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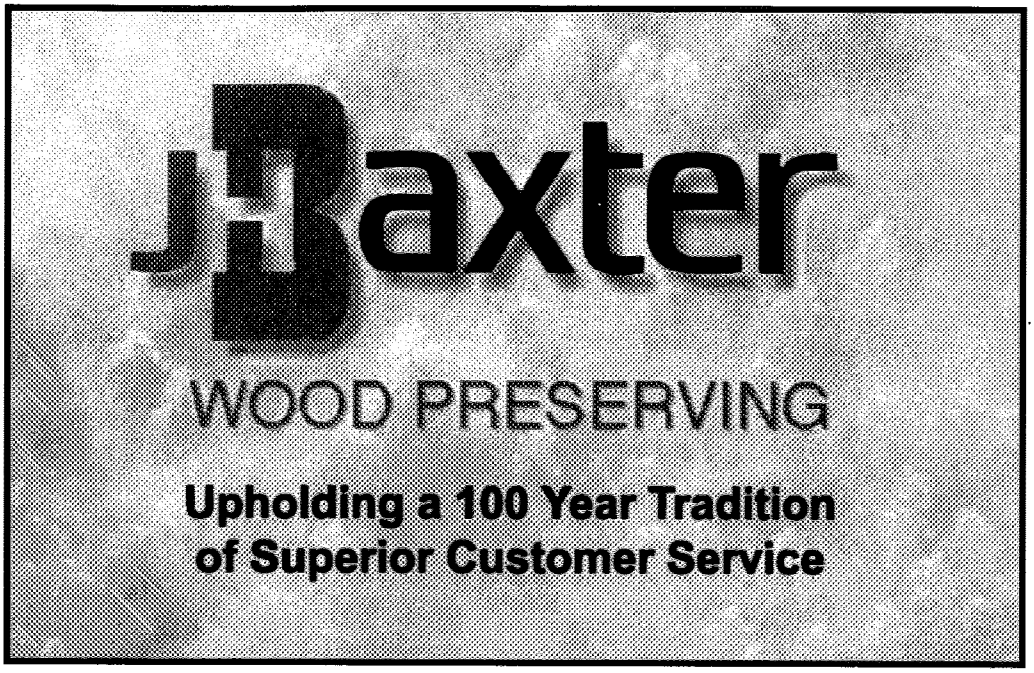
2008 Groundwater Monitoring Report
South Woodwaste Landfill
J.H. Baxter & Company
Arlington, Washington



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April 14, 2009

JBaxter

PREMIER
ENVIRONMENTAL SERVICES, INC

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Acronyms and Abbreviations

AVD	absolute value difference
Baxter	J. H. Baxter & Company
COD	chemical oxygen demand
CAS	Columbia Analytical Services, Inc.
EAL	Edge Analytical Laboratory
EPA	Environmental Protection Agency
MCL	maximum contaminant level
MDL	method detection limit
MRL	method reporting limit
PQL	practical quantitation limit
QA	quality assurance
QC	quality control
RPD	relative percent difference
SMCL	secondary maximum contaminant level
TDS	total dissolved solids
TOC	total organic carbon
WAC	Washington Administrative Code

1 Introduction

This report presents quarterly groundwater data collected from January to October 2008 for the J. H. Baxter & Company's (Baxter) closed South Woodwaste Landfill (South Landfill), located at 6520 188th Street NE in the City of Arlington, Snohomish County, Washington (Figure 1). The South Landfill is closed and covered with a vegetated soil cap.

Groundwater sampling was performed on monitoring wells BXS-1, BXS-2, BXS-3, and BXS-4 during quarterly monitoring events conducted in January, April, July, and October 2008. Field measurements were taken for pH, conductivity, temperature, redox potential (Eh), and dissolved oxygen. In addition, methane measurements were collected in July and October 2008. Field measurement data are summarized in Table 3a.

Groundwater samples were submitted for laboratory analysis of pH, conductivity, ammonia as nitrogen, chemical oxygen demand (COD), chloride, nitrite plus nitrate as nitrogen, total dissolved solids (TDS), sulfate, tannin and lignin, total organic carbon (TOC), total Coliform, and dissolved metals (arsenic, barium, cadmium, copper, iron, manganese, nickel, and zinc). Laboratory results are presented in Tables 3b and 3c.

All of the monitoring wells were installed in 1988. Monitoring wells BXS-1, BXS-2, and BXS-3 are located hydraulically downgradient of the South Landfill. Monitoring well BXS-4 is located hydraulically upgradient of the South Landfill (Figure 2). Monitoring well BXS-4 represents the background groundwater analytical data, the benchmark which to compare the analytical data from the downgradient wells. Boring logs, groundwater monitoring procedures, and a summary of site conditions encountered during the

installation of the monitoring wells are included in the hydrogeologic report prepared by Sweet-Edwards/EMCON, Inc. (EMCON 1989) in 1989.

2 Hydrogeology

As discussed, quarterly groundwater monitoring events were performed during January, April, July, and October 2008 for the South Landfill. Monitoring activities included well purging, water level measurement, groundwater sampling, and laboratory analysis. Groundwater samples were collected from monitoring well locations BXS-1, BXS-2, BXS-3, and BXS-4 during each quarterly sampling event.

2.1 Groundwater Elevations

Groundwater levels were measured in each well during each of the four monitoring events. The elevation of the groundwater surface was calculated relative to the Baxter plant datum by subtracting the depth to water from the surveyed top of casing elevation. Measured groundwater levels throughout the 2008 monitoring period are summarized in Table 1.

Groundwater elevations were highest during the April event, with the exception of BXS-4, which was highest in January. Groundwater elevations were lowest during the October event for wells BXS-2 and BXS-3, during the January event for BXS-1, and during the July event for BXS-4. The static groundwater level in wells BXS-1, BXS-2, BXS-3, and BXS-4 fluctuated throughout the year by 2.13 feet, 2.81 feet, 6.28 feet, and 5.76 feet, respectively. Groundwater surface elevations measured in January 2008 (Figure 2) and the October 2008 (Figure 3) are provided for reference.

The groundwater flow direction throughout the year was toward the northwest and is consistent with the regional groundwater flow in the aquifer (Figure 4). The average gradient varied between 0.018 and 0.025 during 2008 (Table 2).

2.2 Groundwater Velocities

Groundwater velocities ($\mathbf{v_x}$) for each monitoring event were estimated using Darcy's Law.

$$v_x = -Ki / n_e$$

Hydraulic conductivity ($\mathbf{K}$) in the fine sand unit beneath the landfill was estimated at 3×10^{-2} to 6×10^{-2} centimeters per second (cm/sec) based on slug tests performed in BXS-2 and BXS-4 (EMCON 1989). Porosity ($\mathbf{n_e}$) was assumed to be 0.300 (i.e., 30%).

The average gradient ($\boldsymbol{i}$) ranged from 0.0182 to 0.0254, resulting in velocity estimates of 5.159 to 14.400 feet per day. Table 2 shows the calculated hydraulic gradients and groundwater velocities during the monitoring events in 2008.

3 Groundwater Quality

Groundwater samples were collected on January 9th for the first quarter, April 30th for the second quarter, July 29th and 30th for the third quarter, and October 22nd for the fourth quarter of 2008 using sampling procedures originally described in Appendix C of EMCON's Hydrogeologic Report (EMCON 1989). Field sampling records are located in Appendix A.

Samples for total Coliform analyses were submitted to Edge Analytical Laboratory (EAL) in Burlington, Washington. Samples for pH, conductivity, ammonia as nitrogen, COD, chloride, nitrate + nitrite as nitrogen, TDS, sulfate, tannin and lignin, TOC, and dissolved metals (arsenic, barium, cadmium, copper, iron, manganese, nickel and zinc) were submitted to Columbia Analytical Services, Inc. (CAS) in Kelso, Washington. Groundwater levels were measured in each well prior to purging.

3.1 Groundwater Sampling

Groundwater sampling was performed using dedicated submersible pumps (bladder pumps). A field duplicate, labeled BXS-5 or BXS-6, was collected from well BXS-1 or BXS-2 during each sampling event. Field blanks were not collected due to the use of dedicated pumping equipment.

Prior to sample collection, field measurements were taken for pH, conductivity, temperature, redox potential, and dissolved oxygen. In addition, the well headspace was tested for methane using a methane meter during the January and July 2008 events. Field measurement data are summarized in Table 3a.

Groundwater samples were submitted for laboratory analysis of pH, conductivity, ammonia as nitrogen, COD, chloride, nitrite plus nitrate as nitrogen, TDS, sulfate, tannin and lignin, TOC, total Coliform, and dissolved metals (arsenic, barium, cadmium, copper, iron, manganese, nickel, and zinc).

The analytical data for the groundwater samples are summarized in Tables 3a, 3b, and 3c. Laboratory analytical reports and chain-of-custody forms for the 2008 groundwater monitoring events are presented in Appendix B.

4 Data Review

This section describes the data review process that was performed to evaluate the adequacy and quality of the analytical data from the 2008 groundwater monitoring events. The objective of the data review was to identify estimated, unreliable, or invalid measurements. Information on the reliability of the data is critical to the interpretation of the results. The review was performed according to guidelines prepared by the United States Environmental Protection Agency (EPA) (EPA 1994).

4.1 Field Quality Assurance/Quality Control (QA/QC)

During the quarterly groundwater sampling events, field duplicates were prepared and containerized by Baxter field personnel in accordance with standard practice. The field duplicate samples were collected from well BXS-1 or BXS-2 and labeled BXS-5 or BXS-6.

Field duplicate results aid in the assessment of sampling and analytical precision. Analytical results for the original and duplicate samples collected from each sampling event were evaluated using the relative percent difference (RPD). RPD is the difference between the two results divided by the mean and expressed as a percent. The RPD between the two results was calculated when both the natural sample and duplicate sample had positive results. If the RPD was greater than 35 percent, the reported values are considered estimated concentrations.

The precision of the field duplicate samples collected in 2008 is acceptable, with the following three exceptions.

- The July Total Coliform result and October nitrate plus nitrite as nitrogen and sulfate results for BXS-2 are imprecise. The RPD values are 111, 106 and 86, respectively.

4.2 Laboratory QA/QC

Collected groundwater samples were received by the laboratory with the proper chain-of-custody (COC) documentation, were properly preserved, and at the proper temperature. Samples for total Coliform were analyzed by Edge Analytical, located in Burlington Washington. The remaining analyses were performed by CAS.

With the exception of pH, all analyses were performed within the required holding time for the parameters of interest. The samples were analyzed for pH between one and four days after collection. The method used for pH analysis, Standard Methods 4500-H+ B (APHA 1998), does not list an analysis holding time. The USEPA method for pH analysis of water samples, Method 150.1 (USEPA 1999), specifies that pH analyses be performed "as soon as possible preferably in the field at the time of sampling". For that reason, the field analyzed pH results are utilized for trend analysis and statistical evaluation.

The laboratory reports are complete and contain results for all samples and corresponding analyses requested on the COC forms.

4.3 Statistical Analysis of Data

Groundwater sample chemical analysis results were statistically evaluated to assess if there was a significant difference between the downgradient wells and the upgradient background well. The following approach was used for performing the statistical analysis:

- **Non-Detects.** Non-detect results were replaced with a value of half of the laboratory method reporting limit (MRL).

- **Data Distribution**. A key assumption of Student's t-test was that the data are normally distributed.

- **Parametric hypothesis testing.** Parametric hypothesis testing was performed using Student's t-test for all parameters in both the upgradient and downgradient wells. For each comparison the null hypothesis was that there was no difference between the downgradient and upgradient concentrations. The null hypothesis was tested using a two-tailed test at a significance level of 0.025. The t-test statistic ($\mathbf{t_{stat}}$) was calculated from the average and variance of quarterly sampling results in a downgradient well and the upgradient well. Each quarterly sample was compared to the previous three quarterly samples to provide a four sample running average. The average concentration in the downgradient well was significantly higher than the upgradient well if $\mathbf{t_{stat}}$ was greater than the critical test statistic ($\mathbf{t_c}$). The critical test statistic was computed using the percent point function. The percent point function (ppf) is the inverse of the cumulative distribution function.

Statistically significant detections above background well (BXS-4) concentrations are shown in **bold** in the tables presented in Appendix C. Statistically significant detections below background concentrations are shown in ***bold italics*** in the tables presented in Appendix C.

5 Discussion of Results

5.1 Statistical Results

Appendix C presents the results of the statistical analyses for each individual parameter tested in the groundwater samples from wells BXS-1 through BXS-4. These include average concentration, variance, standard deviation, and Student's t-test statistic. The parameters detected at statistically higher concentrations in specific downgradient wells compared to the upgradient well are listed below:

- Field conductivity, COD, chloride, TDS, TOC, and dissolved manganese for wells BXS-1, BXS-2, and BXS-3

- Tannin and lignin, dissolved barium, dissolved iron, and dissolved nickel for wells BXS-2 and BXS-3

- Nitrate plus nitrite as nitrogen and sulfate for well BXS-1

- Dissolved zinc for well BXS-2

- Dissolved arsenic for well BXS-3.

5.2 Concentration Trends over Time

Figures 5 through 18 show the concentration trends from 2004 through 2008 for each parameter discussed below.

Ammonia as Nitrogen (Figure 5) – The samples collected from well BXS-3 during July and October were higher than the concentrations in background well BXS-4. Ammonia concentrations in wells BXS-1, BXS-2, and BXS-4 have remained steady since 2003. Ammonia concentrations in well BXS-3 during 2008 are within the range of concentrations observed since 2005.

Arsenic (Figure 6) – Dissolved arsenic concentrations in well BXS-3 were above background levels during the 2008 sampling events. Concentrations of arsenic in wells BXS-1, BXS-2, and BXS-4 have been stable during the last four years.

Barium (Figure 7) – Concentrations of dissolved barium in downgradient wells BXS-2 and BXS-3 were higher than the concentrations in background well BXS-4 in all sampling events. The concentrations of barium in the most downgradient well, BXS-1, were below the corresponding concentrations in the background well, with one exception. The barium concentration of well BXS-1 was slightly above the background level during July 2008. Concentrations of barium have been stable in all four wells during the last three years.

Chemical Oxygen Demand (COD) (Figure 8) – The COD concentrations in the downgradient wells were higher than the corresponding COD concentrations in background well BXS-4. COD concentrations have been relatively stable in the wells the last three years.

Chloride (see Figure 9) – The concentrations of chloride in down gradient wells BXS-1, BXS-2, and BXS-3 for all 2008 sampling events were slightly greater than the corresponding concentrations in background well BXS-4. Concentrations of chloride have been stable over the last four years.

Conductivity (Field) (Figure 10) – Field conductivity measurements of the groundwater samples from all of the downgradient wells were greater than the conductivity of the background well for all four sampling events. Conductivity values have been relatively stable over the last three years.

Iron (Figure 11) – Dissolved iron concentrations in well BXS-3 exhibit a temporal distribution that appears to be seasonal with the lowest concentrations in fall/winter and the highest concentrations in spring/summer. The iron concentrations in well BXS-3 have been stable since May of 2006. Concentrations of iron in groundwater samples collected from wells BXS-1, BXS-2, and BXS-4 have remained stable over the last four years.

Manganese (Figure 12) – The concentrations of dissolved manganese in the downgradient wells BXS-1, BXS-2 and BXS-3 were higher than the corresponding levels in the background well. Manganese concentrations have been stable over the last four years.

Nickel (Figure 13) – Dissolved nickel was not detected in background well BXS-4 during 2008 (Figure 13 values are one-half the reporting limit). Dissolved nickel was detected at low concentrations in wells BXS-1, BXS-2, and BXS-3 during 2008. Dissolved nickel concentrations have been relatively stable for the last three years.

Sulfate (Figure 14) – During all four sampling events the sulfate concentrations in downgradient well BXS-1 were greater than corresponding background well concentrations. The sulfate concentrations in wells BXS-2 and BXS-3 were lower than

the concentrations in the background well. The concentration of sulfate in all wells has remained relatively stable over the last two years.

Tannin and Lignin (Figure 15) – Concentrations of tannin and lignin detected in wells BXS-2 and BXS-3 for all four sampling events were greater than the corresponding concentrations in the background well. Tannin and lignin concentrations in well BXS-1 were lower than or equal to the corresponding background well concentration during 2008. Tannin and lignin levels in wells BXS-1, BXS-2, and BXS-4 have remained stable for the last three years. The tannin and lignin concentration of well BXS-3 was at a historic high of 22.5 mg/L in April of 2008; however, the concentration dropped to approximately 2 mg/L in October 2008.

Total Organic Carbon (TOC) (Figure 16) – Concentrations of TOC in the groundwater samples collected from the downgradient wells were greater than the TOC detected in background well BXS-4. Concentrations of TOC in all wells have remained relatively stable over the last three years.

Field pH (Figure 17) – Field pH measurements in all of the downgradient wells were less than the background well with values ranging from 5.91 to 6.55 standard pH units. The pH of well BXS-4 groundwater varied from a low of 7.66 to a high of 8.32 pH units. Field pH measurements have been stable for the last two years.

Total Dissolved Solids (TDS) (Figure 18) – TDS measured in the downgradient wells were higher than the TDS in the background well for all 2008 sampling events. TDS levels have remained stable for the last two years, with the exception of the high value observed in July 2008 for well BXS-1.

Methane – The headspace of each well was tested for methane during the January and July 2008 sampling events. Methane has not been detected above the detection limit of 1 parts per million in any of the monitoring wells since methane testing began in 2005.

5.3 Comparison to Standards

MCLs for groundwater were established in WAC 173-304-9901 as equal to the primary drinking water standards set forth in WAC 246-290-310. MCLs are the maximum permissible concentration of a contaminant in drinking water supplies, whereas SMCLs are guidelines related to criteria other than adverse health effects. MCLs and SMCLs are listed in Tables 3a, 3b, and 3c and are shown on the time series plots on Figures 5 through 18 for reference.

5.3.1 Comparison to MCLs

Of the monitored parameters, MCLs apply to arsenic, barium, cadmium, copper, nickel, and nitrate plus nitrite as nitrogen. Concentrations in all of the groundwater samples were lower than the MCLs for barium, cadmium, copper, nickel, and nitrate plus nitrite as nitrogen during the 2008 monitoring events. The dissolved arsenic concentrations in well BXS-3 during all four 2008 events were greater than the MCL of 10 µg/L. The arsenic concentrations ranged from 42.6 to 117 µg/L.

The MCL for total Coliform is a drinking water criteria used to alert treatment system operators of potential bacterial contamination. This criterion does not apply to groundwater and the MCL is provided for informational purposes only. The high level of total Coliform found in monitoring well BXS-2 during the July 2008 sampling event is assumed an isolated instance until further data is collected in 2009.

5.3.2 Comparison to SMCLs

Among the monitored parameters, SMCLs apply to pH, conductivity, chloride, TDS, sulfate, iron, manganese, and zinc. The data from the 2008 monitoring events indicated that the groundwater concentrations from all the monitoring wells were lower than the

SMCLs for chloride, sulfate, and zinc. Samples exceeded the SMCLs for conductivity, TDS, dissolved iron, dissolved manganese, and several samples were below the SMCL for pH, as described below:

Field Conductivity values were higher than the SMCL of 700 µS/cm for groundwater collected from wells BXS-2 and BXS-3, with values ranging from 722 to 846 µS/cm. Conductivity measurements were below the SMCL in background well BXS-4 and in the most downgradient well BXS-1.

Laboratory Conductivity values for well BXS-2 were higher than the SMCL of 700 µmhos/cm, with values ranging from 747 to 892 µmhos/cm. Conductivity values for the background well BXS-4 and down gradient wells BXS-1 and BXS-3 were equal to or below the SMCL during 2008.

TDS levels were slightly higher than the SMCL of 500 mg/L in well BXS-3 during the January event (578 mg/L) and in well BXS-2 during the January (508 mg/L) and July (506 mg/L) events. TDS in down gradient well BSX-1, and background well BXS-4 were below the SMCL.

Dissolved iron concentrations detected in groundwater samples from wells BXS-2 and BXS-3 were higher than the SMCL of 300 µg/L. Dissolved iron detected in BXS-2 ranged from 560 to 624 µg/L and ranged from 35,500 to 102,000 µg/L in BXS-3. The dissolved iron concentrations in the wells BXS-1 and BXS-4 were below the SMCL.

Dissolved manganese concentrations detected in all four wells exceeded the 50 µg/L SMCL during the 2008 monitoring period. Concentrations detected in well BXS-3 were the highest, averaging 14,750 µg/L. Concentrations in the background well (BXS-4) were the lowest, averaging 114 µg/L.

Field pH measurements were below the SMCL range of 6.5 to 8.5 standard pH units during several events for wells BXS-1, BXS-2, and BXS-3 in 2008. Field pH values were below the SMCL for well BXS-1 during all four events, with a low 5.91 standard pH units in January and a high of 6.28 standard pH units in October. The field pH reading of well BXS-2 were below the SMCL during all four 2008 events, with a low of 6.10 standard pH in April and a high of 6.48 standard pH units in October. Field pH readings were below the SMCL during January, April, and July for well BXS-3, with a low of 6.23 in April and a high of 6.42 in July. The field pH values were within the SMCL range for well BXS-4 during 2008.

Laboratory pH measurements were below the SMCL range of 6.5 to 8.5 standard pH units for wells BXS-1, BXS-2, and BXS-3 during all four 2008 monitoring events. Laboratory pH values ranged from 6.23 to 6.49 for BXS-1, 6.41 to 6.46 for BXS-2, and 6.32 to 6.41 pH units for BXS-3. Laboratory pH values were consistently within the SMCL range for background well BXS-4.

6 Summary

Quarterly groundwater monitoring samples were collected from one upgradient well and three downgradient wells during 2008 at the J.H. Baxter South Woodwaste Landfill. The samples were analyzed for eleven groundwater quality parameters, eight dissolved metals, and vapor phase methane.

Groundwater samples collected during the 2008 monitoring events did not exceed the MCLs for any of the monitored parameters, with the exception of arsenic. Dissolved arsenic concentrations in well BXS-3 exceeded the MCL during all four sampling events. The statistical analysis of dissolved arsenic concentrations in well BXS-3 indicates that concentrations detected in 2008 are statistically greater than background.

There were no exceedances of the SMCLs for chloride, sulfate, or dissolved zinc in the groundwater samples collected during the quarterly groundwater monitoring events. The parameters that exceeded the SMCLs in the groundwater samples collected during the 2008 monitoring events include field and laboratory conductivity, field and laboratory pH, TDS, dissolved iron, and dissolved manganese. These exceedances are discussed below.

Field Conductivity – Field conductivity measurements exceeded the SMCL in wells BXS-2 and BXS-3 during all 2008 monitoring events. The statistical evaluation indicated that all measured conductivity values in the downgradient wells are statistically greater than background. Field conductivity in the farthest downgradient well BXS-1 was below the SMCL during 2008. Field conductivity in all wells has remained relatively stable over the last several years.

Laboratory Conductivity – Laboratory conductivity measurements exceeded the SMCL in well BXS-2 during all 2008 events. Laboratory conductivity measurements have remained fairly stable in all wells for the last four years.

Field pH – Field pH values were below the lower SMCL for all four quarterly measurements in wells BXS-1 and BXS-2, and during the January, April, and July events for well BXS-3. The pH values were found to be statistically lower than background. Field pH values for the downgradient wells have remained stable for the last two years.

Laboratory pH – Laboratory pH values were below the lower SMCL for all three downgradient wells during all four 2008 sampling events. Laboratory pH values have been relatively stable since 2003.

TDS – TDS exceeded the SMCL in well BXS-2 during January and July and BXS-3 during January 2008. All TDS concentrations in the downgradient wells were determined to be statistically greater than background. TDS concentrations in well BXS-1 increased slightly while concentrations in wells BXS-2, BXS-3, and BXS-4 have remained stable.

Dissolved Iron – The iron SMCL was exceeded in wells BXS-2 and BXS-3 during all quarterly sampling events of 2008. Dissolved iron concentrations in wells BXS-2 and BXS-3 were statistically greater than background. Dissolved iron concentrations in wells BXS-1, BXS-2, and BXS-4 have been stable for the last five years. The dissolved iron concentration in well BXS-3 has been relatively stable over the last two years.

Dissolved Manganese – Dissolved manganese concentrations in the upgradient and downgradient wells exceeded the SMCL during quarterly monitoring in 2008. Dissolved manganese levels in wells BXS-1, BXS-2, and BXS-3 during all four events were statistically greater than background. Dissolved manganese levels have remained stable for the last four years.

For parameters without MCLs or SMCLs, the statistical evaluation of groundwater results for the three downgradient wells indicated that the following parameter concentrations are statistically greater than the background concentrations.

COD – COD levels in the downgradient wells BXS-1, BXS-2, and BXS-3 were statistically greater than background during 2008. COD levels in all wells have remained stable over the last four years.

Chloride – Chloride concentrations in all three downgradient wells during all of 2008 were statistically greater than background. Chloride levels have been stable for four years.

Nitrate plus nitrite as nitrogen – Nitrate plus nitrite as nitrogen concentrations in well BXS-1 were statistically greater than background during 2008, but have been stable.

Sulfate – Sulfate concentrations in well BXS-1 were statistically greater than background during 2008. All sulfate concentrations were below the SMCL. Sulfate levels in all wells have remained relatively stable for the last four years.

TOC – TOC levels were statistically greater than background for the downgradient wells during all 2008 sampling events. TOC levels in all wells have been stable since 2002.

Tannin and Lignin – Tannin and lignin concentrations in wells BXS-2 and BXS-3 were statistically greater than background during 2008. Tannin and lignin levels in wells BXS-1, BXS-2, and BXS-4 have been stable since 2002. Tannin and lignin levels in well BXS-3 vary widely and reached a historic high concentration during April 2008.

Methane – The headspace of each well was tested for methane during the January and July 2008 sampling events. Methane was not detected in any of the monitoring wells during 2008.

Concentrations of two parameters were at historically high levels during 2008. Tannin and lignin in well BXS-3 and dissolved iron in well BXS-4 were at their highest since April 2000.

- The high tannin and lignin concentration observed in well BXS-3 in April was statistically above background. Tannin and lignin concentration fell back within normal range in July and October.

- The dissolved iron concentration in well BXS-4 during October was above normal range at 74.8 µg/L. Additional data gathered in 2009 will help determine if a trend is materializing.

The nature of elevated concentrations will be further evaluated in 2009. Monitoring data gathered in 2009 will be carefully reviewed to determine the need for further action, if any.

7 Limitations

Work for this project was performed, and this report prepared, in accordance with generally accepted professional practices for the nature and conditions of the work completed in the same or similar localities, at the time the work was performed. It is intended for the exclusive use of J. H. Baxter & Co. for specific application to the referenced property. This report is not meant to represent a legal opinion. No other warranty, express or implied, is made.

8 References

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Figures

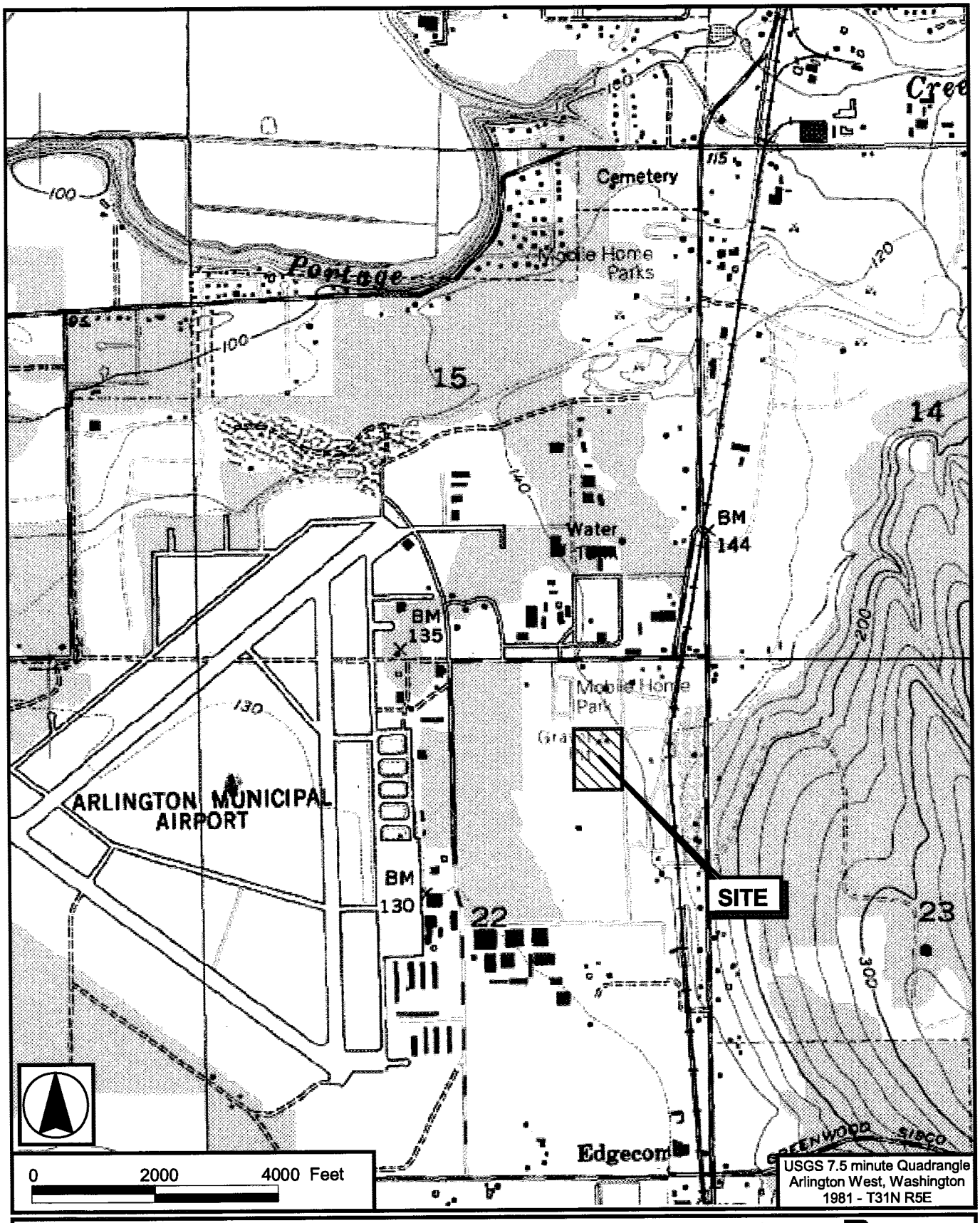

Figure 1. Site Location Map - South Landfill

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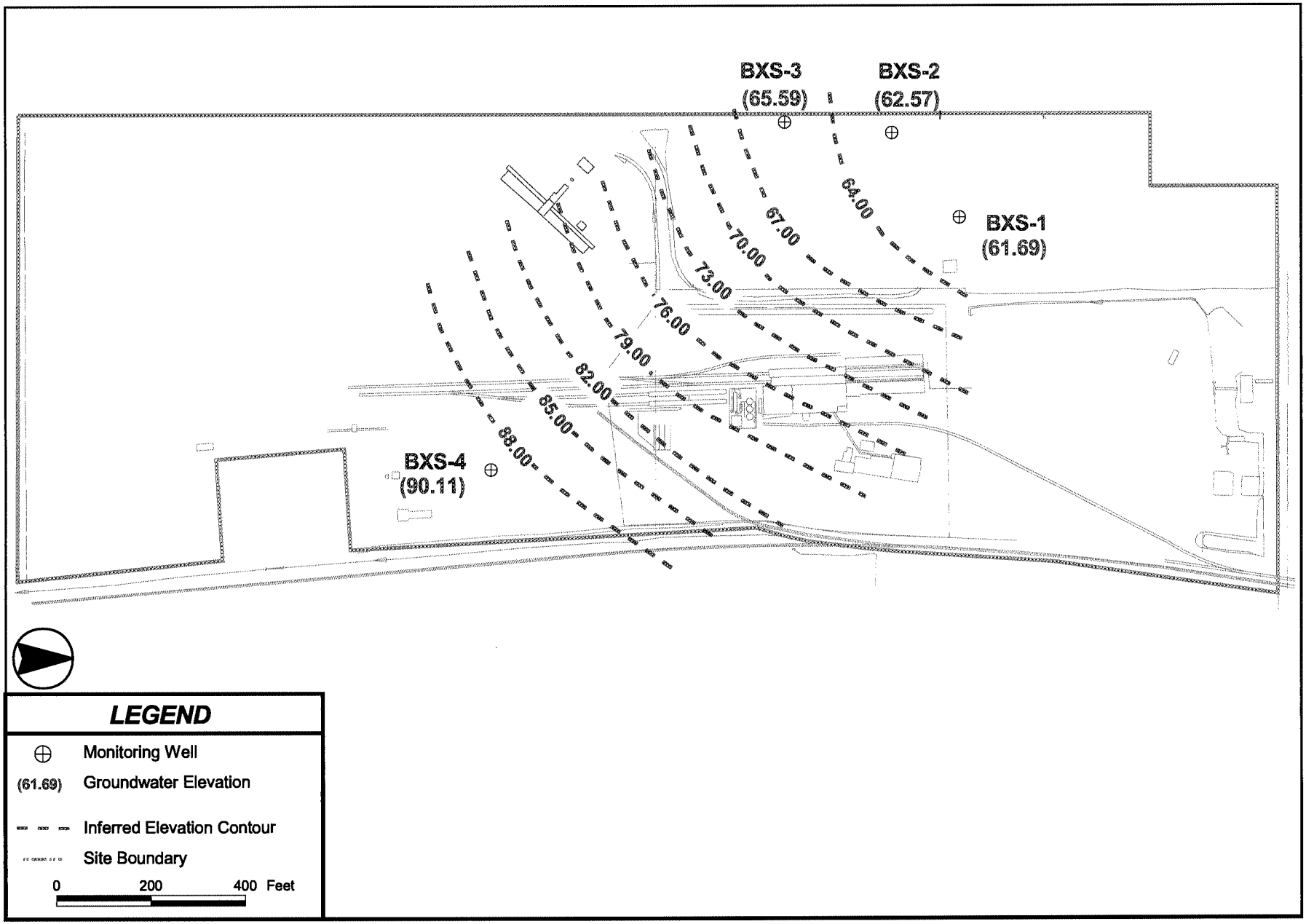

Figure 2. Groundwater Elevation Contour Map - January 2008 - South Landfill

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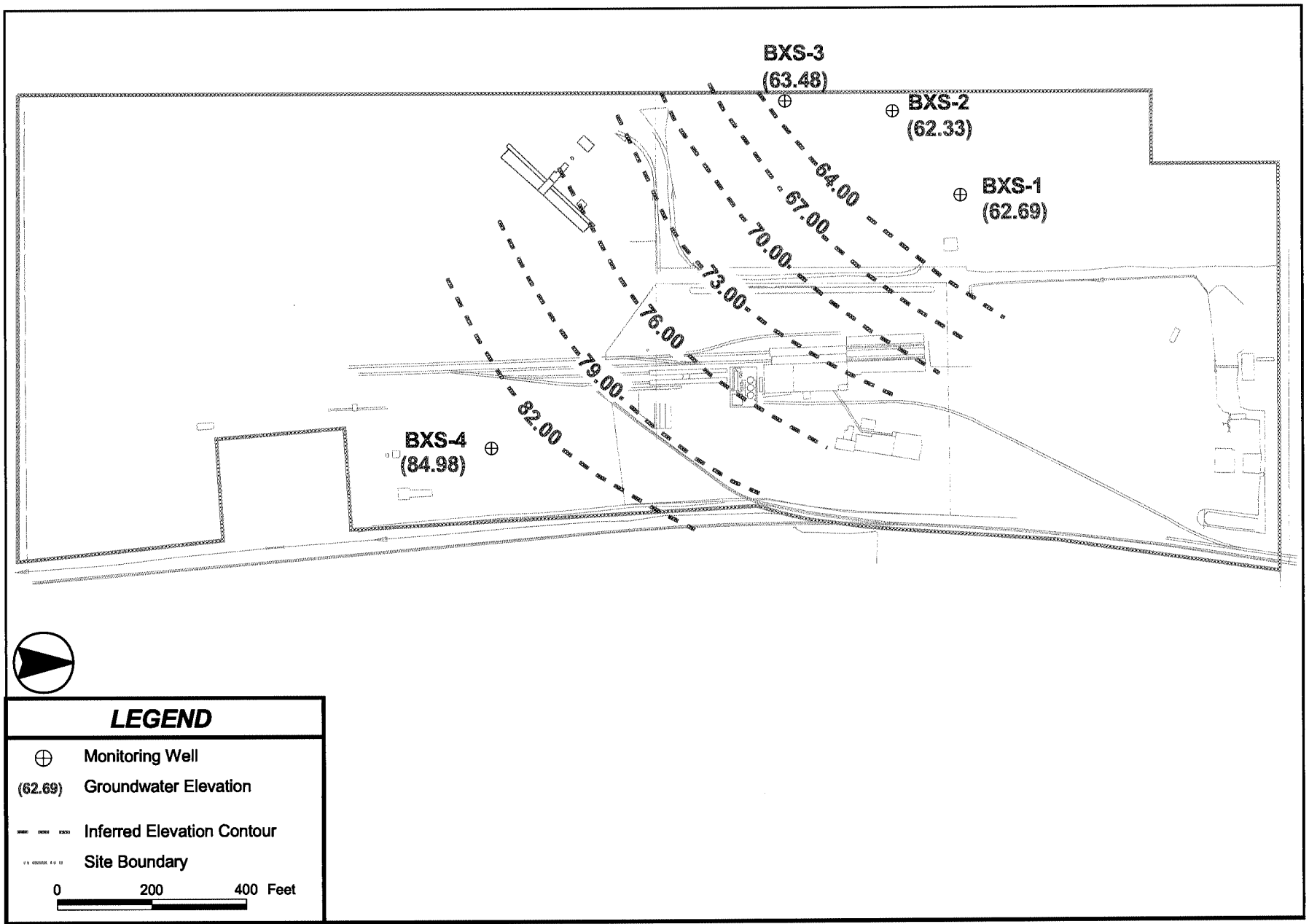

Figure 3. Groundwater Elevation Contour Map - October 2008 - South Landfill

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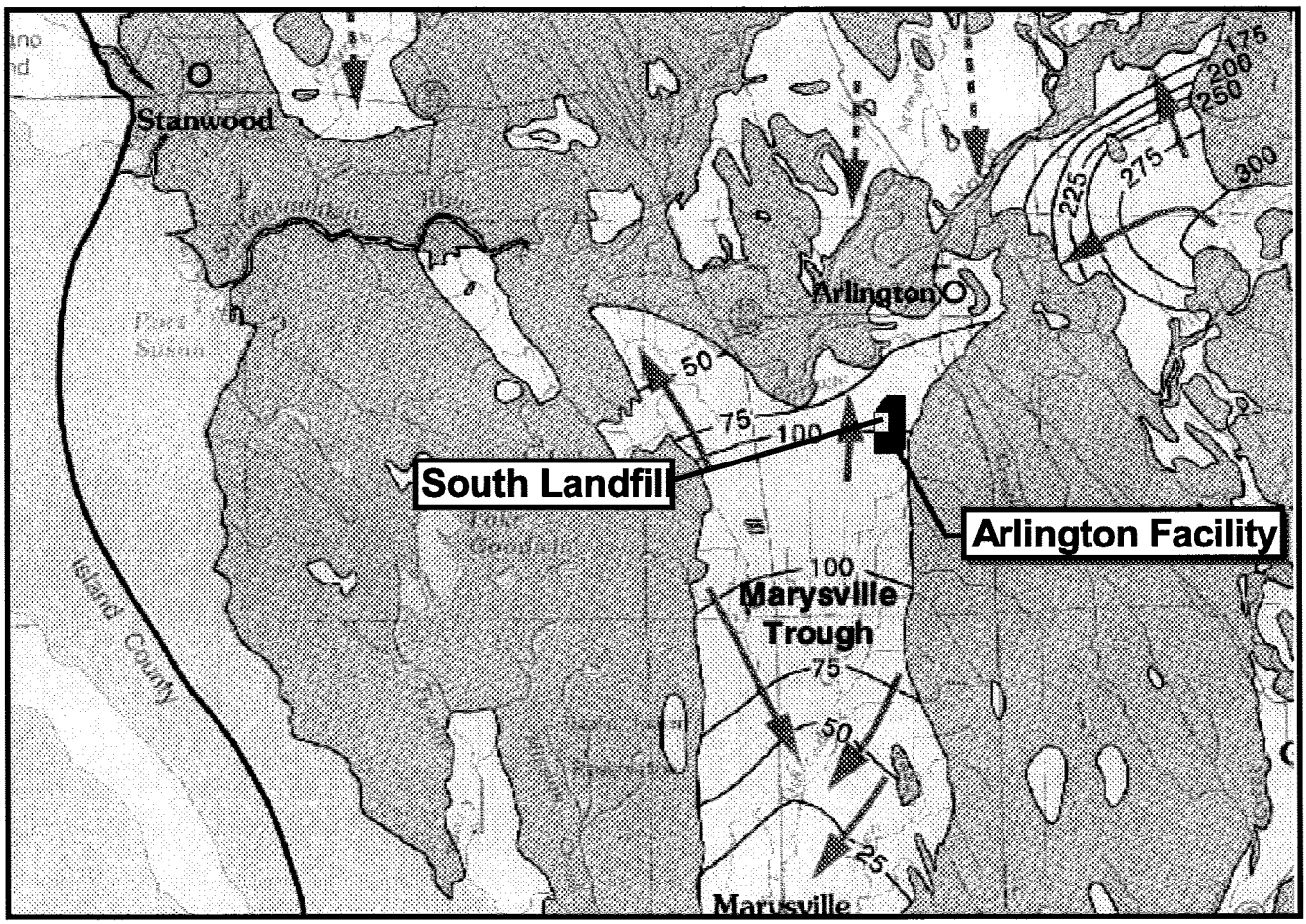

Note:
Map created by base map by B.E. Thomas, J.M. Wilkinson, and S.S. Embrey, entitled "Plate 6. Areal Recharge From Precipitation and Potentiometric Surfaces of Prinicpal Auqifers, Western Snohomish County, Washington," dated 1997

0 4 8 Miles

LEGEND

50 Groundwater Elevation

Groundwater Elevation Contour

Inferred Groundwater Flow Direction

Figure 4. Regional Groundwater Flow Directions

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Figure 5. Concentration Trends for Ammonia
South Woodwaste Landfill Monitoring Well Data

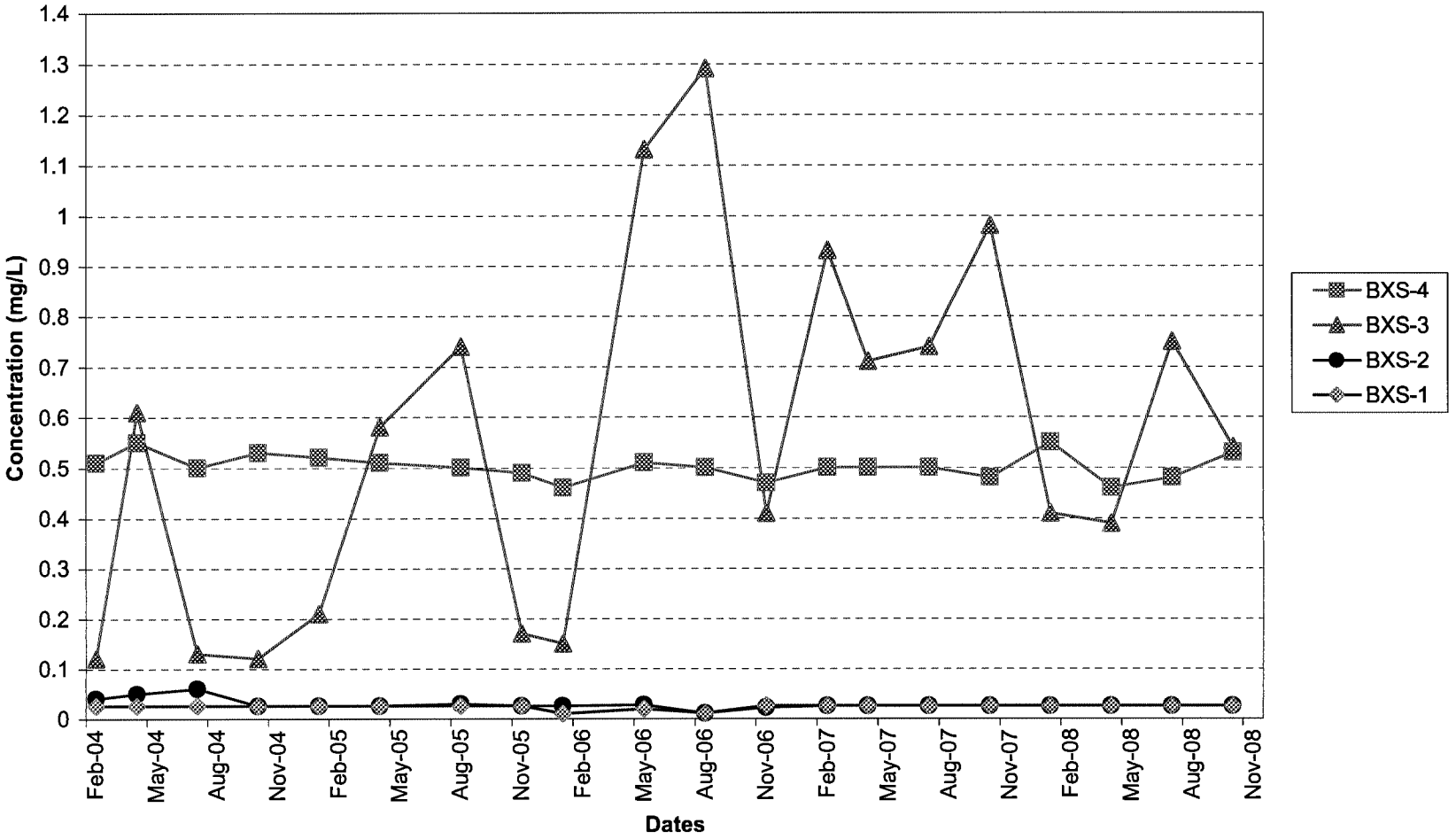


Figure 6. Concentration Trends for Arsenic
South Woodwaste Landfill Monitoring Well Data

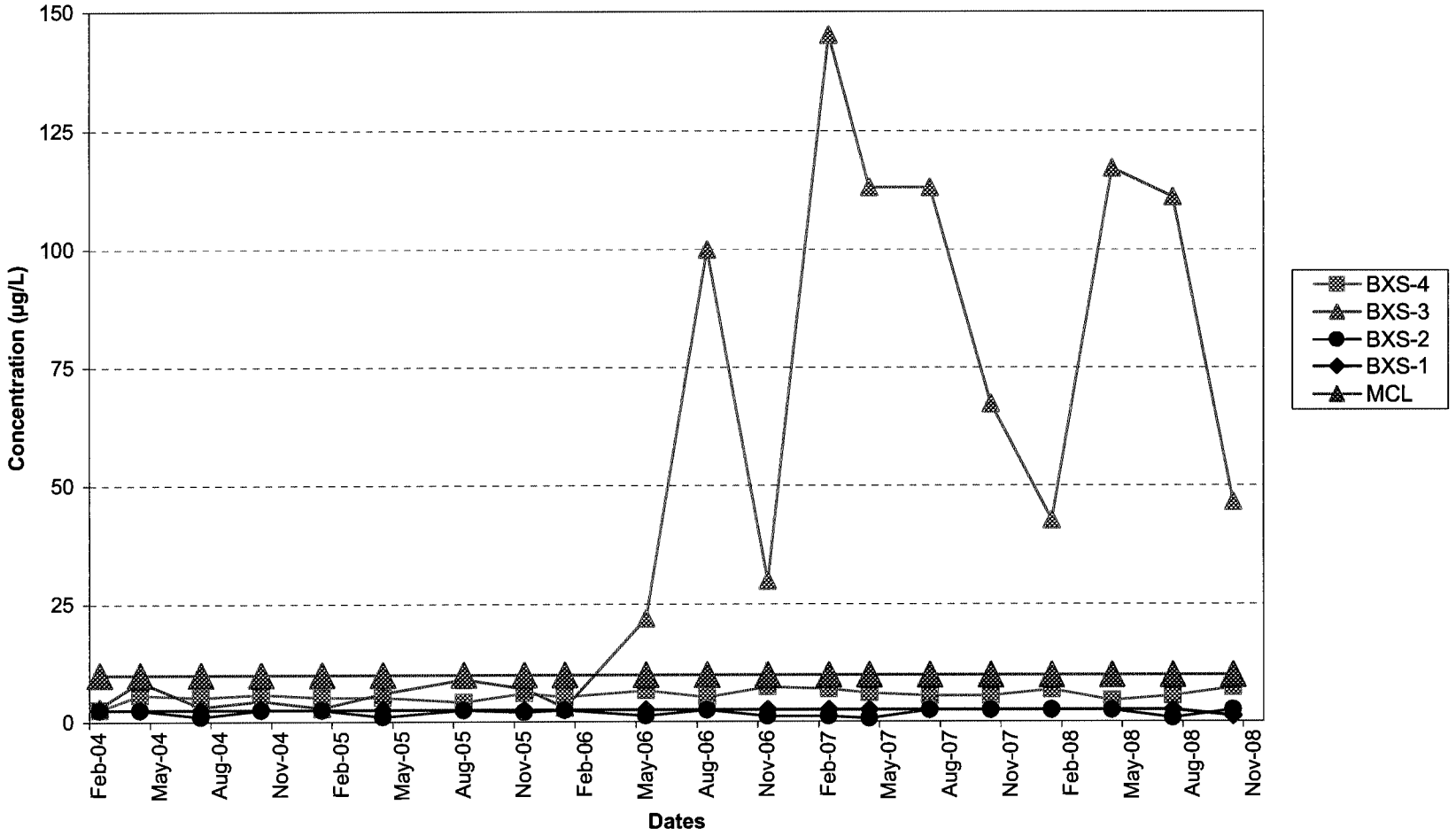


Figure 7. Concentration Trends for Barium
South Woodwaste Landfill Monitoring Well Data

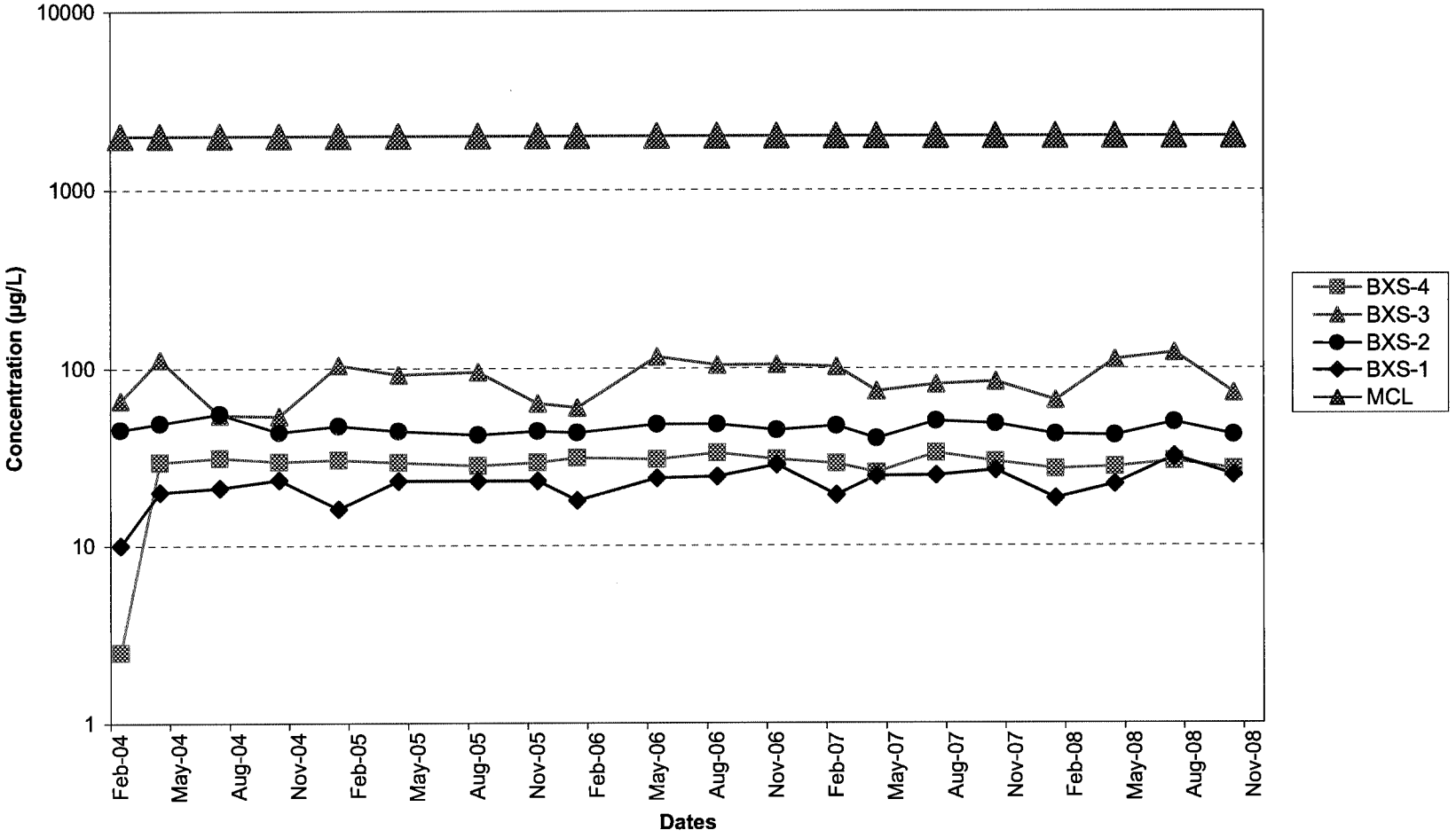


Figure 8. Concentration Trends for Chemical Oxygen Demand
South Woodwaste Landfill Monitoring Well Data

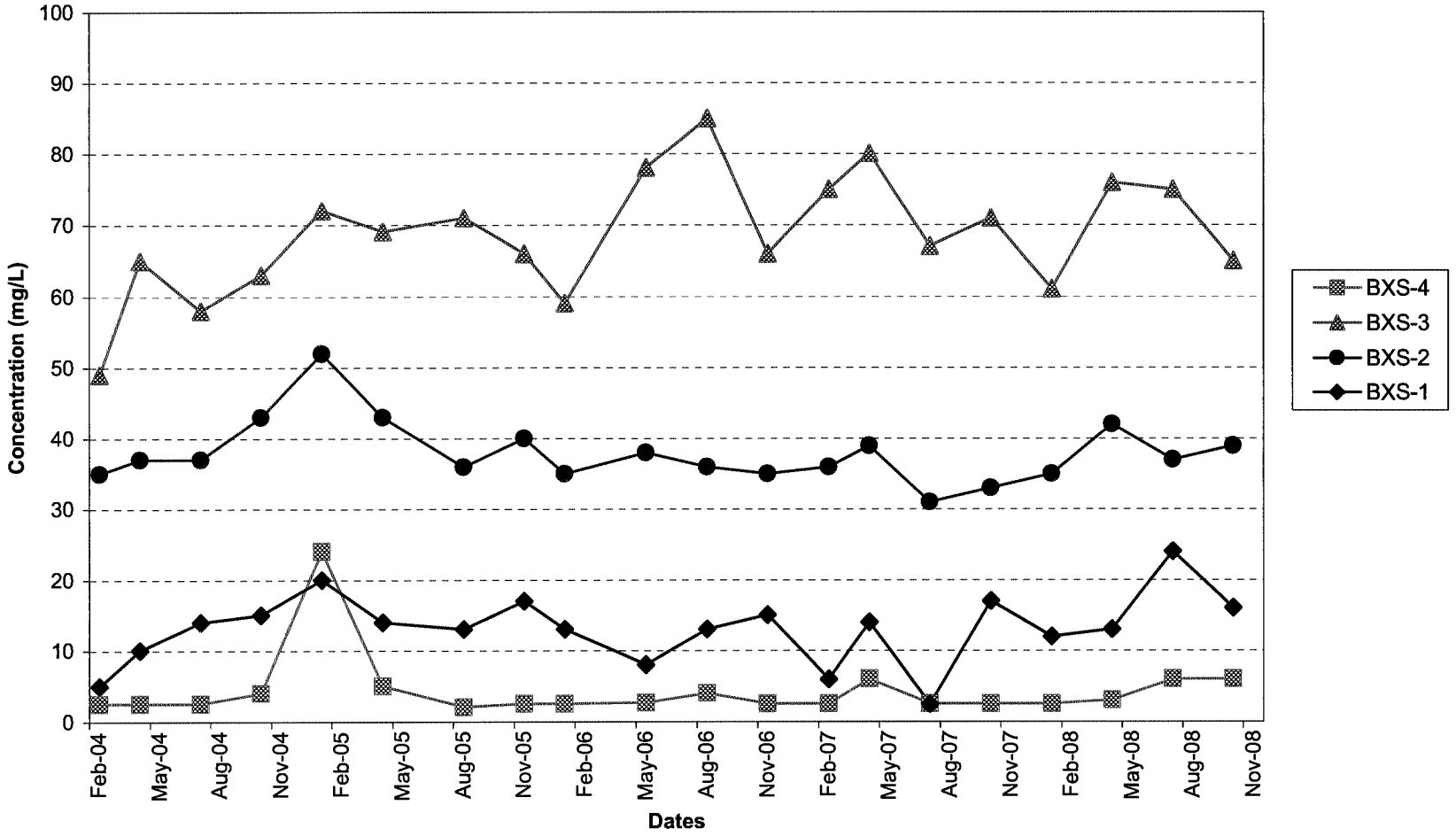


Figure 9. Concentration Trends for Chloride
South Woodwaste Landfill Monitoring Well Data

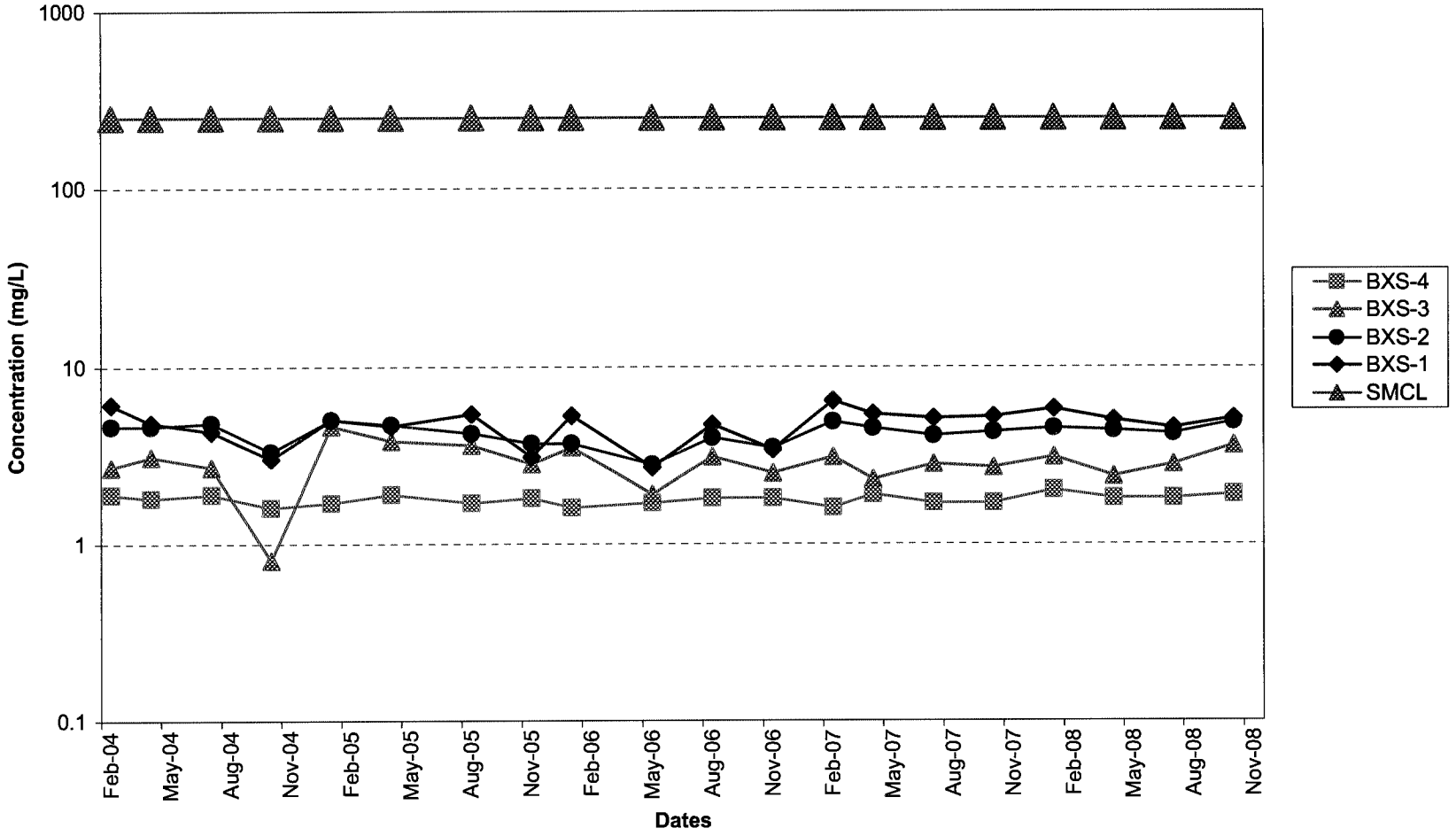


Figure 10. Concentration Trends for Field Conductivity
South Woodwaste Landfill Monitoring Well Data

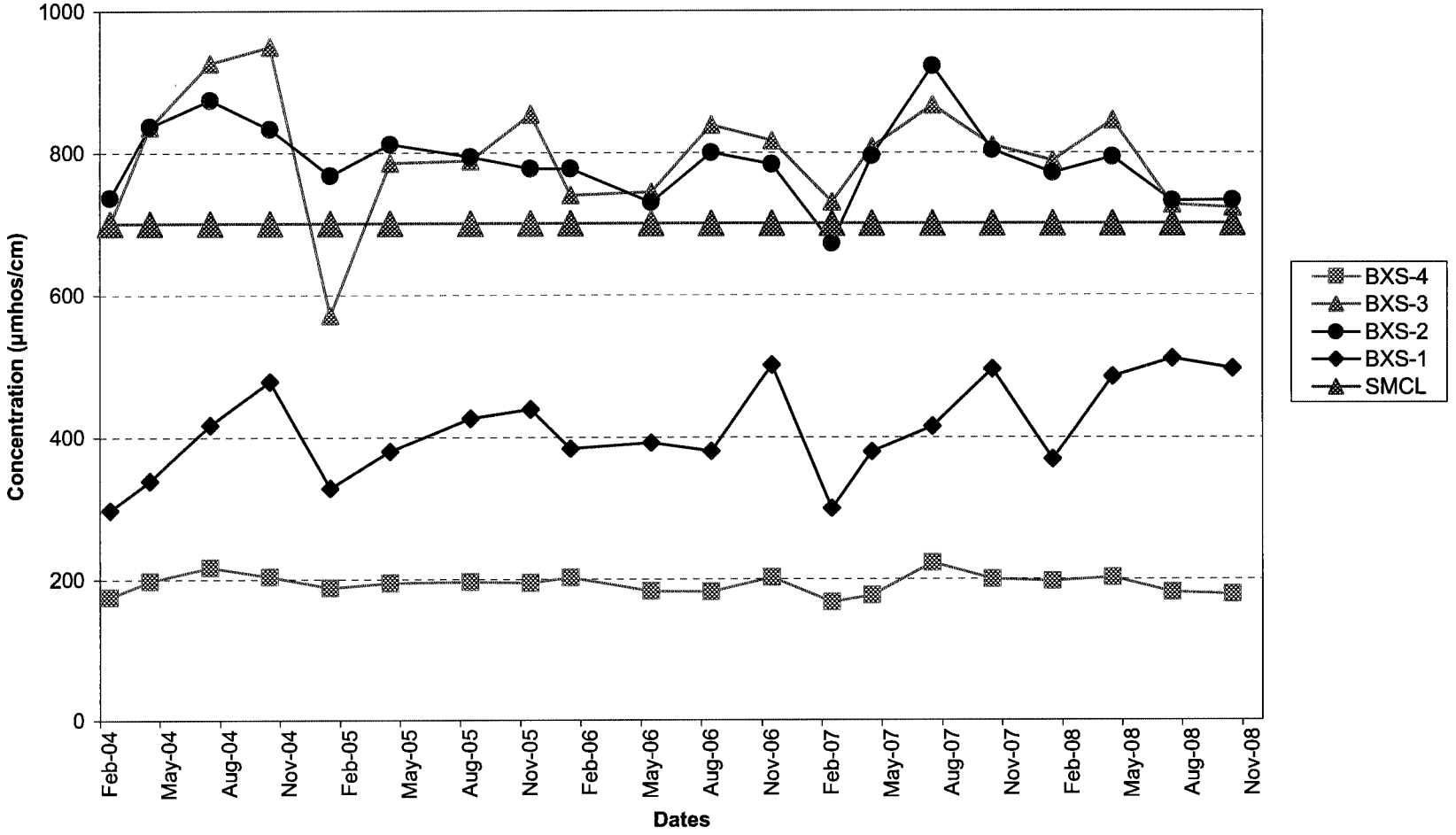


Figure 11. Concentration Trends for Iron
South Woodwaste Landfill Monitoring Well Data

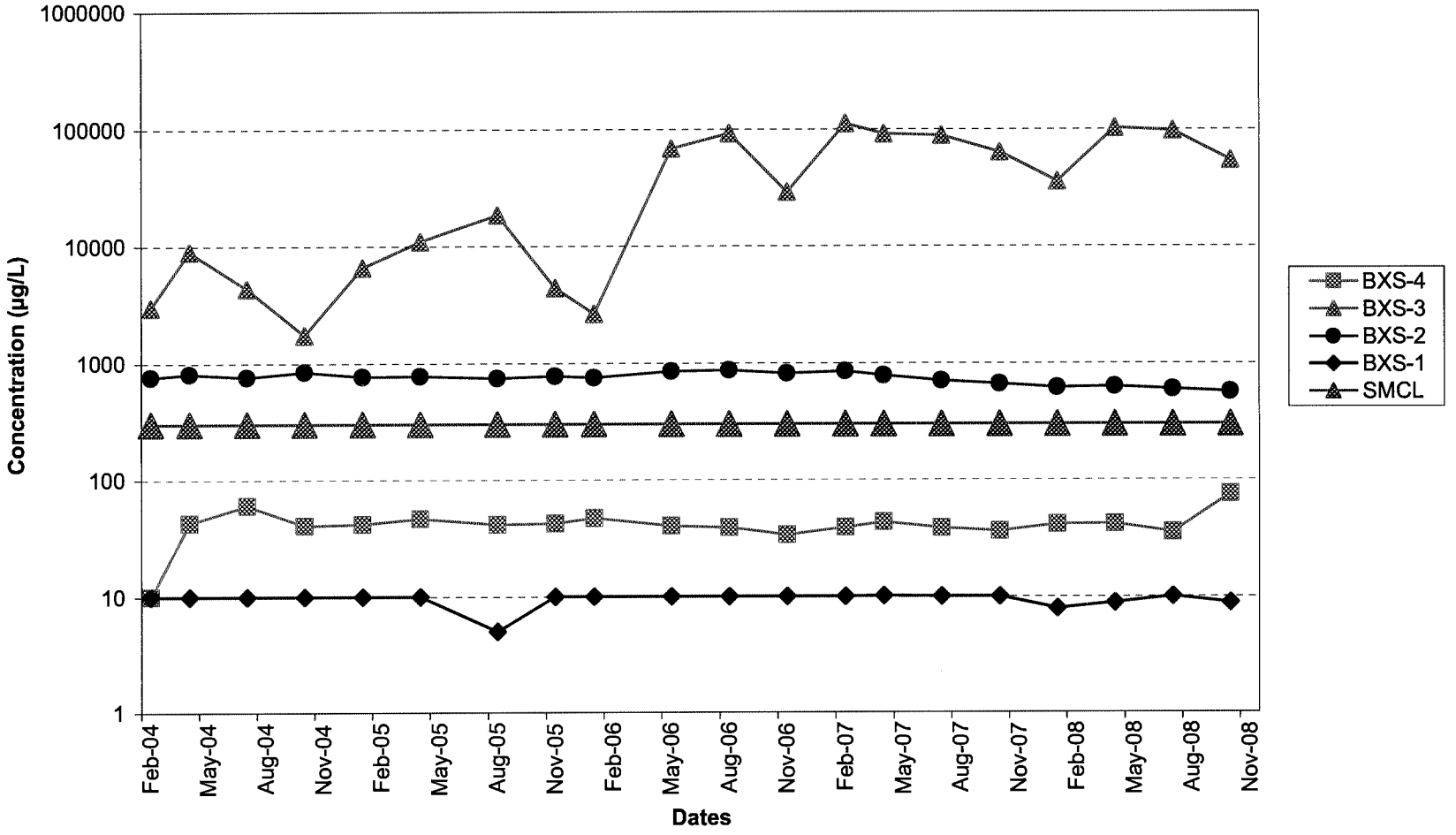


Figure 12. Concentration Trends for Manganese
South Woodwaste Landfill Monitoring Well Data

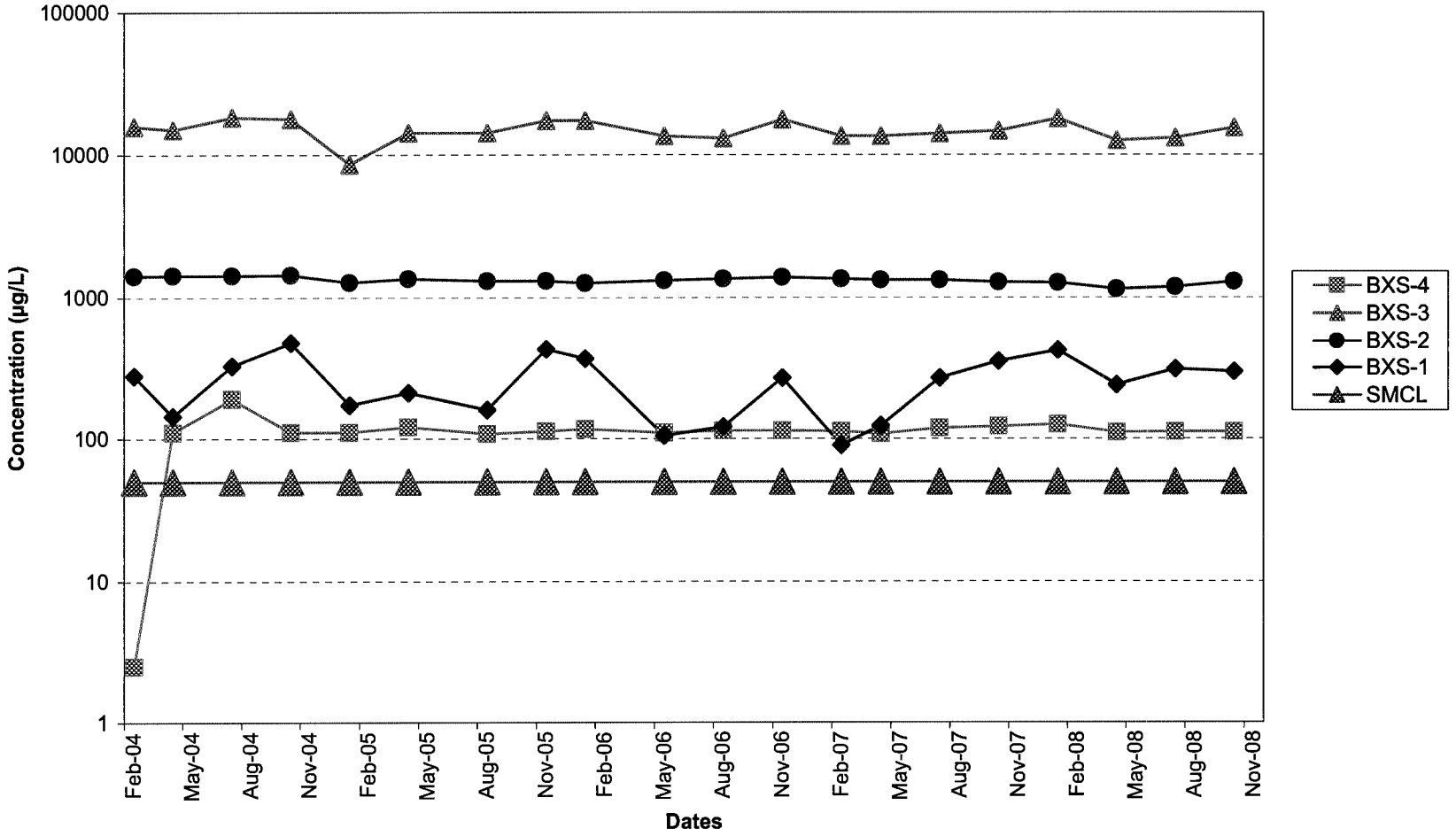


Figure 13. Concentration Trends for Nickel
South Woodwaste Landfill Monitoring Well Data

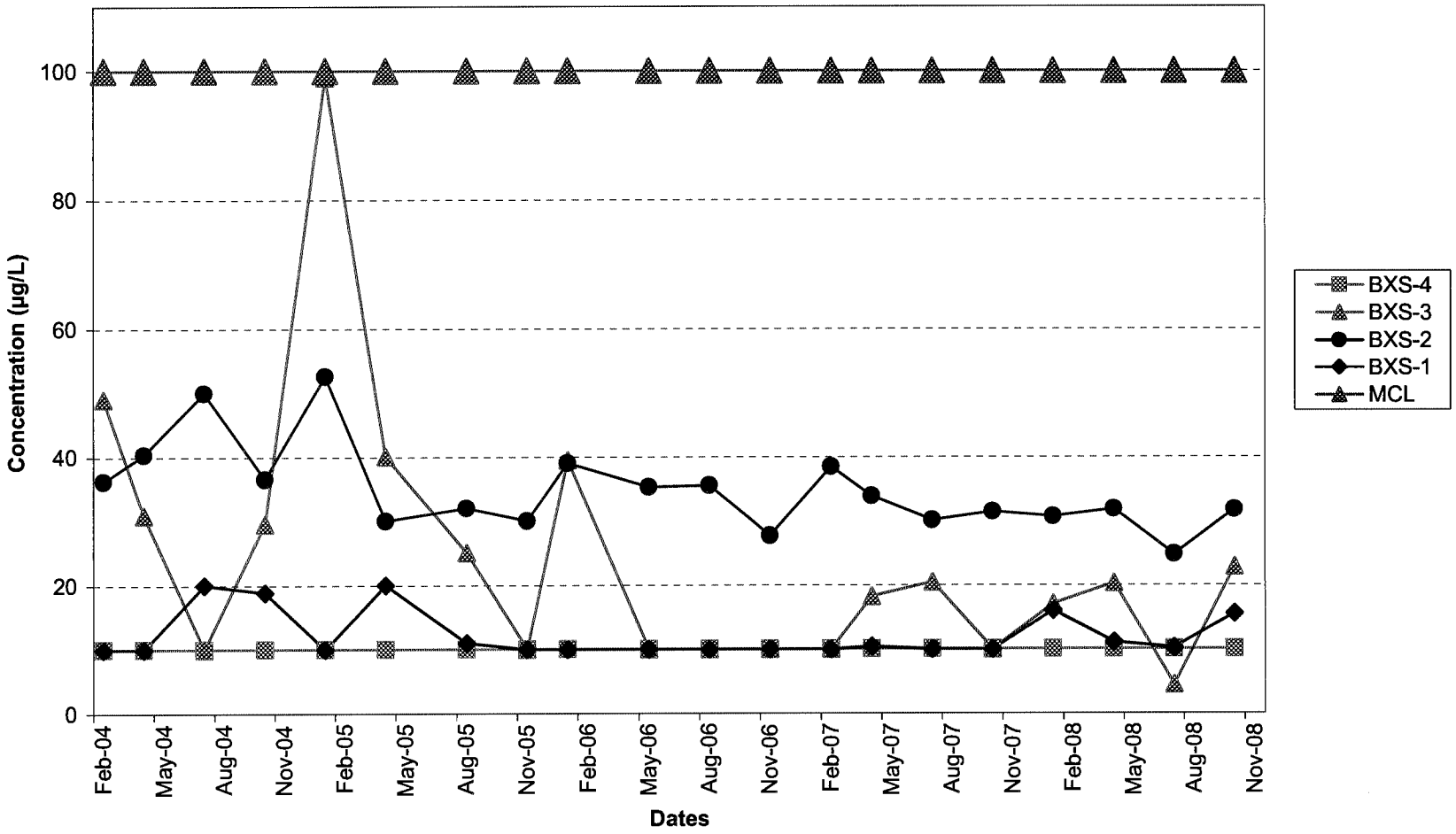


Figure 14. Concentration Trends for Sulfate
South Woodwaste Landfill Monitoring Well Data

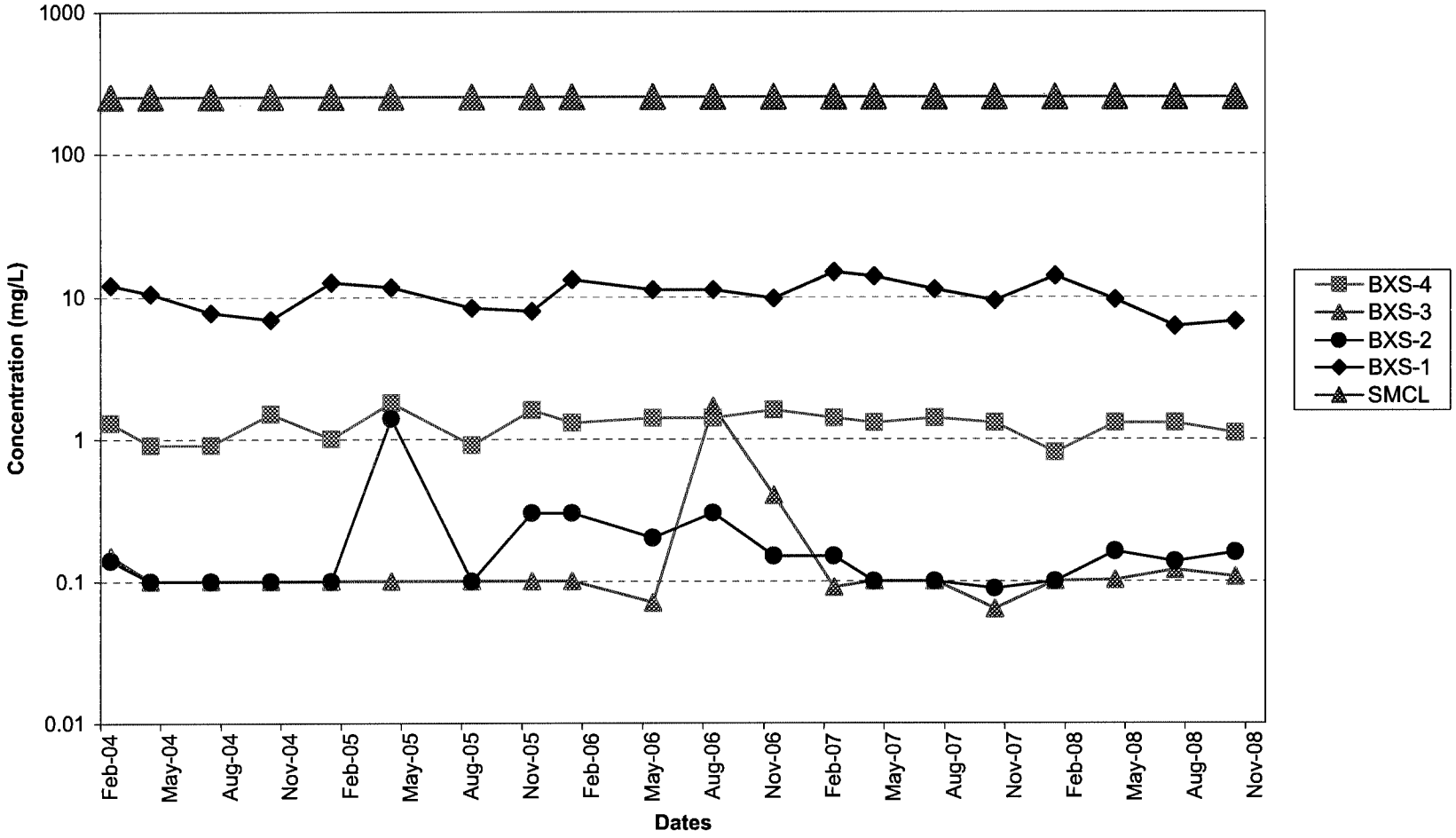


Figure 15. Concentration Trends for Tannin and Lignin
South Woodwaste Landfill Monitoring Well Data

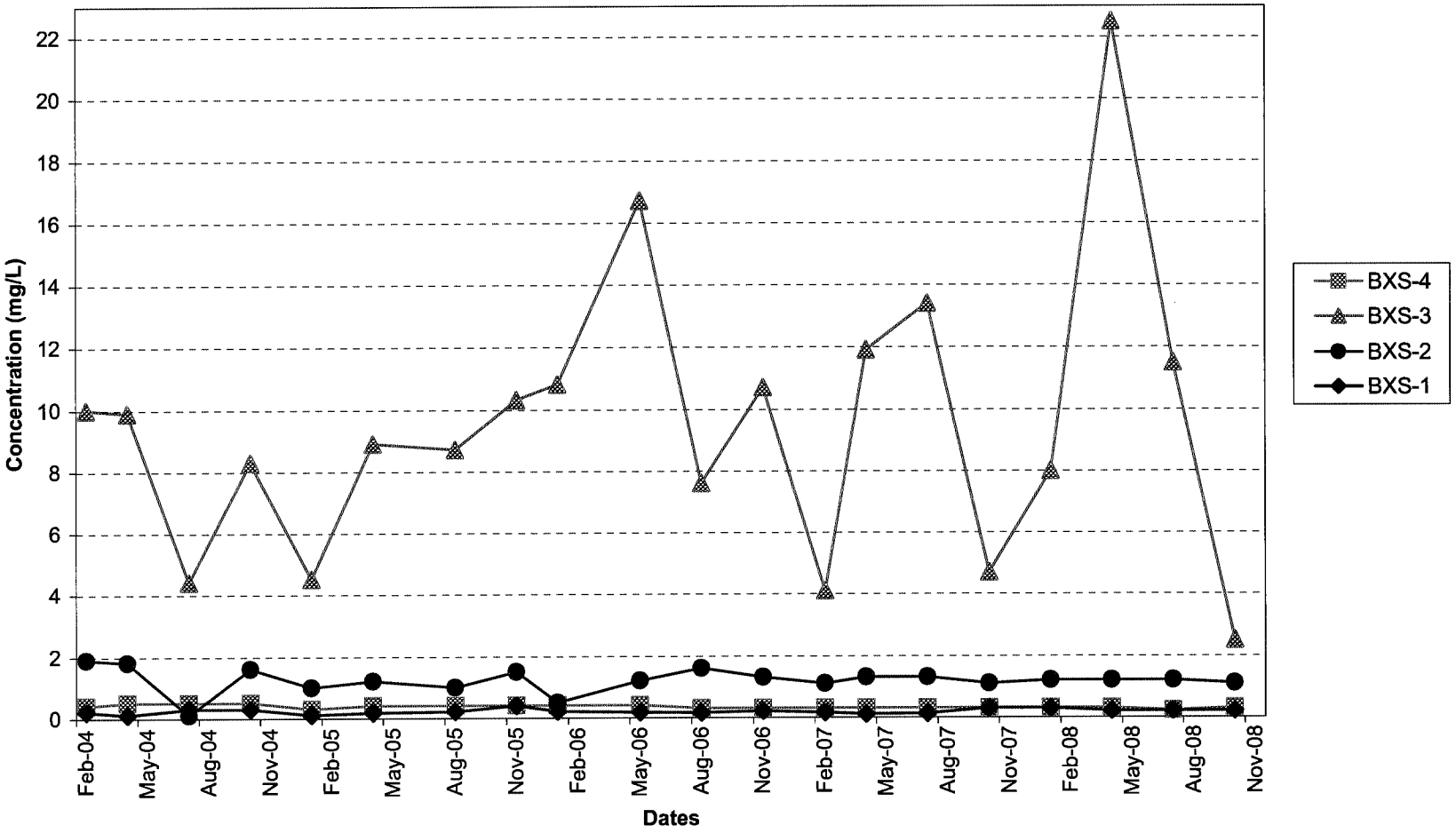


Figure 16. Concentration Trends for Total Organic Carbon
South Woodwaste Landfill Monitoring Well Data

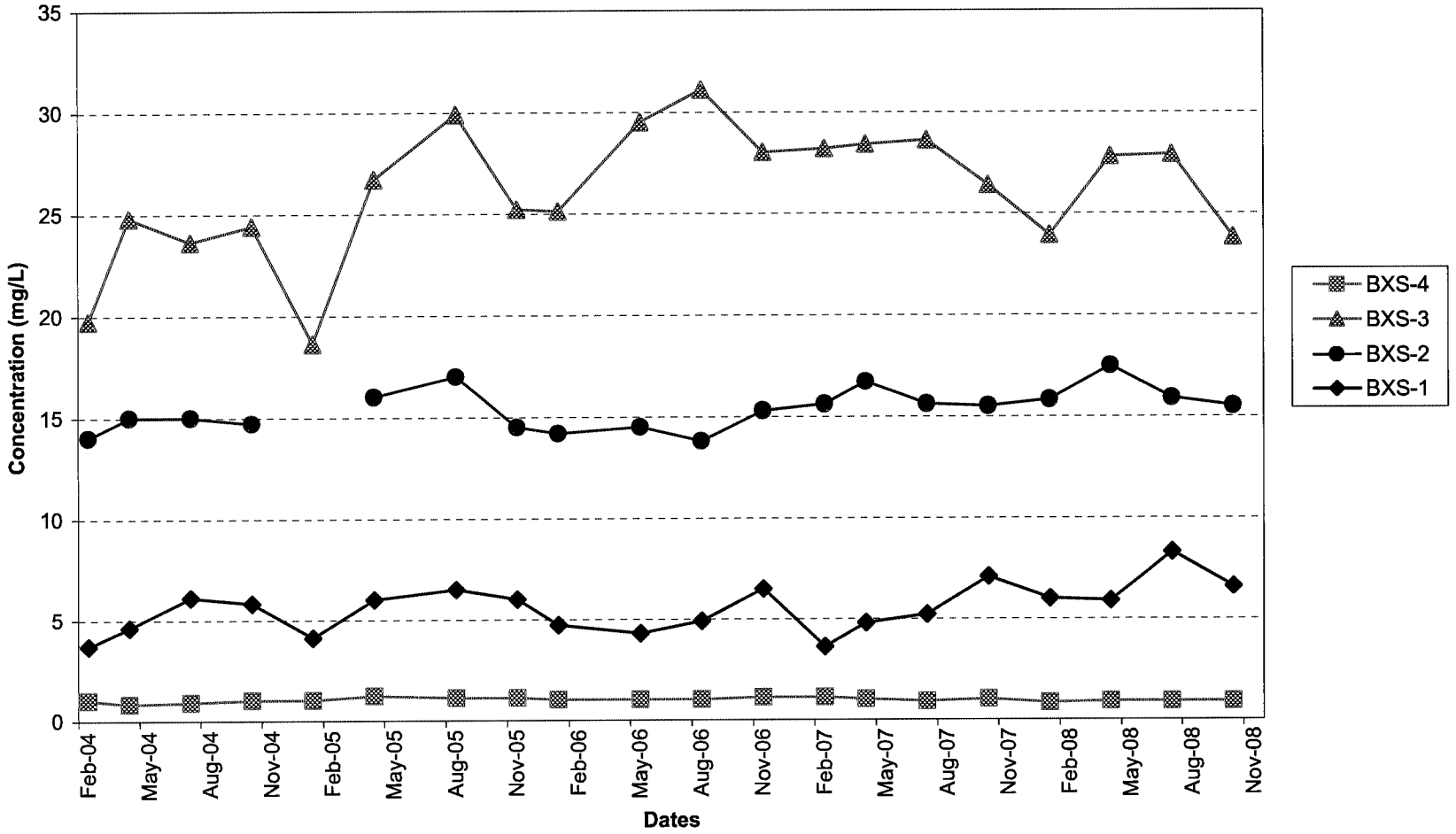


Figure 17. Concentration Trends for Field pH
South Woodwaste Landfill Monitoring Well Data

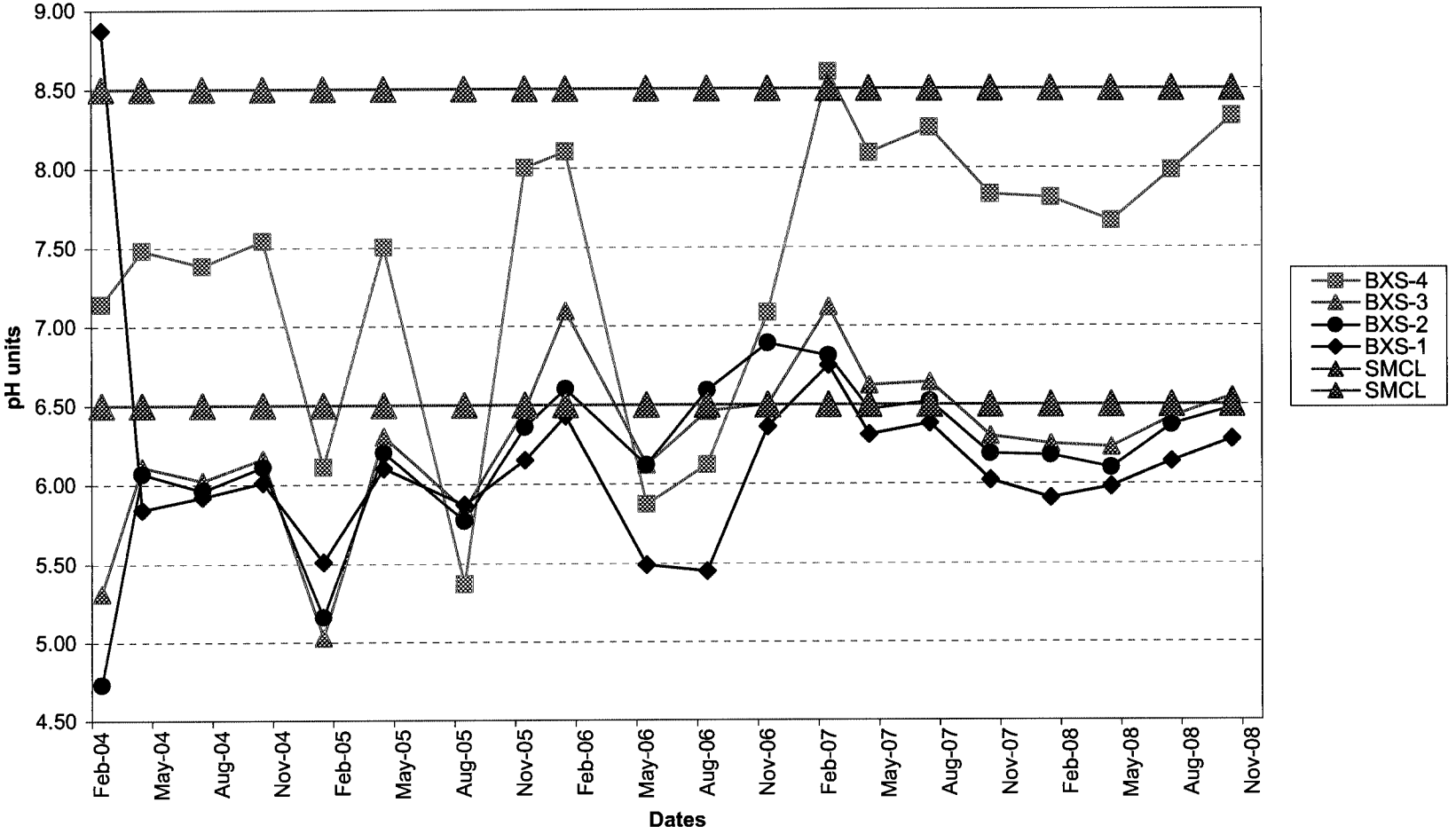
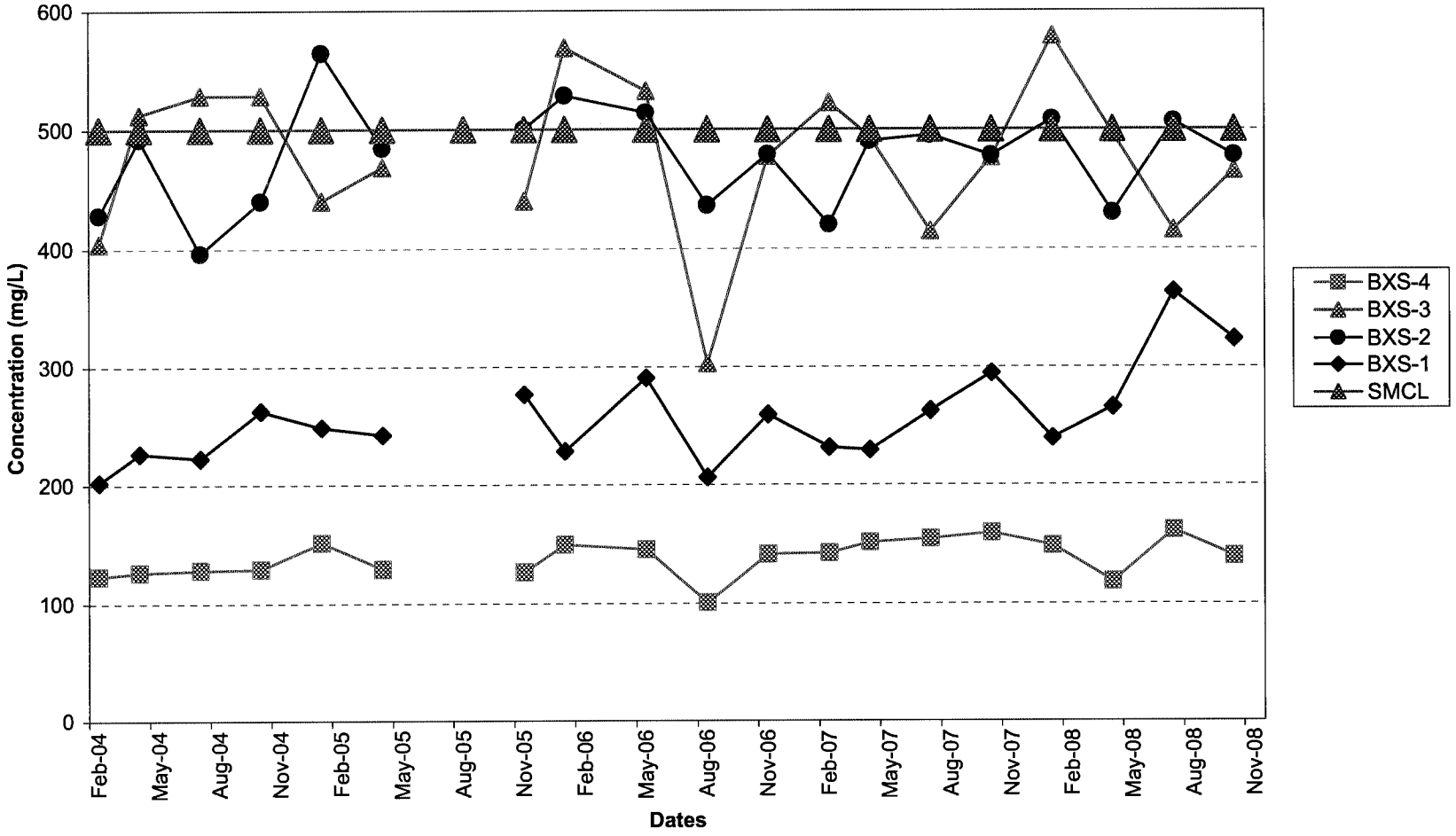


Figure 18. Concentration Trends for Total Dissolved Solids
South Woodwaste Landfill Monitoring Well Data



Tables

Table 1. Summary of Groundwater Elevations in 2008 (South Landfill)

	Inner Casing (inches)	Depth of Well (ft bgs)	Length of Screen (ft)	TOC Elevation (ft asd)	TOC Elevation 10/2002a (ft msl)	Screened Interval (ft bgs)		Date	Depth to GW from TOC (ft)	Groundwater Elevation (ft asd)
BXS-1	2	47.90	10	99.59	142.90	37.90	47.90	1/07/08	37.90	61.69
								4/28/08	35.77	63.82
								7/28/08	37.03	62.56
								10/22/08	36.90	62.69
BXS-2	2	45.40	10	99.77	143.02	35.40	45.40	1/07/08	37.20	62.57
								4/28/08	34.63	65.14
								7/28/08	35.46	64.31
								10/22/08	37.44	62.33
BXS-3	2	44.15	10	98.99	142.07	34.15	44.15	1/07/08	33.40	65.59
								4/28/08	29.23	69.76
								7/28/08	30.65	68.34
								10/22/08	35.51	63.48
BXS-4	2	47.40	10	100.34	143.42	37.40	47.40	1/07/08	10.23	90.11
								4/28/08	11.65	88.69
								7/28/08	15.99	84.35
								10/22/08	15.36	84.98

Notes:

a) Wells were resurveyed in October 2002. Groundwater elevations are based on the earlier survey.

bgs - below ground surface

ft msl - feet above mean sea level.

ft asd - feet above assumed site datum

TOC - top of casing

Table 2. Hydraulic Gradient and Groundwater Velocity Calculations (South Landfill)

Date	Average Gradient *i* (cm/cm)	Hydraulic Conductivity K (cm/sec)	Porosity n_e	Velocity v (cm/sec)	Velocity v (ft/day)
1/07/08	0.0254	3.00E-02 to 6.00E-02	0.300	0.003 to 0.005	7.200 to 14.400
4/28/08	0.0212			0.002 to 0.004	6.009 to 12.019
7/28/08	0.0182			0.002 to 0.004	5.159 to 10.318
10/22/08	0.0207			0.002 to 0.004	5.868 to 11.735

Table 3a. Field Parameters from Groundwater Sampling, April 2000 to October 2008 (South Landfill)

	pH (standard units)				Conductivity (µS/cm)				Temperature (°C)			
Primary MCL [a]												
Secondary MCL [a]	6.5 - 8.5				700							
	BXS-4	**BXS-3**	**BXS-2**	**BXS-1**	**BXS-4**	**BXS-3**	**BXS-2**	**BXS-1**	**BXS-4**	**BXS-3**	**BXS-2**	**BXS-1**
Apr-00	7.59	7.51	7.53	7.50	187	831	875	431	10.8	15.30	16.10	15.2
Jul-00	7.74	6.58	6.52	6.18	182	822	905	464	13.5	19.90	15.90	14.4
Oct-00	7.92	6.39	6.45	6.22	185	855	833	502	9.9	16.2	19.40	12.6
Jan-01	8.07	7.11	6.73	6.55	182	925	893	522	8	11.4	10.60	9.6
Apr-01	7.52	6.49	6.47	6.07	184	860	860	476	9.4	14.9	15.30	14
Jul-01	6.89	7.87	8.37	7.26	183	833	850	477	8.6	17.3	14.10	13.8
Oct-01	6.91	6.70	6.05	5.71	203	872	847	495	11.5	15.4	15.50	14
Jan-02	7.30	6.38	6.28	6.14	186	825	844	474	7.1	10.6	10.80	9.3
Apr-02	7.73	6.57	6.35	6.09	181	832	838	441	10.4	14.9	13.40	11.9
Jul-02	7.68	6.26	6.31	6.06	178	827	840	469	11.9	16.4	14.40	13.1
Oct-02	6.95	6.36	6.49		205	930	930		9.8	13.2	13.20	
Jan-03	7.77	6.14	6.12	5.93	178	1430	1400	1130	9.8	13.4	13.3	11.6
Apr-03	7.91	6.96	6.52	5.97	191	899	808	442	9.6	13.6	13.4	11.7
Jul-03	7.90	6.33	6.25	6.12	193	945	869	441	10.91	13.58	13.37	16.19
Oct-03	7.84	6.26	6.07		207	945	883		10.16	13.76	13.92	
Feb-04	7.14	5.31	4.73	8.87	174	699	737	297	9.58	13.13	12.79	12.54
Apr-04	7.48	6.11	6.07	5.84	197	836	838	339	9.69	13.42	12.89	13.71
Jul-04	7.38	6.02	5.96	5.92	216	926	874	417	10.27	13.76	13.51	13.66
Oct-04	7.54	6.16	6.11	6.01	203	949	834	478	10.81	13.82	14.48	13.14
Jan-05	6.11	5.03	5.16	5.51	187	571	768	328	9.88	13.52	12.9	11.92
Apr-05	7.50	6.30	6.20	6.10	194	785	812	380	9.6	13.5	13	11.9
Aug-05	5.37	5.84	5.77	5.87	195	788	794	426	10.51	13.16	12.84	12.61
Dec-05	8.00	6.47	6.36	6.15	194	854	778	439	9.7	12.2	12.5	11.7
Jan-06	8.10	7.09	6.60	6.43	201	740	778	384	9.6	12.6	12.4	11.7
May-06	5.87	6.12	6.12	5.49	182	744	730	392	10.1	138	13.9	12.6
Aug-06	6.12	6.46	6.59	5.45	181	839	800	380	10.2	13.4	12.9	12.3
Nov-06	7.08	6.50	6.89	6.36	201	817	784	501	10.9	12	12.4	11.7
Feb-07	8.60	7.12	6.81	6.75	166	730	672	299	9.5	13.2	12.1	11.4
Apr-07	8.09	6.62	6.47	6.31	176	808	796	379	9.5	13.1	12.3	11.7
Jul-07	8.25	6.64	6.52	6.38	222	867	922	415	9.8	13.1	12.5	12
Oct-07	7.83	6.30	6.19	6.02	199	810	804	495	9.8	12.8	12.5	12
Jan-08	7.81	6.25	6.18	5.91	196	788	772	369	9.3	12.1	12.1	11.4
Apr-08	7.66	6.23	6.10	5.98	201	846	794	485	9.1	12.9	12.2	11.8
Jul-08	7.98	6.42	6.37	6.14	180	726	732	510	9.4	12.9	12.4	12.0
Oct-08	8.32	6.55	6.48	6.28	177	722	733	496	9.6	12.7	12.4	12.0

Table 3a. Field Parameters from Groundwater Sampling, April 2000 to October 2008 (South Landfill)

	Eh (mV)				DO (mg/L)				Methane (Percent)			
Primary MCL [(a)] Secondary MCL [(a)]												
	BXS-4	**BXS-3**	**BXS-2**	**BXS-1**	**BXS-4**	**BXS-3**	**BXS-2**	**BXS-1**	**BXS-4**	**BXS-3**	**BXS-2**	**BXS-1**
Apr-00	-80	-70	80	120	0	0.8	0.00	0	nt	nt	nt	nt
Jul-00	-70	-45	120	135	2.22	1.62	2.33	0.76	nt	nt	nt	nt
Oct-00	-1	0	0	130	4.99	5.24	5.22	5.89	nt	nt	nt	nt
Jan-01		-20	90	110	4.3	2.54	1.28	6.98	nt	nt	nt	nt
Apr-01	-65	45	105	100	0.75	1.37	1.11	1.22	nt	nt	nt	nt
Jul-01	-1	1	0	120	1.46	0.99	1.32	0.33	nt	nt	nt	nt
Oct-01	180	20	50	115	0.99	0.83	0.93	0.86	nt	nt	nt	nt
Jan-02	-65	-5	80	160	1.37	1.39	1.01	1.96	nt	nt	nt	nt
Apr-02	-45	0.5	135	180	0.87	2.17	0.79	0.49	nt	nt	nt	nt
Jul-02	-55	-5	90	180	1.24	0.84	1.01	0.4	nt	nt	nt	nt
Oct-02	60	57	166		7.97	1.72	1.37		nt	nt	nt	nt
Jan-03	-3	183	217	258	3.92	2.04	2.74	3.4	nt	nt	nt	nt
Apr-03	-31	43	126	366	7.8	5.5	3.64	5.56	nt	nt	nt	nt
Jul-03	-253	-57	-9	202	0.82	2.28	0.44	2.79	nt	nt	nt	nt
Oct-03	-162	35	59		1.53	2.82	3.31		nt	nt	nt	nt
Feb-04	-110	-6	35	143	11.24	4.81	8.84	7.39	nt	nt	nt	nt
Apr-04	-174	-28	51	212	0.35	1.27	1.28	3.18	nt	nt	nt	nt
Jul-04	-92	6	30	182	0.41	0.46	1.52	2.73	nt	nt	nt	nt
Oct-04	-198	-39	11	148	4.57	3.06	10.92	3.36	nt	nt	nt	nt
Jan-05	5	3	3	4	7.10	4.66	3.80	4.46	nt	nt	nt	nt
Apr-05	-171	-1	67	317	1.1	4.4	1.7	6.4	0.0	0.0	0.0	0.0
Aug-05	-86	-1	84	84	4.13	9.66	4.74	3.98	nt	nt	nt	nt
Dec-05	-120	-25	51	177	8	1.9	6.5	0.7	0.0	0.0	0.0	0.0
Jan-06	5	28	76	179	2.70	10.50	3.70	0.9	nt	nt	nt	nt
May-06	-147	-85	59	225	3.6	0.7	1.4	1.6	0.0	0.0	0.0	0.0
Aug-06	-126	-77	48	148	2.9	4.5	2	0.9	nt	nt	nt	nt
Nov-06	-138	3	80	212	1.3	7.4	3	1.7	0.0	0.0	0.0	0.0
Feb-07	-40	-103	0.8	241	9.80	2.40	3	2.3	nt	nt	nt	nt
Apr-07	-136	-113	45	187	1.20	1.80	1.2	0.8	nt	nt	nt	nt
Jul-07	-145	-113	62	219	0.00	0.00	0	0	0.0	0.0	0.0	0.0
Oct-07	-148	-97	40	226	0	0	0	0	0.0	0.0	0.0	0.0
Jan-08	-147	-67	54	251	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0
Apr-08	-157	-126	32	138	0.00	0.00	0.08	0.15	nt	nt	nt	nt
Jul-08	-150	-90	31	185	0.33	0.37	1.77	5.80	0.0	0.0	0.0	0.0
Oct-08	-173	-93	20	157	0.07	0.12	0.14	1.10	nt	nt	nt	nt

Notes:

(a) Primary and secondary MCLs (maximum contaminant levels) per WAC 246-290-310.

nt Not tested

Table 3b. Conventional Parameters from Groundwater Sampling, April 2000 to October 2008 (South Landfill)

	pH (standard units)								Conductivity (umhos/cm)							
Primary MCL [a] / Secondary MCL [a]	6.5 - 8.5								700							
	BXS-4	BXS-4 Dup	BXS-3	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk	BXS-4	BXS-4 Dup	BXS-3	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk
Apr-00	7.97		6.47	6.39		6.15	6.08	6.01	150		568	685		342	344	2 U
Jul-00	7.78		6.34	6.31		5.96	5.93	5.16	165		589	767		401	429	2 U
Oct-00	7.99		6.47	6.37		6.15	6.12	5.72	159		614	719		414	436	2 U
Jan-01	8.03		6.83	6.48		6.06	6.1	5.52	189		872	878		473	494	2
Apr-01	7.87		6.9	6.36		6.33	6.01	5.4	193		901	884		506	474	3
Jul-01	7.96		6.64	6.44		6.09	6.12	5.53	193		885	890		489	490	1
Oct-01	7.58		6.36	6.27		6.07	5.96	5.92	195		887	861		504	500	6
Jan-02	8.03		6.45	6.34		6.17	6.14	5.77	192		806	842		471	474	2 U
Apr-02	8.02 J		6.6 J	6.32 J		6 J	6.06 J	5.9 J	192		804	863		443	445	2
Jul-02	8		6.4	6.51		6.21	6.2	5.9	176		710	794		434	425	2 U
Oct-02			6.51	6.57							817	785				
Jan-03																
Apr-03																
Jul-03								5.86								2 U
Oct-03	8.04	7.99	6.56	6.41				7.05	182	182	851	789				2 U
Feb-04	8	8	6.37	6.39		6.22		5.76	182	179	692	736		286		0.6 J
Apr-04	7.91	7.92	6.41	6.38		6.14		5.65	172	175	696	716		295		2 U
Jul-04	8	8.01	6.52	6.5		6.28		5.78	171	168	739	681		347		2 U
Oct-04	7.96	7.97	6.57	6.67		6.26		6.5	179	178	933	819		395		0.2 J
Jan-05	7.95	7.97	6.28	6.55		6.29		5.63	194	195	526	813		334		1.8 J
Apr-05	8.06	8.1	6.82	6.6		6.42		6.06	191	188	749	803		370		1.4 J
Aug-05	7.98	8.02	6.67	6.54		6.28		5.95	190	192	741	799		418		2 U
Nov-05	8	7.91	6.73	6.63		6.33		5.78	194	194	793	778		442		1.4 J
Jan-06	7.87	7.85	6.36	6.36		6.15		5.42	194	194	735	772		368		3
May-06	7.94	7.94	6.36	6.41		6.31		5.45	195	195	682	792		404		1.5 J
Aug-06	7.88	7.9	6.4	6.33		6.39		5.19	226	228	824	935		481		2
Nov-06	7.62	6.08	6.43	6.41		6.09		5.56	188	406	682	719		424		1.8 J
Feb-07	7.81	7.9	6.38	6.36		6.36		5.5	193	192	517	743		338		5
Apr-07	7.61	7.45	6.05	6.1		5.94		5.77	195	199	565	779		377		2 U
Jul-07	7.69		6.34	6.96		6.28	6.23		201		518	798		410	401	
Oct-07	7.82	7.85	6.36	6.35		6.18			200	201	638	814		482		
Jan-08	7.75		6.41	6.46		6.23	6.25		215		681	747		375	360	
Apr-08	7.76		6.36	6.44		6.38	6.38		188		658	797		475	472	
Jul-08	7.83		6.32	6.45	6.4	6.27			206		659	853	865	592		
Oct-08	7.83		6.33	6.41	6.4	6.49			210		700	892	877	592		

Table 3b. Conventional Parameters from Groundwater Sampling, April 2000 to October 2008 (South Landfill)

	Ammonia as N (mg/L)								Chemical Oxygen Demand (COD) (mg/L)							
Primary MCL [a] Secondary MCL [a]																
	BXS-4	BXS-4 Dup	BXS-3	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk	BXS-4	BXS-4 Dup	BXS-3	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk
Apr-00	0.51		0.3	0.05 U		0.05 U	0.05 U	0.05 U	16		91	44		24	21	5 U
Jul-00	0.54		0.31	0.05		0.05 U	0.05	0.05 U	5 U		49	49		29	14	5 U
Oct-00	0.46		0.16	0.05 U		0.05 U	0.05 U	0.05 U	29		77	41		26	27	5 U
Jan-01	0.63		0.12	0.05 U		0.1	0.07	0.06	7		68	40		21	23	5 U
Apr-01	0.48		0.14	0.05 U		0.05 U	0.05 U	0.05 U	14		79	47		27	27	5 U
Jul-01	0.53		0.11	0.05 U		0.05 U	0.05 U	0.05 U	38		71	46		23	24	5 U
Oct-01	0.37		0.05 U	0.05 U		0.05 U	0.05 U	0.05 U	10		60	37		18	19	5 U
Jan-02	0.47		0.07	0.05 U		0.05 U	0.05 U	0.05 U	7		54	41		20	17	5 U
Apr-02	0.38		0.19	0.05 U		0.05 UJ	0.05 U	0.05 U	19		59	36		14	16	5 U
Jul-02	0.49		0.3	0.05 UJ		0.05 U	0.05 U	0.05 U	25		57	29			14 J	5 U
Oct-02	0.05 U		0.2	0.05 U					37		49	33				
Jan-03	0.44		0.02 J	0.05 U		0.05 UJ	0.46	0.025	3		53	35		22	3	5 U
Apr-03	0.53		0.15	0.05 U		0.05 U	0.05 U	0.025	2 J		59	40		16	16	5 U
Jul-03	0.55		0.18	0.02 J		0.05 U	0.05 U		5 U		56	37		14	14	
Oct-03	0.48	0.53	0.25	0.05 U				0.05 U	4 J	3 J	55	36				5 U
Feb-04	0.51	0.51	0.12	0.04 J		0.05 U		0.05 U	5 U	5 U	49	35		5		5
Apr-04	0.55	0.55	0.61	0.05		0.05 U		0.05 U	5 U	5 U	65	37		10		5 U
Jul-04	0.5	0.47	0.13	0.06		0.05 U		0.05 U	5 U	5 U	58	37		14		5 U
Oct-04	0.53	0.51	0.12	0.05 U		0.05 U		0.05 U	4 J	3 J	63	43		15		5 U
Jan-05	0.52	0.51	0.21	0.05 U		0.05 U		0.05 U	24	16	72	52		20		2 J
Apr-05	0.51	0.53	0.58	0.05 U		0.05 U		0.05 U	5	6	69	43		14		5
Aug-05	0.5	0.5	0.74	0.03 J		0.05 U		0.05 U	2 J	5 U	71	36		13		5 U
Nov-05	0.49	0.48	0.17	0.05 U		0.05 U		0.05 U	5 U	3 J	66	40		17		5 U
Jan-06	0.46	0.47	0.15	0.05 U		0.01 J		0.05 U	5 U	3 J	59	35		13		5 U
May-06	0.51	0.51	1.13	0.027 J		0.019 J		0.018 J	2.6 J	2.6 J	78	38		8		5 U
Aug-06	0.5	0.51	1.29	0.011 J		0.011 J		0.05 U	4 J	2.5 J	85	36		13		5 U
Nov-06	0.47	0.05 U	0.41	0.022 J		0.05 U		0.05 U	5 U	16	66	35		15		5 U
Feb-07	0.5	0.52	0.93	0.05 U		0.05 U		0.05 U	5 U	5 U	75	36		6		5 U
Apr-07	0.5	0.5	0.71	0.05 U		0.05 U		0.05 U	6	6	80	39		14		5 U
Jul-07	0.5		0.74	0.05 U		0.05 U	0.05 U		5 U		67	31		5 U	6	
Oct-07	0.48	0.49	0.98	0.05 U		0.05 U			5 U	5 U	71	33		17		
Jan-08	0.55		0.41	0.05 U		0.05 U	0.05 U		5 U		61	35		12	13	
Apr-08	0.46		0.39	0.05 U		0.05 U	0.05 U		3 J		76	42		13	14	
Jul-08	0.48		0.75	0.05 U	0.05 U	0.05 U			6		75	37	35	24		
Oct-08	0.53		0.54	0.05 U	0.05 U	0.05 U			6		65	39	41	16		

Table 3b. Conventional Parameters from Groundwater Sampling, April 2000 to October 2008 (South Landfill)

	Chloride (mg/L)								Nitrate + Nitrite as N (mg/L)							
Primary MCL [a]	250								10							
Secondary MCL [a]																
	BXS-4	BXS-4 Dup	BXS-3	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk	BXS-4	BXS-4 Dup	BXS-3	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk
Apr-00	2		3.9	7.4		8.2	8.2	0.2 U	0.2 U		0.2 U	0.2 U		0.4	0.4	0.2 U
Jul-00	2		5.5	8.8		8.3	8.2	0.2 U	0.1		0.2 U	0.2 U		0.5	0.5	
Oct-00	2		5	8.1		6.7	7	0.2 U	0.2 U		0.2 U	0.2 U		0.2 U	0.2 U	0.2 U
Jan-01	2.2		5.5	8.7		7.7	7.7	0.2 U	0.2 U		0.2 U	0.2 U		0.3	0.3	0.2 U
Apr-01	2		4.8	7.6		5.9	5.8	0.2 U	0.2 U		0.2 U	0.2 U		0.2	0.4	0.2 U
Jul-01	2		4.4	6.7		5.6	5.5	0.2 U	0.2 U		0.2 U	0.2 U		0.4	0.4	0.2 U
Oct-01	2		4.1	6.7		4.3	4.3	0.2 U								
Jan-02	2		3.2	6.1		5	4.9	0.2 U	0.2 U		0.2 U	0.2 U		0.2	0.3	0.2 U
Apr-02	2		2.9	6.3		5.7	5.9	0.2 U	0.2 U		0.2 U	0.2 U		1.1	1.1	0.2 U
Jul-02	2.2		4	6.7		6	6.4	0.2 U	0.2 U		0.2 U	0.2 U		0.7	0.6	0.2 U
Oct-02	1.9		3	5.6					0.9			0.2 U				
Jan-03	2		3.5	5.8		4	2.2	0.2 U								
Apr-03	2.1		4	6		4.9	4.7	0.2 U	0.2 U		0.2 U	0.2 U		0.9	0.8	0.2 U
Jul-03	1.8		3	5.2		4.8	5	0.2 U	0.2 U		0.2 U	0.2 U		1.5	1.5	0.02 J
Oct-03	2	1.8	3.1	5				0.2 U	0.2 U	0.2 U	0.2 U	0.2 U				0.2 U
Feb-04	1.9	1.9	2.7	4.6		6.1		0.2 U	0.06 J	0.06 J	0.08 J	0.1 J		1.1		0.2 U
Apr-04	1.8	1.8	3.1	4.6		4.8		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		1.4		0.2 U
Jul-04	1.9	1.8	2.7	4.8		4.3		0.2 U	0.05 J	0.05 J	0.2 U	0.2 U		0.6		0.04 J
Oct-04	1.6	1.6	0.8	3.3		3		0.2 U	0.05 U	0.05 U	0.01 J	0.01 J		0.3		0.2 U
Jan-05	1.7	1.7	4.6	5		5		0.2 U	0.01 J	0.02 J	0.03 J	0.01 J		0.75		0.01 J
Apr-05	1.9	1.9	3.8	4.7		4.6		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U		1		0.2 U
Aug-05	1.7	1.7	3.6	4.2		5.4		0.2 U	0.05 U	0.05 U	0.02 J	0.01 J		0.95		0.05 U
Nov-05	1.8	1.9	2.8	3.7		3.1		0.04 J	0.1 J	0.09 J	0.08 J	0.11 J		0.3		0.1 J
Jan-06	1.6	1.6	3.5	3.7		5.3		0.2 U	0.09 J	0.1 J	0.07 J	0.2 U		0.5		0.1 J
May-06	1.7	1.9	1.9	2.8		2.7		0.4 U	0.05 U	0.05 U	0.16	0.039 J		0.92		0.05 U
Aug-06	1.8	1.8	3.1	4		4.7		0.4 U	0.05 U	0.05 U	0.14	0.01 J		0.96		0.05 U
Nov-06	1.8	3.4	2.5	3.5		3.4		0.2 U	0.05 U	0.46	0.07	0.008 J		0.46		0.05 U
Feb-07	1.6	1.6	3.1	4.9		6.4		0.2 U	0.28	0.58	0.96	0.94		0.75		1.02
Apr-07	1.9	1.9	2.3	4.5		5.4		0.2	0.23	1.21	0.2	0.63		0.85		0.63
Jul-07	1.7		2.8	4.1		5.1	5		0.05 U		0.19	0.08		0.7	0.68	
Oct-07	1.7	1.7	2.7	4.3		5.2			0.05 U	0.05 U	0.17	0.05 U		0.47		
Jan-08	2		3.1	4.5		5.8	5.8		0.05 U		0.07	0.05 U		0.58	0.54	
Apr-08	1.8		2.4	4.4		5	5.1		0.05 U		0.05 U	0.05 U		0.74	0.73	
Jul-08	1.8		2.8	4.2	4.4	4.5			0.1		0.15	0.05 U	0.05 U	1.48		
Oct-08	1.9		3.6	4.9	4.9	5.1			0.05 U		0.1	0.026 J	0.008 J	0.51		

Table 3b. Conventional Parameters from Groundwater Sampling, April 2000 to October 2008 (South Landfill)

	Nitrate as N (mg/L)								Nitrite as N (mg/L)							
Primary MCL [a] Secondary MCL [a]																
	BXS-4	**BXS-4 Dup**	**BXS-3**	**BXS-2**	**BXS-2 Dup**	**BXS-1**	**BXS-1 Dup**	**Field blk**	**BXS-4**	**BXS-4 Dup**	**BXS-3**	**BXS-2**	**BXS-2 Dup**	**BXS-1**	**BXS-1 Dup**	**Field blk**
Apr-00																
Jul-00								0.05 U								0.1 U
Oct-00																
Jan-01																
Apr-01																
Jul-01																
Oct-01	0.2 UJ		0.3 UJ	0.3 UJ		0.3 UJ	0.3 UJ	0.3	0.1 U		0.2	0.1 J		0.1 UJ	0.1 U	0.1 U
Jan-02																
Apr-02																
Jul-02																
Oct-02			0.003								0.004					
Jan-03	0.003		0.1 UJ	0.1 UJ		0.3 J	0.3	0.05	0.007		0.1 UJ	0.1 UJ		0.1 UJ	0.007	0.1 UJ
Apr-03																
Jul-03																
Oct-03																
Feb-04																
Apr-04																
Jul-04																
Oct-04																
Jan-05																
Apr-05																
Aug-05																
Nov-05																
Jan-06																
May-06																
Aug-06																
Nov-06																
Feb-07																
Apr-07																
Jul-07																
Oct-07																
Jan-08																
Apr-08																
Jul-08																
Oct-08																

Table 3b. Conventional Parameters from Groundwater Sampling, April 2000 to October 2008 (South Landfill)

	Solids, total dissolved (TDS) (mg/L)								Sulfate (mg/L)							
Primary MCL [a]																
Secondary MCL [a]	500								250							
	BXS-4	BXS-4 Dup	BXS-3	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk	BXS-4	BXS-4 Dup	BXS-3	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk
Apr-00	180		561	598		330	318	27	1.6		0.3	0.3		7.7	7.6	0.2 U
Jul-00	156		517	532		323	291	5 U	1.7		0.2	0.2		7.8	7.2	0.2 U
Oct-00	94		503	501		281	275	5 U	1.6		0.2 U	0.3		6.1	6.1	0.2 U
Jan-01	131					286	272	5 U	1.2		0.2	0.4		7.7	7.8	0.2 U
Apr-01	134		556	456		284	258	5 U	1.6		0.4	0.4		8.3	8	0.3
Jul-01	134		420	320		212	262	5 U	1.6		0.2	0.3		7.2	7.1	0.2 U
Oct-01	140		408	420		262	274	8	1.2		0.2	0.3		6.7	6.5	0.2 U
Jan-02	136		496	428		275	246	5 U	1.1		0.7	0.3		6.8	7	0.2 U
Apr-02	167		520	584		356	302	5 U	1.6		0.3	0.5		7.9	8.1	0.2 U
Jul-02	174		592	532		384	352	10	1.6		0.3	0.3		7.5	7.6	0.2 U
Oct-02	112		518	564					1.1		0.4	0.3				
Jan-03	117		604	620		392	168	5 U	1		0.4	0.4		4.2	1.1	0.2 U
Apr-03	143		524	460		236	252	5 U	1.1		0.19 J	0.3		8.2	7.6	0.2 U
Jul-03	128		592	492		245	250	5 U	1.5		0.2 U	0.2		9.6	9.7	0.2 U
Oct-03	140	137	568	528				5	1	0.7	0.2 U	0.2				0.2 U
Feb-04	123	113	404	428		202		5 U	1.3	1.3	0.15 J	0.14 J		12.1		0.2 U
Apr-04	126	138	512	492		226		5 U	0.9	1	0.2 U	0.2 U		10.5		0.2 U
Jul-04	128	123	528	396		222		5 U	0.9	0.9	0.2 U	0.2 U		7.7		0.2 U
Oct-04	129	132	528	440		262		5 U	1.5	1.4	0.2 U	0.2 U		6.9		0.2 U
Jan-05	151	150	440	564		248		5 UX	1	0.9	0.2 U	0.2 U		12.6		0.2 U
Apr-05	129	128	468	484		242		5 U	1.8	1.6	0.2 U	1.4		11.7		0.2 U
Aug-05									0.9	1	0.2 U	0.2 U		8.3		0.2 U
Nov-05	126	127	440	500		276		5 U	1.6	1.6	0.2 U	0.3		7.9		0.2 U
Jan-06	149	169	568	528		228		34	1.3	1.4	0.2 U	0.3		13.2		0.2 U
May-06	145	156	532	514		290		27	1.4	1.5	0.07 J	0.4 U		11.2		0.4 U
Aug-06	100	90	302	436		206		5 U	1.4	1.4	1.7	0.3		11.2		0.4 U
Nov-06	141	242	477	479		259		6	1.6	3.4	0.4	0.15 J		9.7		0.2 U
Feb-07	142	146	522	420		231		5 U	1.4	1.4	0.09 J	0.15 J		14.8		0.03 J
Apr-07	151	140	493	490		229		5 U	1.3	1.3	0.2 U	0.2 U		13.9		0.2 U
Jul-07	154		414	495		262	248		1.4		0.2 U	0.2 U		11.3	11.4	
Oct-07	159	151	476	478		294			1.3	1.3	0.063 J	0.088 J		9.4		
Jan-08	148		578	508		239	233		0.8		0.2 U	0.2 U		14	14.9	
Apr-08	118		496	430		265	256		1.3		0.101 J	0.161 J		9.6	9.7	
Jul-08	161		415	506	505	363			1.3		0.119 J	0.137 J	0.152 J	6.2		
Oct-08	139		465	478	491	323			1.1		0.107 J	0.159 J	0.4	6.7		

Table 3b. Conventional Parameters from Groundwater Sampling, April 2000 to October 2008 (South Landfill)

	Tannin & Lignin (mg/L)								Total Organic Carbon (TOC) (mg/L)							
Primary MCL [a] Secondary MCL [a]																
	BXS-4	BXS-4 Dup	BXS-3	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk	BXS-4	BXS-4 Dup	BXS-3	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk
Apr-00	0.3		9.1	1.1		0.3	0.3	0.2 U	0.7		28.8	13.5		6.6	6.6	0.5 U
Jul-00	0.3		7.1	1.1		0.3	0.4	0.2 U	1.1		29.2	16.8		7.7	7.1	0.5 U
Oct-00	0.4		8.2	1		0.5	0.5	0.2 U	1.3		0.5 U	15.5		9.7	9.7	0.5 U
Jan-01	0.6		12.2	1.7		0.6	0.7	0.2 U	1		27.1	14.8		8.6	8.6	0.5 U
Apr-01	0.2		3.2	0.9		0.4	0.4	0.2 U	1.2		26.1	14.6		7.5	7.5	0.5 U
Jul-01	0.4		6.4	1.4		0.5	0.5	0.2 U	9.3		25.9	15.1		6.8	7.3	0.5 U
Oct-01	0.5		21.6	2.8		0.6	0.8	0.2 U	0.9		21.6	13.7		7.1	7.1	0.5 U
Jan-02	0.5		9.9	1.3		0.3	0.4	0.2 U	1		19.1	13.5		5.9	5.8	0.5 U
Apr-02	0.5		10.9	1.5		0.4	0.6	0.2 U	1		23	14.2		6.4	6.4	0.5 U
Jul-02	0.4		8	1		0.5	0.3	0.2 U	0.8		21.8	11.9		6	5.7	0.5 U
Oct-02	0.3		8.1	1.1							23.1	15				
Jan-03	0.3		9.5	0.9		0.8	0.3	0.2 U	1.1		21	13.2		8.4	0.9	0.4 J
Apr-03	0.6		2.5	2		0.3	0.3	0.2 U	1		22.2	14.1		5.9	6	0.5 U
Jul-03	0.3		4.6	1.5		0.2	0.2	0.2 U	0.7							
Oct-03	0.5	0.5	8.5	1.9				0.2 U	0.25 U	10.4	21.2	14.6				0.4 J
Feb-04	0.4	0.5	10	1.9		0.2		0.08 J	1	0.9	19.7	14		3.7		1
Apr-04	0.5	0.5	9.9	1.8		0.2 U		0.2 U	0.8	0.9	24.8	15		4.6		0.5 U
Jul-04	0.5	0.5	4.4	0.2 U		0.3		0.14 J	0.9	1	23.6	15		6.1		0.17 J
Oct-04	0.5	0.4	8.3	1.6		0.3		0.08 J	1	0.9	24.4	14.7		5.8		0.5 U
Jan-05	0.3	0.3	4.5	1		0.1 J		0.2 U	1	0.9	18.6			4.1		0.5 U
Apr-05	0.4	0.5	8.9	1.2		0.18 J		0.18 J	1.2	1	26.7	16		6		0.6
Aug-05	0.4	0.4	8.7	1		0.2		0.05 J	1.1	1	29.9	17		6.5		0.2 J
Nov-05	0.4	0.4	10.3	1.5		0.4		0.09 J	1.1	0.9	25.2	14.5		6		0.1 J
Jan-06	0.4	0.4	10.8	0.5		0.2		0.2 U	1	1	25.1	14.2		4.7		0.07 J
May-06	0.4	0.4	16.7	1.2		0.17 J		0.5	1	0.9	29.5	14.5		4.3		0.09 J
Aug-06	0.3	0.3	7.6	1.6		0.15 J		0.2 U	1	0.9	31.1	13.8		4.9		0.5 U
Nov-06	0.3	0.2	10.7	1.3		0.2		0.2 U	1.1	6.8	28	15.3		6.5		0.5 U
Feb-07	0.3	0.4	4.1	1.1		0.16 J		0.05 J	1.1	1	28.2	15.6		3.6		0.5 U
Apr-07	0.3	0.3	11.9	1.3		0.2 U		0.2 U	1	1	28.4	16.7		4.8		0.5 U
Jul-07	0.3		13.4	1.3		0.12 J	0.13 J		0.9		28.6	15.6		5.2	5.2	
Oct-07	0.3	0.3	4.7	1.1		0.3			1	0.9	26.4	15.5		7.1		
Jan-08	0.3		8	1.2		0.3	0.3		0.8		23.9	15.8		6	6.1	
Apr-08	0.3		22.5	1.2		0.2	0.2		0.9		27.8	17.5		5.9	5.9	
Jul-08	0.2		11.5	1.2	1.2	0.2			0.9		27.9	15.9	16.2	8.3		
Oct-08	0.3		2.5	1.1	1.1	0.2			0.9		23.8	15.5	16.3	6.6		

Table 3b. Conventional Parameters from Groundwater Sampling, April 2000 to October 2008 (South Landfill)

	Total Coliforms (MPN/100 mL)							
Primary MCL [a] Secondary MCL [a]	<5%[b]							
	BXS-4	**BXS-4 Dup**	**BXS-3**	**BXS-2**	**BXS-2 Dup**	**BXS-1**	**BXS-1 Dup**	**Field blk**
Apr-00	2 U		2 U	2 U		11	7	
Jul-00	2 U		110	6		2 U	2 U	2 U
Oct-00	4 J		80 J	11 J		2 UJ	2 J	2 UJ
Jan-01	2 UJ		14 J	4 J		2 UJ	2 UJ	2 UJ
Apr-01	2 UJ		2 UJ	17 J		2 UJ	2 UJ	2 UJ
Jul-01	2 UJ		2 UJ	500 J		2 UJ	2 UJ	2 UJ
Oct-01	2 UJ		900 J	2 UJ		2 U	2 UJ	2 UJ
Jan-02	2 U		2 UJ	2 UJ		2 UJ	2 UJ	2 UJ
Apr-02	2 UJ			2 UJ		2 UJ	2 UJ	2 UJ
Jul-02	2 UX		1600 E	8		2 U	2 UX	2 UX
Oct-02	2 U		2					
Jan-03	2		2 U	2 U		2 U	2	2 U
Apr-03	2 U		2 U	2 U		2 UJ	2 UJ	2 UJ
Jul-03	23 J		2 UJ	1600 J		30 J	300 J	
Oct-03	900 J	300 J	2 UJ	2 UJ				2 UJ
Feb-04	1	1 U	2 UX	2 UX		25 X		1 U
Apr-04	2 UX	2 UX	2 UX	2 UX		2 UX		2 UX
Jul-04	23	23	14	4		2 U		2 U
Oct-04	2 U	2	12	2 U		4		2 U
Jan-05	2 U	2 U	27	2 U		2 U		2 U
Apr-05	2 U	2 U	2 U	220		2 U		2 U
Aug-05	2 U	2 U	2 U	2 U		2 U		2 U
Nov-05	2 U	2 U	170	17		2 U		2 U
Jan-06	2 U	2 U	5.1	2 U		2 U		2 U
May-06	9 U	2 U	2 U	2 U		2 U		2 U
Aug-06	2 U	2 U	2 U	2 U		36.4		2 U
Nov-06	2 U	8.7	2 U	129.8		5.3		2 U
Feb-07	1 U	1 U	1 U	1 U		1 U		1 U
Apr-07	1 U	1 U	1 U	1 U		1 U		1 U
Jul-07	1		3	2419.6 >		1 U	1	
Oct-07	1 U	1 U	1 U	5.1		1 U		
Jan-08	1 U		1 U	1 U		1 U	1 U	
Apr-08	1 U		1 U	2		1 U	1 U	
Jul-08	1 U		1 U	248.9	70.3	1 U		
Oct-08	1 U		1 U	1 U	1 U	1 U		

Table 3b. Conventional Parameters from Groundwater Sampling, April 2000 to October 2008 (South Landfill)

Notes:

(a) Primary and secondary MCLs (maximum contaminant levels) per WAC 246-290-310.

(b) <5% criteria indicates less than 5 percent of total coliform samples can be positive in a month.

Dup Field duplicates collected as BXS-6

Blk Field blank collected as BXS-5

J Estimated Value

U Not detected. Reporting limit shown.

X Analysis performed past method holding time

> Exceeds maximum detection level of test

Table 3c. Metals from Groundwater Sampling, April 2000 to October 2008 (South Landfill)

	Arsenic, dissolved (µg/L)								Barium, dissolved (µg/L)							
Primary MCL [a]	10								2000							
Secondary MCL [a]																
	BXS-4	BXS-4 Dup	BXS-3	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk	BXS-4	BXS-4 Dup	BXS-3	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk
Apr-00	5		46	5 U		5 U	5 U	5 U	26		83	56		29	27	5 U
Jul-00	6		49	5 U		5 U	5 U	5 U	26		105	51		28	27	5 U
Oct-00	5		6 U	5 U		5 U	5 U	5 U	29		103	56		34	33	5 U
Jan-01	5 U		8	5 U		5 U	5 U	5 U	25		60	51		30	30	5 U
Apr-01	5		16	5 U		5 U	5 U	5 U	26		67	50		25	25	5 U
Jul-01	5		9	5 U		5 U	5 U	5 U	32		64	53		27	27	5 U
Oct-01	5		5	5 U		5 U	5 U	5 U	26		49	50		31	28	5 U
Jan-02	5 U		6	5 U		5 U	5 U	5 U	27.1		71.2	52.3		27.1	27.2	5 U
Apr-02	5		14	5 U		5 U	5 U	5 U	26		99	47		24	23	5 U
Jul-02	10 U		21.9	10 U		10 U	10 U	10 U	29.6		129	52.8		28.4	28.1	5 U
Oct-02	5.4		8	5 U					26.6		64.9	43.8				
Jan-03	4.7 B		5.3	1.4 B		1 B	4.9 B	5 U	26.8		55.7	47.2		30.8	28	5 U
Apr-03	5.2		4.6 B	1.2 B		5 U	5 U	5 U	29.1		54.4	48.7		20.3	20.1	5 U
Jul-03	6		5 U	5 U		5 U	5 U	5 U	32		58.1	42.1		18	18.9	5 U
Oct-03	4.9 B	5.3	3.7 B	5 U				5 U		28.8	50.7	47.8				5 U
Feb-04	5 U	5 B	3 B	5 U		5 U		4.9 B	5 U	28.3	65.3	45		10		29.1
Apr-04	5.6	5.5	8.5	5 U		5 U		5 U	29.3	29.1	111	48.8		19.9		5 U
Jul-04	5	5	3 B	1 B		5 U		5 U	31	29	54	55		21		5 U
Oct-04	5.7	5.3	4.4 B	5 U		5 U		5 U	29.4	28.3	53.3	43.3		23.4		5 U
Jan-05	5	5.1	2.8 B	5 U		5 U		5 U	30.2	30.2	103	47.2		16		5 U
Apr-05	5	5 B	6	1 B		5 U		5 U	29	28	91	44		23		5 U
Aug-05	4 B	5 B	9	5 U		5 U		5 U	28	28.4	94.4	41.9		23		5 U
Nov-05	6	5 U	7	2 B		5 U		5 U	29	5 U	83	44		23		5 U
Jan-06	5.2	5.6	2.9 B	5 U		5 U		5 U	31	28.3	59.5	43		17.8		5 U
May-06	6.5	5.8	21.9	1.2 B		5 U		5 U	30.4	32	115	48.1		23.9		5 U
Aug-06	5.1	5 B	99.8	5 U		5 U		5 U	33	35.3	103	48		24.3		5 U
Nov-06	7.3	5 U	29.8	1.1 B		5 U		5 U	30.4	25	104	44.6		28.4		3 B
Feb-07	6.8	5.8	145	1.1 B		5 U		5 U	28.6	28.9	101	47		19.1		5 U
Apr-07	6	6	113	0.7 B		5 U		5 U	25.6	25.6	73.8	39.8		24.5		5 U
Jul-07	5.4		113	5 U		5 U	5 U		33		80.6	50.1		24.6	23	
Oct-07	5.4	4.8 B	67.2	5 U		5 U			29.4	29.3	83.2	48.3		26.5		
Jan-08	6.7		42.6	5.0 U		5.0 U	5.0 U		26.7		65.4	42.3		18.3	19.0	
Apr-08	4.4 J		117.0	5.0 U		5.0 U	5.0 U		27.6		111.0	41.7		22.1	22.6	
Jul-08	5.4		111.0	0.8 J	5.0 U	5.0 U			29.7		122.0	49.5	50.9	31.5		
Oct-08	7.2		46.5	5.0 U	5.0 U	1.1 J			26.7		72.2	41.9	43.3	24.8		

Table 3c. Metals from Groundwater Sampling, April 2000 to October 2008 (South Landfill)

	Cadmium, dissolved (µg/L)								Copper, dissolved (µg/L)							
Primary MCL [a] Secondary MCL [a]	5								1300							
	BXS-4	BXS-4 Dup	BXS-3	BXS-2	BXS-2 DUP	BXS-1	BXS-1 Dup	Field blk	BXS-4	BXS-4 Dup	BXS-3	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk
Apr-00	4 U		4 U	4 U		4 U	4 U	4 U	10 U		10 U	10 U		10 U	10 U	10 U
Jul-00	4 U		4 U	4 U		4 U	4 U	4 U	10 U		10 U	10 U		10 U	10 U	10 U
Oct-00	4 U		4 U	4 U		4 U	4 U	4 U	10 U		10 U	10 U		10 U	10 U	10 U
Jan-01	4 U		4 U	4 U		4 U	4 U	4 U	10 U		10 U	10 U		10 U	10 U	10 U
Apr-01	4 U		4 U	4 U		4 U	4 U	4 U	10 U		10 U	10 U		10 U	10 U	10 U
Jul-01	4 U		4 U	4 U		4 U	4 U	4 U	10 U		10 U	10 U		10 U	10 U	10 U
Oct-01	5 U		5 U	5 U		5 U	5 U	5 U	10 U		10 U	10 U		10 U	10 U	10 U
Jan-02	5 U		5 U	5 U		5 U	5 U	5 U	10 U		10 U	10 U		10 U	10 U	10 U
Apr-02	5 U		5 U	5 U		5 U	5 U	5 U	10 U		10 U	10 U		10 U	10	10 U
Jul-02	5 U		5 U	5 U		5 U	5 U	5 U	10 U		10 U	10 U		10 U	10 U	10 U
Oct-02	5 U		1.1 B	1.1 B					10 U		10 U	10 U				
Jan-03	0.5 B		3.6 B	5 U		5 U	5 U	5 U	10 U		10 U	10 U		5.1 B	10 U	10 U
Apr-03	2 R		2 R	2 R		2 R	2 R	2 R	10 U		10 U	10 U		16.8 J	9.2 J	5.4 B
Jul-03	5 UJ		5 U	5 U		5 U	5 U	5 U	10 U		10 U	10 U		10 U	10 U	10 U
Oct-03	5 U	5 U	5 B	5 U				5 U	10 U	10 U	10 U	10 U				10 U
Feb-04	5 U	5 U	5 U	5 U		5 U		5 U	10 U	10 U	10 U	10 U		10 U		10 U
Apr-04	5 U	5 U	5 U	5 U		5 U		5 U	10 U	10 U	10 U	10 U		10 U		10 U
Jul-04	5 U	5 U	6	5 U		5 U		5 U	5 B	6 B	5 B	10 U		11		10 U
Oct-04	5 U	5 U	5 U	5 U		5 U		5 U	10 U	10 U	10 U	10 U		10 U		10 U
Jan-05	5 U	5 U	5 U	5 U		5 U		5 U	10 U	10 U	10 U	10 U		6.1 B		10 U
Apr-05	5 U	5 U	5 U	5 U		5 U		5 U	10 U	10 U	10 U	8 B		9 B		10 U
Aug-05	0.8 B	0.3 B	1.4 B	0.3 B		5 U		5 U	10 U	10 U	10 U	10 U		10 U		10 U
Nov-05	5 U	5 U	5 U	5 U		5 U		5 U	10 U	10 U	10 U	10 U		10 U		10 U
Jan-06	5 U	5 U	5 U	5 U		5 U		5 U	10 U	10 U	10 U	10 U		10 U		10 U
May-06	5 U	5 U	5 U	5 U		5 U		5 U	10 U	10 U	10 U	10 U		2.6 B		10 U
Aug-06	5 U	5 U	3.2 B	5 U		5 U		5 U	10 U	10 U	20 U	2.5 B		3.1 B		10 U
Nov-06	5 U	5 U	5 U	5 U		5 U		5 U	10 U	10 U	10 U	10 U		10 U		10 U
Feb-07	5 U	5 U	5 U	5 U		5 U		5 U	10 U	10 U	10 U	10 U		3 B		10 U
Apr-07	5 U	5 U	2.9 B	0.7 B		1.9 B		5 U	10 U	10 U	10 U	10 U		10 U		10 U
Jul-07	5 U		5 U	5 U		5 U	5 U		10 U		4.4 B	5.4 B		4.2 B	6 B	
Oct-07	5 U	5 U	5 U	5 U		5 U			10 U	10 U	10 U	10 U		10 U		
Jan-08	5.0 U		1.8 J	1.4 J		5.0 U	1.3 J		10.0 U		10.0 U	10.0 U		10.0 U	10.0 U	
Apr-08	5.0 U		5.0 U	1.1 J		5.0 U	0.7 J		10.0 U		10.0 U	10.0 U		10.0 U	10.0 U	
Jul-08	5.0 U		4.3 J	5.0 U	5.0 U	0.2 J			10.0 U		10.0 U	1.4 J	1.4 J	3.3 J		
Oct-08	5.0 U		5.0 U	5.0 U	5.0 U	5.0 U			10.0 U		10.0 U	10.0 U	10.0 U	10.0 U		

Table 3c. Metals from Groundwater Sampling, April 2000 to October 2008 (South Landfill)

	Iron, dissolved (µg/L)								Manganese, dissolved (µg/L)							
Primary MCL [a] Secondary MCL [a]	300								50							
	BXS-4	BXS-4 Dup	BXS-3	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk	BXS-4	BXS-4 Dup	BXS-3	BXS-2	BXS-2 Dup	BXS-1	BXS-1 Dup	Field blk
Apr-00	40		56,600	690		20 U	20 U	20 U	123		15,900	1450		264	272	5 U
Jul-00	40		52,600	720		20 U	20 U	20 U	120		13,900	1500		307	308	5 U
Oct-00	60		34,200	630		20 U	20 U	20 U	129		15,800	1390		346	348	5 U
Jan-01	50		7,560	620		20 U	30	20 U	123		14,500	1460		409	397	5 U
Apr-01	50		5,530	780		20 U	20 U	20 U	116		16,200	1470		341	345	5 U
Jul-01	43.8		8,530	736		20 U	20 U	20 U	123		17,100	1540		396	400	5 U
Oct-01	35		4,740	789		20 U	20 U	20 U	114		13,600	1580		556	534	5 U
Jan-02	50		5,760	806		20 U	20 U	20 U	127		15,600	1500		464	470	5 U
Apr-02	40		19,600	640		20 U	20 U	20 U	112		15,600	1430		362	353	5 U
Jul-02	32.9		21,900	670		20 U	20 U	20 U	123		17,900	1520		373	384	5 U
Oct-02	41.8		5,340	628					105		16,000	1410				
Jan-03	39.9 J		3,220	714		20 U	126	20 U	103		14,800	1560		733	107	5 U
Apr-03	40.8		4,280	780		20 U	20 U	20 U	118		17,800	1560		431	451	5 U
Jul-03	53		3,680	926		20 U	20 U	20 U	115		15,900	1390		370	377	5 U
Oct-03	36.1	36.9	903	836				20 U	115	110	14,500	1580				5 U
Feb-04	20 U	41.4	2,950	753		20 U		48.1	5 U	113	15,700	1410		277		115
Apr-04	42.4	90.6	8,890	796		20 U		20 U	110	111	14,900	1420		144		5 U
Jul-04	60	50	4,290	750		20 U		20 U	189	114	18,200	1420		326		5 U
Oct-04	40.3	39.3	1,710	836		20 U		20 U	110	107	17,700	1430		478		5 U
Jan-05	41.6	42.4	6,520	761		20 U		20 U	110	112	8,510	1270		172		2.8 B
Apr-05	46	48	10,900	769		20 U		20 U	120	120	14,200	1350		210		5 U
Aug-05	41	40	18,300	732		5 B		20 U	107	107	14,100	1300		160		0.3 B
Nov-05	42	20 U	4,330	770		20 U		4 B	112	5 U	17,200	1300		429		5 U
Jan-06	46.6	43.2	2,590	740		20 U		20 U	116	114	17,200	1260		367		5 U
May-06	40.1	41.9	67,900	842		20 U		20 U	109	114	13,400	1320		105		5 U
Aug-06	38.7	40.5	91,400	860		20 U		5 B	113	112	13,000	1350		121		5 U
Nov-06	33.3	20 U	28,700	811		20 U		20 U	113	261	17,500	1390		268		0.5 B
Feb-07	38.6	36.7	110,000	846		20 U		20 U	112	114	13,500	1350		89.5		5 U
Apr-07	42.8	36.4	90,500	771		10.1 B		20 U	107	106	13,500	1330		123		5 U
Jul-07	38.3		88,100	699		20 U	20 U		118		14,000	1330		268	268	
Oct-07	36.1	36	62,700	656		20 U			121	120	14,700	1280		353		
Jan-08	41.3		35,500	608		7.8 J	8.2 J		125		17,900	1,270		422	428	
Apr-08	41.5		102,000	624		8.8 J	8.3 J		110		12,600	1,150		240	234	
Jul-08	35.2		96,800	593	591	20.0 U			111		13,100	1,190	1,210	309		
Oct-08	74.8		53,800	560	571	8.8 J			111		15,400	1,290	1,300	297		

Table 3c. Metals from Groundwater Sampling, April 2000 to October 2008 (South Landfill)

	Nickel, dissolved (µg/L)								Zinc, dissolved (µg/L)							
Primary MCL [a]	100								5000							
Secondary MCL [a]																
	BXS-4	**BXS-4 Dup [b]**	**BXS-3**	**BXS-2**	**BXS-2 Dup**	**BXS-1**	**BXS-1 Dup**	**Field blk**	**BXS-4**	**BXS-4 Dup**	**BXS-3**	**BXS-2**	**BXS-2 Dup**	**BXS-1**	**BXS-1 Dup**	**Field blk**
Apr-00	20 U		20 U	40		20 U	20 U	20 U	10 U		10 U	10 U		10 U	10 U	10 U
Jul-00	20 U		20 U	38		20	20	20 U	10 U		15	10 U		10 U	10 U	10 U
Oct-00	20 U		20 U	30		20 U	20 U	20 U	10 U		10 U	10 U		10	10 U	10 U
Jan-01	20 U		20 U	40		20 U	20	20 U	10 U		10 U	10 U		10 U	10	10 U
Apr-01	20 U		20 U	30		20 U	20 U	20 U	10 U		20	10		10 U	10	10 U
Jul-01	20 U		38	41		27	26	20 U	10 U		10 U	10 U		10 U	10 U	10 U
Oct-01	20 U		20 U	39		24	21	20 U	10 U		10 U	11		13	12	10 U
Jan-02	20 U		33	39		27	22	20 U	10 U		10 U	11		14	10 U	10 U
Apr-02	20 U		20	40		20 U	20 U	20 U	10 U		10 U	10 U		10 U	10 U	10 U
Jul-02	20 U		36.3	38.7		26.5	26.6	20 U	10 U		10.2	10 U		10 U	10 U	10 U
Oct-02	20 U		19.8 B	32.9					10 U		8.8 B	6.5 B				
Jan-03	20 U		32.2	37.3		34.7	20 U	20 U	10 U		10 U	14.7		16.8	10 U	10 U
Apr-03	20 U		22.9	39		20 U	20 U	20 U	10 U		14.5	10 U		36.1	32.2	10 U
Jul-03	20 U		18.5 B	35.9		14.8 B	15.3 B	20 U	6 B		5.8 B	9.9 B		26.2	29.4	10 U
Oct-03	20 U	20 U	33.3	37.1				20 U	10 U	10 U	10 U	12.7				10 U
Feb-04	20 U	20 U	49	36.2		20 U		20 U	10 U	10 U	10.6	6.1 B		10 U		10 U
Apr-04	20 U	20 U	30.8	40.3		20 U		20 U	10 U	10 U	10 U	10 U		33		10 U
Jul-04	20 U	20 U	20 U	50		20		20 U	4 B	7 B	21	8 B		24		9 B
Oct-04	20 U	20 U	29.5	36.5		18.8 B		20 U	10 U	10 U	8 B	12.8		9.9 B		10 U
Jan-05	20 U	20 U	98.9	52.6		20 U		20 U	10 U	10 U	11.2	7.9 B		15.1		10 U
Apr-05	20 U	20 U	40	30		20		20 U	10 U	10 U	63	10		13		10 U
Aug-05	20 U	20 U	25	32		11 B		20 U	10 U	10 U	5 B	15		5 B		10 U
Nov-05	20 U	20 U	20 U	30		20 U		20 U	10 U	10 U	7 B	51		7 B		10 U
Jan-06	20 U	20 U	39.4	39		20 U		20 U	6.2 B	10 U	18.9	19.4		25.5		10 U
May-06	20 U	20 U	20 U	35.3		20 U		20 U	3 B	3.9 B	22.1	46.7		8.5 B		2.7 B
Aug-06	20 U	20 U	20 U	35.5		20 U		20 U	2.6 B	10 U	13.7	21.9		8.1 B		10 U
Nov-06	20 U	20 U	20 U	27.7		20 U		20 U	10 U	9.2 B	14	18.5		9.6 B		2.1 B
Feb-07	20 U	20 U	20 U	38.4		20 U		20 U	2.4 B	10 U	12.9	5.8 B		4 B		10 U
Apr-07	20 U	20 U	18.2 B	33.9		10.4 B		20 U	10 U	10 U	8.5 B	30.2		10 U		10 U
Jul-07	20 U		20.4	30.1		20 U	20 U		10 U		12.4	11.1		8 B	6.5 B	
Oct-07	20 U	20 U	20 U	31.4		20 U			10 U	12.9	15.9	22.3		7.9 B		
Jan-08	20.0 U		17.0 J	30.6		16.0 J	15.5 J		8.3 J		10.0 U	14.8		10.0 U	8.0 J	
Apr-08	20.0 U		20.2	31.8		11.1 J	11.8 J		10.0 U		10.0 U	10.0 U		10.0 U	10.0 U	
Jul-08	20.0 U		4.5 J	24.8	25.1	10.2 J			1.0 J		4.8 J	4.4 J	4.2 J	9.1 J		
Oct-08	20.0 U		22.8	31.7	32.4	15.5 J			10.0 U		3.9 J	6.2 J	7.1 J	12.1		

Notes:

(a) Primary and secondary MCLs (maximum contaminant levels) per WAC 246-290-310.
(b) Samples collected as BXS-6
(c) Samples collected as BXS-5
B Estimated. Result is below reporting limit
J Estimated Value
R Rejected Sample
U Not detected. Reporting limit shown.

Table 4. Parameters Statistically Higher than Background (1988-2008), South Landfill

Test Type	Parameter	Monitoring Period	Mean Value Downgradient BXS-1	BXS-2	BXS-3	Mean Value Upgradient BXS-4
Conventionals	Ammonia as Nitrogen	2001			0.10	0.50
Conventionals	Ammonia as Nitrogen	2007			0.84	0.50
Conventionals	Carbon, Total Organic	1992	3.6	5.0	18.7	1.5
Conventionals	Carbon, Total Organic	1993		7.3	20.0	2.0
Conventionals	Carbon, Total Organic	1994		8.6	21.9	2.3
Conventionals	Carbon, Total Organic	1995		10.7	30.6	3.4
Conventionals	Carbon, Total Organic	1996	4.9	12.7	38.5	2.3
Conventionals	Carbon, Total Organic	1997		15.0		3.8
Conventionals	Carbon, Total Organic	1998			32.1	10.8
Conventionals	Carbon, Total Organic	1999		15.8	31.8	6.6
Conventionals	Carbon, Total Organic	2000	8.1	15.2		1.0
Conventionals	Carbon, Total Organic	2001	7.5	14.6	25.2	3.1
Conventionals	Carbon, Total Organic	2002	6.4	13.8	22.2	2.0
Conventionals	Carbon, Total Organic	2003		14.0	21.5	0.7
Conventionals	Carbon, Total Organic	2004	5.1	14.7	23.1	0.9
Conventionals	Carbon, Total Organic	2005	5.7	15.8	25.1	1.1
Conventionals	Carbon, Total Organic	2006	5.1	14.5	28.4	1.0
Conventionals	Carbon, Total Organic	2007	5.2	15.8	27.9	1.0
Conventionals	Carbon, Total Organic	2008	6.7	16.2	25.9	0.9
Conventionals	Chemical Oxygen Demand	1990	27.9	41.2	97.8	2.2
Conventionals	Chemical Oxygen Demand	1993			106.0	30.5
Conventionals	Chemical Oxygen Demand	1994		30.0	83.0	22.0
Conventionals	Chemical Oxygen Demand	1995			90.0	32.0
Conventionals	Chemical Oxygen Demand	1996		41.0	98.0	16.0
Conventionals	Chemical Oxygen Demand	1997		43.0	87.0	19.0
Conventionals	Chemical Oxygen Demand	1998		51.0	98.0	20.1
Conventionals	Chemical Oxygen Demand	1999			92.0	40.5
Conventionals	Chemical Oxygen Demand	2000		43.5	71.3	13.6
Conventionals	Chemical Oxygen Demand	2001	22.3	42.5	69.5	17.3
Conventionals	Chemical Oxygen Demand	2002	19.0	38.0	60.0	18.0
Conventionals	Chemical Oxygen Demand	2003		37.0	55.8	2.9
Conventionals	Chemical Oxygen Demand	2004		38.0	58.8	2.9
Conventionals	Chemical Oxygen Demand	2005		42.8	69.5	8.4
Conventionals	Chemical Oxygen Demand	2006	12.5	36.0	72.0	2.9

Table 4. Parameters Statistically Higher than Background (1988-2008), South Landfill

Test Type	Parameter	Monitoring Period	Mean Value Downgradient BXS-1	BXS-2	BXS-3	Mean Value Upgradient BXS-4
Conventionals	Chemical Oxygen Demand	2007	9.9	34.8	73.3	3.4
Conventionals	Chemical Oxygen Demand	2008	16.3	38.3	69.3	4.4
Conventionals	Chloride	1989	45.0	61.0	17.0	6.6
Conventionals	Chloride	1990	22.5	14.5	6.8	2.2
Conventionals	Chloride	1992	16.7	6.7	7.7	2.2
Conventionals	Chloride	1993	12.1	6.6	12.8	2.3
Conventionals	Chloride	1994	13.0	7.4	7.4	2.1
Conventionals	Chloride	1995	14.0	10.0	9.6	1.9
Conventionals	Chloride	1996	14.6	17.3	9.1	2.0
Conventionals	Chloride	1997	12.6	14.8	35.0	2.0
Conventionals	Chloride	1998	11.6	11.0	6.3	2.1
Conventionals	Chloride	1999	10.0		6.1	2.2
Conventionals	Chloride	2000	7.8	8.3	5.0	2.1
Conventionals	Chloride	2001	5.9	7.4	4.7	2.1
Conventionals	Chloride	2002	5.3	6.5	3.8	2.0
Conventionals	Chloride	2003	4.6	5.5		2.0
Conventionals	Chloride	2004		4.3	2.3	1.8
Conventionals	Chloride	2005	4.5	4.4	3.7	1.8
Conventionals	Chloride	2006	4.0	3.5	2.8	1.7
Conventionals	Chloride	2007	5.5	4.4	2.7	1.7
Conventionals	Chloride	2008	5.1	4.5	3.0	1.9
Conventionals	Conductivity (umhos/cm)	1989	351	607	514	180
Conventionals	Conductivity (umhos/cm)	1990	366	624	500	214
Conventionals	Conductivity (umhos/cm)	1992	292	586	533	189
Conventionals	Conductivity (umhos/cm)	1993		487	526	173
Conventionals	Conductivity (umhos/cm)	1994	214	479	602	169
Conventionals	Conductivity (umhos/cm)	1995	333	623		149
Conventionals	Conductivity (umhos/cm)	1996	290	602	787	161
Conventionals	Conductivity (umhos/cm)	1997	326		765	169
Conventionals	Conductivity (umhos/cm)	1998	393	678	738	177
Conventionals	Conductivity (umhos/cm)	1999	406	786	748	177
Conventionals	Conductivity (umhos/cm)	2000	417	762	651	166
Conventionals	Conductivity (umhos/cm)	2001	493	878	886	193
Conventionals	Conductivity (umhos/cm)	2002	470	849	825	187

Table 4. Parameters Statistically Higher than Background (1988-2008), South Landfill

Test Type	Parameter	Monitoring Period	Mean Value Downgradient BXS-1	BXS-2	BXS-3	Mean Value Upgradient BXS-4
Conventionals	Conductivity (umhos/cm)	2004		821	853	198
Conventionals	Conductivity (umhos/cm)	2005	393	788	750	192
Conventionals	Conductivity (umhos/cm)	2006	414	773	785	191
Conventionals	Conductivity (umhos/cm)	2007	397	799	804	191
Conventionals	Conductivity (umhos/cm)	2008	465	758	771	189
Conventionals	Nitrate + Nitrite as Nitrogen	1990	0.72			0.10
Conventionals	Nitrate + Nitrite as Nitrogen	1993	0.79			0.18
Conventionals	Nitrate + Nitrite as Nitrogen	1994	0.50			ND
Conventionals	Nitrate + Nitrite as Nitrogen	1996	1.65			ND
Conventionals	Nitrate + Nitrite as Nitrogen	1997	0.75			ND
Conventionals	Nitrate + Nitrite as Nitrogen	1999	0.43			ND
Conventionals	Nitrate + Nitrite as Nitrogen	2000	0.33			0.10
Conventionals	Nitrate + Nitrite as Nitrogen	2002	0.50			0.20
Conventionals	Nitrate + Nitrite as Nitrogen	2004	0.85			0.06
Conventionals	Nitrate + Nitrite as Nitrogen	2005	0.75			0.06
Conventionals	Nitrate + Nitrite as Nitrogen	2006	0.71			0.04
Conventionals	Nitrate + Nitrite as Nitrogen	2007	0.69			0.14
Conventionals	Nitrate + Nitrite as Nitrogen	2008	0.83			0.04
Conventionals	pH	1992	6.1	6.3	6.4	7.9
Conventionals	pH	2000	6.1	6.4	6.5	7.9
Conventionals	pH	2001	6.1	6.4	6.7	7.9
Conventionals	Solids, Total Dissolved	1990		397	436	228
Conventionals	Solids, Total Dissolved	1992		352	351	147
Conventionals	Solids, Total Dissolved	1993		330		141
Conventionals	Solids, Total Dissolved	1994	161	330	418	134
Conventionals	Solids, Total Dissolved	1995	188	361	492	141
Conventionals	Solids, Total Dissolved	1996	224	423	604	153
Conventionals	Solids, Total Dissolved	1997	236	456	613	150
Conventionals	Solids, Total Dissolved	1998	273	473	562	137
Conventionals	Solids, Total Dissolved	1999	256	524	517	156
Conventionals	Solids, Total Dissolved	2000	297	544	527	140
Conventionals	Solids, Total Dissolved	2001	261	299	346	135
Conventionals	Solids, Total Dissolved	2002	298	466	518	145
Conventionals	Solids, Total Dissolved	2003	291	525	572	132

Table 4. Parameters Statistically Higher than Background (1988-2008), South Landfill

Test Type	Parameter	Monitoring Period	Mean Value Downgradient BXS-1	BXS-2	BXS-3	Mean Value Upgradient BXS-4
Conventionals	Solids, Total Dissolved	2004	228	439	493	127
Conventionals	Solids, Total Dissolved	2005	255	516	449	135
Conventionals	Solids, Total Dissolved	2006	259	507	526	145
Conventionals	Solids, Total Dissolved	2007	254	471	476	152
Conventionals	Solids, Total Dissolved	2008	298	481	489	142
Conventionals	Sulfate	1989	5.9			2.3
Conventionals	Sulfate	1990	6.6			1.9
Conventionals	Sulfate	1992	9.1			2.0
Conventionals	Sulfate	1993	10.0			2.0
Conventionals	Sulfate	1994	11.8			1.9
Conventionals	Sulfate	1995	12.0			1.8
Conventionals	Sulfate	1996	10.7			1.7
Conventionals	Sulfate	1997	11.8			1.6
Conventionals	Sulfate	1998	9.5			1.3
Conventionals	Sulfate	1999	7.8			1.4
Conventionals	Sulfate	2001	7.5			1.4
Conventionals	Sulfate	2002	7.3			1.4
Conventionals	Sulfate	2005	10.1			1.3
Conventionals	Sulfate	2006	11.3			1.4
Conventionals	Sulfate	2007	12.4			1.4
Conventionals	Sulfate	2008	9.1			1.1
Conventionals	Tannin and Lignin	1990			3.1	1.4
Conventionals	Tannin and Lignin	1993		0.5		0.3
Conventionals	Tannin and Lignin	1994		0.5	1.0	0.2
Conventionals	Tannin and Lignin	1995			3.1	0.6
Conventionals	Tannin and Lignin	1996		0.7	5.6	0.3
Conventionals	Tannin and Lignin	1998			8.1	0.7
Conventionals	Tannin and Lignin	1999			12.2	0.5
Conventionals	Tannin and Lignin	2000		9.1	9.2	0.4
Conventionals	Tannin and Lignin	2002		1.6	11.1	0.4
Conventionals	Tannin and Lignin	2003			6.3	0.4
Conventionals	Tannin and Lignin	2004		1.4		0.5
Conventionals	Tannin and Lignin	2005			8.1	0.4
Conventionals	Tannin and Lignin	2006			11.5	0.4

Table 4. Parameters Statistically Higher than Background (1988-2008), South Landfill

Test Type	Parameter	Monitoring Period	Mean Value Downgradient BXS-1	BXS-2	BXS-3	Mean Value Upgradient BXS-4
Conventionals	Tannin and Lignin	2007		1.2	8.5	0.3
Conventionals	Tannin and Lignin	2008		1.2	11.1	0.3
Metals	Arsenic	1996			9.0	4.0
Metals	Arsenic	1997			15.0	5.0
Metals	Arsenic	1998			20.0	4.6
Metals	Arsenic	1999			34.0	5.8
Metals	Arsenic	2002			10.4	3.8
Metals	Arsenic	2007			110	5.9
Metals	Arsenic	2008			79.3	5.9
Metals	Barium	1993		36.0	38.0	28.0
Metals	Barium	1994		38.0	51.0	25.0
Metals	Barium	1995		45.0	58.0	27.0
Metals	Barium	1996		48.0	74.0	26.0
Metals	Barium	1997		50.0	58.0	21.0
Metals	Barium	1998		51.0	65.0	26.0
Metals	Barium	1999		51.0	58.0	27.0
Metals	Barium	2000			87.8	26.5
Metals	Barium	2001	28.3	51.0	60.0	27.3
Metals	Barium	2002		50.0	78.0	28.0
Metals	Barium	2003		46.5	54.7	29.2
Metals	Barium	2004		48.0	70.9	23.1
Metals	Barium	2005		44.3	87.8	29.1
Metals	Barium	2006		45.9	95.4	31.2
Metals	Barium	2007		46.3	84.6	29.2
Metals	Barium	2008		43.9	92.7	27.7
Metals	Cadmium	2002		1.1	1.1	<1.1
Metals	Copper	1993			8	5
Metals	Iron	1990		140	1,950	48
Metals	Iron	1994		748	1,950	45
Metals	Iron	1995		1,120	341	50
Metals	Iron	1996		1,520	9,490	46
Metals	Iron	1997		1,220	17,800	50
Metals	Iron	1998		1,130	20,700	56
Metals	Iron	1999		950	34,500	30

Table 4. Parameters Statistically Higher than Background (1988-2008), South Landfill

Test Type	Parameter	Monitoring Period	Mean Value Downgradient BXS-1	BXS-2	BXS-3	Mean Value Upgradient BXS-4
Metals	Iron	2000		665	37,740	47.5
Metals	Iron	2001	10	715	6,538	42.5
Metals	Iron	2002		729	10,474	42
Metals	Iron	2003		814		42.45
Metals	Iron	2004		784		38.18
Metals	Iron	2005		758	10,013	42.6
Metals	Iron	2006		813	47,648	39.7
Metals	Iron	2007		743	87,825	39.0
Metals	Iron	2008		596	72,025	48.2
Metals	Lead	1993			2	1
Metals	Manganese	1989	210	580	1,100	120
Metals	Manganese	1990		650	1,820	99
Metals	Manganese	1993		570		110
Metals	Manganese	1994		670	1,110	120
Metals	Manganese	1995		834	3,780	122
Metals	Manganese	1996		1,120	10,800	121
Metals	Manganese	1997		1,510	13,000	90
Metals	Manganese	1998	175	1,650	13,800	126
Metals	Manganese	1999	200	1,420	14,800	116
Metals	Manganese	2000	331	1,450	15,025	124
Metals	Manganese	2001	426	1,513	15,350	119
Metals	Manganese	2002	430	1,502	15,763	119
Metals	Manganese	2003		1,523	15,750	113
Metals	Manganese	2004		1,420	16,625	103
Metals	Manganese	2005		1,305	13,503	112
Metals	Manganese	2006		1,330	15,275	113
Metals	Manganese	2007		1,323	13,925	114
Metals	Manganese	2008	317	1,225	14,750	114
Metals	Nickel	1993		18.0		1.0
Metals	Nickel	1994		18.0		ND
Metals	Nickel	1995		21.0	30.0	ND
Metals	Nickel	1996			25.0	ND
Metals	Nickel	1997		34.0	20.0	ND
Metals	Nickel	1998		43.0	29.0	ND

Table 4. Parameters Statistically Higher than Background (1988-2008), South Landfill

Test Type	Parameter	Monitoring Period	Mean Value Downgradient BXS-1	BXS-2	BXS-3	Mean Value Upgradient BXS-4
Metals	Nickel	1999		36.0	22.0	ND
Metals	Nickel	2000		37.0		ND
Metals	Nickel	2001	20.3	37.5	17.5	10.0
Metals	Nickel	2002	21.3	38.5	24.0	5.5
Metals	Nickel	2003		37.0		10.0
Metals	Nickel	2004		40.8		10.0
Metals	Nickel	2005		36.2		10.0
Metals	Nickel	2006		34.4		10.0
Metals	Nickel	2007		33.4		10.0
Metals	Nickel	2008		29.7	16.1	10.0
Metals	Zinc	2002	8.0	6.8		<2.4
Metals	Zinc	2005	10.0			5.0
Metals	Zinc	2007	6.2	17.3	12.4	4.4
Metals	Zinc	2008		7.6		4.8

Mean values are yearly averages
ND = not detected
< = not detected above listed reporting limit

Appendix A

Field Groundwater Sampling Records

CHAIN OF CUSTODY

Columbia Analytical Services Inc. — An Employee - Owned Company

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

SR#: ______ PAGE ______ OF ______ COC # ______

PROJECT NAME: J.H. Baxter Arlington

PROJECT NUMBER: Stilwell & landfill

PROJECT MANAGER: Anita Ragan

COMPANY/ADDRESS: 85 Baxter Rd.

CITY/STATE/ZIP: Eugene, OR 97402

E-MAIL ADDRESS:

PHONE #: (541) 689-3801 FAX#:

SAMPLER'S SIGNATURE: [signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐	☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☒	PAHS 8310☐ SIM☒	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) NO2+NO3	TOX 9020☐ AOX 1650☐ 506☐	COD, TOC, Nitrate/Nitrite		TDS Sulfate, Chloride, [illegible]		REMARKS
BXS-1	1/9/08	0830		H_2O	5								X	X						X		X		
BXS-5	1/9/08	0835		|	5								X	X						X		X		
BXS-2	1/9/08	0930		|	5								X	X						X		X		
BXS-3	1/9/08	1015		|	3															X		X		
MW-3	1/9/08	1115		|	3															X		X		
BXS-4	1/9/08	1350		|	3															X		X		

REPORT REQUIREMENTS

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

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

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

___ IV. CLP Deliverable Report

___ V. EDD

INVOICE INFORMATION

P.O. #

Bill To: J.H. Baxter

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 NORTHWEST OTHER: ______ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

For Questions please contact Kathy Gunderson @ (360) 942-3409

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature] Date/Time: 1/11/08 1655	Signature: [signature] Date/Time: 1/11/08 1656	Signature: Date/Time:	Signature: Date/Time:
Printed Name: Anita Ragan Firm: Baxter	Printed Name: [illegible] Firm: CAS	Printed Name: Firm:	Printed Name: Firm:

RCOC #1 06/03

Columbia Analytical Services®
An Employee-Owned Company

CHAIN OF CUSTODY

SR#: ______

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

PAGE ______ OF ______ COC # ______

PROJECT NAME: J.H. Baxter Arlington
PROJECT NUMBER: PMP Well + Equ. Check
PROJECT MANAGER: Anita Ragan
COMPANY/ADDRESS: 85 Baxter Rd.
CITY/STATE/ZIP: Eugene, OR 97402
E-MAIL ADDRESS:
PHONE #: (541) 689-3801
FAX #:
SAMPLER'S SIGNATURE: [signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS		Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐	☐ Fuel Fingerprint (FID) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenols - 8151M Tri☐ Tetra☐ PCP☒	PAHS 8310☐ SIM☒	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) NO2+NO3	TOX 9020☐ AOX 1650☐ 506☐	COD, TOC, [illegible]		TDS, Sulfate, Chloride, [illegible]		REMARKS
MW-25	1/10/08	1725		H₂O	1									X											
Equ. Check	1/11/08	0815			5									X	X	X					X		X		
MW-22	1/11/08	0918			1									X											
MW-24	1/11/08	1005			1									X											
MW-33	1/11/08	1030			1									X											

REPORT REQUIREMENTS

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

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

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

___ IV. CLP Deliverable Report

___ V. EDD

INVOICE INFORMATION

P.O. # ______

Bill To: J.H. Baxter

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 NORTHWEST OTHER: ______ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

For Questions please contact Kathy Gunderson @ (360) 942-3409

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature] Date/Time: 1/11/08 1655	Signature: [signature] Date/Time: 1/11/08 1656	Signature: Date/Time:	Signature: Date/Time:
Printed Name: Anita Ragan Firm: Baxter	Printed Name: [illegible] Firm: [illegible]	Printed Name: Firm:	Printed Name: Firm:

WATER LEVEL MONITORING RECORD

Geomatrix

Project Name: JH BAXTER Project and Task Number: _____

Date: 1-7-09 Measured by: K HANSEN D. Instrument Used: _____

Note: For you convenience, the following abbreviations may be used.

P = Pumping I = Inaccessible D = Dedicated Pump

ST = Steel Tape ES = Electric Sounder MP = Measuring Point WL = Water Level

Well No.	Time	MP Elevation (feet)	Water Level Below MP (feet)	Water Level Elevation (feet)	Previous Water Level Below MP	Remarks
MW-4	845		8.03			
MW-14	859		23.0			
BXS-4	906		10.23			
MW-11	918		19.21			
MW 1	925		22.45			
MW-10	930		32.44			
MW-5	935		23.12			
BXS-1	946		37.90			Difficulty with level at or near top of skimmer pump
BXS-2	959		37.20			
BXS-3	1005		33.40			
MW 18	1020		41.10			
HCMW 7	1030		42.80			
MW 16	1040		39.90			
MW 15	1046		38.42			
MW 17	1052		41.31			
MW 37	1101		38.69			
MW 36	1109		36.55			
MW 31	1116		36.73			
MW 2	1124		43.14			
HCMW 6	1135		40.94			
MW 3	1142		40.42			
MW 33	1336		37.74			
MW 24	1346		38.27			
MW 35	1401		38.65			
MW 28	1431		36.93			
MW 34	1439		37.42			
MW 29	1441		37.38			
MW 30	1446		37.98			
MW 22	1457		35.69			
MW 25	1522		38.14			

WATER LEVEL MONITORING RECORD

Geomatrix

Project Name: _____ Project and Task Number: _____

Date: _____ Measured by: _____ Instrument Used: _____

Note: For you convenience, the following abbreviations may be used.

P = Pumping I = Inaccessible D = Dedicated Pump
ST = Steel Tape ES = Electric Sounder MP = Measuring Point WL = Water Level

Well No.	Time	MP Elevation (feet)	Water Level Below MP (feet)	Water Level Elevation (feet)	Previous Water Level Below MP	Remarks
MW 32	1528		38.81			
MW 27	1537		38.51			
MW 23	1610	11/8/08	37.03			
MW 26	1620	11/8/08	38.42			
BXN-3	1130	1/10/08	47.86			
BXN-1	1105	1/10/08	50.20			
BXN-2	0942		46.46			
BXN-4	0822		45.47			

JH Baxter & Co.

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Arlington, WA 98223
PHONE (360) 435-2146 FAX (360) 435-3035

Groundwater Sampling Field Form

Well No. BXS-4	Location Arlington A. Ragan	Date 1/9/08
Sample No. BXS-4	Field Personnel/Company ~~Jim Clawson / Mary Larson J.H. Baxter~~	
Sample Time (2400 hours) 1350	Instrument Calibration Date 1/9/08	

Well Condition Poor (Satisfactory) New (If poor, explain) _____

Field Conditions/Weather _____

Equipment Decontamination **Liquinox, Hexane, Methanol, and D.I. Water Rinse.**

Casing Diameter: (Circle One) (2") 4" 6" Other____

Casing Volume (gallons/ft) for: (2"=0.163; 4"=0.653; 6"=1.47
Multiply Water Column Height by appropriate number above to get proper purge volume.

Depth of Well (feet):	47.4'
Depth to Water (feet):	10.23'
Water Column (feet):	37.17'
Casing Volume (gallons):	6.1
Calculated Purge Volume (gallons):	18.2 gal
Actual Purge Volume (gallons):	18.5 gal

Sheen / LNAPL / DNAPL present: _____

Other remarks: _____

Time 2400 hrs	Cumulative Volume (gal)	pH	Conductivity ms/cm 25°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	EH MV	Odor/Color/ Remarks
1255	0							Purge Start
1257	1	6.87	19.5	0	1.20	9.1	-66	
1310	7	7.68	19.5	0	0.0	9.2	-120	
1328	13	7.28	19.5	0	0.0	9.3	-139	
1345	18.5	7.81	19.6	0	0.0	9.3	-147	

Purging Equipment: **Portable / Dedicated Bladder Pump or Disposable Bailer** Sampling Equipment: **Horiba U22**

Remarks: _____

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Groundwater Sampling Field Form

Well No. BXS-3	Location Arlington A2Bagon		Date 1/9/08
Sample No. BXS-3	Field Personnel/Company ~~Jim Clawson / Mary Larson J.H. Baxter~~		
Sample Time (2400 hours) 1015	Instrument Calibration Date 1/9/08		
Well Condition Poor (Satisfactory) New (If poor, explain)			
Field Conditions/Weather Overcast			
Equipment Decontamination **Liquinox, Hexane, Methanol, and D.I. Water Rinse.**			

Casing Diameter: (Circle One) (2") 4" 6" Other____

Casing Volume (gallons/ft) for: (2"=0.163; 4"=0.653; 6"=1.47
Multiply Water Column Height by appropriate number above to get proper purge volume.

Depth of Well (feet):	44.56'
Depth to Water (feet):	33.40'
Water Column (feet):	11.16'
Casing Volume (gallons):	1.8 gal
Calculated Purge Volume (gallons):	5.5
Actual Purge Volume (gallons):	5.5 gal

Sheen / LNAPL / DNAPL present: ____

Other remarks: ____

Time 2400 hrs	Cumulative Volume (gal)	pH	Conductivity ms/cm 25°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	EH MV	Odor/Color/ Remarks
0946	0							Purge Start
0951	1.9	6.21	78.6	0.0	0.0	12.4	-54	clear
0958	2.0	6.23	77.0	0.0	0.0	12.7	-77	
1005	5.5	6.25	78.8	0.0	0.0	12.1	-67	

Purging Equipment: **Portable / Dedicated Bladder Pump or Disposable Bailer** Sampling Equipment: **Horiba U22**

Remarks: ____

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Groundwater Sampling Field Form

Well No. BXS-2	Location Arlington A. Ragan	Date 11/9/08
Sample No. BXS-2	Field Personnel/Company ~~Jim Clawson / Mary Larson J.H. Baxter~~	
Sample Time (2400 hours) 0930	Instrument Calibration Date	

Well Condition Poor (Satisfactory) New (If poor, explain) _____

Field Conditions/Weather Overcast

Equipment Decontamination **Liquinox, Hexane, Methanol, and D.I. Water Rinse.**

Casing Diameter: (Circle One) (2") 4" 6" Other____

Casing Volume (gallons/ft) for (2"=0.163; 4"=0.653; 6"=1.47
Multiply Water Column Height by appropriate number above to get proper purge volume.

Depth of Well (feet):	45.4'
Depth to Water (feet):	37.2'
Water Column (feet):	8.2'
Casing Volume (gallons):	1.4gal
Calculated Purge Volume (gallons):	4.0 gal
Actual Purge Volume (gallons):	4.5gal

Sheen / LNAPL / DNAPL present: _____

Other remarks: _____

Time 2400 hrs	Cumulative Volume (gal)	pH	Conductivity ms/cm 25°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	EH MV	Odor/Color/ Remarks
0915	0							Purge Start
0919	1.5	6.18	76.8	0	.12	12.1	61	
0922	3.0	6.18	77.1	0	0	12.1	56	
0926	4.5	6.18	77.2	0	0	12.1	54	

Purging Equipment: **Portable / Dedicated Bladder Pump or Disposable Bailer** Sampling Equipment: **Horiba U22**

Remarks: _____

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Groundwater Sampling Field Form

Well No. BXS-1	Location Arlington A. Raagan	Date 1-9-08
Sample No. BXS-1	Field Personnel/Company Jim Clawson / Mary Larson J.H. Baxter	
Sample Time (2400 hours) 0830	Instrument Calibration Date 1/9/08	

Well Condition Poor (Satisfactory) New (If poor, explain) _____

Field Conditions/Weather Overcast

Equipment Decontamination **Liquinox, Hexane, Methanol, and D.I. Water Rinse.**

Casing Diameter: (Circle One) (2") 4" 6" Other____

Casing Volume (gallons/ft) for (2"=0.163; 4"=0.653; 6"=1.47
Multiply Water Column Height by appropriate number above to get proper purge volume.

Depth of Well (feet):	47.9'	Sheen / LNAPL / DNAPL present:	
Depth to Water (feet):	37.9'	Other remarks:	
Water Column (feet):	10'		
Casing Volume (gallons):	1.63gal		
Calculated Purge Volume (gallons):	4.9gal		
Actual Purge Volume (gallons):	5gal		

Time 2400 hrs	Cumulative Volume (gal)	pH	Conductivity ms/cm 25°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	EH MV	Odor/Color/ Remarks
0750	0							Purge Start
0803	1.0	5.90	38.9	0	0	11.5	275	
0808	2.0	5.91	38.4	0	0	11.5	264	
0814	3.6	5.91	37.5	0	0	11.5	257	
0825	5gal	5.91	36.9	0	0	11.4	251	

Purging Equipment: **Portable / Dedicated Bladder Pump or Disposable Bailer** Sampling Equipment: **Horiba U22**

Remarks: Duplicate BXS-5 - 0835

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Groundwater Sampling Field Form

Well No. BXS4	Location Arlington	Date 4-30-08
Sample No. BXS4	Field Personnel/Company ~~Jim Clawson / Mary Larson~~ J.H. Baxter	
Sample Time (2400 hours) 0920	Instrument Calibration Date 4/30/08	

Well Condition Poor Satisfactory New (If poor, explain) _____

Field Conditions/Weather Rain

Equipment Decontamination **Liquinox, Hexane, Methanol, and D.I. Water Rinse.**

Casing Diameter: (Circle One) (2") 4" 6" Other_____

Casing Volume (gallons/ft) for (2"=0.163); 4"=0.653; 6"=1.47
Multiply Water Column Height by appropriate number above to get proper purge volume.

Depth of Well (feet): 51.74'	Sheen / LNAPL / DNAPL present: _____
Depth to Water (feet): 11.65'	Other remarks: _____
Water Column (feet): 40.09'	
Casing Volume (gallons): 6.53 gal	
Calculated Purge Volume (gallons): 19.6 gal	
Actual Purge Volume (gallons): 19.8 gal	

Time 2400 hrs	Cumulative Volume (gal)	pH	Conductivity ~~mc/cm~~ 25°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	EH MV	Odor/Color/ Remarks
0920	0							Purge Start
0925	0.25	6.14	22.7	46.2	1.17	8.7	-67	
0841	6.5	7.57	20.3	6.4	0.0	8.9	-142	
0855	13.00	7.65	20.2	11.6	0.0	9.1	-151	
0915	19.7	7.66	20.1	14.0	0.0	9.1	-157	

Purging Equipment: **Portable / Dedicated Bladder Pump or Disposable Bailer** Sampling Equipment: **Horiba U22**

Remarks: _____

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Groundwater Sampling Field Form

Well No. BXS-1	Location Arlington	A. Ragan / K. Hanson	Date 4/30/08
Sample No. BXS-1	Field Personnel/Company	~~Jim Clawson / Mary Larson~~ J.H. Baxter	
Sample Time (2400 hours) 1030	Instrument Calibration Date	4/30/08	

Well Condition Poor (Satisfactory) New (If poor, explain)

Field Conditions/Weather Rain

Equipment Decontamination **Liquinox, Hexane, Methanol, and D.I. Water Rinse.**

Casing Diameter: (Circle One) (2") 4" 6" Other_____

Casing Volume (gallons/ft) for (2"=0.163); 4"=0.653; 6"=1.47
Multiply Water Column Height by appropriate number above to get proper purge volume.

Depth of Well (feet): 47.9'
Depth to Water (feet): 35.77'
Water Column (feet): 12.13'
Casing Volume (gallons): 1.98 gal
Calculated Purge Volume (gallons): 6.0 gal
Actual Purge Volume (gallons): 6.5

Sheen / LNAPL / DNAPL present:
Other remarks:

Time 2400 hrs	Cumulative Volume (gal)	pH	Conductivity ~~mS/cm~~ mS/m 25°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	EH MV	Odor/Color/ Remarks
1013	0							Purge Start
1015	0.25	7.48	39.2	31.8	8.86	10.9	51	
1019	2.0	6.01	58.7	0.0	0.35	11.8	105	
1023	4.0	5.98	52.7	0.0	0.2	11.8	121	
1028	6.2	5.98	48.5	2.8	0.15	11.8	138	

Purging Equipment: **Portable / Dedicated Bladder Pump or Disposable Bailer** Sampling Equipment: **Horiba U22**

Remarks: LF, PCB, PAH - BXS-6 duplicate

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Arlington, WA 98223

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Groundwater Sampling Field Form

Well No.	BXS-2	Location Arlington	A. Ragan / K. Hansen Date 4/30/08
Sample No.	BXS-2	Field Personnel/Company	~~Jim Clawsen / Mary Larsen~~ J.H. Baxter
Sample Time (2400 hours)	1107	Instrument Calibration Date	4/30/08

Well Condition (Poor / Satisfactory New (If poor, explain)

Field Conditions/Weather Rain

Equipment Decontamination **Liquinox, Hexane, Methanol, and D.I. Water Rinse.**

Casing Diameter: (Circle One) (2") 4" 6" Other____

Casing Volume (gallons/ft) for: (2"=0.163); 4"=0.653; 6"=1.47
Multiply Water Column Height by appropriate number above to get proper purge volume.

Depth of Well (feet):	45.40'
Depth to Water (feet):	34.63'
Water Column (feet):	10.77
Casing Volume (gallons):	1.8 gal
Calculated Purge Volume (gallons):	5.3 gal
Actual Purge Volume (gallons):	6.8 gal

Sheen / LNAPL / DNAPL present:

Other remarks:

Time 2400 hrs	Cumulative Volume (gal)	pH	Conductivity ~~mS/cm~~ µS/cm 25°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	EH MV	Odor/Color/ Remarks
1052	0							Purge Start
1053	0.25	6.11	72.4	7.7	0.83	12.02	25	
1055	2.0	6.07	79.1	9.8	0.0	12.2	31	
1100	4.0	6.09	79.3	7.5	0.26	12.2	32	
1105	6.5	6.10	79.4	9.3	0.08	12.2	32	

Purging Equipment: **Portable / Dedicated Bladder Pump or Disposable Bailer** Sampling Equipment: **Horiba U22**

Remarks: PCP / PAH LF

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Groundwater Sampling Field Form

Well No. BXS-3	Location Arlington	J. Raggio / K. Hansen	Date 4/30/08
Sample No. BXS-3	Field Personnel/Company	~~Jim Clawson / Mary Larson~~ J.H. Baxter	
Sample Time (2400 hours) 1140	Instrument Calibration Date	4/30/08	

Well Condition Poor (Satisfactory) New (If poor, explain) _____

Field Conditions/Weather Rain

Equipment Decontamination **Liquinox, Hexane, Methanol, and D.I. Water Rinse.**

Casing Diameter: (Circle One) (2") 4" 6" Other_____

Casing Volume (gallons/ft) for: (2"=0.163); 4"=0.653; 6"=1.47
Multiply Water Column Height by appropriate number above to get proper purge volume.

Depth of Well (feet):	44.56'	Sheen / LNAPL / DNAPL present:	
Depth to Water (feet):	34.63'	Other remarks:	
Water Column (feet):	9.93'		
Casing Volume (gallons):	1.7gal		
Calculated Purge Volume (gallons):	4.9gal		
Actual Purge Volume (gallons):	16.0gal		

Time 2400 hrs	Cumulative Volume (gal)	pH	Conductivity ~~mS/cm~~ 25°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	EH MV	Odor/Color/ Remarks
1120	0							Purge Start
1121	0.25	6.29	86.8	16.8	2.6	12.7	-108	clear
1124	2.0	6.18	85.0	0.6	0.24	12.9	-115	clear
1127	4.5	6.21	86.0	13.9	0.0	12.9	-123	clear
1130	7.5	6.22	85.3	19.0	0.0	12.9	-125	clear
1133	10.0	6.23	85.0	14.9	0.0	12.9	-125	clear
1135	13.0	6.23	84.8	14.6	0.0	12.9	-126	clear
113	16.0	6.23	84.6	14.8	0.0	12.9	-126	clear

Purging Equipment: **Portable / Dedicated Bladder Pump or Disposable Bailer** Sampling Equipment: **Horiba U22**

Remarks: _____

Revised 12/05/05

Geomatrix

WATER LEVEL MONITORING
J.H. Baxer Co. Wood Treating Facility
Arlington, Washington

Date	HCMW-6		MW-26		MW-27		MW-25		MW-32		MW-24		MW-10	
	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC
1/28/08	11:05	39.52	10:54	37.27	10:41	37.3	10:28	35.92	10:32	37.65	10:25	37.11	12:15	30.09
4/28/08	10:12	38.74	10:15	36.44	10:21	36.57	10:25	31.53	10:26	36.78	10:28	36.32	10:34	28.27

Date	HCMW-5		MW-4		MW-14		BXS-4		MW-11		MW-1	
	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC
1/28/08	15:15	23.33	11:37	9.84	11:45	21.72	11:51	11.32	11:59	20.32	12:05	23.11
4/28/08	10:37	23.60	10:46	10.56	10:57	20.98	11:01	11.65	11:06	20.81	11:10	23.22

Geomatrix

WATER LEVEL MONITORING

J.H. Baxer Co. Wood Treating Facility

Arlington, Washington

Date	MW-18		HCMW-7		MW-16		MW-37		MW-17		MW-15		MW-31	
	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC
1/28/08	14:14	40.4	14:19	42.06	13:57	39	14:05	38.8	13:52	40.38	13:47	37.5	13:42	35.72
4/28/08	09:01	39.26	09:04	41.02	09:07	37.90	09:11	36.71	09:14	39.29	09:18	36.45	09:23	34.72

Date	MW-36		MW-30		MW-34		MW-29		MW-28		BXS-1		BXS-2	
	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC
1/28/08	13:41	35.55	13:28	36.93	14:51	36.31	14:46	36.28	9:47	35.76	8:41	Below top of pump	8:22	36.26
04/28/08	09:26	34.73	09:27	36.06	09:31	35.73	09:32	35.71	09:35	34.19	09:38	35.77	09:42	34.63

Date	BXS-3		MW-22		MW-23		MW-3		MW-33		MW-35		MW-2	
	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC
1/28/08	8:30	32.25	10:10	34.03	10:02	36.68	10:22	39.26	10:17	36.59	11:12	37.53	14:23	42.28
04/28/08	09:44	29.23	10:00	31.13	09:58	33.66	10:03	38.50	10:04	35.83	10:06	36.81	10:09	41.24

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CHAIN OF CUSTODY

SR#: ____________

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PAGE ______ OF ______ COC # ______

PROJECT NAME: J.H. Baxter Arlington
PROJECT NUMBER: Land Fills
PROJECT MANAGER: A. Ragan
COMPANY/ADDRESS: J.H. Baxter
85 Baxter Rd.
CITY/STATE/ZIP: Eugene, OR 97402
E-MAIL ADDRESS: aragan@jhbaxter.com
PHONE #: 541 689 3801 FAX#: 541 689 8303
SAMPLER'S SIGNATURE: [signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS		Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐	Fuel Fingerprint (FIO) ☐ NW-HCID Screen ☐	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHS 8310☐ SIM☐	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) NO2+NO3	TOX 9020☐ AOX 1650☐ 506☐	COD TOC NH3 Nitrate + Nitrite	TDS Sulfate Chloride Cond pH Tannins + Lignins			REMARKS
BXS-4	4/30	0920		H2O	3											X					X	X			
BXS-1	4/30	1030		H2O	5									X	X	X					X	X			
BXS-6	4/30	1030		H2O	~~5~~	3										X					X	X			
BXS-2	4/30	1107		H2O	5									X	X	X					X	X			
BXS-3	4/30	1140		H2O	3											X					X	X			
BXN-2	4/30	1350		H2O	3											X					X	X			
BXN-1	4/30	1417		H2O	3											X					X	X			
BXN-3	4/30	1515		H2O	3											X					X	X			
BXN-4	4/30	1535		H2O	3											X					X	X			
BXN-5	4/30	1535		H2O	3											X					X	X			

REPORT REQUIREMENTS

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

INVOICE INFORMATION

P.O. # ________
Bill To: J.H. Baxter

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 NORTHWEST OTHER: ______ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:
For Questions please contact Kathy Gunderson@
(360) 942-3409

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature] Date/Time: 5/1/08 1235	Signature: [signature] Date/Time: 5/1/08 1237	Signature Date/Time	Signature Date/Time
Printed Name: Arthur Ragan Firm: Baxter	Printed Name: [illegible] Firm: [illegible]	Printed Name Firm	Printed Name Firm

RCOC #1 06/03

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CHAIN OF CUSTODY

SR#: ______

PAGE ______ OF ______ COC # ______

PROJECT NAME: J.H. Baxter Arlington
PROJECT NUMBER: PMP & SI Wells
PROJECT MANAGER: A. Ragan
COMPANY/ADDRESS: J.H. Baxter
85 Baxter Rd.
CITY/STATE/ZIP: Eugene, OR 97402
E-MAIL ADDRESS: aragan@jhbaxter.com
PHONE #: 541 689-3801 FAX#: 541 689-8303
SAMPLER'S SIGNATURE: [signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS		Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐	Hydrocarbons (*see below) Gas☐ Diesel☐ 8021☐ Oil☐ BTEX☐	☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☒	PAHS 8310☐ SIM☒	Metals, Total or Dissolved (See list below)	Cyanide☐	pH, Cond. Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle)	NH3-N, COD, Total-P, TKN, TOC, DOC (circle) NO2+NO3	TOX 9020☐ AOX 1650☐ 506☐	COD, TOC, Nitrate/Nitrite [illegible]		TDS, Sulfate, Chloride [illegible]		REMARKS
MW-3	4/29	1345		H2O	2									X	X										
MW-4S	4/29	1410		"	2									X	X										
MW-2	4/29	1540		"	2									X	X										
MW-3S	4/29	1647		"	1									X											
MW-26	4/29	1658		"	1									X											
Equip. Check	4/30	1620		"	5									X	X						X		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 NORTHWEST OTHER: ______ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature] Date/Time: 5/1/08 1235	Signature: [signature] Date/Time: 5/1/08 1237	Signature: Date/Time:	Signature: Date/Time:
Printed Name: Anita Ragan Firm: Baxter	Printed Name: [illegible] Firm: [illegible]	Printed Name: Firm:	Printed Name: Firm:

JH Baxter & Co.

6520 188th St. NE / PO Box 305
Arlington, WA 98223
PHONE (360) 435-2146 FAX (360) 435-3035

Groundwater Sampling Field Form

Well No. BXS – 4	Location Arlington A. Bacon	Date 7/30/08
Sample No. BXS-4	Field Personnel/Company ~~Jim Clarkson / Mary Larsen~~ J.H. Baxter	
Sample Time (2400 hours) 0836	Instrument Calibration Date 7/ see sheet	

Well Condition Poor (Satisfactory) New (If poor, explain)

Field Conditions/Weather OVERCAST

Equipment Decontamination **Liquinox, Hexane, Methanol, and D.I. Water Rinse.**

Casing Diameter: (Circle One) (2") 4" 6" Other____

Casing Volume (gallons/ft) for: 2"=0.163; 4"=0.653; 6"=1.47
Multiply Water Column Height by appropriate number above to get proper purge volume.

Depth of Well (feet):	47.40'	Sheen / LNAPL / DNAPL present:	
Depth to Water (feet):	15.99'	Other remarks:	
Water Column (feet):	31.41'		
Casing Volume (gallons):	5.12 gal		
Calculated Purge Volume (gallons):	15.4 gal		
Actual Purge Volume (gallons):	17.0 gal		

Time 2400 hrs	Cumulative Volume (gal)	pH	Conductivity ms/cm 25°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	EH MV	Odor/Color/ Remarks
	0							Purge Start
0758	1.5	7.35	0.177	12.9	3.04	9.33	-97	
0807	5.1	7.23	0.178	7.6	0.54	9.34	-122	
0818	10.2	7.9	0.177	6.3	0.36	9.38	-138	
0833	15.4	7.98	0.180	5.7	0.33	9.42	-150	

Purging Equipment: **Portable / Dedicated Bladder Pump or Disposable Bailer** Sampling Equipment: ~~Horiba U22~~

Remarks: Quanta Hydro lab

Revised 12/05/05

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Groundwater Sampling Field Form

Well No. BXS-3	Location Arlington K. Hansen	Date 7-30-08
Sample No. BXS-3	Field Personnel/Company ~~Jim Clawson / Mary Larsen~~ J.H. Baxter	
Sample Time (2400 hours) 1025	Instrument Calibration Date	

Well Condition Poor (Satisfactory) New (If poor, explain)

Field Conditions/Weather OVERCAST

Equipment Decontamination **Liquinox, Hexane, Methanol, and D.I. Water Rinse.**

Casing Diameter: (Circle One) (2") 4" 6" Other____

Casing Volume (gallons/ft) for: 2"=0.163; 4"=0.653; 6"=1.47
Multiply Water Column Height by appropriate number above to get proper purge volume.

Depth of Well (feet): 44.56
Depth to Water (feet): 30.65
Water Column (feet): 13.91
Casing Volume (gallons): 2.27
Calculated Purge Volume (gallons): 6.8 gal
Actual Purge Volume (gallons): 10 gal

Sheen / LNAPL / DNAPL present:
Other remarks:

Time 2400 hrs	Cumulative Volume (gal)	pH	Conductivity ms/cm 25°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	EH MV	Odor/Color/ Remarks
951	0							Purge Start
953	5	6.54	.730	22.8	6.45	12.89	-61	
957	2.5	6.40	.721	10.7	.50	12.92	-79	
1002	5	6.41	.725	15.1	.26	12.93	-87	
1007	7.5	6.42	.726	16.5	.37	12.92	-90	

Purging Equipment: **Portable / Dedicated Bladder Pump or Disposable Bailer** Sampling Equipment: ~~Horiba U22~~

Remarks: QUANTA HYDROLAB

Revised 12/05/05

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Groundwater Sampling Field Form

Well No. BXS-2	Location Arlington	Date 7-30-08
Sample No. BXS-2	Field Personnel/Company ~~Jim Clawson / Mary Larsen~~ J.H. Baxter	
Sample Time (2400 hours) 0927	Instrument Calibration Date See sheet	

Well Condition Poor (Satisfactory) New (If poor, explain)

Field Conditions/Weather OVERCAST

Equipment Decontamination Liquinox, Hexane, Methanol, and D.I. Water Rinse.

Casing Diameter: (Circle One) (2") 4" 6" Other____

Casing Volume (gallons/ft) for: 2"=0.163; 4"=0.653; 6"=1.47
Multiply Water Column Height by appropriate number above to get proper purge volume.

Depth of Well (feet): 45.40
Depth to Water (feet): 35.46
Water Column (feet): 9.94
Casing Volume (gallons): 1.62
Calculated Purge Volume (gallons): 4.86
Actual Purge Volume (gallons): 6.0gal

Sheen / LNAPL / DNAPL present:
Other remarks:

Time 2400 hrs	Cumulative Volume (gal)	pH	Conductivity ms/cm 25°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	EH MV	Odor/Color/ Remarks
910	0							Purge Start
912	0.25	6.96	0.699	7.7	3.1	12.61	-22	
915	1.62	6.44	.739	16.7	1.75	12.37	19	
920	4	6.40	.741	15.7	1.09	12.36	24	
0925	5.5	6.37	.732	20.1	1.79	12.35	31	

Purging Equipment: **Portable / Dedicated Bladder Pump or Disposable Bailer** Sampling Equipment: ~~Horiba U22~~

Remarks: FIELD DUPLICATE SAMPLED HERE (BXS-6) Quanta Hydrolab

Revised 12/05/05

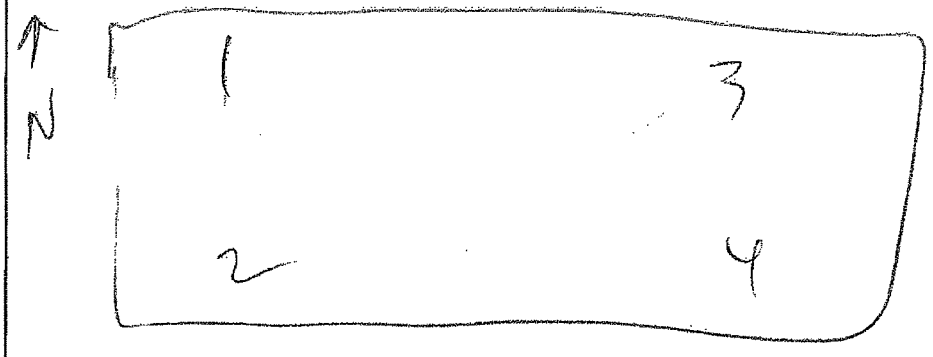
Subject _____ Project No. _____

By _____ Checked By _____ Task No. _____

File No. _____

Date _____ Date _____ Sheet 1 of 1

BSX-4	0.0	1520	
BSX-3	0.0	1535	30.65 ft
BSX-2	0.0	1548	35.46 ft
BSX-1	0.0	1650	NO READING WATER LEVEL BELOW TOP OF PUMP
BNX-1	0.0	1615	49.43
BNX-2	0.0	1604	45.72
BNX-3	0.0	1625	46.92
BNX-4	0.0	1637	44.38



Geomatrix

Geomatrix

WATER LEVEL MONITORING
J.H. Baxer Co. Wood Treating Facility
Arlington, Washington

Date	MW-18		HCMW-7		MW-16		MW-37		MW-17		MW-15		MW-31	
	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC
1/28/08	14:14	40.4	14:19	42.06	13:57	39	14:05	38.8	13:52	40.38	13:47	37.5	13:42	35.72
7/28/08	9:36	39.87	9:41	41.70	9:46	38.66	9:49	37.45	9:55	40.04	9:57	37.29	10:01	35.61

Date	MW-36		MW-30		MW-34		MW-29		MW-28		BXS-1		BXS-2	
	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC
1/28/08	13:41	35.55	13:28	36.93	14:51	36.31	14:46	36.28	9:47	35.76	8:41	Below top of pump	8:22	36.26
7/28/08	10:07	35.64	10:03	37.00	10:12	36.81	10:13	36.82	10:15	35.32	16:50	" "	15:48	35.46

Date	BXS-3		MW-22		MW-23		MW-3		MW-33		MW-35		MW-2	
	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC
1/28/08	8:30	32.25	10:10	34.03	10:02	36.68	10:22	39.26	10:17	36.59	11:12	37.53	14:23	42.28
7/28/08	15:35	30.65	10:19	37.60	10:21	34.75	10:25	39.74	10:27	37.01	10:29	37.92	10:37	42.05

Geomatrix

WATER LEVEL MONITORING

J.H. Baxer Co. Wood Treating Facility

Arlington, Washington

Date	HCMW-6		MW-26		MW-27		MW-25		MW-32		MW-24		MW-10	
	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC
1/28/08	11:05	39.52	10:54	37.27	10:41	37.3	10:28	35.92	10:32	37.65	10:25	37.11	12:15	30.09
7/28/08	10:41	39.98	10:45	37.82	10:47	37.84	10:49	37.49	10:50	38.06	10:53	37.56	10:57	31.79

Date	HCMW-5		MW-4		MW-14		BXS-4		MW-11		MW-1	
	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC
1/28/08	15:15	23.33	11:37	9.84	11:45	21.72	11:51	11.32	11:59	20.32	12:05	23.11
7/28/08	11:00	28.22	11:09	13.82	11:12	25.41	11:17	15.99	11:23	24.31	11:26	27.04

JH Baxter & Co.

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Arlington, WA 98223
PHONE (360) 435-2146 FAX (360) 435-3035

Groundwater Sampling Field Form

Well No. BXS-1	Location Arlington A. Ragan	Date 7/29/08
Sample No. BXS-1	Field Personnel/Company ~~Jim Stanford / Mary Larson~~ J.H. Baxter	
Sample Time (2400 hours) 1810	Instrument Calibration Date 7/29/08	

Well Condition Poor (Satisfactory) New (If poor, explain)

Field Conditions/Weather Overcast

Equipment Decontamination **Liquinox, Hexane, Methanol, and D.I. Water Rinse.**

Casing Diameter: (Circle One) (2") 4" 6" Other____

Casing Volume (gallons/ft) for: 2"=0.163; 4"=0.653; 6"=1.47
Multiply Water Column Height by appropriate number above to get proper purge volume.

Depth of Well (feet):	47.90'
Depth to Water (feet):	37.03'
Water Column (feet):	10.87'
Casing Volume (gallons):	1.78 gal
Calculated Purge Volume (gallons):	5.33 gal
Actual Purge Volume (gallons):	

Sheen / LNAPL / DNAPL present:

Other remarks:

Time 2400 hrs	Cumulative Volume (gal)	pH	Conductivity ms/cm 25°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	EH MV	Odor/Color/ Remarks
	0							Purge Start
1735	.3	6.22	0.488	6.5	2.02	12.09	172	
1745	2.0	6.21	0.516	6.3	1.15	12.07	176	
1753	4.0	6.17	0.511	5.7	0.8	12.05	182	
1801	5.3	6.14	0.516	6.1	5.8	12.03	185	

Purging Equipment: **Portable / Dedicated Bladder Pump or Disposable Bailer** Sampling Equipment: **Horiba U22**

Remarks:

Revised 12/05/05

Columbia Analytical Services™
1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

CHAIN OF CUSTODY

SR#: ______
PAGE ______ OF ______ COC # ______

PROJECT NAME: J.H. Baxter Arlington
PROJECT NUMBER: Landfills
PROJECT MANAGER: Anita Ragan
COMPANY/ADDRESS: 85 N Baxter Rd
CITY/STATE/ZIP: Eugene, OR 97402
E-MAIL ADDRESS: aragan@jhbaxter.com
PHONE #: 541 689 3801 FAX #: 541 689 8303
SAMPLER'S SIGNATURE: [signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐	Fuel Fingerprint (FIQ) ☐ NW-HCID Screen ☐	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHS 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐ Hex-Chrom☐	pH, Cond, Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC DOC (circle) NO_2+NO_3	TOX 9020☐	AOX 1650☐ 506☐ / COD TOC UV/Nitrate Nitrite		TDS sulfate chloride / Alkalinity		REMARKS
BXS-4	10/22	0900		H_2O	3										X					X		X		
BXS-1	10/22	1025		|	3										X					X		X		
BXS-2	10/22	1130		|	3										X					X		X		
BXS-5	10/22	1130		|	3										X					X		X		
BXS-3	10/22	1215		|	3										X					X		X		
BXN-2	10/22	1410		|	3										X					X		X		
BXN-4	10/22	1600		|	3										X					X		X		
BXN-5	10/22	1600		|	3										X					X		X		
BXN-3	10/22	1530		|	3										X					X		X		
BXN-1	10/22	1455		|	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

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 NORTHWEST OTHER: ______ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:
- Contact Kathy Gunderson @ (360) 942-3409 for questions
- metals are field filtered

RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
[signature]	10/23/08 1220	[signature]	10/23/08 1000				
Signature	Date/Time	Signature	Date/Time	Signature	Date/Time	Signature	Date/Time
Anita Ragan	Baxter	Brad Tobin	CAS				
Printed Name	Firm	Printed Name	Firm	Printed Name	Firm	Printed Name	Firm

Columbia Analytical Services™

CHAIN OF CUSTODY

SR#: ______

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PAGE ______ OF ______ COC # ______

PROJECT NAME: J.H. Baxter Arlington
PROJECT NUMBER: SL-FMP
PROJECT MANAGER: Anita Ragan
COMPANY/ADDRESS: 85 N. Baxter Rd.
CITY/STATE/ZIP: Eugene, OR 97402
E-MAIL ADDRESS: aragan@jhbaxter.com
PHONE #: 541 689 8801 | FAX #: 541 689 8303
SAMPLER'S SIGNATURE: [signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS		Semivolatile Organics by GC/MS 625 ☐ 8270 ☐ 8270LL ☐	Volatile Organics 624 ☐ 8260 ☐	Hydrocarbons (*see below) Gas ☐ 8021 ☐ Diesel ☐ Oil ☐ BTEX ☐	☐ Fuel Fingerprint (FIO) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM ☐ 1664 SGT ☐	PCB's Aroclors ☐ Congeners ☐	Pesticides/Herbicides 608 ☐ 8081A ☐ 8141A ☐ 8151A ☐	Chlorophenolics - 8151M Tri ☐ Tetra ☐ PCP X	PAHS 8310 ☐ SIM X	Metals, Total or Dissolved (See list below)	Cyanide ☐	pH, Cond, Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle) Hex-Chrom ☐	NH3-N, COD, Total-P, TKN, TOC, DOC (circle) NO2+NO3	TOX 9020 ☐ AOX 1650 ☐ 506 ☐					REMARKS
MW29	10/20	1245			1									X											
MC-MW7	10/20	1618			2									X	X										
MW184	10/20	1537			2									X	X										
Equip check	10/21	1705			2									X	X										
BXS-1	10/22	1025			2									X	X										
BXS-2	10/22	1130			2									X	X										
BXS-5	10/22	1130			2									X	X										
~~BXS-4~~	10/21	1:35																							
MW28	10/21	1755																							
EW1-17	10/22	1055			1									X											

REPORT REQUIREMENTS

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

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

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

___ IV. CLP Deliverable Report

___ V. EDD

INVOICE INFORMATION

P.O. # ______

Bill To: J.H. Baxter

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 NORTHWEST OTHER: ______ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:
For questions, please call Kathy Gunderson @ (360) 942-3409

RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
[signature]	10/23/08 1220	[signature]	10/23/08 12:20				
Signature	Date/Time	Signature	Date/Time	Signature	Date/Time	Signature	Date/Time
Anita Ragan	Baxter	Brad Tobin	CAS				
Printed Name	Firm	Printed Name	Firm	Printed Name	Firm	Printed Name	Firm

JH Baxter & Co.

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Arlington, WA 98223
PHONE (360) 435-2146 FAX (360) 435-3035

Groundwater Sampling Field Form

Well No. BXS-4	Location Arlington A. Bagan	Date 10/22/08
Sample No. BXS-4	Field Personnel/Company ~~Jim Clawson / Mary Larson~~ J.H. Baxter	
Sample Time (2400 hours) 0900	Instrument Calibration Date	

Well Condition Poor (Satisfactory) New (If poor, explain)

Field Conditions/Weather Overcast

Equipment Decontamination Liquinox, Hexane, Methanol, and D.I. Water Rinse.

Casing Diameter: (Circle One) (2") 4" 6" Other____

Casing Volume (gallons/ft) for (2"=0.163; 4"=0.653; 6"=1.47
Multiply Water Column Height by appropriate number above to get proper purge volume.

Depth of Well (feet): 47.4'
Depth to Water (feet): 15.36'
Water Column (feet): 32.04'
Casing Volume (gallons): 5.3 gal
Calculated Purge Volume (gallons): 15.9 gal
Actual Purge Volume (gallons): 16.5 gal

Sheen / LNAPL / DNAPL present:
Other remarks:

Time 2400 hrs	Cumulative Volume (gal)	pH	Conductivity ms/cm 25°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	EH MV	Odor/Color/ Remarks
0757	0							
0758	0.5	8.24	0.176	0.6	1.82	[illegible]	-119	Purge Start
0816	5.3	8.31	0.177	0.0	0.22	9.65	-158	
0836	10.6	8.32	0.177	0.0	0.09	9.60	-168	
0856	15.9	8.32	0.177	0.0	0.07	9.55	-173	

Purging Equipment: Portable / (Dedicated Bladder Pump) or Disposable Bailer Sampling Equipment: ~~Horiba U22~~

Remarks: Flow through meter - Quanta Hydrolab

Revised 12/05/05

JH Baxter & Co.

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Groundwater Sampling Field Form

Well No. BXS-3	Location Arlington A. Ragan Date 10/22/08
Sample No. BXS-3	Field Personnel/Company ~~Jim Clawson / Mary Larson~~ J.H. Baxter
Sample Time (2400 hours) 1215	Instrument Calibration Date

Well Condition (Poor) Satisfactory New (If poor, explain)

Field Conditions/Weather Sunny

Equipment Decontamination **Liquinox, Hexane, Methanol, and D.I. Water Rinse.**

Casing Diameter: (Circle One) (2") 4" 6" Other_____

Casing Volume (gallons/ft) for (2"=0.163) 4"=0.653; 6"=1.47
Multiply Water Column Height by appropriate number above to get proper purge volume.

Depth of Well (feet): 44.56'
Depth to Water (feet): 33.51'
Water Column (feet): 11.05'
Casing Volume (gallons): 1.8 gal
Calculated Purge Volume (gallons): 5.8 gal
Actual Purge Volume (gallons): 7.0 gal

Sheen / LNAPL / DNAPL present:
Other remarks:

Time 2400 hrs	Cumulative Volume (gal)	pH	Conductivity ms/cm 25°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	EH MV	Odor/Color/ Remarks
	0							Purge Start
1152	0.25	7.44	0.693	1.6	0.56	12.84	-60	
1158	1.8	6.57	0.696	0.0	0.17	12.95	-64	
1203	3.6	6.54	0.711	0.0	0.12	12.83	-86	
1212	6.5	6.55	0.722	0.0	0.12	12.74	-93	

Purging Equipment: **Portable / Dedicated Bladder Pump or Disposable Bailer** Sampling Equipment: ~~Horiba U22~~ QUANTA HYDROLAB

Remarks:

JH Baxter & Co.

6520 188th St. NE / PO Box 305
Arlington, WA 98223
PHONE (360) 435-2146 FAX (360) 435-3035

Groundwater Sampling Field Form

Well No. BXS-2	Location Arlington	A. Baggan	Date 10/22/08
Sample No. BXS-2	Field Personnel/Company	~~Jim Clawson / Mary Larson~~ J.H. Baxter	
Sample Time (2400 hours) 1130	Instrument Calibration Date	~~10/22/08~~	

Well Condition (Poor) Satisfactory New (If poor, explain)

Field Conditions/Weather Sunny

Equipment Decontamination Liquinox, Hexane, Methanol, and D.I. Water Rinse.

Casing Diameter: (Circle One) (2") 4" 6" Other____

Casing Volume (gallons/ft) for (2"=0.163) 4"=0.653; 6"=1.47
Multiply Water Column Height by appropriate number above to get proper purge volume.

Depth of Well (feet):	45.4'
Depth to Water (feet):	37.44'
Water Column (feet):	7.96'
Casing Volume (gallons):	1.3gal
Calculated Purge Volume (gallons):	3.9gal
Actual Purge Volume (gallons):	4.1 gal

Sheen / LNAPL / DNAPL present:
Other remarks:

Time 2400 hrs	Cumulative Volume (gal)	pH	Conductivity ms/cm 25°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	EH MV	Odor/Color/ Remarks
1118	0							Purge Start
1119	0.20	6.92	0.697	0.0	1.09	13.04	71	
1122	1.3	6.54	0.726	0.0	0.20	12.40	15	
1125	2.6	6.50	0.730	0.0	0.17	12.40	17	
1128	3.9	6.48	0.733	0.0	0.14	12.39	20	

Purging Equipment: Portable / Dedicated Bladder Pump or Disposable Bailer Sampling Equipment: ~~Horiba U22~~

Remarks: Fielddup-BXS-5, Quantra Hydrolab

Revised 12/05/05

JH Baxter & Co.

6520 188th St. NE / PO Box 305
Arlington, WA 98223
PHONE (360) 435-2146 FAX (360) 435-3035

Groundwater Sampling Field Form

Well No. BXS 1	Location Arlington	Date 10/22/08
Sample No. BXS 1	Field Personnel/Company ~~Jim Clewson / Mary Larson~~ J.H. Baxter	
Sample Time (2400 hours) 10:25	Instrument Calibration Date	

Well Condition Poor (Satisfactory) New (If poor, explain)

Field Conditions/Weather

Equipment Decontamination Liquinox, Hexane, Methanol, and D.I. Water Rinse.

Casing Diameter: (Circle One) (2") 4" 6" Other____

Casing Volume (gallons/ft) for: (2"=0.163; 4"=0.653; 6"=1.47
Multiply Water Column Height by appropriate number above to get proper purge volume.

Depth of Well (feet): 47.9'
Depth to Water (feet): 36.9' estimate
Water Column (feet): 11'
Casing Volume (gallons): 1.8gal
Calculated Purge Volume (gallons): 5.4gal
Actual Purge Volume (gallons): 6.0gal

Sheen / LNAPL / DNAPL present:
Other remarks:

Time 2400 hrs	Cumulative Volume (gal)	pH	Conductivity ms/cm 25°C	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (°C)	EH MV	Odor/Color/ Remarks
0930	0							
0935	0.25	6.54	0.420	0.0	4.45	11.41	54	Purge Start
0957	1.8	6.35	0.495	0.0	1.95	11.59	130	
1012	3.6	6.50	0.494	0.0	1.31	12.45	139	
1023	5.4	6.28	0.496	0.0	1.10	12.07	157	

Purging Equipment: Portable / (Dedicated Bladder Pump) or Disposable Bailer Sampling Equipment: ~~Horiba U22~~

Remarks: water level is based on past data due to low water level & pump level in the well. Quanta Hydrolab

Revised 12/05/05

Geomatrix

WATER LEVEL MONITORING

J.H. Baxer Co. Wood Treating Facility

Arlington, Washington

Date	HCMW-6		MW-26		MW-27		MW-25		MW-32		MW-24		MW-10	
	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC
~~1/28/08~~	11:05	39.52	10:54	37.27	10:41	37.3	10:28	35.92	10:32	37.65	10:25	37.11	12:15	30.09
10/20/08	11:45	41.95	11:50	39.59	11:52	39.52	12:00	34.33	12:02	39.74	1745	39.22	12:10	34.75

Date	HCMW-5		MW-4		MW-14		BXS-4		MW-11		MW-1	
	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC
~~1/28/08~~ 10/20/08	15:15	23.33	11:37	9.84	11:45	21.72	11:51	11.32 ~~15.36~~	11:59	20.32	12:05	23.11
	12:19	30.27	12:27	12.75	12:32	28.56	12:39	~~15.36~~	12:45	24.02	12:50	28.26

Geomatrix

WATER LEVEL MONITORING

J.H. Baxer Co. Wood Treating Facility

Arlington, Washington

Date	MW-18		HCMW-7		MW-16		MW-37		MW-17		MW-15		MW-31	
	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC
1/28/08	14:14	40.4	14:19	42.06	13:57	39	14:05	38.8	13:52	40.38	13:47	37.5	13:42	35.72
10/20/08	940	41.59	950	43.42	1000	40.45	1005	39.23	1010	41.81	1012	39.05	1018	37.36

Date	MW-36		MW-30		MW-34		MW-29		MW-28		BXS-1		BXS-2	
	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC
1/28/08	13:41	35.55	13:28	36.93	14:51	36.31	14:46	36.28	9:47	35.76	8:41	Below top of pump	8:22	36.26
10/20/08	1022	37.34	1026	38.70	1052	38.26	1050	38.23	1045	36.94	1055	"	1100	37.44

Date	BXS-3		MW-22		MW-23		MW-3		MW-33		MW-35		MW-2	
	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC	Time	Depth (ft) below TOC
1/28/08	8:30	32.25	10:10	34.03	10:02	36.68	10:22	39.26	10:17	36.59	11:12	37.53	14:23	42.28
10/20/08	1107	33.51	1300	34.53	1125	36.77	1133	41.36	1129	38.63	1137	29.55	1139	43.92

~~1~~ 2 1 of 2 chains

CHAIN OF CUSTODY / ANALYSIS REQUEST (PLEASE COMPLETE ALL APPLICABLE SHADED SECTIONS)

PAGE____ OF ____

EDGE ANALYTICAL

Corporate
1620 S Walnut St
Burlington, WA 98233
1.800.755.9295

Microbiology
805 W. Orchard Dr. Suite 4
Bellingham, WA 98225

REPORT TO: J.H. Baxter & Co.	BILL TO: J.H. Baxter & Co.
ADDRESS: 85 Baxter Rd	ADDRESS: 85 Baxter Rd.
CITY: Eugene STATE: OR ZIP: 97402	CITY: Eugene STATE: OR ZIP: 97402
ATTN: Kathy Gunderson	PHONE: 541 689 3801 FAX: 5416898303
PHONE: 360 435 2146 FAX:	P.O.#: ATTN:
EMAIL: kgunderson@premier corp-usa.com	☐ VISA ☐ M/C ☐ A/E EXPIRES /
PROJECT NAME:	CARD#

FOR LAB USE ONLY
REF#

CHECK REGULATORY PROGRAM
- ☐ SAFE DRINKING WATER ACT
- ☐ CLEAN WATER ACT
- ☐ RCRA / CERCLA
- ☐ OTHER

INSTRUCTIONS
1. USE ONE LINE PER SAMPLE.
2. BE SPECIFIC IN TEST REQUESTS.
3. CHECK OFF TESTS TO BE PERFORMED FOR EACH SAMPLE.
4. ENTER NUMBER OF CONTAINERS.

TURN AROUND TIME REQUIRED
- ☐ STANDARD
- ☐ HALF-TIME (50% SURCHARGE)
- ☐ QUICKEST (100% SURCHARGE)
- ☐ OTHER ____

ANALYSIS REQUESTED

	SAMPLE ID	LOCATION	GRAB/ COMP.	MATRIX	DATE	TIME	total coli/E. coli SM9223B QT							NUMBER OF CONTAINERS	SPECIAL INSTRUCTIONS/ CONDITIONS ON RECEIPT
1	BXS-4	south landfill	Grab	H_2O	10/22	0900	☒	☐	☐	☐	☐	☐	☐		
2	BXS-1	"	"	"	10/22	1025	☒	☐	☐	☐	☐	☐	☐		
3	BXS-2	"	"	"	10/22	1130	☒	☐	☐	☐	☐	☐	☐		
4	BXS-5	"	"	"	10/22	1130	☒	☐	☐	☐	☐	☐	☐		
5	BXS-3	"	"	"	10/22	1215	☒	☐	☐	☐	☐	☐	☐		
6	Equip check				10/22	1330	☒	☐	☐	☐	☐	☐	☐		
7	BXN-2	North landfill			10/22	1410	☒	☐	☐	☐	☐	☐	☐		
8	BXN-1	"			10/22	1455	☒	☐	☐	☐	☐	☐	☐		
9	BXN-3	"			10/22	1530	☒	☐	☐	☐	☐	☐	☐		
10	BXN-4	"			10/22	1600	☒	☐	☐	☐	☐	☐	☐		

◀TOTAL CONTAINERS

SAMPLED BY: PHONE: FAX: EMAIL:

SAMPLE RECEIPT REQUESTED (MUST INCLUDE FAX OR EMAIL) ☐

RELINQUISHED BY	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	10/22	1627			

	YES	NO	N/A
CUSTODY SEALS INTACT	☐	☐	☐
SAMPLE TEMP____ °C SATISFACTORY	☐	☐	☐
SAMPLES RECEIVED INTACT	☐	☐	
CHAIN OF CUSTODY & LABELS AGREE	☐	☐	

CHAIN OF CUSTODY / ANALYSIS REQUEST (PLEASE COMPLETE ALL APPLICABLE SHADED SECTIONS)

PAGE ____ OF ____

REPORT TO: See other chain	BILL TO:	FOR LAB USE ONLY
ADDRESS:	ADDRESS:	REF#
CITY: STATE: ZIP:	CITY: STATE: ZIP:	CHECK REGULATORY PROGRAM
ATTN:	PHONE: FAX:	☐ SAFE DRINKING WATER ACT
PHONE: FAX:	P.O.#: ATTN:	☐ CLEAN WATER ACT
EMAIL:	☐ VISA ☐ M/C ☐ A/E EXPIRES /	☐ RCRA / CERCLA
PROJECT NAME:	CARD#	☐ OTHER

ANALYTICAL

Corporate
1620 S Walnut St
Burlington, WA 98233
1.800.755.9295

Microbiology
805 W. Orchard Dr. Suite 4
Bellingham, WA 98225

INSTRUCTIONS
1. USE ONE LINE PER SAMPLE.
2. BE SPECIFIC IN TEST REQUESTS.
3. CHECK OFF TESTS TO BE PERFORMED FOR EACH SAMPLE.
4. ENTER NUMBER OF CONTAINERS.

TURN AROUND TIME REQUIRED
- ☐ STANDARD
- ☐ HALF-TIME (50% SURCHARGE)
- ☐ QUICKEST (100% SURCHARGE)
- ☐ OTHER ____

ANALYSIS REQUESTED

	SAMPLE ID	LOCATION	GRAB/ COMP.	MATRIX	DATE	TIME	total coli/E. coli SM 9223 B
1	BXN-5	North landfill	Grab	H_2O	10/22	1530	☐
2							☐
3							☐
4							☐
5							☐
6							☐
7							☐
8							☐
9							☐
10							☐

NUMBER OF CONTAINERS

SPECIAL INSTRUCTIONS/ CONDITIONS ON RECEIPT

◀TOTAL CONTAINERS

SAMPLED BY: PHONE: FAX: EMAIL:

SAMPLE RECEIPT REQUESTED (MUST INCLUDE FAX OR EMAIL) ☐

RELINQUISHED BY	DATE	TIME	RECEIVED BY	DATE	TIME
Al Rag	10/22/08	1627			

	YES	NO	N/A
CUSTODY SEALS INTACT	☐	☐	☐
SAMPLE TEMP ____ °C SATISFACTORY	☐	☐	☐
SAMPLES RECEIVED INTACT	☐	☐	
CHAIN OF CUSTODY & LABELS AGREE	☐	☐	

Appendix B

Laboratory Reports including Chain of Custody Records

Summary reports only; complete laboratory reports available upon request. Results from samples collected else where are not included.

1317 South 13th Avenue Kelso, Washington 98626 (360) 577-7222 (360) 636-1068 fax

Columbia Analytical Services INC.
An Employee - Owned Company

February 11, 2008 Analytical Report for Service Request No: K0800345

Kathy Gunderson
Premier Environmental Services
981 State Street
Raymond, WA 98577

RE: Arlington Landfill Wells/SI Well & Landfill

Dear Kathy:

Enclosed are the results of the samples submitted to our laboratory on January 11, 2008. For your reference, these analyses have been assigned our service request number K0800345.

All analyses were performed according to our laboratory's quality assurance program. Where applicable, the methods cited conform to the Methods Update Rule (effective 4/11/2007), which relates to the use of analytical methods for the drinking water and waste water programs. The test results meet requirements of the NELAC standards. Exceptions are noted in the case narrative report where applicable. 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 3275. You may also contact me via Email at JSedlak@caslab.com.

Respectfully submitted,

Columbia Analytical Services, Inc.

Janice Sedlak
Project Chemist

JS/lb

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.
Kelso, WA
State Certifications, Accreditations, and Licenses

Program	Number
Alaska DEC UST	UST-040
Arizona DHS	AZ0339
Arkansas - DEQ	88-0637
California DHS	2286
Colorado DPHE	-
Florida DOH	E87412
Hawaii DOH	-
Idaho DHW	-
Indiana DOH	C-WA-01
Louisiana DEQ	3016
Louisiana DHH	LA050010
Maine DHS	WA0035
Michigan DEQ	9949
Minnesota DOH	053-999-368
Montana DPHHS	CERT0047
Nevada DEP	WA35
New Jersey DEP	WA005
New Mexico ED	-
North Carolina DWQ	605
Oklahoma DEQ	9801
Oregon - DHS	WA200001
South Carolina DHEC	61002
Utah DOH	COLU
Washington DOE	C1203
Wisconsin DNR	998386840
Wyoming (EPA Region 8)	-

Case Narrative

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	JH Baxter & Company	**Service Request No.:**	K0800345
Project:	Arlington Landfill Wells, SI Well & Landfill	**Date Received:**	1/11/08
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 III validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Six water samples were received for analysis at Columbia Analytical Services on 1/11/08. 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.

General Chemistry Parameters

Chemical Oxygen Demand by SM 5220 C
The Relative Percent Difference (RPD) criterion for the replicate analysis of Chemical Oxygen Demand in the Batch QC sample is not applicable because the analyte concentration was not significantly greater than the Method Reporting Limit (MRL). Analytical values derived from measurements close to the detection limit are not subject to the same accuracy and precision criteria as results derived from measurements higher on the calibration range for the method.

pH by SM 4500-H+ B
The samples were received past the recommended holding time. The analysis was performed as soon as possible after receipt by the laboratory.

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

Dissolved Metals

Matrix Spike Recovery Exceptions:
The control criteria for matrix spike recoveries of Iron and Manganese for the Batch QC sample are not applicable. The analyte concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery.

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

Pentachlorophenol by EPA Method 8151M

Method Reporting Limits:
Samples BXS-1, BXS-5, and MW-3 required dilution due to the presence of elevated levels of target analyte Pentachlorophenol. The reporting limits are adjusted to reflect the dilution.

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

Approved by _____ Date 2/13/08

Polynuclear Aromatic Hydrocarbons by EPA Method 8270C

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

Approved by _____ Date 2/13/08

Chain of Custody Documentation

Columbia Analytical Services INC
An Employee - Owned Company

CHAIN OF CUSTODY

SR#: K0800345

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

PAGE ______ OF ______ COC # ______

PROJECT NAME: J.H. Baxter Arlington
PROJECT NUMBER: SI well & landfill
PROJECT MANAGER: Anita Ragan
COMPANY/ADDRESS: 85 Baxter Rd.
CITY/STATE/ZIP: Eugene, OR 97402
E-MAIL ADDRESS:
PHONE #: (541) 689-3801 FAX#:
SAMPLER'S SIGNATURE: [signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐	Fuel Fingerprint (FIQ) ☐ NW-HCID Screen ☐	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☒	PAHS 8310☐ SIM☒	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) NO2+NO3	TOX 9020☐ AOX 1650☐ 506☐	COD, TOC, Nitrate & Nitrite, NH4	TDS, Sulfide, chloride, cond, pH, tannins & lignins		REMARKS
BXS-1	1/9/08	0830		H_2O	5								X	X							X	X		
BXS-5	1/9/08	0835			5								X	X							X	X		
BXS-2	1/9/08	0930			5								X	X							X	X		
BXS-3	1/9/08	1015			3																X	X		~~rec'd 2B~~
MW-3	1/9/08	1115			3																X	X		rec'd 1-L Poly rec'd 1-40 mL
BXS-4	1/9/08	1350			3																X	X		

REPORT REQUIREMENTS

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

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

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

___ IV. CLP Deliverable Report

___ V. EDD

INVOICE INFORMATION

P.O. # ______

Bill To: J.H. Baxter

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 NORTHWEST OTHER:______ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

For Questions please contact Kathy Gunderson @ (360) 942-3409

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature] Date/Time: 1/10/08 1655	Signature: [signature] Date/Time: 1/11/08 1656	Signature: Date/Time:	Signature: Date/Time:
Printed Name: Anita Ragan Firm: Baxter	Printed Name: [illegible] Firm: CAS	Printed Name: Firm:	Printed Name: Firm:

Columbia Analytical Services, Inc.
Cooler Receipt and Preservation Form

PC 15

Client / Project: S.H. Baxter Service Request K08 0345

Received: 1/11/08 Opened: 1/11/08 By: JA

1. Samples were received via? *US Mail* *Fed Ex* *UPS* *DHL* *GH* *GS* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? _____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Is shipper's air-bill filed? If not, record air-bill number: _____ NA Y N

5. **Temperature of cooler(s) upon receipt (°C):**	5.7	3.6	4.9	3.6	4.6
Temperature Blank (°C):	3.5	2.6	1.5	N/P	3.0
6. If applicable, list Chain of Custody Numbers:					

7. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
8. Packing material used: *Inserts* *Bubble Wrap* *Gel Packs* *Wet Ice* *Sleeves* *Other* _____
9. **Did all bottles arrive in good condition (unbroken)?** *Indicate in the table below.* NA Y N
10. Were all sample labels complete (i.e analysis, preservation, etc.)? Y N
11. Did all sample labels and tags agree with custody papers? *Indicate in the table below* Y N
12. **Were the correct types of bottles used for the tests indicated?** NA Y N
13. Were all of the preserved bottles received at the lab with the appropriate pH? *Indicate in the table below* NA Y N
14. Were VOA vials and 1631 Mercury bottles checked for absence of air bubbles? *Indicate in the table below.* NA Y N
15. **Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection?** NA Y N
16. Was Cl2/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broken	pH	Reagent	Volume added	Reagent Lot Number	Initials

Additional Notes, Discrepancies, & Resolutions: FOR MW3, RECEIVED A ONE LITER UNPRESERVED AMBER AND AN AMBER VOA. DID NOT RECEIVE BOTTLES FOR THE TESTS MARKED ON THE COC FOR THIS SAMPLE.

General Chemistry Parameters

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : Arlington Landfill Wells
Project Number : SI Well & Landfill
Sample Matrix : WATER

Service Request : K0800345
Date Collected : 01/09/08
Date Received : 01/11/08

Ammonia as Nitrogen

Analysis Method : 350.1
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0800345-001	0.05	0.008	1	01/23/08	ND	
BXS-5	K0800345-002	0.05	0.008	1	01/23/08	ND	
BXS-2	K0800345-003	0.05	0.008	1	01/23/08	ND	
BXS-3	K0800345-004	0.05	0.008	1	01/23/08	0.41	
BXS-4	K0800345-006	0.05	0.008	1	01/23/08	0.55	
Method Blank	K0800345-MB	0.05	0.008	1	01/23/08	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : Arlington Landfill Wells
Project Number : SI Well & Landfill
Sample Matrix : WATER

Service Request : K0800345
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 01/23/08

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0800471-007DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Ammonia as Nitrogen	350.1	0.05	0.91	0.89	0.90	2	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : Arlington Landfill Wells
Project Number : SI Well & Landfill
Sample Matrix : WATER

Service Request : K0800345
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 01/23/08

Matrix Spike Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0800471-007MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Ammonia as Nitrogen	350.1	0.05	2.00	0.91	2.89	99	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0800345
Project Name :	Arlington Landfill Wells	**Date Collected :**	NA
Project Number :	SI Well & Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	01/23/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0800345-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Ammonia as Nitrogen	NONE	350.1	8.45	8.39	99	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : Arlington Landfill Wells

Service Request : K0800345
Date Collected : NA
Date Received : NA

Ammonia as Nitrogen
350.1
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	1/23/2008	2.00	1.97	99
CCV2 Result	1/23/2008	2.00	1.97	99
CCV3 Result	1/23/2008	2.00	1.97	99
CCV4 Result	1/23/2008	2.00	1.97	99
CCV5 Result	1/23/2008	2.00	1.97	99

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : Arlington Landfill Wells

Service Request : K0800345
Date Collected : NA
Date Received : NA

Ammonia as Nitrogen
350.1
Units: mg/L

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	1/23/2008	0.05	ND
CCB2 Result	1/23/2008	0.05	ND
CCB3 Result	1/23/2008	0.05	ND
CCB4 Result	1/23/2008	0.05	ND
CCB5 Result	1/23/2008	0.05	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : Arlington Landfill Wells
Project Number : SI Well & Landfill
Sample Matrix : WATER

Service Request : K0800345
Date Collected : 01/09/08
Date Received : 01/11/08

Chloride

Analysis Method : 300.0
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0800345-001	0.2	0.018	2	01/15/08	5.8	
BXS-5	K0800345-002	0.2	0.018	2	01/15/08	5.8	
BXS-2	K0800345-003	0.2	0.018	2	01/15/08	4.5	
BXS-3	K0800345-004	0.2	0.018	2	01/15/08	3.1	
BXS-4	K0800345-006	0.2	0.018	2	01/15/08	2.0	
Method Blank	K0800345-MB	0.2	0.009	1	01/15/08	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : Arlington Landfill Wells
Project Number : SI Well & Landfill
Sample Matrix : WATER

Service Request : K0800345
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 01/16/08

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0800344-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Chloride	300.0	2.0	49.4	49.5	49.4	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0800345
Project Name :	Arlington Landfill Wells	**Date Collected :**	NA
Project Number :	SI Well & Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	01/16/08

Matrix Spike Summary
Inorganic Parameters

Sample Name :	Batch QC	Units :	mg/L
Lab Code :	K0800344-001MS	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chloride	300.0	2.0	20.0	49.4	69.4	100	80-120	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0800345
Project Name :	Arlington Landfill Wells	**Date Collected :**	NA
Project Number :	SI Well & Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	01/15/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0800345-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chloride	NONE	300.0	5.0	4.9	98	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : Arlington Landfill Wells

Service Request : K0800345
Date Collected : NA
Date Received : NA

Chloride
300.0
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	1/15/2008	5.0	5.0	100
CCV2 Result	1/15/2008	5.0	5.0	100
CCV3 Result	1/15/2008	5.0	5.0	100
CCV4 Result	1/15/2008	5.0	5.0	100
CCV5 Result	1/16/2008	5.0	5.0	100
CCV6 Result	1/16/2008	5.0	5.0	100
CCV7 Result	1/16/2008	5.0	5.0	100
CCV8 Result	1/16/2008	5.0	5.0	100

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : Arlington Landfill Wells

Service Request : K0800345
Date Collected : NA
Date Received : NA

Chloride
300.0
Units: mg/L

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	1/15/2008	0.2	ND
CCB2 Result	1/15/2008	0.2	ND
CCB7 Result	1/15/2008	0.2	ND
CCB8 Result	1/15/2008	0.2	ND
CCB3 Result	1/16/2008	0.2	ND
CCB4 Result	1/16/2008	0.2	ND
CCB5 Result	1/16/2008	0.2	ND
CCB6 Result	1/16/2008	0.2	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : Arlington Landfill Wells
Project Number : SI Well & Landfill
Sample Matrix : WATER

Service Request : K0800345
Date Collected : 01/09/08
Date Received : 01/11/08

Sulfate

Analysis Method : 300.0
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0800345-001	0.2	0.014	2	01/15/08	14.0	
BXS-5	K0800345-002	0.2	0.014	2	01/15/08	14.9	
BXS-2	K0800345-003	0.2	0.014	2	01/16/08	ND	
BXS-3	K0800345-004	0.2	0.014	2	01/16/08	ND	
BXS-4	K0800345-006	0.2	0.014	2	01/15/08	0.8	
Method Blank	K0800345-MB	0.2	0.007	1	01/15/08	ND	
Method Blank	K0800345-MB	0.2	0.007	1	01/16/08	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : Arlington Landfill Wells
Project Number : SI Well & Landfill
Sample Matrix : WATER

Service Request : K0800345
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 01/16/08

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0800344-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Sulfate	300.0	2.0	32.4	32.1	32.2	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0800345
Project Name :	Arlington Landfill Wells	**Date Collected :**	NA
Project Number :	SI Well & Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	01/16/08

Matrix Spike Summary
Inorganic Parameters

Sample Name :	Batch QC	Units :	mg/L
Lab Code :	K0800344-001MS	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Sulfate	300.0	2.0	20.0	32.4	50.0	88	80-120	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0800345
Project Name :	Arlington Landfill Wells	**Date Collected :**	NA
Project Number :	SI Well & Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	01/15/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0800345-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Sulfate	NONE	300.0	5.0	4.9	98	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0800345
Project Name :	Arlington Landfill Wells	**Date Collected :**	NA
Project Number :	SI Well & Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	01/16/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0800345-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Sulfate	NONE	300.0	5.0	4.7	94	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : Arlington Landfill Wells

Service Request : K0800345
Date Collected : NA
Date Received : NA

Sulfate
300.0
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV4 Result	1/15/2008	5.0	4.6	92
CCV5 Result	1/15/2008	5.0	4.8	96
CCV6 Result	1/15/2008	5.0	4.8	96
CCV7 Result	1/15/2008	5.0	4.7	94
CCV1 Result	1/16/2008	5.0	4.8	96
CCV1 Result	1/16/2008	5.0	4.7	94
CCV1 Result	1/16/2008	5.0	4.8	96
CCV2 Result	1/16/2008	5.0	4.8	96
CCV2 Result	1/16/2008	5.0	4.7	94
CCV3 Result	1/16/2008	5.0	4.7	94
CCV3 Result	1/16/2008	5.0	4.6	92
CCV4 Result	1/16/2008	5.0	4.7	94
CCV5 Result	1/16/2008	5.0	4.7	94
CCV6 Result	1/16/2008	5.0	4.8	96
CCV7 Result	1/16/2008	5.0	4.8	96

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : Arlington Landfill Wells

Service Request : K0800345
Date Collected : NA
Date Received : NA

Sulfate
300.0
Units: mg/L

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	1/15/2008	0.2	ND
CCB2 Result	1/15/2008	0.2	ND
CCB2 Result	1/15/2008	0.2	ND
CCB3 Result	1/15/2008	0.2	ND
CCB1 Result	1/16/2008	0.2	ND
CCB1 Result	1/16/2008	0.2	ND
CCB2 Result	1/16/2008	0.2	ND
CCB3 Result	1/16/2008	0.2	ND
CCB3 Result	1/16/2008	0.2	ND
CCB4 Result	1/16/2008	0.2	ND
CCB4 Result	1/16/2008	0.2	ND
CCB5 Result	1/16/2008	0.2	ND
CCB5 Result	1/16/2008	0.2	ND
CCB6 Result	1/16/2008	0.2	ND
CCB7 Result	1/16/2008	0.2	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	JH Baxter & Company	**Service Request :**	K0800345
Project Name :	Arlington Landfill Wells	**Date Collected :**	01/09/08
Project Number :	SI Well & Landfill	**Date Received :**	01/11/08
Sample Matrix :	WATER		

Chemical Oxygen Demand (COD)

Analysis Method : SM 5220 C
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0800345-001	5	3	1	01/17/08	12	
BXS-5	K0800345-002	5	3	1	01/17/08	13	
BXS-2	K0800345-003	5	3	1	01/17/08	35	
BXS-3	K0800345-004	5	3	1	01/17/08	61	
BXS-4	K0800345-006	5	3	1	01/17/08	ND	
Method Blank	K0800345-MB	5	3	1	01/17/08	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : Arlington Landfill Wells
Project Number : SI Well & Landfill
Sample Matrix : WATER

Service Request : K0800345
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 01/17/08

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0800344-005DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Chemical Oxygen Demand (COD)	SM 5220 C	5	9	7	8	25	*

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : Arlington Landfill Wells
Project Number : SI Well & Landfill
Sample Matrix : WATER

Service Request : K0800345
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 01/17/08

Matrix Spike Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0800344-005MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chemical Oxygen Demand (COD)	SM 5220 C	5	100	9	105	96	75-125	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0800345
Project Name :	Arlington Landfill Wells	**Date Collected :**	NA
Project Number :	SI Well & Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	01/17/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0800345-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chemical Oxygen Demand (COD)	NONE	SM 5220 C	106	101	95	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : Arlington Landfill Wells
Project Number : SI Well & Landfill
Sample Matrix : WATER

Service Request : K0800345
Date Collected : 01/09/08
Date Received : 01/11/08

Conductivity at 25 Degrees Celsius

Analysis Method : 120.1
Test Notes :

Units : uMHOS/cm
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0800345-001	2	0.3	1	01/24/08	375	
BXS-5	K0800345-002	2	0.3	1	01/24/08	360	
BXS-2	K0800345-003	2	0.3	1	01/24/08	747	
BXS-3	K0800345-004	2	0.3	1	01/24/08	681	
BXS-4	K0800345-006	2	0.3	1	01/24/08	215	
Method Blank	K0800345-MB	2	0.3	1	01/24/08	1.5	J

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : Arlington Landfill Wells
Project Number : SI Well & Landfill
Sample Matrix : WATER

Service Request : K0800345
Date Collected : 1/9/2008
Date Received : 1/11/2008
Date Prepared : NA
Date Analyzed : 01/24/08

Duplicate Summary
Inorganic Parameters

Sample Name : BXS-1
Lab Code : K0800345-001DUP
Test Notes :

Units : uMHOS/cm
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Conductivity at 25 Degrees Celsius	120.1	2	375	370	372	1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0800345
Project Name :	Arlington Landfill Wells	**Date Collected :**	NA
Project Number :	SI Well & Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	01/24/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	uMHOS/cm
Lab Code :	K0800345-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Conductivity at 25 Degrees Celsius	NONE	120.1	1150	1180	103	85-115	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : Arlington Landfill Wells
Project Number : SI Well & Landfill
Sample Matrix : WATER

Service Request : K0800345
Date Collected : 01/09/08
Date Received : 01/11/08

Nitrate+Nitrite as Nitrogen

Analysis Method : 353.2
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0800345-001	0.05	0.006	1	01/24/08	0.58	
BXS-5	K0800345-002	0.05	0.006	1	01/24/08	0.54	
BXS-2	K0800345-003	0.05	0.006	1	01/24/08	ND	
BXS-3	K0800345-004	0.05	0.006	1	01/24/08	0.07	
BXS-4	K0800345-006	0.05	0.006	1	01/24/08	ND	
Method Blank	K0800345-MB	0.05	0.006	1	01/24/08	ND	

QA/QC Report

Client : JH Baxter & Company
Project Name : Arlington Landfill Wells
Project Number : SI Well & Landfill
Sample Matrix : WATER

Service Request : K0800345
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 01/24/08

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0800346-002DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Nitrate+Nitrite as Nitrogen	353.2	0.05	ND	0.015	NC	NC	J

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : Arlington Landfill Wells
Project Number : SI Well & Landfill
Sample Matrix : WATER

Service Request : K0800345
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 01/24/08

Matrix Spike Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0800346-002MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Nitrate+Nitrite as Nitrogen	353.2	0.05	2.00	ND	1.98	99	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0800345
Project Name :	Arlington Landfill Wells	**Date Collected :**	NA
Project Number :	SI Well & Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	01/24/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0800345-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Nitrate+Nitrite as Nitrogen	NONE	353.2	37.5	36.3	97	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : Arlington Landfill Wells

Service Request : K0800345
Date Collected : NA
Date Received : NA

Nitrate+Nitrite as Nitrogen
353.2
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	1/24/2008	2.00	1.99	100
CCV2 Result	1/24/2008	2.00	2.02	101
CCV3 Result	1/24/2008	2.00	1.96	98
CCV4 Result	1/24/2008	2.00	1.94	97

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : Arlington Landfill Wells

Service Request : K0800345
Date Collected : NA
Date Received : NA

Nitrate+Nitrite as Nitrogen
353.2
Units: mg/L

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	1/24/2008	0.05	ND
CCB2 Result	1/24/2008	0.05	ND
CCB3 Result	1/24/2008	0.05	ND
CCB4 Result	1/24/2008	0.05	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : Arlington Landfill Wells
Project Number : SI Well & Landfill
Sample Matrix : WATER

Service Request : K0800345
Date Collected : 01/09/08
Date Received : 01/11/08

pH

Analysis Method : SM 4500-H+ B
Test Notes :

Units : pH Units
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date/Time Analyzed	Result	Result Notes
BXS-1	K0800345-001	-	-	1	01/12/08 16:01	6.23	
BXS-5	K0800345-002	-	-	1	01/12/08 16:02	6.25	
BXS-2	K0800345-003	-	-	1	01/12/08 16:05	6.46	
BXS-3	K0800345-004	-	-	1	01/12/08 16:05	6.41	
BXS-4	K0800345-006	-	-	1	01/12/08 16:06	7.75	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0800345
Project Name :	Arlington Landfill Wells	**Date Collected :**	NA
Project Number :	SI Well & Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	01/12/08

Duplicate Summary
Inorganic Parameters

Sample Name :	Batch QC	Units :	pH Units
Lab Code :	K0800344-001DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
pH	SM 4500-H+ B	-	6.62	6.65	6.64	<1	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0800345
Project Name :	Arlington Landfill Wells	**Date Collected :**	NA
Project Number :	SI Well & Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	01/12/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	pH Units
Lab Code :	K0800345-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
pH	NONE	SM 4500-H+ B	6.18	6.15	100	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	JH Baxter & Company	**Service Request :**	K0800345
Project Name :	Arlington Landfill Wells	**Date Collected :**	01/09/08
Project Number :	SI Well & Landfill	**Date Received :**	01/11/08
Sample Matrix :	WATER		

Tannin and Lignin

Analysis Method : SM 5550 B
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0800345-001	0.2	0.03	1	01/25/08	0.3	
BXS-5	K0800345-002	0.2	0.03	1	01/25/08	0.3	
BXS-2	K0800345-003	0.2	0.03	1	01/25/08	1.2	
BXS-3	K0800345-004	0.4	0.060	2	01/25/08	8.0	
BXS-4	K0800345-006	0.2	0.03	1	01/25/08	0.3	
Method Blank	K0800345-MB	0.2	0.03	1	01/25/08	0.06	J

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

Report By:CSKILLERN

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0800345
Project Name :	Arlington Landfill Wells	**Date Collected :**	NA
Project Number :	SI Well & Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	01/25/08

Duplicate Summary
Inorganic Parameters

Sample Name :	Batch QC	Units :	mg/L
Lab Code :	K0800344-003DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Tannin and Lignin	SM 5550 B	0.2	1.3	1.3	1.3	<1	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : Arlington Landfill Wells
Project Number : SI Well & Landfill
Sample Matrix : WATER

Service Request : K0800345
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 01/25/08

Matrix Spike Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0800344-003MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Tannin and Lignin	SM 5550 B	0.2	1.0	1.3	2.4	110	75-125	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0800345
Project Name :	Arlington Landfill Wells	**Date Collected :**	NA
Project Number :	SI Well & Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	01/25/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0800345-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Tannin and Lignin	NONE	SM 5550 B	1.0	1.1	110	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : Arlington Landfill Wells

Service Request : K0800345
Date Collected : NA
Date Received : NA

Tannin and Lignin
SM 5550 B
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	1/25/2008	2.5	2.5	100
CCV2 Result	1/25/2008	2.5	2.5	100
CCV3 Result	1/25/2008	2.5	2.5	100

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : Arlington Landfill Wells

Service Request : K0800345
Date Collected : NA
Date Received : NA

Tannin and Lignin
SM 5550 B
Units: mg/L

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	1/25/2008	0.2	0.07 J
CCB2 Result	1/25/2008	0.2	0.07 J
CCB3 Result	1/25/2008	0.2	0.07 J

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : Arlington Landfill Wells
Project Number : SI Well & Landfill
Sample Matrix : WATER

Service Request : K0800345
Date Collected : 01/09/08
Date Received : 01/11/08

Solids, Total Dissolved

Analysis Method : SM 2540 C
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0800345-001	5	5	1	01/15/08	239	
BXS-5	K0800345-002	5	5	1	01/15/08	233	
BXS-2	K0800345-003	5	5	1	01/15/08	508	
BXS-3	K0800345-004	5	5	1	01/15/08	578	
BXS-4	K0800345-006	5	5	1	01/15/08	148	
Method Blank	K0800345-MB	5	5	1	01/15/08	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0800345
Project Name :	Arlington Landfill Wells	**Date Collected :**	1/9/2008
Project Number :	SI Well & Landfill	**Date Received :**	1/11/2008
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	01/15/08

Duplicate Summary
Inorganic Parameters

Sample Name :	BXS-2	Units :	mg/L
Lab Code :	K08003245-003DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Solids, Total Dissolved	SM 2540 C	5	508	485	496	5	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0800345
Project Name :	Arlington Landfill Wells	**Date Collected :**	NA
Project Number :	SI Well & Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	01/15/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0800345-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Solids, Total Dissolved	NONE	SM 2540 C	759	824	109	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : Arlington Landfill Wells
Project Number : SI Well & Landfill
Sample Matrix : WATER

Service Request : K0800345
Date Collected : 01/09/08
Date Received : 01/11/08

Carbon, Total Organic

Analysis Method : SM 5310 C
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0800345-001	0.5	0.04	1	01/23/08	6.0	
BXS-5	K0800345-002	0.5	0.04	1	01/23/08	6.1	
BXS-2	K0800345-003	5.0	0.40	10	01/23/08	15.8	
BXS-3	K0800345-004	5.0	0.40	10	01/23/08	23.9	
BXS-4	K0800345-006	0.5	0.04	1	01/23/08	0.8	
Method Blank	K0800345-MB	0.5	0.04	1	01/23/08	0.08	J

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0800345
Project Name :	Arlington Landfill Wells	**Date Collected :**	NA
Project Number :	SI Well & Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	01/23/08

Duplicate Summary
Inorganic Parameters

Sample Name :	Batch QC	Units :	mg/L
Lab Code :	K0800344-003DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Carbon, Total Organic	SM 5310 C	0.5	2.1	2.0	2.1	5	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0800345
Project Name :	Arlington Landfill Wells	**Date Collected :**	NA
Project Number :	SI Well & Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	01/23/08

Matrix Spike Summary
Inorganic Parameters

Sample Name :	Batch QC	Units :	mg/L
Lab Code :	K0800344-003MS	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Carbon, Total Organic	SM 5310 C	0.5	25.0	2.1	26.2	96	49-156	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0800345
Project Name :	Arlington Landfill Wells	**Date Collected :**	NA
Project Number :	SI Well & Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	01/23/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Laboratory Control Sample	Units :	mg/L
Lab Code :	K0800345-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Carbon, Total Organic	NONE	SM 5310 C	24.0	23.3	97	69-136	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : Arlington Landfill Wells

Service Request : K0800345
Date Collected : NA
Date Received : NA

Carbon, Total Organic
SM 5310 C
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV5 Result	1/23/2008	25.0	26.9	108
CCV6 Result	1/23/2008	25.0	25.6	102
CCV7 Result	1/23/2008	25.0	25.6	102

1317 South 13th Avenue Kelso, Washington 98626 (360) 577-7222 (360) 636-1068 fax

Columbia Analytical Services, Inc.
An Employee - Owned Company

August 20, 2008 Analytical Report for Service Request No: K0807006

Anita Ragan
JH Baxter & Company
85 Baxter Road
Eugene, OR 97440

RE: JH Baxter Arlington/South Landfill

Dear Anita:

Enclosed are the results of the samples submitted to our laboratory on July 30, 2008. For your reference, these analyses have been assigned our service request number K0807006.

All analyses were performed according to our laboratory's quality assurance program. Where applicable, the methods cited conform to the Methods Update Rule (effective 4/11/2007), which relates to the use of analytical methods for the drinking water and waste water programs. The test results meet requirements of the NELAC standards. Exceptions are noted in the case narrative report where applicable. 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 3275. You may also contact me via Email at CLeaf@caslab.com.

Respectfully submitted,

Columbia Analytical Services, Inc.

Chris Leaf
Project Chemist

CL/ss

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.
Kelso, WA
State Certifications, Accreditations, and Licenses

Program	Number
Alaska DEC UST	UST-040
Arizona DHS	AZ0339
Arkansas - DEQ	88-0637
California DHS	2286
Colorado DPHE	-
Florida DOH	E87412
Hawaii DOH	-
Idaho DHW	-
Indiana DOH	C-WA-01
Louisiana DEQ	3016
Louisiana DHH	LA050010
Maine DHS	WA0035
Michigan DEQ	9949
Minnesota DOH	053-999-368
Montana DPHHS	CERT0047
Nevada DEP	WA35
New Jersey DEP	WA005
New Mexico ED	-
North Carolina DWQ	605
Oklahoma DEQ	9801
Oregon - DHS	WA200001
South Carolina DHEC	61002
Utah DOH	COLU
Washington DOE	C1203
Wisconsin DNR	998386840
Wyoming (EPA Region 8)	-

Case Narrative

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	JH Baxter & Company	**Service Request No.:**	K0807006
Project:	JH Baxter Arlington	**Date Received:**	07/30/2008
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 III validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Five water samples were received for analysis at Columbia Analytical Services on 07/30/2008. 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.

General Chemistry Parameters

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

Dissolved Metals

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

Approved by _____ **Date** 8/21/08

Chain of Custody Documentation

Columbia Analytical Services INC
An Employee - Owned Company

CHAIN OF CUSTODY

SR#: K0807006

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

PAGE ____ OF ____ COC # ____

PROJECT NAME: JH Baxter Arlington
PROJECT NUMBER: South landfill
PROJECT MANAGER: Anita Ragan
COMPANY/ADDRESS: 85 Baxter Rd.
CITY/STATE/ZIP: Eugene, OR 97402
E-MAIL ADDRESS: aragan@jhbaxter
PHONE #: 541 689 3801
FAX#:
SAMPLER'S SIGNATURE: [signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625 8270 8270LL	Volatile Organics 624 8260 8021	Hydrocarbons (*see below) Gas Diesel Oil BTEX	Fuel Fingerprint (FIQ) NW-HCID Screen	Oil & Grease/TRPH 1664 HEM 1664 SGT	PCB's Aroclors Congeners	Pesticides/Herbicides 608 8081A 8141A 8151A	Chlorophenolics - 8151M Tri Tetra PCP	PAHS 8310 SIM	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) NO2+NO3	TOX 9020 AOX 1650 506	COD TOC, Nitrate, Nitrite, NH4	TDS, Sulfate, sulfite, chloride, cond, pH	tanins & ligins			REMARKS
BXS-1	7/29/08	1810		H2O	3										X						X	X	X			
BXS-4	7/30	0836		|	3										X						X	X	X			
BXS-2	7/30	0927		|	3										X						X	X	X			
BXS-6	7/30	0927		|	3										X						X	X	X			
BXS-3	7/30	1025		|	3										X						X	X	X			

8

REPORT REQUIREMENTS

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

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

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

___ IV. CLP Deliverable Report

___ V. EDD

INVOICE INFORMATION

P.O. # ____

Bill To: J.H. Baxter

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 NORTHWEST OTHER:____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

For Questions, please contact Kathy Gunderson @ (360) 942-3409

Metals added 8/1/08 per Kathy G based on previous study. CL 8/1/08

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature] Date/Time: 7/30/08 1720	Signature: [signature] Date/Time: 7/30/08 1721	Signature ____ Date/Time ____	Signature ____ Date/Time ____
Printed Name: Anita Ragan Firm: Baxter	Printed Name: [illegible] Firm: [illegible]	Printed Name ____ Firm ____	Printed Name ____ Firm ____

RCOC #1 06/03

Client / Project: JH Baxter Service Request K08 07007 C.C.

Received: 7/30/08 Opened: 7/31/08 By: LM

1. Samples were received via? US Mail Fed Ex UPS DHL GH GS PDX (Courier) Hand Delivered
2. Samples were received in: (circle) (Cooler) Box Envelope Other ______ NA
3. Were custody seals on coolers? NA Y (N) If yes, how many and where? ______
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Is shipper's air-bill filed? If not, record air-bill number: ______ (NA) Y N
5. Temperature of cooler(s) upon receipt (°C): 6.4 3.4 -0.5 2.7
   Temperature Blank (°C): 4.6 — 2.2 —
6. If applicable, list Chain of Custody Numbers:
7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Packing material used. (Inserts) Baggies (Bubble Wrap) (Gel Packs) (Wet Ice) Sleeves Other ______
9. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA (Y) N
10. Were all sample labels complete (i.e analysis, preservation, etc.)? (Y) N
11. Did all sample labels and tags agree with custody papers? *Indicate in the table below* Y (N)
12. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
13. Were the pH-preserved bottles tested* received at the appropriate pH? *Indicate in the table below* NA (Y) N
14. Were VOA vials and 1631 Mercury bottles received without headspace? *Indicate in the table below.* (NA) Y N
15. Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection? (NA) Y N
16. Was C12/Res negative? NA (Y) N

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC
EW Extraction 1-7	Extra Well 1-7		
Equipt. Check	Equip Check		

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broken	pH	Reagent	Volume added	Reagent Lot Number	Initials

...es not include all pH preserved sample aliquots received. See sample receiving SOP (SMO-GEN).

...ditional Notes, Discrepancies, & Resolutions:

Rec'd 1 1 liter Red, 1 liter white, + 1 L yellow for Equip Check not specified on COC. analyze same as previous submissions CC 8/1/08

General Chemistry Parameters

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : South Landfill
Sample Matrix : WATER

Service Request : K0807006
Date Collected : 07/29,30/08
Date Received : 07/30/08

Ammonia as Nitrogen

Analysis Method : 350.1
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0807006-001	0.05	0.008	1	08/04/08	ND	
BXS-4	K0807006-002	0.05	0.008	1	08/04/08	0.48	
BXS-2	K0807006-003	0.05	0.008	1	08/04/08	ND	
BXS-6	K0807006-004	0.05	0.008	1	08/04/08	ND	
BXS-3	K0807006-005	0.05	0.008	1	08/04/08	0.75	
Method Blank	K0807006-MB	0.05	0.008	1	08/04/08	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807006
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	South Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/04/08

Duplicate Summary
Inorganic Parameters

Sample Name :	Batch QC	Units :	mg/L
Lab Code :	K0807066-001DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Ammonia as Nitrogen	350.1	0.05	0.11	0.10	0.11	9	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : South Landfill
Sample Matrix : WATER

Service Request : K0807006
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 08/04/08

Matrix Spike Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0807066-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Ammonia as Nitrogen	350.1	0.05	2.00	0.11	2.22	106	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807006
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	South Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/04/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0807006-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Ammonia as Nitrogen	NONE	350.1	8.38	8.32	99	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0807006
Date Collected : NA
Date Received : NA

Ammonia as Nitrogen
350.1
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	8/4/2008	2.00	1.94	97
CCV2 Result	8/4/2008	2.00	1.95	98
CCV3 Result	8/4/2008	2.00	1.96	98
CCV4 Result	8/4/2008	2.00	1.95	98
CCV5 Result	8/4/2008	2.00	1.95	98
CCV6 Result	8/4/2008	2.00	1.95	98
CCV7 Result	8/4/2008	2.00	1.98	99
CCV8 Result	8/4/2008	2.00	1.94	97
CCV9 Result	8/4/2008	2.00	1.95	98

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0807006
Date Collected : NA
Date Received : NA

Ammonia as Nitrogen
350.1
Units: mg/L

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	8/4/2008	0.05	ND
CCB2 Result	8/4/2008	0.05	ND
CCB3 Result	8/4/2008	0.05	ND
CCB4 Result	8/4/2008	0.05	ND
CCB5 Result	8/4/2008	0.05	ND
CCB6 Result	8/4/2008	0.05	ND
CCB7 Result	8/4/2008	0.05	ND
CCB8 Result	8/4/2008	0.05	ND
CCB9 Result	8/4/2008	0.05	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : South Landfill
Sample Matrix : WATER

Service Request : K0807006
Date Collected : 07/29,30/08
Date Received : 07/30/08

Chloride

Analysis Method : 300.0
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0807006-001	1.0	0.040	5	08/04/08	4.5	
BXS-4	K0807006-002	0.2	0.016	2	08/04/08	1.8	
BXS-2	K0807006-003	1.0	0.040	5	08/04/08	4.2	
BXS-6	K0807006-004	1.0	0.040	5	08/04/08	4.4	
BXS-3	K0807006-005	1.0	0.040	5	08/04/08	2.8	
Method Blank	K0807006-MB	0.2	0.008	1	08/04/08	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807006
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	South Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/04/08

Duplicate Summary
Inorganic Parameters

Sample Name :	Batch QC	Units :	mg/L
Lab Code :	K0807066-001DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Chloride	300.0	0.2	0.6	0.6	0.6	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : South Landfill
Sample Matrix : WATER

Service Request : K0807006
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 08/04/08

Matrix Spike Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0807066-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chloride	300.0	0.2	4.0	0.6	4.1	87	80-120	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807006
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	South Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/04/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0807006-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chloride	NONE	300.0	5.0	4.7	94	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0807006
Date Collected : NA
Date Received : NA

Chloride
300.0
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	8/4/2008	5.0	4.7	94
CCV2 Result	8/4/2008	5.0	4.8	96
CCV3 Result	8/4/2008	5.0	4.8	96
CCV4 Result	8/4/2008	5.0	4.8	96
CCV5 Result	8/4/2008	5.0	4.8	96
CCV6 Result	8/4/2008	5.0	4.8	96
CCV7 Result	8/4/2008	5.0	4.8	96
CCV8 Result	8/4/2008	5.0	4.7	94
CCV9 Result	8/5/2008	5.0	4.8	96

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0807006
Date Collected : NA
Date Received : NA

Chloride
300.0
Units: mg/L

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	8/4/2008	0.2	0.023 J
CCB2 Result	8/4/2008	0.2	0.014 J
CCB3 Result	8/4/2008	0.2	ND
CCB4 Result	8/4/2008	0.2	ND
CCB5 Result	8/4/2008	0.2	ND
CCB6 Result	8/4/2008	0.2	ND
CCB7 Result	8/4/2008	0.2	ND
CCB8 Result	8/4/2008	0.2	ND
CCB9 Result	8/5/2008	0.2	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : South Landfill
Sample Matrix : WATER

Service Request : K0807006
Date Collected : 07/29,30/08
Date Received : 07/30/08

Sulfate

Analysis Method : 300.0
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0807006-001	0.2	0.012	2	08/04/08	6.2	
BXS-4	K0807006-002	0.2	0.012	2	08/04/08	1.3	
BXS-2	K0807006-003	0.2	0.012	2	08/04/08	0.137	J
BXS-6	K0807006-004	0.2	0.012	2	08/04/08	0.152	J
BXS-3	K0807006-005	0.2	0.012	2	08/04/08	0.119	J
Method Blank	K0807006-MB	0.2	0.006	1	08/04/08	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807006
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	South Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/04/08

Duplicate Summary
Inorganic Parameters

Sample Name :	Batch QC	Units :	mg/L
Lab Code :	K0807066-001DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Sulfate	300.0	0.2	1.2	1.2	1.2	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807006
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	South Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/04/08

Matrix Spike Summary
Inorganic Parameters

Sample Name :	Batch QC	Units :	mg/L
Lab Code :	K0807066-001MS	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Sulfate	300.0	0.2	4.0	1.2	4.9	93	80-120	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807006
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	South Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/04/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0807006-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Sulfate	NONE	300.0	5.0	4.7	94	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0807006
Date Collected : NA
Date Received : NA

Sulfate
300.0
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	8/4/2008	5.0	4.8	96
CCV2 Result	8/4/2008	5.0	4.9	98
CCV3 Result	8/4/2008	5.0	4.8	96
CCV4 Result	8/4/2008	5.0	4.8	96
CCV5 Result	8/4/2008	5.0	4.7	94
CCV6 Result	8/4/2008	5.0	4.8	96
CCV7 Result	8/4/2008	5.0	4.7	94
CCV8 Result	8/4/2008	5.0	4.7	94
CCV9 Result	8/5/2008	5.0	4.8	96

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0807006
Date Collected : NA
Date Received : NA

Sulfate
300.0
Units: mg/L

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	8/4/2008	0.2	ND
CCB2 Result	8/4/2008	0.2	ND
CCB3 Result	8/4/2008	0.2	ND
CCB4 Result	8/4/2008	0.2	ND
CCB5 Result	8/4/2008	0.2	ND
CCB6 Result	8/4/2008	0.2	ND
CCB7 Result	8/4/2008	0.2	ND
CCB8 Result	8/4/2008	0.2	ND
CCB9 Result	8/5/2008	0.2	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : South Landfill
Sample Matrix : WATER

Service Request : K0807006
Date Collected : 07/29,30/08
Date Received : 07/30/08

pH

Analysis Method : SM 4500-H+ B
Test Notes :

Units : pH Units
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0807006-001	-	-	1	07/31/08	6.27	
BXS-4	K0807006-002	-	-	1	07/31/08	7.83	
BXS-2	K0807006-003	-	-	1	07/31/08	6.45	
BXS-6	K0807006-004	-	-	1	07/31/08	6.40	
BXS-3	K0807006-005	-	-	1	07/31/08	6.32	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807006
Project Name :	JH Baxter Arlington	**Date Collected :**	7/29/2008
Project Number :	South Landfill	**Date Received :**	7/30/2008
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	07/31/08

Duplicate Summary
Inorganic Parameters

Sample Name :	BXS-1	Units :	pH Units
Lab Code :	K0807006-001DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
pH	SM 4500-H+ B	-	6.27	6.26	6.27	<1	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807006
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	South Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	07/31/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	pH Units
Lab Code :	K0807006-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
pH	NONE	SM 4500-H+ B	7.65	7.60	99	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : South Landfill
Sample Matrix : WATER

Service Request : K0807006
Date Collected : 07/29,30/08
Date Received : 07/30/08

Conductivity at 25 Degrees Celsius

Analysis Method : 120.1
Test Notes :

Units : uMHOS/cm
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0807006-001	2	0.3	1	08/01/08	592	
BXS-4	K0807006-002	2	0.3	1	08/01/08	206	
BXS-2	K0807006-003	2	0.3	1	08/01/08	853	
BXS-6	K0807006-004	2	0.3	1	08/01/08	865	
BXS-3	K0807006-005	2	0.3	1	08/01/08	659	
Method Blank	K0807006-MB	2	0.3	1	08/01/08	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : South Landfill
Sample Matrix : WATER

Service Request : K0807006
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 08/01/08

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0806967-002DUP
Test Notes :

Units : uMHOS/cm
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Conductivity at 25 Degrees Celsius	120.1	2	383	387	385	1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807006
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	South Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/01/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Laboratory Control Sample	Units :	uMHOS/cm
Lab Code :	K0807006-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Conductivity at 25 Degrees Celsius	NONE	120.1	1150	1160	101	85-115	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : South Landfill
Sample Matrix : WATER

Service Request : K0807006
Date Collected : 07/29,30/08
Date Received : 07/30/08

Nitrate+Nitrite as Nitrogen

Analysis Method : 353.2
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0807006-001	0.05	0.005	1	08/05/08	1.48	
BXS-4	K0807006-002	0.05	0.005	1	08/05/08	0.10	
BXS-2	K0807006-003	0.05	0.005	1	08/05/08	ND	
BXS-6	K0807006-004	0.05	0.005	1	08/05/08	ND	
BXS-3	K0807006-005	0.05	0.025	5	08/05/08	0.15	
Method Blank	K0807006-MB	0.05	0.005	1	08/05/08	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807006
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	South Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/05/08

Duplicate Summary
Inorganic Parameters

Sample Name :	Batch QC	Units :	mg/L
Lab Code :	K0807007-001DUP	Basis :	NA

Test Notes :

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Nitrate+Nitrite as Nitrogen	353.2	0.05	0.60	0.58	0.59	3	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : South Landfill
Sample Matrix : WATER

Service Request : K0807006
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 08/05/08

Matrix Spike Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0807007-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Nitrate+Nitrite as Nitrogen	353.2	0.05	2.00	0.60	2.76	108	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807006
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	South Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/05/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0807006-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Nitrate+Nitrite as Nitrogen	NONE	353.2	37.5	37.5	100	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0807006
Date Collected : NA
Date Received : NA

Nitrate+Nitrite as Nitrogen
353.2
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	8/5/2008	2.00	2.02	101
CCV2 Result	8/5/2008	2.00	2.04	102
CCV3 Result	8/5/2008	2.00	2.02	101
CCV4 Result	8/5/2008	2.00	2.00	100
CCV5 Result	8/5/2008	2.00	2.03	102
CCV6 Result	8/5/2008	2.00	2.02	101
CCV7 Result	8/5/2008	2.00	2.03	102

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0807006
Date Collected : NA
Date Received : NA

Nitrate+Nitrite as Nitrogen
353.2
Units: mg/L

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	8/5/2008	0.05	ND
CCB2 Result	8/5/2008	0.05	ND
CCB3 Result	8/5/2008	0.05	ND
CCB4 Result	8/5/2008	0.05	ND
CCB5 Result	8/5/2008	0.05	ND
CCB6 Result	8/5/2008	0.05	ND
CCB7 Result	8/5/2008	0.05	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : South Landfill
Sample Matrix : WATER

Service Request : K0807006
Date Collected : 07/29,30/08
Date Received : 07/30/08

Tannin and Lignin

Analysis Method : SM 5550 B
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0807006-001	0.2	0.03	1	08/08/08	0.2	
BXS-4	K0807006-002	0.2	0.03	1	08/08/08	0.2	
BXS-2	K0807006-003	0.2	0.03	1	08/08/08	1.2	
BXS-6	K0807006-004	0.2	0.03	1	08/08/08	1.2	
BXS-3	K0807006-005	0.2	0.03	1	08/08/08	11.5	
Method Blank	K0807006-MB	0.2	0.03	1	08/08/08	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807006
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	South Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/08/08

Duplicate Summary
Inorganic Parameters

Sample Name :	BXS-1	Units :	mg/L
Lab Code :	K0807006-001DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Tannin and Lignin	SM 5550 B	0.2	0.2	0.2	0.2	<1	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807006
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	South Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/08/08

Matrix Spike Summary
Inorganic Parameters

Sample Name :	BXS-1	Units :	mg/L
Lab Code :	K0807006-001MS	Basis :	NA

Test Notes :

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Tannin and Lignin	SM 5550 B	0.2	1.0	0.2	1.1	90	75-125	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807006
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	South Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/08/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0807006-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Tannin and Lignin	NONE	SM 5550 B	1.0	1.0	100	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0807006
Date Collected : NA
Date Received : NA

Tannin and Lignin
SM 5550 B
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	8/8/2008	2.5	2.4	96
CCV2 Result	8/8/2008	2.5	2.4	96
CCV3 Result	8/8/2008	2.5	2.6	104
CCV4 Result	8/8/2008	2.5	2.5	100
CCV5 Result	8/8/2008	2.5	2.4	96

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0807006
Date Collected : NA
Date Received : NA

Tannin and Lignin
SM 5550 B
Units: mg/L

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	8/8/2008	0.2	ND
CCB2 Result	8/8/2008	0.2	ND
CCB3 Result	8/8/2008	0.2	ND
CCB4 Result	8/8/2008	0.2	ND
CCB5 Result	8/8/2008	0.2	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	JH Baxter & Company	**Service Request :**	K0807006
Project Name :	JH Baxter Arlington	**Date Collected :**	07/29,30/08
Project Number :	South Landfill	**Date Received :**	07/30/08
Sample Matrix :	WATER		

Solids, Total Dissolved

Analysis Method : SM 2540 C
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0807006-001	5	5	1	08/04/08	363	
BXS-4	K0807006-002	5	5	1	08/04/08	161	
BXS-2	K0807006-003	5	5	1	08/04/08	506	
BXS-6	K0807006-004	5	5	1	08/04/08	505	
BXS-3	K0807006-005	5	5	1	08/04/08	415	
Method Blank	K0807006-MB	5	5	1	08/04/08	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

Report By: MKANALY

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807006
Project Name :	JH Baxter Arlington	**Date Collected :**	7/30/2008
Project Number :	South Landfill	**Date Received :**	7/30/2008
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/04/08

Duplicate Summary
Inorganic Parameters

Sample Name :	BXS-2	Units :	mg/L
Lab Code :	K0807006-003DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Solids, Total Dissolved	SM 2540 C	5	506	485	496	4	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807006
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	South Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/04/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0807006-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Solids, Total Dissolved	NONE	SM 2540 C	884	944	107	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : South Landfill
Sample Matrix : WATER

Service Request : K0807006
Date Collected : 07/29,30/08
Date Received : 07/30/08

Carbon, Total Organic

Analysis Method : SM 5310 C
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0807006-001	0.5	0.04	1	08/07/08	8.3	
BXS-4	K0807006-002	0.5	0.04	1	08/07/08	0.9	
BXS-2	K0807006-003	0.5	0.04	1	08/07/08	15.9	
BXS-6	K0807006-004	1.0	0.080	2	08/07/08	16.2	
BXS-3	K0807006-005	5.0	0.40	10	08/07/08	27.9	
Method Blank	K0807006-MB	0.5	0.04	1	08/07/08	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : South Landfill
Sample Matrix : WATER

Service Request : K0807006
Date Collected : 7/29/2008
Date Received : 7/30/2008
Date Prepared : NA
Date Analyzed : 08/07/08

Duplicate Summary
Inorganic Parameters

Sample Name : BXS-1
Lab Code : K0807006-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Carbon, Total Organic	SM 5310 C	0.5	8.3	8.5	8.4	2	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807006
Project Name :	JH Baxter Arlington	**Date Collected :**	7/29/2008
Project Number :	South Landfill	**Date Received :**	7/30/2008
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/07/08

Matrix Spike Summary
Inorganic Parameters

Sample Name :	BXS-1	Units :	mg/L
Lab Code :	K0807006-001MS	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Carbon, Total Organic	SM 5310 C	0.5	25.0	8.3	32.7	98	49-156	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

Report By: MKANALY

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807006
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	South Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/07/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0807006-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Carbon, Total Organic	NONE	SM 5310 C	24.0	22.7	95	69-136	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0807006
Date Collected : NA
Date Received : NA

Carbon, Total Organic
SM 5310 C
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	8/7/2008	25.0	24.4	98
CCV2 Result	8/7/2008	25.0	25.5	102
CCV3 Result	8/7/2008	25.0	24.5	98
CCV4 Result	8/7/2008	25.0	24.9	100
CCV5 Result	8/7/2008	25.0	25.2	101
CCV6 Result	8/7/2008	25.0	25.1	100
CCV7 Result	8/7/2008	25.0	25.0	100
CCV8 Result	8/7/2008	25.0	24.7	99

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0807006
Date Collected : NA
Date Received : NA

Carbon, Total Organic
SM 5310 C
Units: mg/L

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	8/7/2008	0.5	ND
CCB2 Result	8/7/2008	0.5	ND
CCB3 Result	8/7/2008	0.5	ND
CCB4 Result	8/7/2008	0.5	ND
CCB5 Result	8/7/2008	0.5	ND
CCB6 Result	8/7/2008	0.5	ND
CCB7 Result	8/7/2008	0.5	ND
CCB8 Result	8/7/2008	0.5	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : South Landfill
Sample Matrix : WATER

Service Request : K0807006
Date Collected : 07/29,30/08
Date Received : 07/30/08

Chemical Oxygen Demand (COD)

Analysis Method : SM 5220 C
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-1	K0807006-001	5	3	1	08/08/08	24	
BXS-4	K0807006-002	5	3	1	08/08/08	6	
BXS-2	K0807006-003	5	3	1	08/08/08	37	
BXS-6	K0807006-004	5	3	1	08/08/08	35	
BXS-3	K0807006-005	5	3	1	08/08/08	75	
Method Blank	K0807006-MB	5	3	1	08/08/08	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : South Landfill
Sample Matrix : WATER

Service Request : K0807006
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 08/08/08

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0807005-005DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Chemical Oxygen Demand (COD)	SM 5220 C	5	9	4	7	71	J

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

Report By: MKANALY

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807006
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	South Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/08/08

Matrix Spike Summary
Inorganic Parameters

Sample Name :	Batch QC	Units :	mg/L
Lab Code :	K0807005-005MS	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chemical Oxygen Demand (COD)	SM 5220 C	5	100	9	111	102	75-125	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807006
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	South Landfill	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/08/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0807006-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chemical Oxygen Demand (COD)	NONE	SM 5220 C	106	113	107	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

1317 South 13th Avenue Kelso, Washington 98626 (360) 577-7222 (360) 636-1068 fax

Columbia Analytical Services INC.
An Employee - Owned Company

December 3, 2008 Analytical Report for Service Request No: K0810389

Kathy Gunderson
Premier Environmental Services
981 State Street
Raymond, WA 98577

RE: JH Baxter Arlington/Landfills

Dear Kathy:

Enclosed are the results of the samples submitted to our laboratory on October 23, 2008. For your reference, these analyses have been assigned our service request number K0810389.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. 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 3275. You may also contact me via Email at CLeaf@caslab.com.

Respectfully submitted,

Columbia Analytical Services, Inc.

Chris Leaf
Project Chemist

CL/SV

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.
Kelso, WA
State Certifications, Accreditations, and Licenses

Program	Number
Alaska DEC UST	UST-040
Arizona DHS	AZ0339
Arkansas - DEQ	88-0637
California DHS	2286
Colorado DPHE	-
Florida DOH	E87412
Hawaii DOH	-
Idaho DHW	-
Indiana DOH	C-WA-01
Louisiana DEQ	3016
Louisiana DHH	LA050010
Maine DHS	WA0035
Michigan DEQ	9949
Minnesota DOH	053-999-368
Montana DPHHS	CERT0047
Nevada DEP	WA35
New Jersey DEP	WA005
New Mexico ED	-
North Carolina DWQ	605
Oklahoma DEQ	9801
Oregon - DHS	WA200001
South Carolina DHEC	61002
Utah DOH	COLU
Washington DOE	C1203
Wisconsin DNR	998386840
Wyoming (EPA Region 8)	-

Case Narrative

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	JH Baxter & Company	**Service Request No.:**	K0810389
Project:	JH Baxter Arlington	**Date Received:**	10/23/2008
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 II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), and Laboratory Control Sample (LCS).

Sample Receipt

Eleven water samples were received for analysis at Columbia Analytical Services on 10/23/2008. 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.

General Chemistry Parameters

Nitrate+Nitrite as Nitrogen by EPA 353.2;
The Relative Percent Difference (RPD) criterion for the replicate analysis of nitrate+nitrite in the Batch QC is not applicable because the analyte concentration was not significantly greater than the Method Reporting Limit (MRL). Analytical values derived from measurements close to the detection limit are not subject to the same accuracy and precision criteria as results derived from measurements higher on the calibration range for the method.

Dissolved Metals

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

Approved by C. Lang Date 12-3-08

Chain of Custody Documentation

Columbia Analytical Services™

CHAIN OF CUSTODY

SR#: K0810389

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • (800) 695-7222x07 • FAX (360) 636-1068

PAGE ______ OF ______ COC # ______

PROJECT NAME: J.H. Baxter Arlington

PROJECT NUMBER: Landfills

PROJECT MANAGER: Anita Ragan

COMPANY/ADDRESS: 85 N Baxter Rd

CITY/STATE/ZIP: Eugene, OR 97402

E-MAIL ADDRESS: aragan@jhbaxter.com

PHONE #: 541 689 3801 | FAX #: 541 689 8303

SAMPLER'S SIGNATURE: [signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS		Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐	☐ Fuel Fingerprint (FID) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHS 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐	pH, Cond, Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle)	NH3-N, COD, Total-P, TKN, TOC, DOC (circle) NO2+NO3	TOX 9020☐ AOX 1650☐ 506☐	COD, TOC, Nitrate & Nitrite, Ammonia as N		TDS, sulfate, chloride, cond, pH, tannins & lignins		REMARKS
BXS-4	10/22	0900		H_2O	3											X					X		X		
BXS-1	10/22	1025			3											X					X		X		
BXS-2	10/22	1130			3											X					X		X		
BXS-5	10/22	1130			3											X					X		X		
BXS-3	10/22	1215			3											X					X		X		
BXN-2	10/22	1410			3											X					X		X		
BXN-4	10/22	1600			3											X					X		X		
BXN-5	10/22	1600			3											X					X		X		
BXN-3	10/22	1530			3											X					X		X		
BXN-1	10/22	1455			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

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 NORTHWEST OTHER: ______ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

-Contact Kathy Gunderson @ (360) 942-3409 for questions

-metals are field filtered

[redacted]

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature] Date/Time: 10/23/08 1220	Signature: [signature] Date/Time: 10/23/08 1220	Signature ______ Date/Time ______	Signature ______ Date/Time ______
Printed Name: Anita Ragan Firm: Baxter	Printed Name: Kristel Tobin Firm: CAS	Printed Name ______ Firm ______	Printed Name ______ Firm ______

RCOC #1 06/08

Columbia Analytical Services, Inc.
Cooler Receipt and Preservation Form

PC CL

ient / Project: JH Baxter Service Request K08 10389

ceived: 10/23/08 Opened: 10/23/08 By: AJ

Samples were received via? *US Mail* *Fed Ex* *UPS* *DHL* *GH* *GS* *PDX* *Courier* *Hand Delivered*

Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ NA

Were custody seals on coolers? NA Y N If yes, how many and where? _____

If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Is shipper's air-bill filed? If not, record air-bill number: _____ NA Y N

Temperature of cooler(s) upon receipt (°C):	-0.3	2.4		
Temperature Blank (°C):	1.0	4.9		
If applicable, list Chain of Custody Numbers:				

Packing material used. *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Sleeves* *Other* _____

Were custody papers properly filled out (ink, signed, etc.)?	NA	Y	N
Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.*	NA	Y	N
Were all sample labels complete (i.e analysis, preservation, etc.)?	NA	Y	N
Did all sample labels and tags agree with custody papers? *Indicate in the table below*	NA	Y	N
Were appropriate bottles/containers and volumes received for the tests indicated?	NA	Y	N
Were the pH-preserved bottles tested* received at the appropriate pH? *Indicate in the table below*	NA	Y	N
Were VOA vials and 1631 Mercury bottles received without headspace? *Indicate in the table below.*	NA	Y	N
Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection?	NA	Y	N
Was C12/Res negative?	NA	Y	N

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broken	pH	Reagent	Volume added	Reagent Lot Number	Initials

es not include all pH preserved sample aliquots received. See sample receiving SOP (SMO-GEN).

litional Notes, Discrepancies, & Resolutions:

Rec'd 1 set of Samples labeled "Equip Check" 10/21/08 1705 not on COC - these were added to testing list. Tier I reports marked - No QC Tier II in project profile. Tier II will be reported unless notified. 10/28/08

General Chemistry Parameters

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0810389
Date Collected : 10/21,22/08
Date Received : 10/23/08

Conductivity at 25 Degrees Celsius

Analysis Method : 120.1
Test Notes :

Units : uMHOS/cm
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-4	K0810389-001	2	0.4	1	11/05/08	210	
BXS-1	K0810389-002	2	0.4	1	11/05/08	592	
BXS-2	K0810389-003	2	0.4	1	11/05/08	892	
BXS-5	K0810389-004	2	0.4	1	11/05/08	877	
BXS-3	K0810389-005	2	0.4	1	11/05/08	700	
BXN-2	K0810389-006	2	0.4	1	11/05/08	336	
BXN-4	K0810389-007	2	0.4	1	11/05/08	822	
BXN-5	K0810389-008	2	0.4	1	11/05/08	830	
BXN-3	K0810389-009	2	0.4	1	11/05/08	731	
BXN-1	K0810389-010	2	0.4	1	11/05/08	529	
Equip Check	K0810389-011	2	0.4	1	11/05/08	3	
Method Blank	K0810389-MB	2	0.4	1	11/05/08	1.3	J

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0810389
Project Name :	JH Baxter Arlington	**Date Collected :**	10/22/2008
Project Number :	Landfills	**Date Received :**	10/23/2008
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	11/05/08

Duplicate Summary
Inorganic Parameters

Sample Name :	BXS-3	Units :	uMHOS/cm
Lab Code :	K0810389-005DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Conductivity at 25 Degrees Celsius	120.1	2	700	701	701	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0810389
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	11/05/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	uMHOS/cm
Lab Code :	K0810389-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Conductivity at 25 Degrees Celsius	NONE	120.1	1150	1140	99	85-115	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0810389
Date Collected : 10/21,22/08
Date Received : 10/23/08

Chloride

Analysis Method : 300.0
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-4	K0810389-001	0.2	0.016	2	10/27/08	1.9	
BXS-1	K0810389-002	0.2	0.016	2	10/27/08	5.1	
BXS-2	K0810389-003	0.2	0.016	2	10/27/08	4.9	
BXS-5	K0810389-004	0.2	0.016	2	10/27/08	4.9	
BXS-3	K0810389-005	0.2	0.016	2	10/27/08	3.6	
BXN-2	K0810389-006	1.0	0.040	5	10/27/08	5.6	
BXN-4	K0810389-007	4.0	0.16	20	10/27/08	15.8	
BXN-5	K0810389-008	2.0	0.080	10	10/27/08	16.8	
BXN-3	K0810389-009	1.0	0.040	5	10/27/08	3.9	
BXN-1	K0810389-010	2.0	0.080	10	10/27/08	13.8	
Equip Check	K0810389-011	0.2	0.008	1	10/27/08	0.010	J
Method Blank	K0810389-MB	0.2	0.008	1	10/27/08	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0810389
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	10/27/08

Duplicate Summary
Inorganic Parameters

Sample Name :	Batch QC	Units :	mg/L
Lab Code :	K0810369-005DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Chloride	300.0	10	98	97	98	1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0810389
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 10/27/08

Matrix Spike Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0810369-005MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chloride	300.0	10	100	98	199	101	80-120	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0810389
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	10/27/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0810389-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chloride	NONE	300.0	5.0	4.8	96	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0810389
Date Collected : NA
Date Received : NA

Chloride
300.0
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	10/27/2008	5.0	5.0	100
CCV2 Result	10/27/2008	5.0	4.9	98
CCV3 Result	10/27/2008	5.0	4.8	96
CCV4 Result	10/27/2008	5.0	4.9	98
CCV5 Result	10/27/2008	5.0	4.8	96
CCV6 Result	10/27/2008	5.0	4.8	96
CCV7 Result	10/27/2008	5.0	4.9	98

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0810389
Date Collected : NA
Date Received : NA

Chloride
300.0
Units: mg/L

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	10/27/2008	0.2	ND
CCB2 Result	10/27/2008	0.2	ND
CCB3 Result	10/27/2008	0.2	ND
CCB4 Result	10/27/2008	0.2	ND
CCB5 Result	10/27/2008	0.2	ND
CCB6 Result	10/27/2008	0.2	ND
CCB7 Result	10/27/2008	0.2	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0810389
Date Collected : 10/21,22/08
Date Received : 10/23/08

Sulfate

Analysis Method : 300.0
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-4	K0810389-001	0.2	0.012	2	10/27/08	1.1	
BXS-1	K0810389-002	0.2	0.012	2	10/27/08	6.7	
BXS-2	K0810389-003	0.2	0.012	2	10/27/08	0.159	J
BXS-5	K0810389-004	0.2	0.012	2	10/27/08	0.4	
BXS-3	K0810389-005	0.2	0.012	2	10/27/08	0.107	J
BXN-2	K0810389-006	1.0	0.030	5	10/27/08	21.5	
BXN-4	K0810389-007	4.0	0.12	20	10/27/08	25.6	
BXN-5	K0810389-008	2.0	0.060	10	10/27/08	26.9	
BXN-3	K0810389-009	1.0	0.030	5	10/27/08	9.9	
BXN-1	K0810389-010	2.0	0.060	10	10/27/08	10.8	
Equip Check	K0810389-011	0.2	0.006	1	10/27/08	ND	
Method Blank	K0810389-MB	0.2	0.006	1	10/27/08	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0810389
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	10/27/08

Duplicate Summary
Inorganic Parameters

Sample Name :	Batch QC	Units :	mg/L
Lab Code :	K0810369-005DUP	Basis :	NA

Test Notes :

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Sulfate	300.0	10	205	201	203	2	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0810389
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 10/27/08

Matrix Spike Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0810369-005MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Sulfate	300.0	10	100	205	312	107	80-120	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0810389
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	10/27/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0810389-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Sulfate	NONE	300.0	5.0	4.9	98	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0810389
Date Collected : NA
Date Received : NA

Sulfate
300.0
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	10/27/2008	5.0	5.0	100
CCV2 Result	10/27/2008	5.0	5.0	100
CCV3 Result	10/27/2008	5.0	5.0	100
CCV4 Result	10/27/2008	5.0	5.0	100
CCV5 Result	10/27/2008	5.0	5.0	100
CCV6 Result	10/27/2008	5.0	4.9	98
CCV7 Result	10/27/2008	5.0	5.0	100

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0810389
Date Collected : NA
Date Received : NA

Sulfate
300.0
Units: mg/L

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	10/27/2008	0.2	ND
CCB2 Result	10/27/2008	0.2	ND
CCB3 Result	10/27/2008	0.2	ND
CCB4 Result	10/27/2008	0.2	ND
CCB5 Result	10/27/2008	0.2	ND
CCB6 Result	10/27/2008	0.2	ND
CCB7 Result	10/27/2008	0.2	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0810389
Date Collected : 10/21,22/08
Date Received : 10/23/08

Ammonia as Nitrogen

Analysis Method : 350.1
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-4	K0810389-001	0.05	0.008	1	10/24/08	0.53	
BXS-1	K0810389-002	0.05	0.008	1	10/24/08	ND	
BXS-2	K0810389-003	0.05	0.008	1	10/24/08	ND	
BXS-5	K0810389-004	0.05	0.008	1	10/24/08	ND	
BXS-3	K0810389-005	0.05	0.008	1	10/24/08	0.54	
BXN-2	K0810389-006	0.05	0.008	1	10/24/08	ND	
BXN-4	K0810389-007	0.50	0.080	10	10/24/08	12.9	
BXN-5	K0810389-008	0.50	0.080	10	10/24/08	13.6	
BXN-3	K0810389-009	0.05	0.008	1	10/24/08	0.028	J
BXN-1	K0810389-010	0.05	0.008	1	10/24/08	0.050	J
Equip Check	K0810389-011	0.05	0.008	1	10/24/08	0.035	J
Method Blank	K0810389-MB	0.05	0.008	1	10/24/08	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0810389
Project Name :	JH Baxter Arlington	**Date Collected :**	10/22/2008
Project Number :	Landfills	**Date Received :**	10/23/2008
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	10/24/08

Duplicate Summary
Inorganic Parameters

Sample Name :	BXS-4	Units :	mg/L
Lab Code :	K0810389-001DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Ammonia as Nitrogen	350.1	0.05	0.53	0.53	0.53	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0810389
Date Collected : 10/22/2008
Date Received : 10/23/2008
Date Prepared : NA
Date Analyzed : 10/24/08

Matrix Spike Summary
Inorganic Parameters

Sample Name : BXS-4
Lab Code : K0810389-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Ammonia as Nitrogen	350.1	0.05	2.00	0.53	2.58	103	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0810389
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	10/24/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0810389-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Ammonia as Nitrogen	NONE	350.1	16.9	17.0	101	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0810389
Date Collected : NA
Date Received : NA

Ammonia as Nitrogen
350.1
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	10/24/2008	2.00	2.03	102
CCV2 Result	10/24/2008	2.00	2.05	103
CCV3 Result	10/24/2008	2.00	2.04	102
CCV4 Result	10/24/2008	2.00	2.04	102
CCV5 Result	10/24/2008	2.00	2.03	102
CCV6 Result	10/24/2008	2.00	2.03	102
CCV7 Result	10/24/2008	2.00	2.02	101
CCV8 Result	10/24/2008	2.00	2.02	101
CCV9 Result	10/24/2008	2.00	2.02	101

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0810389
Date Collected : NA
Date Received : NA

Ammonia as Nitrogen
350.1
Units: mg/L

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	10/24/2008	0.05	ND
CCB2 Result	10/24/2008	0.05	ND
CCB3 Result	10/24/2008	0.05	ND
CCB4 Result	10/24/2008	0.05	ND
CCB5 Result	10/24/2008	0.05	ND
CCB6 Result	10/24/2008	0.05	ND
CCB7 Result	10/24/2008	0.05	ND
CCB8 Result	10/24/2008	0.05	ND
CCB9 Result	10/24/2008	0.05	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0810389
Date Collected : 10/21,22/08
Date Received : 10/23/08

Nitrate+Nitrite as Nitrogen

Analysis Method : 353.2
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-4	K0810389-001	0.05	0.005	1	10/27/08	ND	
BXS-1	K0810389-002	0.05	0.005	1	10/27/08	0.51	
BXS-2	K0810389-003	0.05	0.005	1	10/27/08	0.026	J
BXS-5	K0810389-004	0.05	0.005	1	10/27/08	0.008	J
BXS-3	K0810389-005	0.05	0.005	1	10/27/08	0.10	
BXN-2	K0810389-006	0.05	0.005	1	10/27/08	1.64	
BXN-4	K0810389-007	0.05	0.005	1	10/27/08	1.49	
BXN-5	K0810389-008	0.05	0.005	1	10/27/08	1.79	
BXN-3	K0810389-009	0.05	0.005	1	10/27/08	0.043	J
BXN-1	K0810389-010	0.05	0.005	1	10/27/08	0.042	J
Equip Check	K0810389-011	0.05	0.005	1	10/27/08	0.024	J
Method Blank	K0810389-MB	0.05	0.005	1	10/27/08	0.010	J

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0810389
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 10/27/08

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0810265-004DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Nitrate+Nitrite as Nitrogen	353.2	0.05	0.13	0.17	0.16	25	*

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0810389
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 10/27/08

Matrix Spike Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0810265-004MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Nitrate+Nitrite as Nitrogen	353.2	0.05	2.00	0.13	2.05	96	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0810389
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	10/27/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0810389-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Nitrate+Nitrite as Nitrogen	NONE	353.2	1.70	1.61	95	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0810389
Date Collected : NA
Date Received : NA

Nitrate+Nitrite as Nitrogen
353.2
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	10/27/2008	2.00	1.97	99
CCV2 Result	10/27/2008	2.00	1.98	99
CCV3 Result	10/27/2008	2.00	1.97	99
CCV4 Result	10/27/2008	2.00	1.97	99
CCV5 Result	10/27/2008	2.00	1.94	97

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0810389
Date Collected : NA
Date Received : NA

Nitrate+Nitrite as Nitrogen
353.2
Units: mg/L

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	10/27/2008	0.05	ND
CCB2 Result	10/27/2008	0.05	ND
CCB3 Result	10/27/2008	0.05	ND
CCB4 Result	10/27/2008	0.05	ND
CCB5 Result	10/27/2008	0.05	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0810389
Date Collected : 10/21,22/08
Date Received : 10/23/08

Solids, Total Dissolved

Analysis Method : SM 2540 C
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-4	K0810389-001	5	5	1	10/27/08	139	
BXS-1	K0810389-002	5	5	1	10/27/08	323	
BXS-2	K0810389-003	5	5	1	10/27/08	478	
BXS-5	K0810389-004	5	5	1	10/27/08	491	
BXS-3	K0810389-005	5	5	1	10/27/08	465	
BXN-2	K0810389-006	5	5	1	10/27/08	184	
BXN-4	K0810389-007	5	5	1	10/27/08	401	
BXN-5	K0810389-008	5	5	1	10/27/08	382	
BXN-3	K0810389-009	5	5	1	10/27/08	421	
BXN-1	K0810389-010	5	5	1	10/27/08	308	
Equip Check	K0810389-011	5	5	1	10/27/08	ND	
Method Blank	K0810389-MB	5	5	1	10/27/08	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0810389
Project Name :	JH Baxter Arlington	**Date Collected :**	10/22/2008
Project Number :	Landfills	**Date Received :**	10/23/2008
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	10/27/08

Duplicate Summary
Inorganic Parameters

Sample Name :	BXS-5	Units :	mg/L
Lab Code :	K0810389-004DUP	Basis :	NA

Test Notes :

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Solids, Total Dissolved	SM 2540 C	5	491	488	490	<1	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0810389
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	10/27/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0810389-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Solids, Total Dissolved	NONE	SM 2540 C	1070	1080	101	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0810389
Date Collected : 10/21,22/08
Date Received : 10/23/08

pH

Analysis Method : SM 4500-H+ B
Test Notes :

Units : pH Units
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date/Time Analyzed	Result	Result Notes
BXS-4	K0810389-001	-	-	1	10/23/08 16:41	7.83	
BXS-1	K0810389-002	-	-	1	10/23/08 16:42	6.49	
BXS-2	K0810389-003	-	-	1	10/23/08 16:43	6.41	
BXS-5	K0810389-004	-	-	1	10/23/08 16:43	6.40	
BXS-3	K0810389-005	-	-	1	10/23/08 16:44	6.33	
BXN-2	K0810389-006	-	-	1	10/23/08 16:44	6.64	
BXN-4	K0810389-007	-	-	1	10/23/08 16:46	6.68	
BXN-5	K0810389-008	-	-	1	10/23/08 16:46	6.69	
BXN-3	K0810389-009	-	-	1	10/23/08 16:47	6.49	
BXN-1	K0810389-010	-	-	1	10/23/08 16:48	6.41	
Equip Check	K0810389-011	-	-	1	10/23/08 16:51	6.08	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0810389
Project Name :	JH Baxter Arlington	**Date Collected :**	10/22/2008
Project Number :	Landfills	**Date Received :**	10/23/2008
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	10/23/08

Duplicate Summary
Inorganic Parameters

Sample Name :	BXS-4	Units :	pH Units
Lab Code :	K0810389-001DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
pH	SM 4500-H+ B	-	7.83	7.84	7.84	<1	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0810389
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	10/23/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	pH Units
Lab Code :	K0810389-LCS	Basis :	NA

Test Notes :

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
pH	NONE	SM 4500-H+ B	6.58	6.57	100	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0810389
Date Collected : 10/21,22/08
Date Received : 10/23/08

Chemical Oxygen Demand (COD)

Analysis Method : SM 5220 C
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-4	K0810389-001	5	3	1	11/07/08	6	
BXS-1	K0810389-002	5	3	1	11/07/08	16	
BXS-2	K0810389-003	5	3	1	11/07/08	39	
BXS-5	K0810389-004	5	3	1	11/07/08	41	
BXS-3	K0810389-005	5	3	1	11/07/08	65	
BXN-2	K0810389-006	5	3	1	11/07/08	ND	
BXN-4	K0810389-007	5	3	1	11/07/08	18	
BXN-5	K0810389-008	5	3	1	11/07/08	18	
BXN-3	K0810389-009	5	3	1	11/07/08	13	
BXN-1	K0810389-010	5	3	1	11/07/08	9	
Equip Check	K0810389-011	5	3	1	11/07/08	ND	
Method Blank	K0810389-MB	5	3	1	11/07/08	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0810389
Project Name :	JH Baxter Arlington	**Date Collected :**	10/22/2008
Project Number :	Landfills	**Date Received :**	10/23/2008
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	11/07/08

Duplicate Summary
Inorganic Parameters

Sample Name :	BXS-4	Units :	mg/L
Lab Code :	K0810389-001DUP	Basis :	NA

Test Notes :

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Chemical Oxygen Demand (COD)	SM 5220 C	5	6	6	6	<1	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0810389
Date Collected : 10/22/2008
Date Received : 10/23/2008
Date Prepared : NA
Date Analyzed : 11/07/08

Matrix Spike Summary
Inorganic Parameters

Sample Name : BXS-4
Lab Code : K0810389-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chemical Oxygen Demand (COD)	SM 5220 C	5	100	6	105	99	75-125	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0810389
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	11/07/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0810389-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chemical Oxygen Demand (COD)	NONE	SM 5220 C	106	101	95	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0810389
Date Collected : 10/21,22/08
Date Received : 10/23/08

Carbon, Total Organic

Analysis Method : SM 5310 C
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-4	K0810389-001	0.5	0.04	1	10/29/08	0.9	
BXS-1	K0810389-002	5.0	0.40	10	10/29/08	6.6	
BXS-2	K0810389-003	5.0	0.40	10	10/29/08	15.5	
BXS-5	K0810389-004	5.0	0.40	10	10/29/08	16.3	
BXS-3	K0810389-005	5.0	0.40	10	10/29/08	23.8	
BXN-2	K0810389-006	0.5	0.04	1	10/29/08	1.8	
BXN-4	K0810389-007	0.5	0.04	1	10/29/08	6.8	
BXN-5	K0810389-008	0.5	0.04	1	10/29/08	7.0	
BXN-3	K0810389-009	0.5	0.04	1	10/29/08	5.9	
BXN-1	K0810389-010	0.5	0.04	1	10/29/08	3.4	
Equip Check	K0810389-011	0.5	0.04	1	10/29/08	0.08	J
Method Blank	K0810389-MB	0.5	0.04	1	10/29/08	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0810389
Project Name :	JH Baxter Arlington	**Date Collected :**	10/22/2008
Project Number :	Landfills	**Date Received :**	10/23/2008
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	10/29/08

Duplicate Summary
Inorganic Parameters

Sample Name :	BXS-4	Units :	mg/L
Lab Code :	K0810389-001DUP	Basis :	NA

Test Notes :

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Carbon, Total Organic	SM 5310 C	0.5	0.9	0.9	0.9	<1	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0810389
Date Collected : 10/22/2008
Date Received : 10/23/2008
Date Prepared : NA
Date Analyzed : 10/29/08

Matrix Spike Summary
Inorganic Parameters

Sample Name : BXS-4
Lab Code : K0810389-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Carbon, Total Organic	SM 5310 C	0.5	25.0	0.9	25.5	98	49-156	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0810389
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	10/29/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0810389-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Carbon, Total Organic	NONE	SM 5310 C	24.0	23.3	97	69-136	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0810389
Date Collected : NA
Date Received : NA

Carbon, Total Organic
SM 5310 C
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	10/29/2008	25.0	24.8	99
CCV2 Result	10/29/2008	25.0	25.0	100
CCV3 Result	10/29/2008	25.0	24.6	98
CCV4 Result	10/29/2008	25.0	24.3	97
CCV5 Result	10/29/2008	25.0	24.5	98
CCV6 Result	10/29/2008	25.0	24.7	99
CCV7 Result	10/29/2008	25.0	25.6	102
CCV8 Result	10/29/2008	25.0	24.9	100

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0810389
Date Collected : NA
Date Received : NA

Carbon, Total Organic
SM 5310 C
Units: mg/L

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	10/29/2008	0.5	ND
CCB2 Result	10/29/2008	0.5	ND
CCB3 Result	10/29/2008	0.5	ND
CCB4 Result	10/29/2008	0.5	ND
CCB5 Result	10/29/2008	0.5	ND
CCB6 Result	10/29/2008	0.5	ND
CCB7 Result	10/29/2008	0.5	ND
CCB8 Result	10/29/2008	0.5	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	JH Baxter & Company	**Service Request :**	K0810389
Project Name :	JH Baxter Arlington	**Date Collected :**	10/21,22/08
Project Number :	Landfills	**Date Received :**	10/23/08
Sample Matrix :	WATER		

Tannin and Lignin

Analysis Method : SM 5550 B
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Analyzed	Result	Result Notes
BXS-4	K0810389-001	0.2	0.03	1	11/12/08	0.3	
BXS-1	K0810389-002	0.2	0.03	1	11/12/08	0.2	
BXS-2	K0810389-003	0.2	0.03	1	11/12/08	1.1	
BXS-5	K0810389-004	0.2	0.03	1	11/12/08	1.1	
BXS-3	K0810389-005	0.2	0.03	1	11/12/08	2.5	
BXN-2	K0810389-006	0.2	0.03	1	11/12/08	1.2	
BXN-4	K0810389-007	0.2	0.03	1	11/12/08	3.6	
BXN-5	K0810389-008	0.2	0.03	1	11/12/08	3.5	
BXN-3	K0810389-009	0.2	0.03	1	11/12/08	1.6	
BXN-1	K0810389-010	0.2	0.03	1	11/12/08	0.7	
Equip Check	K0810389-011	0.2	0.03	1	11/12/08	0.05	J
Method Blank	K0810389-MB	0.2	0.03	1	11/12/08	0.04	J

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0810389
Project Name :	JH Baxter Arlington	**Date Collected :**	10/22/2008
Project Number :	Landfills	**Date Received :**	10/23/2008
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	11/12/08

Duplicate Summary
Inorganic Parameters

Sample Name :	BXS-4	Units :	mg/L
Lab Code :	K0810389-001DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Tannin and Lignin	SM 5550 B	0.2	0.3	0.3	0.3	<1	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : JH Baxter Arlington
Project Number : Landfills
Sample Matrix : WATER

Service Request : K0810389
Date Collected : 10/22/2008
Date Received : 10/23/2008
Date Prepared : NA
Date Analyzed : 11/12/08

Matrix Spike Summary
Inorganic Parameters

Sample Name : BXS-4
Lab Code : K0810389-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Tannin and Lignin	SM 5550 B	0.2	1.0	0.3	1.3	100	75-125	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0810389
Project Name :	JH Baxter Arlington	**Date Collected :**	NA
Project Number :	Landfills	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	11/12/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0810389-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Tannin and Lignin	NONE	SM 5550 B	1.0	1.1	110	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0810389
Date Collected : NA
Date Received : NA

Tannin and Lignin
SM 5550 B
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	11/12/2008	2.5	2.5	100
CCV2 Result	11/12/2008	2.5	2.6	104
CCV3 Result	11/12/2008	2.5	2.6	104
CCV4 Result	11/12/2008	2.5	2.6	104

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : JH Baxter Arlington

Service Request : K0810389
Date Collected : NA
Date Received : NA

Tannin and Lignin
SM 5550 B
Units: mg/L

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	11/12/2008	0.2	ND
CCB2 Result	11/12/2008	0.2	0.04 J
CCB3 Result	11/12/2008	0.2	0.04 J
CCB4 Result	11/12/2008	0.2	0.04 J

Metals

Columbia Analytical Services

- Cover Page -
INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project Name: JH Baxter Arlington
Project No.: Landfills

Service Request: K0810389

Sample Name:	Lab Code:
BXS-4	K0810389-001 DISS
BXS-4D	K0810389-001D DISS
BXS-4S	K0810389-001S DISS
BXS-1	K0810389-002 DISS
BXS-2	K0810389-003 DISS
BXS-5	K0810389-004 DISS
BXS-3	K0810389-005 DISS
BXN-2	K0810389-006 DISS
BXN-4	K0810389-007 DISS
BXN-5	K0810389-008 DISS
BXN-3	K0810389-009 DISS
BXN-1	K0810389-010 DISS
Equip Check	K0810389-011 DISS
Method Blank	K0810389-MB

Comments:

Approved By: 3C **Date:** 12/2/08

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project No.: Landfills
Project Name: JH Baxter Arlington
Matrix: WATER

Service Request: K0810389
Date Collected: 10/22/2008
Date Received: 10/23/2008
Units: ug/L
Basis: N/A

Sample Name: BXS-4
Lab Code: K0810389-001 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.6	1.0	11/12/08	11/20/08	7.2		
Barium	6010B	5.0	0.7	1.0	11/12/08	11/17/08	26.7		
Cadmium	6010B	5.0	2.0	1.0	11/12/08	11/17/08	2.0	U	
Copper	6010B	10.0	4.0	1.0	11/12/08	11/17/08	4.0	U	
Iron	6010B	20.0	2.0	1.0	11/12/08	11/17/08	74.8		
Manganese	6010B	5.0	0.3	1.0	11/12/08	11/17/08	111		
Nickel	6010B	20.0	2.0	1.0	11/12/08	11/17/08	2.0	U	
Zinc	6010B	10.0	2.0	1.0	11/12/08	11/17/08	2.0	U	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project No.: Landfills
Project Name: JH Baxter Arlington
Matrix: WATER

Service Request: K0810389
Date Collected: 10/22/2008
Date Received: 10/23/2008
Units: ug/L
Basis: N/A

Sample Name: BXS-1 **Lab Code:** K0810389-002 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.7	1.0	11/12/08	11/24/08	1.1	B	
Barium	6010B	5.0	0.7	1.0	11/12/08	11/17/08	24.8		
Cadmium	6010B	5.0	2.0	1.0	11/12/08	11/17/08	2.0	U	
Copper	6010B	10.0	4.0	1.0	11/12/08	11/17/08	4.0	U	
Iron	6010B	20.0	2.0	1.0	11/12/08	11/17/08	8.8	B	
Manganese	6010B	5.0	0.3	1.0	11/12/08	11/17/08	297		
Nickel	6010B	20.0	2.0	1.0	11/12/08	11/17/08	15.5	B	
Zinc	6010B	10.0	2.0	1.0	11/12/08	11/17/08	12.1		

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project No.: Landfills
Project Name: JH Baxter Arlington
Matrix: WATER

Service Request: K0810389
Date Collected: 10/22/2008
Date Received: 10/23/2008
Units: ug/L
Basis: N/A

Sample Name: BXS-2
Lab Code: K0810389-003 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.6	1.0	11/12/08	11/20/08	0.6	U	
Barium	6010B	5.0	0.7	1.0	11/12/08	11/17/08	41.9		
Cadmium	6010B	5.0	2.0	1.0	11/12/08	11/17/08	2.0	U	
Copper	6010B	10.0	4.0	1.0	11/12/08	11/17/08	4.0	U	
Iron	6010B	20.0	2.0	1.0	11/12/08	11/17/08	560		
Manganese	6010B	5.0	0.3	1.0	11/12/08	11/17/08	1290		
Nickel	6010B	20.0	2.0	1.0	11/12/08	11/17/08	31.7		
Zinc	6010B	10.0	2.0	1.0	11/12/08	11/17/08	6.2	B	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project No.: Landfills
Project Name: JH Baxter Arlington
Matrix: WATER

Service Request: K0810389
Date Collected: 10/22/2008
Date Received: 10/23/2008
Units: ug/L
Basis: N/A

Sample Name: BXS-5
Lab Code: K0810389-004 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.6	1.0	11/12/08	11/20/08	0.6	U	
Barium	6010B	5.0	0.7	1.0	11/12/08	11/17/08	43.3		
Cadmium	6010B	5.0	2.0	1.0	11/12/08	11/17/08	2.0	U	
Copper	6010B	10.0	4.0	1.0	11/12/08	11/17/08	4.0	U	
Iron	6010B	20.0	2.0	1.0	11/12/08	11/17/08	571		
Manganese	6010B	5.0	0.3	1.0	11/12/08	11/17/08	1300		
Nickel	6010B	20.0	2.0	1.0	11/12/08	11/17/08	32.4		
Zinc	6010B	10.0	2.0	1.0	11/12/08	11/17/08	7.1	B	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project No.: Landfills
Project Name: JH Baxter Arlington
Matrix: WATER

Service Request: K0810389
Date Collected: 10/22/2008
Date Received: 10/23/2008
Units: ug/L
Basis: N/A

Sample Name: BXS-3
Lab Code: K0810389-005 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.7	1.0	11/12/08	11/24/08	46.5		
Barium	6010B	5.0	0.7	1.0	11/12/08	11/17/08	72.2		
Cadmium	6010B	5.0	2.0	1.0	11/12/08	11/17/08	2.0	U	
Copper	6010B	10.0	4.0	1.0	11/12/08	11/17/08	4.0	U	
Iron	6010B	20.0	2.0	1.0	11/12/08	11/17/08	53800		
Manganese	6010B	5.0	0.3	1.0	11/12/08	11/17/08	15400		
Nickel	6010B	20.0	2.0	1.0	11/12/08	11/17/08	22.8		
Zinc	6010B	10.0	2.0	1.0	11/12/08	11/17/08	3.9	B	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project No.: Landfills
Project Name: JH Baxter Arlington
Matrix: WATER

Service Request: K0810389
Date Collected: 10/22/2008
Date Received: 10/23/2008
Units: ug/L
Basis: N/A

Sample Name: BXN-2
Lab Code: K0810389-006 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.6	1.0	11/12/08	11/20/08	0.6	U	
Barium	6010B	5.0	0.7	1.0	11/12/08	11/17/08	9.2		
Cadmium	6010B	5.0	2.0	1.0	11/12/08	11/17/08	2.0	U	
Copper	6010B	10.0	4.0	1.0	11/12/08	11/17/08	4.0	U	
Iron	6010B	20.0	2.0	1.0	11/12/08	11/17/08	18.0	B	
Manganese	6010B	5.0	0.3	1.0	11/12/08	11/17/08	4730		
Nickel	6010B	20.0	2.0	1.0	11/12/08	11/17/08	28.0		
Zinc	6010B	10.0	2.0	1.0	11/12/08	11/17/08	2.0	U	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project No.: Landfills
Project Name: JH Baxter Arlington
Matrix: WATER

Service Request: K0810389
Date Collected: 10/22/2008
Date Received: 10/23/2008
Units: ug/L
Basis: N/A

Sample Name: BXN-4 **Lab Code:** K0810389-007 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.6	1.0	11/12/08	11/20/08	0.6	U	
Barium	6010B	5.0	0.7	1.0	11/12/08	11/17/08	145		
Cadmium	6010B	5.0	2.0	1.0	11/12/08	11/17/08	2.0	U	
Copper	6010B	10.0	4.0	1.0	11/12/08	11/17/08	14.1		
Iron	6010B	20.0	2.0	1.0	11/12/08	11/17/08	257		
Manganese	6010B	5.0	0.3	1.0	11/12/08	11/17/08	5130		
Nickel	6010B	20.0	2.0	1.0	11/12/08	11/17/08	62.3		
Zinc	6010B	10.0	2.0	1.0	11/12/08	11/17/08	6.8	B	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project No.: Landfills
Project Name: JH Baxter Arlington
Matrix: WATER

Service Request: K0810389
Date Collected: 10/22/2008
Date Received: 10/23/2008
Units: ug/L
Basis: N/A

Sample Name: BXN-5
Lab Code: K0810389-008 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.6	1.0	11/12/08	11/20/08	0.6	U	
Barium	6010B	5.0	0.7	1.0	11/12/08	11/17/08	140		
Cadmium	6010B	5.0	2.0	1.0	11/12/08	11/17/08	2.0	U	
Copper	6010B	10.0	4.0	1.0	11/12/08	11/17/08	14.6		
Iron	6010B	20.0	2.0	1.0	11/12/08	11/17/08	258		
Manganese	6010B	5.0	0.3	1.0	11/12/08	11/17/08	5030		
Nickel	6010B	20.0	2.0	1.0	11/12/08	11/17/08	61.3		
Zinc	6010B	10.0	2.0	1.0	11/12/08	11/17/08	3.0	B	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project No.: Landfills
Project Name: JH Baxter Arlington
Matrix: WATER

Service Request: K0810389
Date Collected: 10/22/2008
Date Received: 10/23/2008
Units: ug/L
Basis: N/A

Sample Name: BXN-3
Lab Code: K0810389-009 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.6	1.0	11/12/08	11/20/08	0.6	U	
Barium	6010B	5.0	0.7	1.0	11/12/08	11/17/08	41.2		
Cadmium	6010B	5.0	2.0	1.0	11/12/08	11/17/08	2.0	U	
Copper	6010B	10.0	4.0	1.0	11/12/08	11/17/08	4.0	U	
Iron	6010B	20.0	2.0	1.0	11/12/08	11/17/08	4880		
Manganese	6010B	5.0	0.3	1.0	11/12/08	11/17/08	2770		
Nickel	6010B	20.0	2.0	1.0	11/12/08	11/17/08	121		
Zinc	6010B	10.0	2.0	1.0	11/12/08	11/17/08	2.0	U	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project No.: Landfills
Project Name: JH Baxter Arlington
Matrix: WATER

Service Request: K0810389
Date Collected: 10/22/2008
Date Received: 10/23/2008
Units: ug/L
Basis: N/A

Sample Name: BXN-1
Lab Code: K0810389-010 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.6	1.0	11/12/08	11/20/08	4.3	B	
Barium	6010B	5.0	0.7	1.0	11/12/08	11/17/08	29.3		
Cadmium	6010B	5.0	2.0	1.0	11/12/08	11/17/08	2.0	U	
Copper	6010B	10.0	4.0	1.0	11/12/08	11/17/08	4.0	U	
Iron	6010B	20.0	2.0	1.0	11/12/08	11/17/08	11600		
Manganese	6010B	5.0	0.3	1.0	11/12/08	11/17/08	2700		
Nickel	6010B	20.0	2.0	1.0	11/12/08	11/17/08	45.8		
Zinc	6010B	10.0	2.0	1.0	11/12/08	11/17/08	4.3	B	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project No.: Landfills
Project Name: JH Baxter Arlington
Matrix: WATER

Service Request: K0810389
Date Collected: 10/21/2008
Date Received: 10/23/2008
Units: ug/L
Basis: N/A

Sample Name: Equip Check
Lab Code: K0810389-011 DISS

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.6	1.0	11/12/08	11/20/08	0.6	U	
Barium	6010B	5.0	0.7	1.0	11/12/08	11/17/08	0.7	U	
Cadmium	6010B	5.0	2.0	1.0	11/12/08	11/17/08	2.0	U	
Copper	6010B	10.0	4.0	1.0	11/12/08	11/17/08	4.0	U	
Iron	6010B	20.0	2.0	1.0	11/12/08	11/17/08	2.0	B	
Manganese	6010B	5.0	0.3	1.0	11/12/08	11/17/08	0.4	B	
Nickel	6010B	20.0	2.0	1.0	11/12/08	11/17/08	2.0	U	
Zinc	6010B	10.0	2.0	1.0	11/12/08	11/17/08	2.0	U	

% Solids: 0.0

Comments:

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client: JH Baxter & Company
Project No.: Landfills
Project Name: JH Baxter Arlington
Matrix: WATER

Service Request: K0810389
Date Collected:
Date Received:
Units: ug/L
Basis: N/A

Sample Name: Method Blank
Lab Code: K0810389-MB

Analyte	Analysis Method	MRL	MDL	Dil. Factor	Date Extracted	Date Analyzed	Result	C	Q
Arsenic	7060A	5.0	0.6	1.0	11/12/08	11/20/08	1.0	B	
Barium	6010B	5.0	0.7	1.0	11/12/08	11/17/08	0.7	U	
Cadmium	6010B	5.0	2.0	1.0	11/12/08	11/17/08	2.0	U	
Copper	6010B	10.0	4.0	1.0	11/12/08	11/17/08	4.0	U	
Iron	6010B	20.0	2.0	1.0	11/12/08	11/17/08	2.0	U	
Manganese	6010B	5.0	0.3	1.0	11/12/08	11/17/08	0.3	U	
Nickel	6010B	20.0	2.0	1.0	11/12/08	11/17/08	2.0	U	
Zinc	6010B	10.0	2.0	1.0	11/12/08	11/17/08	2.0	U	

% Solids: 0.0

Comments:

Metals

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SPIKE SAMPLE RECOVERY

Client:	JH Baxter & Company	Service Request:	K0810389
Project No.:	Landfills	Units:	UG/L
Project Name:	JH Baxter Arlington	Basis:	N/A
Matrix:	WATER	% Solids:	0.0

Sample Name: BXS-4S Lab Code: K0810389-001S DISS

Analyte	Control Limit %R	Spike Result	C	Sample Result	C	Spike Added	%R	Q	Method
Arsenic	58 - 131	45.7		7.2		40.00	96.2		7060A
Barium	80 - 125	2040		26.7		2000.00	100.7		6010B
Cadmium	71 - 143	49		2.0	U	50.00	98.0		6010B
Copper	88 - 117	255		4.0	U	250.00	102.0		6010B
Iron	68 - 135	1060		74.8		1000.00	98.5		6010B
Manganese	85 - 122	611		111		500.00	100.0		6010B
Nickel	87 - 121	499		2.0	U	500.00	99.8		6010B
Zinc	88 - 113	529		2.0	U	500.00	105.8		6010B

An empty field in the Control Limit column indicates the control limit is not applicable

Metals

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DUPLICATES

Client: JH Baxter & Company **Service Request:** K0810389

Project No.: Landfills **Units:** UG/L

Project Name: JH Baxter Arlington **Basis:** N/A

Matrix: WATER **% Solids:** 0.0

Sample Name: BXS-4D **Lab Code:** K0810389-001D DISS

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Arsenic		7.2		6.6		8.7		7060A
Barium	20	26.7		28.3		5.8		6010B
Cadmium		2.0	U	2.0	U			6010B
Copper		4.0	U	4.0	U			6010B
Iron		74.8		44.0		51.9		6010B
Manganese	20	111		119		7.0		6010B
Nickel		2.0	U	2.0	U			6010B
Zinc		2.0	U	2.0	U			6010B

An empty field in the Control Limit column indicates the control limit is not applicable.

Metals

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LABORATORY CONTROL SAMPLE

Client: JH Baxter & Company Service Request: K0810389

Project No.: Landfills

Project Name: JH Baxter Arlington

Aqueous LCS Source: CAS MIXED Solid LCS Source:

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Arsenic	25	27.1	108.4					
Barium	5000	5200	104.0					
Cadmium	1250	1250	100.0					
Copper	625	669	107.0					
Iron	2500	2580	103.2					
Manganese	1250	1310	104.8					
Nickel	1250	1260	100.8					
Zinc	1250	1320	105.6					

1317 South 13th Avenue Kelso, Washington 98626 (360) 577-7222 (360) 636-1068 fax

Columbia Analytical Services INC.
An Employee - Owned Company

August 22, 2008 Analytical Report for Service Request No: K0807005

Anita Ragan
JH Baxter & Company
85 Baxter Road
Eugene, OR 97440

RE: J.H. Baxter Arlington/SI-PMP Wells

Dear Anita:

Enclosed are the results of the samples submitted to our laboratory on July 30, 2008. For your reference, these analyses have been assigned our service request number K0807005.

All analyses were performed according to our laboratory's quality assurance program. Where applicable, the methods cited conform to the Methods Update Rule (effective 4/11/2007), which relates to the use of analytical methods for the drinking water and waste water programs. The test results meet requirements of the NELAC standards. Exceptions are noted in the case narrative report where applicable. 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 3275. You may also contact me via Email at CLeaf@caslab.com.

Respectfully submitted,

Columbia Analytical Services, Inc.

Chris Leaf
Project Chemist

CL/ss

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.
Kelso, WA
State Certifications, Accreditations, and Licenses

Program	Number
Alaska DEC UST	UST-040
Arizona DHS	AZ0339
Arkansas - DEQ	88-0637
California DHS	2286
Colorado DPHE	-
Florida DOH	E87412
Hawaii DOH	-
Idaho DHW	-
Indiana DOH	C-WA-01
Louisiana DEQ	3016
Louisiana DHH	LA050010
Maine DHS	WA0035
Michigan DEQ	9949
Minnesota DOH	053-999-368
Montana DPHHS	CERT0047
Nevada DEP	WA35
New Jersey DEP	WA005
New Mexico ED	-
North Carolina DWQ	605
Oklahoma DEQ	9801
Oregon - DHS	WA200001
South Carolina DHEC	61002
Utah DOH	COLU
Washington DOE	C1203
Wisconsin DNR	998386840
Wyoming (EPA Region 8)	-

Case Narrative

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	JH Baxter & Company	**Service Request No.:**	K0807005
Project:	JH Baxter Arlington	**Date Received:**	07/30/2008
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 III validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Twenty-eight water samples were received for analysis at Columbia Analytical Services on 07/30/2008. 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.

General Chemistry Parameters

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

Dissolved Metals

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

Semivolatile Organic Compounds by EPA Method 8151A

Continuing Calibration Verification Exceptions:
The primary evaluation criterion was exceeded for the following analytes in Continuing Calibration Verification (CCV) 0816F058, 0818F003, 0818F016, and 0818F026: 4-Bromo-2,6-dichlorophenol. In accordance with CAS standard operating procedures, the alternative evaluation specified in the EPA method was performed using the average percent recovery of all analytes in the verification standard. The standard meets the alternative evaluation criteria.

Results for the following surrogate: 4-Bromo-2, 6-dichlorophenol in sample MW-10 has been reported from a column using average percent recovery of all analytes in the verification standard.

Matrix Spike Recovery Exceptions:
The control criteria for matrix spike recoveries of Pentachlorophenol for MW-32 is not applicable. The analyte concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery.

Sample Confirmation Notes:
JP: The confirmation comparison criteria are not applicable because at least one of the values is below the Method Reporting Limit (MRL).

Approved by _____ Date 8/22/08

Semivolatile Organic Compounds by EPA Method 8151A(cont.)

Elevated Method Reporting Limits:
Several samples required dilution due to the presence of elevated levels of target analyte Pentachlorophenol. The reporting limits are adjusted to reflect the dilution.

Polynuclear Aromatic Hydrocarbons by EPA Method 8270C

Sample Notes and Discussion
Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD). A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was analyzed and reported in lieu of the MS/MSD for these samples.

Approved by _____ **Date** 8/22/08

Chain of Custody Documentation

CHAIN OF CUSTODY

Columbia Analytical Services, Inc.
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SR#: K0807005

PAGE _____ OF _____ COC #_____

PROJECT NAME: J.H. Baxter Arlington
PROJECT NUMBER: SI - PMP wells
PROJECT MANAGER: Anita Ragan Environmental Dept
COMPANY/ADDRESS: 85 N. Baxter Rd
CITY/STATE/ZIP: Eugene, OR 97402
E-MAIL ADDRESS: aragan@jhbaxter
PHONE #: 541 689 3801 FAX#:
SAMPLER'S SIGNATURE:

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625 ☐ 8270 ☐ 8270LL ☐	Volatile Organics 624 ☐ 8260 ☐	Hydrocarbons (*see below) Gas ☐ Diesel ☐ Oil ☐	8021 ☐ BTEX ☐ ☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 SGT ☐ 1664 HEM ☐	PCB's Aroclors ☐	Pesticides/Herbicides 608 ☐ 8081A ☐	Chlorophenolics - 8151M Tri ☐ Tetra ☐	PAHs 8310 ☐ SIM	Metals, Total or Dissolved (See list below)	Cyanide ☐	pH Cond ☐ SO_4 ☐ PO_4 ☐ F, NO_2 NO_3 BOD TSS (DS) (circle) NH_3 NCOD Total-P TKN (NO_2+NO_3) DOC (circle)	TOX 9020 ☐ AOX 1650 ☐ 506 ☐ TOC	PAHs SIM	REMARKS
MW-26	7/29/08	1520		H_2O	1							X	X							
MW-2	7/29	1610			2							X	X						X	
MW-15	7/29	1715			2							X	X						X	
BXS-1	7/29	1810			2							X	X						X	
Equip. Check	7/29	1550			2							X	X	X		X	X		X	
Extra well 1-7	7/29	1031			1							X	X							
BXS-2	7/30	0927			2							X	X						X	
BXS-6	7/30	0927			2							X	X						X	

REPORT REQUIREMENTS

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

INVOICE INFORMATION

P.O. # _____
Bill To: J.H. Baxter

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 NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

for questions, please contact Kathy Gunderson @ (360) 942-3409

* tests added per phone conv. w/ Kathy G. @ 7/31/08 10:30

RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
Signature	Date/Time 7/30/08 1720	Signature	Date/Time 7/30/08 1721	Signature	Date/Time	Signature	Date/Time
Printed Name: Anita Ragan	Firm: Baxter	Printed Name	Firm	Printed Name	Firm	Printed Name	Firm

RCOC #1 06/03

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CHAIN OF CUSTODY

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SR#: _____

PAGE _____ OF _____ COC # _____

PROJECT NAME: J.H. Baxter Arlington
PROJECT NUMBER: SI-PMP wells
PROJECT MANAGER: Anita Ragan
COMPANY/ADDRESS: 85 Baxter Rd
CITY/STATE/ZIP: Eugene, OR 97402
E-MAIL ADDRESS: aragan@jhbaxter.com
PHONE: 541 684-3801 FAX#:
SAMPLER'S SIGNATURE:

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625 ☐ 8270 ☐ 8270LL ☐	Volatile Organics 624 ☐ 8260 ☐	Hydrocarbons 8021 ☐ BTEX ☐ Gas ☐ Diesel ☐ (*see below) Oil ☐ ☐ Fuel Fingerprint (FtQ) ☐ NW-HCID	Oil & Grease/TRPH 1664 HEM ☐ 1664 SGT ☐	PCB's Aroclors ☐ Congeners ☐	Pesticides/Herbicides 608 ☐ 8081A ☐ 8141A ☐ 8151A ☐	Chlorophenolics - 8151M Tri ☐ Tetra ☐ PCP ☐	PAHs 8310 ☐ SIM ☐	Metals, Total or Dissolved (See list below)	Cyanide ☐	Hex-Chrom ☐	pH, Cond., Cl, SO_4, PO4, F, NO_2, NO_3, BOD, TSS, TDS (circle)	NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020 ☐ AOX 1650 ☐ 506 ☐	PAHs SIM					REMARKS
MW-3	7/29/08	0935		H_2O	2							X	X									X					
MW-22	7/29	1028			1							X	X														
MW-16	7/29	1050			2							X	X									X					
MW-25	7/29	1104			1							X	X														
MW-32	7/29	1140			1							X	X														
MW-37	7/29	1208			2							X	X									X					
MW-33	7/29	1347			1							X	X														
MW-35	7/29	1411			1							X	X														reed PAH
MW-24	7/29	1413			1							X	X														
MW-27	7/29	1450			1							X	X														

REPORT REQUIREMENTS

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

INVOICE INFORMATION

P.O. # SI
Bill To: J.H. Baxter

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 NORTHWEST OTHER: _____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

for questions, please contact Kathy Gunderson @ (360) 942-3409

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature: [signature]	Signature:	Signature:
Date/Time: 7/30/08 1720	Date/Time: 7/30/08 1721	Date/Time:	Date/Time:
Printed Name: Anita Ragan	Printed Name: [illegible]	Printed Name:	Printed Name:
Firm: Baxter	Firm: CAS	Firm:	Firm:

RCOC #1 06/03

10

CHAIN OF CUSTODY

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SR#:_____

PAGE _____ OF _____ COC #_____

PROJECT NAME: JH Baxter Arlington
PROJECT NUMBER: SI-PMP Wells
PROJECT MANAGER: Anita Ragan
COMPANY/ADDRESS: 85 Baxter Rd
CITY/STATE/ZIP: Eugene, OR 97402
E-MAIL ADDRESS: aragan@jhbaxter
PHONE #: 5416893801 FAX#:
SAMPLER'S SIGNATURE: [signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	REMARKS
MW-18	7/28/08	1415		H_2O	2	
MW-31	7/28	1505			1	
MW-30	7/28	1545			2	
MW-29	7/28	1618			1	
MW-36	7/28	1708			2	
MW-34	7/28	1710			1	
MW-28	7/28	1745			1	
MW-17	7/28	1805			2	
MW-23	7/29	0847			1	
MW-10	7/29	0933			1	

Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐
Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐
Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐
☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen
Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐
PCB's Aroclors☐ Congeners☐
Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐
Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐
PAHs 8310☐ SIM
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) NO_2+NO_3
TOX 9020☐ AOX 1650☐ 506☐
PAH SIM

REPORT REQUIREMENTS

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

INVOICE INFORMATION

P.O. # _____
Bill To: JH Baxter

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 NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

for questions please contact Kathy Gunderson @ (360) 942-3409

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature: [signature]	Signature:	Signature:
Date/Time: 7/30/08 1720	Date/Time: 7/30/08 1721	Date/Time:	Date/Time:
Printed Name: Anita Ragan	Printed Name: [signature]	Printed Name:	Printed Name:
Firm: Baxter	Firm: [signature]	Firm:	Firm:

RCOC #1 06/03

11

Cooler Receipt and Preservation Form

Chris

Client / Project: JH Baxter Service Request K08 7005

Received: 7/30/08 Opened: 7/31/08 By: LN1

1. Samples were received via? *US Mail* *Fed Ex* *UPS* *DHL* *GH* *GS* *PDX* (Courier) *Hand Delivered*
2. Samples were received in: (circle) (Cooler) *Box* *Envelope* *Other* _____
3. Were custody seals on coolers? NA Y (N) If yes, how many and where? _____ NA
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Is shipper's air-bill filed? If not, record air-bill number: _____ (N) Y N

5. Temperature of cooler(s) upon receipt (°C):	6.4	3.4	0.5	2.2
Temperature Blank (°C):	4.0	—	2.2	—
6. If applicable, list Chain of Custody Numbers:				

7. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
8. Packing material used. (Inserts) *Baggies* *Bubble Wrap* (Gel Packs) (Wet Ice) *Sleeves* *Other* _____
9. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA (Y) N
10. Were all sample labels complete (i.e analysis, preservation, etc.)? (Y) N
11. Did all sample labels and tags agree with custody papers? *Indicate in the table below* (Y) N
12. Were appropriate bottles/containers and volumes received for the tests indicated? Y (N)
13. Were the pH-preserved bottles tested* received at the appropriate pH? *Indicate in the table below* NA (Y) N
14. Were VOA vials and 1631 Mercury bottles received without headspace? *Indicate in the table below.* NA (Y) N
15. Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection? (NA) Y N
16. Was C12/Res negative? (NA) Y N
    NA (Y) N

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC
EW Extraction 1-7	Extra Well 1-7		
Equipt. Check	Equip Check		

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broken	pH	Reagent	Volume added	Reagent Lot Number	Initials
MW-35 - Reed not rec'd	1	1LA								TB

does not include all pH preserved sample aliquots received. See sample receiving SOP (SMO-GEN).

Additional Notes, Discrepancies, & Resolutions:

Rec'd a 1 Liter Red, 1 Liter White, + 1 L Yellow for Equip Check not specified on COC. Run samples similar to K3748 adding metals (D) & gn. chem tests. per phone conv. with Kathy Sundinson cl 7/31/08

Page 1 of 1 CL 8/2/08

General Chemistry Parameters

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	07/29/08
Project Number :	SI-PMP Wells	**Date Received :**	07/30/08
Sample Matrix :	WATER		

Ammonia as Nitrogen

Analysis Method : SM 4500-NH3 E
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	Dilution Factor	Date Analyzed	Result	Result Notes
Equip. Check	K0807005-005	0.05	1	08/01/08	0.08	
Method Blank	K0807005-MB	0.05	1	08/01/08	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	7/29/2008
Project Number :	SI-PMP Wells	**Date Received :**	7/30/2008
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/01/08

Duplicate Summary
Inorganic Parameters

Sample Name :	Equip. Check	Units :	mg/L
Lab Code :	K0807005-005DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Ammonia as Nitrogen	SM 4500-NH3 E	0.05	0.08	0.08	0.08	<1	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : SI-PMP Wells
Sample Matrix : WATER

Service Request : K0807005
Date Collected : 7/29/2008
Date Received : 7/30/2008
Date Prepared : NA
Date Analyzed : 08/01/08

Matrix Spike Summary
Inorganic Parameters

Sample Name : Equip. Check
Lab Code : K0807005-005MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Ammonia as Nitrogen	SM 4500-NH3 E	0.05	10	0.08	10.1	100	75-125	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	SI-PMP Wells	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/01/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0807005-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Ammonia as Nitrogen	NONE	SM 4500-NH3 E	8.45	7.70	91	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : J.H. Baxter Arlington

Service Request : K0807005
Date Collected : NA
Date Received : NA

Ammonia as Nitrogen
SM 4500-NH3 E
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	8/1/2008	10.0	9.33	93
CCV2 Result	8/1/2008	10.0	9.77	98
CCV3 Result	8/1/2008	10.0	9.77	98
CCV4 Result	8/1/2008	10.0	9.79	98

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : J.H. Baxter Arlington

Service Request : K0807005
Date Collected : NA
Date Received : NA

Ammonia as Nitrogen
SM 4500-NH3 E
Units: mg/L

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	8/1/2008	0.05	ND
CCB2 Result	8/1/2008	0.05	ND
CCB3 Result	8/1/2008	0.05	ND
CCB4 Result	8/1/2008	0.05	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : SI-PMP Wells
Sample Matrix : WATER

Service Request : K0807005
Date Collected : 07/29/08
Date Received : 07/30/08

Chloride

Analysis Method : 300.0
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	Dilution Factor	Date Analyzed	Result	Result Notes
Equip. Check	K0807005-005	0.2	2	08/04/08	ND	
Method Blank	K0807005-MB	0.2	1	08/04/08	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	SI-PMP Wells	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/04/08

Duplicate Summary
Inorganic Parameters

Sample Name :	Batch QC	Units :	mg/L
Lab Code :	K0807066-001DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Chloride	300.0	0.2	0.6	0.6	0.6	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : SI-PMP Wells
Sample Matrix : WATER

Service Request : K0807005
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 08/04/08

Matrix Spike Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0807066-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chloride	300.0	0.2	4.0	0.6	4.1	87	80-120	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	SI-PMP Wells	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/04/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0807005-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chloride	NONE	300.0	5.0	4.7	94	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : J.H. Baxter Arlington

Service Request : K0807005
Date Collected : NA
Date Received : NA

Chloride
300.0
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	8/4/2008	5.0	4.7	94
CCV2 Result	8/4/2008	5.0	4.8	96
CCV3 Result	8/4/2008	5.0	4.8	96
CCV4 Result	8/4/2008	5.0	4.8	96
CCV5 Result	8/4/2008	5.0	4.8	96
CCV6 Result	8/4/2008	5.0	4.8	96
CCV7 Result	8/4/2008	5.0	4.8	96
CCV8 Result	8/4/2008	5.0	4.7	94
CCV9 Result	8/5/2008	5.0	4.8	96

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : J.H. Baxter Arlington

Service Request : K0807005
Date Collected : NA
Date Received : NA

Chloride
300.0
Units: mg/L

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	8/4/2008	0.2	ND
CCB2 Result	8/4/2008	0.2	ND
CCB3 Result	8/4/2008	0.2	ND
CCB4 Result	8/4/2008	0.2	ND
CCB5 Result	8/4/2008	0.2	ND
CCB6 Result	8/4/2008	0.2	ND
CCB7 Result	8/4/2008	0.2	ND
CCB8 Result	8/4/2008	0.2	ND
CCB9 Result	8/5/2008	0.2	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	07/29/08
Project Number :	SI-PMP Wells	**Date Received :**	07/30/08
Sample Matrix :	WATER		

Sulfate

Analysis Method : 300.0
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	Dilution Factor	Date Analyzed	Result	Result Notes
Equip. Check	K0807005-005	0.2	2	08/04/08	ND	
Method Blank	K0807005-MB	0.2	1	08/04/08	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	SI-PMP Wells	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/04/08

Duplicate Summary
Inorganic Parameters

Sample Name :	Batch QC	Units :	mg/L
Lab Code :	K0807066-001DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Sulfate	300.0	0.2	1.2	1.2	1.2	<1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : SI-PMP Wells
Sample Matrix : WATER

Service Request : K0807005
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 08/04/08

Matrix Spike Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0807066-001MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Sulfate	300.0	0.2	4.0	1.2	4.9	93	80-120	

Report By: MKANALY

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	SI-PMP Wells	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/04/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0807005-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Sulfate	NONE	300.0	5.0	4.7	94	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : J.H. Baxter Arlington

Service Request : K0807005
Date Collected : NA
Date Received : NA

Sulfate
300.0
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	8/4/2008	5.0	4.8	96
CCV2 Result	8/4/2008	5.0	4.9	98
CCV3 Result	8/4/2008	5.0	4.8	96
CCV4 Result	8/4/2008	5.0	4.8	96
CCV5 Result	8/4/2008	5.0	4.7	94
CCV6 Result	8/4/2008	5.0	4.8	96
CCV7 Result	8/4/2008	5.0	4.7	94
CCV8 Result	8/4/2008	5.0	4.7	94
CCV9 Result	8/5/2008	5.0	4.8	96

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : J.H. Baxter Arlington

Service Request : K0807005
Date Collected : NA
Date Received : NA

Sulfate
300.0
Units: mg/L

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	8/4/2008	0.2	ND
CCB2 Result	8/4/2008	0.2	ND
CCB3 Result	8/4/2008	0.2	ND
CCB4 Result	8/4/2008	0.2	ND
CCB5 Result	8/4/2008	0.2	ND
CCB6 Result	8/4/2008	0.2	ND
CCB7 Result	8/4/2008	0.2	ND
CCB8 Result	8/4/2008	0.2	ND
CCB9 Result	8/5/2008	0.2	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	07/29/08
Project Number :	SI-PMP Wells	**Date Received :**	07/30/08
Sample Matrix :	WATER		

Chemical Oxygen Demand (COD)

Analysis Method : SM 5220 C
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	Dilution Factor	Date Analyzed	Result	Result Notes
Equip. Check	K0807005-005	5	1	08/08/08	9	
Method Blank	K0807005-MB	5	1	08/08/08	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	7/29/2008
Project Number :	SI-PMP Wells	**Date Received :**	7/30/2008
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/08/08

Duplicate Summary
Inorganic Parameters

Sample Name :	Equip. Check	Units :	mg/L
Lab Code :	K0807005-005DUP	Basis :	NA

Test Notes :

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Chemical Oxygen Demand (COD)	SM 5220 C	5	9	ND	NC	NC	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	7/29/2008
Project Number :	SI-PMP Wells	**Date Received :**	7/30/2008
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/08/08

Matrix Spike Summary
Inorganic Parameters

Sample Name :	Equip. Check	Units :	mg/L
Lab Code :	K0807005-005MS	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chemical Oxygen Demand (COD)	SM 5220 C	5	100	9	111	102	75-125	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	SI-PMP Wells	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/08/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0807005-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Chemical Oxygen Demand (COD)	NONE	SM 5220 C	106	113	107	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	07/29/08
Project Number :	SI-PMP Wells	**Date Received :**	07/30/08
Sample Matrix :	WATER		

Conductivity at 25 Degrees Celsius

Analysis Method : SM 2510 B
Test Notes :

Units : uMHOS/cm
Basis : NA

Sample Name	Lab Code	MRL	Dilution Factor	Date Analyzed	Result	Result Notes
Equip. Check	K0807005-005	2	1	08/01/08	4	
Method Blank	K0807005-MB	2	1	08/01/08	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : SI-PMP Wells
Sample Matrix : WATER

Service Request : K0807005
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 08/01/08

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0807007-5DUP
Test Notes :

Units : uMHOS/cm
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Conductivity at 25 Degrees Celsius	SM 2510 B	2	1170	1180	1180	<1	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	SI-PMP Wells	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/01/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	uMHOS/cm
Lab Code :	K0807005-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Conductivity at 25 Degrees Celsius	NONE	SM 2510 B	1150	1170	102	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : SI-PMP Wells
Sample Matrix : WATER

Service Request : K0807005
Date Collected : 07/29/08
Date Received : 07/30/08

Nitrate+Nitrite as Nitrogen

Analysis Method : 353.2
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	Dilution Factor	Date Analyzed	Result	Result Notes
Equip. Check	K0807005-005	0.05	1	08/05/08	ND	
Method Blank	K0807005-MB	0.05	1	08/05/08	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : SI-PMP Wells
Sample Matrix : WATER

Service Request : K0807005
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 08/05/08

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0807066-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Nitrate+Nitrite as Nitrogen	353.2	0.05	0.15	0.14	0.15	7	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	SI-PMP Wells	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/05/08

Matrix Spike Summary
Inorganic Parameters

Sample Name :	Batch QC	Units :	mg/L
Lab Code :	K0807066-001MS	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Nitrate+Nitrite as Nitrogen	353.2	0.05	2.00	0.15	2.31	108	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	SI-PMP Wells	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/05/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0807005-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Nitrate+Nitrite as Nitrogen	NONE	353.2	37.5	37.9	101	90-110	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : J.H. Baxter Arlington

Service Request : K0807005
Date Collected : NA
Date Received : NA

Nitrate+Nitrite as Nitrogen
353.2
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	8/5/2008	2.00	2.02	101
CCV2 Result	8/5/2008	2.00	2.04	102
CCV3 Result	8/5/2008	2.00	2.02	101
CCV4 Result	8/5/2008	2.00	2.00	100
CCV5 Result	8/5/2008	2.00	2.03	102
CCV6 Result	8/5/2008	2.00	2.02	101
CCV7 Result	8/5/2008	2.00	2.03	102

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : J.H. Baxter Arlington

Service Request : K0807005
Date Collected : NA
Date Received : NA

Nitrate+Nitrite as Nitrogen
353.2
Units: mg/L

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	8/5/2008	0.05	ND
CCB2 Result	8/5/2008	0.05	ND
CCB3 Result	8/5/2008	0.05	ND
CCB4 Result	8/5/2008	0.05	ND
CCB5 Result	8/5/2008	0.05	ND
CCB6 Result	8/5/2008	0.05	ND
CCB7 Result	8/5/2008	0.05	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	07/29/08
Project Number :	SI-PMP Wells	**Date Received :**	07/30/08
Sample Matrix :	WATER		

pH

Analysis Method : SM 4500-H+ B
Test Notes :

Units : pH Units
Basis : NA

Sample Name	Lab Code	MRL	Dilution Factor	Date/Time Analyzed	Result	Result Notes
Equip. Check	K0807005-005	-	1	07/31/08 14:32	5.30	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : SI-PMP Wells
Sample Matrix : WATER

Service Request : K0807005
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 07/31/08

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0807015-001DUP
Test Notes :

Units : pH Units
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
pH	SM 4500-H+ B	-	7.70	7.74	7.72	<1	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	SI-PMP Wells	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	07/31/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	pH Units
Lab Code :	K0807005-LCS	Basis :	NA

Test Notes :

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
pH	NONE	SM 4500-H+ B	7.65	7.60	99	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	07/29/08
Project Number :	SI-PMP Wells	**Date Received :**	07/30/08
Sample Matrix :	WATER		

Tannin and Lignin

Analysis Method : SM 5550 B
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	Dilution Factor	Date Analyzed	Result	Result Notes
Equip. Check	K0807005-005	0.2	1	08/08/08	ND	
Method Blank	K0807005-MB	0.2	1	08/08/08	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	7/29/2008
Project Number :	SI-PMP Wells	**Date Received :**	7/30/2008
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/08/08

Duplicate Summary
Inorganic Parameters

Sample Name :	Equip. Check	Units :	mg/L
Lab Code :	K0807005-005DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Tannin and Lignin	SM 5550 B	0.2	ND	ND	ND	-	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : SI-PMP Wells
Sample Matrix : WATER

Service Request : K0807005
Date Collected : 7/29/2008
Date Received : 7/30/2008
Date Prepared : NA
Date Analyzed : 08/08/08

Matrix Spike Summary
Inorganic Parameters

Sample Name : Equip. Check
Lab Code : K0807005-005MS
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Tannin and Lignin	SM 5550 B	0.2	1.0	ND	0.8	80	75-125	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	SI-PMP Wells	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/08/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0807005-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Tannin and Lignin	NONE	SM 5550 B	1.0	0.9	90	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : J.H. Baxter Arlington

Service Request : K0807005
Date Collected : NA
Date Received : NA

Tannin and Lignin
SM 5550 B
Units: mg/L

CONTINUING CALIBRATION VERIFICATION (CCV)

	Date Analyzed	True Value	Measured Value	Percent Recovery
CCV1 Result	8/8/2008	2.5	2.4	96
CCV2 Result	8/8/2008	2.5	2.4	96
CCV3 Result	8/8/2008	2.5	2.6	104
CCV4 Result	8/8/2008	2.5	2.5	100
CCV5 Result	8/8/2008	2.5	2.4	96

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project : J.H. Baxter Arlington

Service Request : K0807005
Date Collected : NA
Date Received : NA

Tannin and Lignin
SM 5550 B
Units: mg/L

CONTINUING CALIBRATION BLANK (CCB)

	Date Analyzed	MRL	Blank Value
CCB1 Result	8/8/2008	0.2	ND
CCB2 Result	8/8/2008	0.2	ND
CCB3 Result	8/8/2008	0.2	ND
CCB4 Result	8/8/2008	0.2	ND
CCB5 Result	8/8/2008	0.2	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	07/29/08
Project Number :	SI-PMP Wells	**Date Received :**	07/30/08
Sample Matrix :	WATER		

Solids, Total Dissolved

Analysis Method : SM 2540 C
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	Dilution Factor	Date Analyzed	Result	Result Notes
Equip. Check	K0807005-005	5	1	08/04/08	ND	
Method Blank	K0807005-MB	5	1	08/04/08	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	SI-PMP Wells	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/04/08

Duplicate Summary
Inorganic Parameters

Sample Name :	Batch QC	Units :	mg/L
Lab Code :	K0807006-003DUP	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Solids, Total Dissolved	SM 2540 C	5	506	485	496	4	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	SI-PMP Wells	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/04/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0807005-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Solids, Total Dissolved	NONE	SM 2540 C	884	892	101	85-115	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	07/29/08
Project Number :	SI-PMP Wells	**Date Received :**	07/30/08
Sample Matrix :	WATER		

Carbon, Total Organic

Analysis Method : SM 5310 C
Test Notes :

Units : mg/L
Basis : NA

Sample Name	Lab Code	MRL	Dilution Factor	Date Analyzed	Result	Result Notes
Equip. Check	K0807005-005	0.5	1	08/07/08	ND	
Method Blank	K0807005-MB	0.5	1	08/07/08	ND	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : JH Baxter & Company
Project Name : J.H. Baxter Arlington
Project Number : SI-PMP Wells
Sample Matrix : WATER

Service Request : K0807005
Date Collected : NA
Date Received : NA
Date Prepared : NA
Date Analyzed : 08/07/08

Duplicate Summary
Inorganic Parameters

Sample Name : Batch QC
Lab Code : K0806967-001DUP
Test Notes :

Units : mg/L
Basis : NA

Analyte	Analysis Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Carbon, Total Organic	SM 5310 C	0.5	1.5	1.5	1.5	<1	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	SI-PMP Wells	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/07/08

Matrix Spike Summary
Inorganic Parameters

Sample Name :	Batch QC	Units :	mg/L
Lab Code :	K0806967-001MS	Basis :	NA
Test Notes :			

Analyte	Analysis Method	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Carbon, Total Organic	SM 5310 C	0.5	25.0	1.5	25.5	96	49-156	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client :	JH Baxter & Company	**Service Request :**	K0807005
Project Name :	J.H. Baxter Arlington	**Date Collected :**	NA
Project Number :	SI-PMP Wells	**Date Received :**	NA
Sample Matrix :	WATER	**Date Prepared :**	NA
		Date Analyzed :	08/07/08

Laboratory Control Sample Summary
Inorganic Parameters

Sample Name :	Lab Control Sample	Units :	mg/L
Lab Code :	K0807005-LCS	Basis :	NA
Test Notes :			

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Carbon, Total Organic	NONE	SM 5310 C	24.0	22.7	95	69-136	

SM Standard Methods for the Examination of Water and Wastewater, 20th Ed., 1998.

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Bellingham WA | 805 Orchard Dr Suite 4 - 98225
Microbiology | 360.671.0688 • 360.671.1577fax

Data Report

Client Name: J H Baxter Company
85 Baxter Rd
Eugene, OR 97402

Report Date: 1/14/2008
Reference Number: 08-00372
Project: Landfill Wells

Collected By: A Ragan

Date Received: 1/10/2008
Peer Review:

Lab Number: 859 Sample Description: BXS-1 - Baxter Arlington Sample Date: 1/9/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	1/11/2008	SK	QT_080114	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	1/11/2008	SK	QT_080114	

Lab Number: 860 Sample Description: BXS-5 - Baxter Arlginton Sample Date: 1/9/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	1/11/2008	SK	QT_080114	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	1/11/2008	SK	QT_080114	

Lab Number: 861 Sample Description: BXS-2 - Baxter Arlington Sample Date: 1/9/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	1/11/2008	SK	QT_080114	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	1/11/2008	SK	QT_080114	

Lab Number: 862 Sample Description: BXS-4 - Baxter Arlington Sample Date: 1/9/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	1/11/2008	SK	QT_080114	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	1/11/2008	SK	QT_080114	

Lab Number: 863 Sample Description: BXS-3 - Baxter Arlington Sample Date: 1/9/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	1/11/2008	SK	QT_080114	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	1/11/2008	SK	QT_080114	

PQL = Practical Quantitation Limit is the lowest level that can be acheived within specified limits of precision and accuracy during routine laboratory operating conditions.
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D.F. - Dilution Factor

WSDOE Lab C1251
WSDOH Lab 046

FORM: MULT_RESULT

EDGE ANALYTICAL LABORATORIES

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Data Report

Client Name: J H Baxter Company
P O Box 305
Eugene, OR 97440

Report Date: 5/8/2008
Reference Number: 08-05662
Project: J H Baxter Company

Collected By: A. Ragan

Date Received: 5/1/2008
Peer Review:

Lab Number: 12305 Sample Description: BXS4 - JHB Arlington Sample Date: 4/30/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	5/2/2008	AS	QT_080505	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	5/2/2008	AS	QT_080505	

Lab Number: 12306 Sample Description: BXS1 - JHB Arlington Sample Date: 4/30/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	5/2/2008	AS	QT_080505	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	5/2/2008	AS	QT_080505	

Lab Number: 12307 Sample Description: BXS6 - JHB Arlington Sample Date: 4/30/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	5/2/2008	AS	QT_080505	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	5/2/2008	AS	QT_080505	

Lab Number: 12308 Sample Description: BXS2 - JHB Arlington Sample Date: 4/30/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**2.0**	1		MPN/10(	1.0	SM9223 B.2.b	5/2/2008	AS	QT_080505	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	5/2/2008	AS	QT_080505	

Lab Number: 12309 Sample Description: BXS3 - JHB Arlington Sample Date: 4/30/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	5/3/2008	AS	QT_080506	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	5/3/2008	AS	QT_080506	

Lab Number: 12310 Sample Description: BXN2 - JHB Arlington Sample Date: 4/30/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	5/2/2008	AS	QT_080505	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	5/2/2008	AS	QT_080505	

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D.F. - Dilution Factor

WSDOE Lab C1251
WSDOH Lab 046

FORM: MULT_RESULT

Reference Number: 08-05662
Report Date: 5/8/2008

Data Report

Collected By: A. Ragan

Date Received: 5/1/2008

Lab Number: 12311 Sample Description: BXN3 - JHB Arlington Sample Date: 4/30/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	5/2/2008	AS	QT_080505	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	5/2/2008	AS	QT_080505	

Lab Number: 12312 Sample Description: BXN1 - JHB Arlington Sample Date: 4/30/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**1.0**	1		MPN/10(	1.0	SM9223 B.2.b	5/2/2008	AS	QT_080505	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	5/2/2008	AS	QT_080505	

Lab Number: 12313 Sample Description: BXN4 - JHB Arlington Sample Date: 4/30/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	5/2/2008	AS	QT_080505	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	5/2/2008	AS	QT_080505	

Lab Number: 12314 Sample Description: BXN5 - JHB Arlington Sample Date: 4/30/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	5/2/2008	AS	QT_080505	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	5/2/2008	AS	QT_080505	

Lab Number: 12315 Sample Description: Equip Check - JHB Arlington Sample Date: 4/30/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	5/2/2008	AS	QT_080505	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	5/2/2008	AS	QT_080505	

PQL = Practical Quantitation Limit is the lowest level that can be acheived within specified limits of precision and accuracy during routine laboratory operating conditions.
ND = Not detected above the listed practical quantitation limit (PQL) or not above the Method Detection Limit (MDL), if requested.
D.F. - Dilution Factor

WSDOE Lab C1251
WSDOH Lab 046

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Data Report

Client Name: J H Baxter Company
P O Box 305
Eugene, OR 97440

Report Date: 8/1/2008
Reference Number: 08-10538
Project: Landfill Wells & Carbon

Collected By: A. Ragan

Date Received: 7/30/2008
Peer Review:

Lab Number: 22245 Sample Description: Equip Check - Baxter/Arlington Sample Date: 7/29/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**18.7**	1		MPN/10(	1.0	SM9223 B.2.b	7/31/2008	AS	QT_080731	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	7/31/2008	AS	QT_080731	

Lab Number: 22246 Sample Description: BXN-2 - Baxter Sample Date: 7/29/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**48.7**	1		MPN/10(	1.0	SM9223 B.2.b	7/31/2008	AS	QT_080731	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	7/31/2008	AS	QT_080731	

Lab Number: 22247 Sample Description: BXS-1 - Baxter Sample Date: 7/29/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	7/31/2008	AS	QT_080731	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	7/31/2008	AS	QT_080731	

Lab Number: 22248 Sample Description: BXS-4 - Baxter Sample Date: 7/30/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	7/31/2008	AS	QT_080731	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	7/31/2008	AS	QT_080731	

PQL = Practical Quantitation Limit is the lowest level that can be acheived within specified limits of precision and accuracy during routine laboratory operating conditions.
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D.F. - Dilution Factor

WSDOE Lab C1251
WSDOH Lab 046

FORM: MULT_RESULT

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Microbiology | 360.671.0688 • 360.671.1577fax

Data Report

Client Name: J H Baxter Company
P O Box 305
Eugene, OR 97440

Report Date: 8/8/2008
Reference Number: 08-10595
Project: BXS and BXN QT

Collected By:

Date Received: 7/31/2008
Peer Review:

Lab Number: 22335 Sample Description: BXN-1 - North landfill Sample Date: 7/30/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**325.5**	1		MPN/10(	1.0	SM9223 B.2.b	8/2/2008	KS	QT_080804	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	8/2/2008	KS	QT_080804	

Lab Number: 22336 Sample Description: BXS-3 - South landfill Sample Date: 7/30/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	8/2/2008	KS	QT_080804	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	8/2/2008	KS	QT_080804	

Lab Number: 22337 Sample Description: BXN-5 - North landfill Sample Date: 7/30/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**56.5**	1		MPN/10(	1.0	SM9223 B.2.b	8/1/2008	AS	QT_080801	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	8/1/2008	AS	QT_080801	

Lab Number: 22338 Sample Description: BXN-4 - North landfill Sample Date: 7/30/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**81.3**	1		MPN/10(	1.0	SM9223 B.2.b	8/1/2008	AS	QT_080801	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	8/1/2008	AS	QT_080801	

Lab Number: 22339 Sample Description: BXS-2 - South landfill Sample Date: 7/30/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**248.9**	1		MPN/10(	1.0	SM9223 B.2.b	8/1/2008	AS	QT_080801	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	8/1/2008	AS	QT_080801	

Lab Number: 22340 Sample Description: BXN-3 - North landfill Sample Date: 7/30/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**63.8**	1		MPN/10(	1.0	SM9223 B.2.b	8/1/2008	AS	QT_080801	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	8/1/2008	AS	QT_080801	

PQL = Practical Quantitation Limit is the lowest level that can be acheived within specified limits of precision and accuracy during routine laboratory operating conditions.
ND = Not detected above the listed practical quantitation limit (PQL) or not above the Method Detection Limit (MDL), if requested.
D.F. - Dilution Factor

WSDOE Lab C1251
WSDOH Lab 046

FORM: MULT_RESULT

Reference Number: 08-10595
Report Date: 8/8/2008

Data Report

Collected By:

Date Received: 7/31/2008

Lab Number: 22341 Sample Description: BXS-6 - South landfill Sample Date: 7/30/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**70.8**	1		MPN/10(	1.0	SM9223 B.2.b	8/1/2008	AS	QT_080801	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	8/1/2008	AS	QT_080801	

PQL = Practical Quantitation Limit is the lowest level that can be acheived within specified limits of precision and accuracy during routine laboratory operating conditions.
ND = Not detected above the listed practical quantitation limit (PQL) or not above the Method Detection Limit (MDL), if requested.
D.F. - Dilution Factor

WSDOE Lab C1251
WSDOH Lab 046

FORM: MULT_RESULT

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Microbiology | 360.671.0688 • 360.671.1577fax

Data Report

Client Name: J H Baxter Company
P O Box 305
Eugene, OR 97440

Report Date: 10/28/2008
Reference Number: 08-15298
Project: Landfill Wells & Carbon

Collected By: A. Ragan

Date Received: 10/23/2008
Peer Review:

Lab Number: 32280 Sample Description: BXS-4 - South Landfill Sample Date: 10/22/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	10/27/2008	dl	QT_081023	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	10/27/2008	dl	QT_081023	

Lab Number: 32281 Sample Description: BXS-1 - South Landfill Sample Date: 10/22/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	10/27/2008	dl	QT_081023	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	10/27/2008	dl	QT_081023	

Lab Number: 32282 Sample Description: BXS-2 - South Landfill Sample Date: 10/22/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	10/27/2008	dl	QT_081023	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	10/27/2008	dl	QT_081023	

Lab Number: 32283 Sample Description: BXS-5 - South Landfill Sample Date: 10/22/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	10/27/2008	dl	QT_081023	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	10/27/2008	dl	QT_081023	

Lab Number: 32284 Sample Description: BXS-3 - South Landfill Sample Date: 10/22/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	10/27/2008	dl	QT_081023	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	10/27/2008	dl	QT_081023	

Lab Number: 32285 Sample Description: Equip Check Sample Date: 10/22/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	**24.9**	1		MPN/10(	1.0	SM9223 B.2.b	10/27/2008	dl	QT_081023	
	E. Coli	**<1**	1		MPN/10(	1.0	SM9223 B.2.b	10/27/2008	dl	QT_081023	

PQL = Practical Quantitation Limit is the lowest level that can be acheived within specified limits of precision and accuracy during routine laboratory operating conditions.
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D.F. - Dilution Factor

WSDOE Lab C1251
WSDOH Lab 046

FORM: MULT_RESULT

Reference Number: 08-15298
Report Date: 10/28/2008

Data Report

Collected By: A. Ragan

Date Received: 10/23/2008

Lab Number: 32286 Sample Description: BXN-2 - North Landfill Sample Date: 10/22/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	3.1	1		MPN/10(	1.0	SM9223 B.2.b	10/27/2008	dl	QT_081023	
	E. Coli	<1	1		MPN/10(	1.0	SM9223 B.2.b	10/27/2008	dl	QT_081023	

Lab Number: 32287 Sample Description: BXN-1 - North Landfill Sample Date: 10/22/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	2.0	1		MPN/10(	1.0	SM9223 B.2.b	10/27/2008	dl	QT_081023	
	E. Coli	<1	1		MPN/10(	1.0	SM9223 B.2.b	10/27/2008	dl	QT_081023	

Lab Number: 32288 Sample Description: BXN-3 - North Landfill Sample Date: 10/22/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	1.0	1		MPN/10(	1.0	SM9223 B.2.b	10/27/2008	dl	QT_081023	
	E. Coli	<1	1		MPN/10(	1.0	SM9223 B.2.b	10/27/2008	dl	QT_081023	

Lab Number: 32289 Sample Description: BXN-4 - North Landfill Sample Date: 10/22/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	5.2	1		MPN/10(	1.0	SM9223 B.2.b	10/27/2008	dl	QT_081023	
	E. Coli	<1	1		MPN/10(	1.0	SM9223 B.2.b	10/27/2008	dl	QT_081023	

Lab Number: 32290 Sample Description: BXN-5 - North Landfill Sample Date: 10/22/2008

CAS ID#	Analyte	Result	PQL	MDL	Units	DF	Method	Analyzed	Analyst	Batch	Comments
	TOTAL COLIFORM	2.0	1		MPN/10(	1.0	SM9223 B.2.b	10/27/2008	dl	QT_081023	
	E. Coli	<1	1		MPN/10(	1.0	SM9223 B.2.b	10/27/2008	dl	QT_081023	

PQL = Practical Quantitation Limit is the lowest level that can be acheived within specified limits of precision and accuracy during routine laboratory operating conditions.
ND = Not detected above the listed practical quantitation limit (PQL) or not above the Method Detection Limit (MDL), if requested.
D.F. - Dilution Factor

WSDOE Lab C1251
WSDOH Lab 046

FORM: MULT_RESULT

Appendix C

Statistical Analysis of
Groundwater Quality Results
(BXS-1 through BXS-4)

Appendix C. Statistical Analysis of Groundwater Quality Results for Downgradient Well, South Landfill

Field pH

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples n = 4

Critical Statistic t_c = 2.447

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
Apr-07	8.09					
Jul-07	8.25					
Oct-07	7.83					
Jan-08	7.81	8.09	8.25	7.83	8.00	0.05
Apr-08	7.66	8.25	7.83	7.81	7.89	0.06
Jul-08	7.98	7.83	7.81	7.66	7.82	0.02
Oct-08	8.32	7.81	7.66	7.98	7.94	0.08

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	6.62							
Jul-07	6.64							
Oct-07	6.30							
Jan-08	6.25	6.62	6.64	6.3	6.45	0.04	0.21	*-10.42*
Apr-08	6.23	6.64	6.3	6.25	6.36	0.04	0.19	*-10.69*
Jul-08	6.42	6.3	6.25	6.23	6.30	0.01	0.09	*-13.28*
Oct-08	6.55	6.25	6.23	6.42	6.36	0.02	0.15	*-12.11*

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	6.47							
Jul-07	6.52							
Oct-07	6.19							
Jan-08	6.18	6.47	6.52	6.19	6.34	0.03	0.18	*-11.88*
Apr-08	6.10	6.52	6.19	6.18	6.25	0.03	0.19	*-11.61*
Jul-08	6.37	6.19	6.18	6.10	6.21	0.01	0.11	*-13.35*
Oct-08	6.48	6.18	6.10	6.37	6.28	0.03	0.17	*-12.10*

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	6.31							
Jul-07	6.38							
Oct-07	6.02							
Jan-08	5.91	6.31	6.38	6.02	6.16	0.05	0.23	*-11.87*
Apr-08	5.98	6.38	6.02	5.91	6.07	0.04	0.21	*-12.15*
Jul-08	6.14	6.38	5.91	5.98	6.10	0.04	0.21	*-11.54*
Oct-08	6.28	5.91	5.98	6.14	6.08	0.03	0.17	*-13.84*

Notes:

X_{bar} Average Concentration
s^2 Sample variance
s^1 Sample variance
s Sample Standard Deviation
t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic). Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for Downgradient Well, South Landfill

Field Conductivity

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples **n** 4

Critical Statistic t_c **2.447**

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
Apr-07	176					
Jul-07	222					
Oct-07	199					
Jan-08	196	176	222	199	198.25	354.92
Apr-08	201	222	199	196	204.50	140.33
Jul-08	180	199	196	201	194.00	91.33
Oct-08	177	196	201	180	188.50	139.00

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	808							
Jul-07	867							
Oct-07	810							
Jan-08	788	808	867	810	818	1155	34	**31.91**
Apr-08	846	867	810	788	828	1256	35	**31.05**
Jul-08	726	810	788	846	793	2537	50	**22.26**
Oct-08	722	788	846	726	771	3446	59	**18.88**

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	796							
Jul-07	922							
Oct-07	804							
Jan-08	772	796	922	804	824	4497	67	**17.95**
Apr-08	794	922	804	772	823	4535	67	**17.69**
Jul-08	732	804	772	794	776	1020	32	**31.37**
Oct-08	733	772	794	732	758	931	31	**31.75**

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	379							
Jul-07	415							
Oct-07	495							
Jan-08	369	379	415	495	415	3270	57	**7.18**
Apr-08	485	415	495	369	441	3571	60	**7.55**
Jul-08	510	495	369	485	465	4180	65	**8.04**
Oct-08	496	369	485	510	465	4201	65	**8.19**

Notes:

X_{bar} Average Concentration
s^2 Sample variance
s^1 Sample variance
s Sample Standard Deviation
t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).
Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for Downgradient Well, South Landfill

Ammonia

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples n = 4

Critical Statistic t_c = 2.447

BXS-4

(Upgradient well)

					X_{bar}	s^1
Apr-07	0.5				*Average Concentration*	
Jul-07	0.5				m_o	
Oct-07	0.48					
Jan-08	0.55	0.5	0.5	0.48	0.51	0.0009
Apr-08	0.46	0.5	0.48	0.55	0.50	0.0015
Jul-08	0.48	0.48	0.55	0.46	0.49	0.0016
Oct-08	0.53	0.55	0.46	0.48	0.51	0.0018

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	0.71							
Jul-07	0.74							
Oct-07	0.98							
Jan-08	0.41	0.71	0.74	0.98	0.71	0.05	0.23	1.72
Apr-08	0.39	0.74	0.98	0.41	0.63	0.08	0.28	0.93
Jul-08	0.75	0.98	0.41	0.39	0.63	0.08	0.28	0.98
Oct-08	0.54	0.41	0.39	0.75	0.52	0.03	0.17	0.21

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	0.025							
Jul-07	0.025							
Oct-07	0.025							
Jan-08	0.025	0.025	0.025	0.025	0.03	0.00	0.00	*-32.32*
Apr-08	0.025	0.025	0.025	0.025	0.03	0.00	0.00	*-31.65*
Jul-08	0.025	0.025	0.025	0.025	0.03	0.00	0.00	*-31.31*
Oct-08	0.025	0.025	0.025	0.025	0.03	0.00	0.00	*-32.15*

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	0.025							
Jul-07	0.025							
Oct-07	0.025							
Jan-08	0.025	0.025	0.025	0.025	0.03	0.00	0.00	*-32.32*
Apr-08	0.025	0.025	0.025	0.025	0.03	0.00	0.00	*-31.65*
Jul-08	0.025	0.025	0.025	0.025	0.03	0.00	0.00	*-31.31*
Oct-08	0.025	0.025	0.025	0.025	0.03	0.00	0.00	*-32.15*

Notes:

- X_{bar} Average Concentration
- s^2 Sample variance
- s^1 Sample variance
- s Sample Standard Deviation
- t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic). Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for Downgradient Well, South Landfill

Chemical Oxygen Demand

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples **n** 4

Critical Statistic t_c 2.447

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
Apr-07	6					
Jul-07	2.5					
Oct-07	2.5					
Jan-08	2.5	6	2.5	2.5	3.38	3.06
Apr-08	3	2.5	2.5	2.5	2.63	0.06
Jul-08	6	2.5	2.5	3	3.50	2.83
Oct-08	6	2.5	3	6	4.38	3.56

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	80							
Jul-07	67							
Oct-07	71							
Jan-08	61	80	67	71	69.75	63.58	7.97	**16.26**
Apr-08	76	67	71	61	68.75	40.25	6.34	**20.10**
Jul-08	75	71	61	76	70.75	46.92	6.85	**19.03**
Oct-08	65	61	76	75	69.25	54.92	7.41	**17.04**

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	39							
Jul-07	31							
Oct-07	33							
Jan-08	35	39	31	33	34.50	11.67	3.42	**16.22**
Apr-08	42	31	33	35	35.25	22.92	4.79	**12.80**
Jul-08	37	33	35	42	36.75	14.92	3.86	**15.68**
Oct-08	39	35	42	37	38.25	8.92	2.99	**19.57**

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	14							
Jul-07	2.5							
Oct-07	17							
Jan-08	12	14	2.5	17	11.38	39.23	6.26	**2.46**
Apr-08	13	2.5	17	12	11.13	37.73	6.14	**2.66**
Jul-08	24	17	12	13	16.50	29.67	5.45	**4.54**
Oct-08	16	12	13	24	16.25	29.58	5.44	**4.16**

Notes:

X_{bar} Average Concentration
s^2 Sample variance
s^1 Sample variance
s Sample Standard Deviation
t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).
Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for Downgradient Well, South Landfill

Chloride

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples n = 4

Critical Statistic t_c = 2.447

BXS-4

(Upgradient well)

					Average Concentration m_o	s^1
Apr-07	1.9					
Jul-07	1.7					
Oct-07	1.7					
Jan-08	2	1.9	1.7	1.7	1.83	0.023
Apr-08	1.8	1.7	1.7	2	1.80	0.020
Jul-08	1.8	1.7	2	1.8	1.83	0.016
Oct-08	1.9	2	1.8	1.8	1.88	0.009

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	2.3							
Jul-07	2.8							
Oct-07	2.7							
Jan-08	3.1	2.3	2.8	2.7	2.73	0.11	0.33	**4.96**
Apr-08	2.4	2.8	2.7	3.1	2.75	0.08	0.29	**5.84**
Jul-08	2.8	2.7	3.1	2.4	2.75	0.08	0.29	**5.69**
Oct-08	3.6	3.1	2.4	2.8	2.98	0.26	0.51	**4.17**

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	4.5							
Jul-07	4.1							
Oct-07	4.3							
Jan-08	4.5	4.5	4.1	4.3	4.35	0.04	0.19	**20.76**
Apr-08	4.4	4.1	4.3	4.5	4.33	0.03	0.17	**22.22**
Jul-08	4.2	4.3	4.5	4.4	4.35	0.02	0.13	**25.52**
Oct-08	4.9	4.5	4.4	4.2	4.50	0.09	0.29	**15.89**

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	5.4							
Jul-07	5.1							
Oct-07	5.2							
Jan-08	5.8	5.4	5.1	5.2	5.38	0.10	0.31	**20.64**
Apr-08	5	5.1	5.2	5.8	5.28	0.13	0.36	**17.85**
Jul-08	4.5	5.2	5.8	5	5.13	0.29	0.54	**11.82**
Oct-08	5.1	5.8	5	4.5	5.10	0.29	0.54	**11.60**

Notes:

- X_{bar} Average Concentration
- s^2 Sample variance
- s^1 Sample variance
- s Sample Standard Deviation
- t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic). Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for Downgradient Well, South Landfill

Nitrate + Nitrite as N

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples **n** 4

Critical Statistic t_c **2.447**

BXS-4

(Upgradient well)

					Average Concentration m_o	s^1
Apr-07	0.23					
Jul-07	0.025					
Oct-07	0.025					
Jan-08	0.025	0.23	0.025	0.025	0.076	0.0105
Apr-08	0.025	0.025	0.025	0.025	0.025	0.0000
Jul-08	0.1	0.025	0.025	0.025	0.044	0.0014
Oct-08	0.025	0.025	0.025	0.1	0.044	0.0014

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	0.2							
Jul-07	0.19							
Oct-07	0.17							
Jan-08	0.07	0.2	0.19	0.17	0.16	0.00	0.06	1.37
Apr-08	0.025	0.19	0.17	0.07	0.11	0.01	0.08	1.37
Jul-08	0.15	0.17	0.07	0.025	0.10	0.00	0.07	0.98
Oct-08	0.1	0.07	0.025	0.15	0.09	0.00	0.05	0.74

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	0.63							
Jul-07	0.08							
Oct-07	0.025							
Jan-08	0.025	0.63	0.08	0.025	0.19	0.09	0.29	0.73
Apr-08	0.025	0.08	0.025	0.025	0.04	0.00	0.03	0.26
Jul-08	0.025	0.025	0.025	0.025	0.03	0.00	0.00	-0.37
Oct-08	0.026	0.025	0.025	0.025	0.03	0.00	0.00	-0.36

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	0.85							
Jul-07	0.7							
Oct-07	0.47							
Jan-08	0.58	0.85	0.7	0.47	0.65	0.03	0.16	**5.96**
Apr-08	0.74	0.7	0.47	0.58	0.62	0.01	0.12	**7.49**
Jul-08	1.48	0.47	0.58	0.74	0.82	0.21	0.46	**3.32**
Oct-08	0.51	0.58	0.74	1.48	0.83	0.20	0.45	**3.43**

Notes:

- X_{bar} Average Concentration
- s^2 Sample variance
- s^1 Sample variance
- s Sample Standard Deviation
- t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).
Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for Downgradient Well, South Landfill

Total Dissolved Solids

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples n = 4

Critical Statistic t_c = 2.447

BXS-4

(Upgradient well)

					Average Concentration m_o	s^1
Apr-07	151					
Jul-07	154					
Oct-07	159					
Jan-08	148	151	154	159	153.00	22.00
Apr-08	118	154	159	148	144.75	338.25
Jul-08	161	159	148	118	146.50	393.67
Oct-08	139	148	118	161	141.50	327.00

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	493							
Jul-07	414							
Oct-07	476							
Jan-08	578	493	414	476	490	4575	68	**9.95**
Apr-08	496	414	476	578	491	4583	68	**10.21**
Jul-08	415	476	578	496	491	4532	67	**10.22**
Oct-08	465	578	496	415	489	4674	68	**10.13**

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	490							
Jul-07	495							
Oct-07	478							
Jan-08	508	490	495	478	493	154	12	**51.18**
Apr-08	430	495	478	508	478	1164	34	**19.34**
Jul-08	506	478	508	430	481	1321	36	**18.23**
Oct-08	478	508	430	506	481	1321	36	**18.50**

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	229							
Jul-07	262							
Oct-07	294							
Jan-08	239	229	262	294	256	833	29	**7.05**
Apr-08	265	262	294	239	265	509	23	**10.44**
Jul-08	363	294	239	265	290	2857	53	**5.36**
Oct-08	323	239	265	363	298	3140	56	**5.55**

Notes:

X_{bar} Average Concentration
s^2 Sample variance
s^1 Sample variance
s Sample Standard Deviation
t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).
Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for Downgradient Well, South Landfill

Sulfate

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples **n** = 4

Critical Statistic t_c = **2.447**

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
Apr-07	1.3					
Jul-07	1.4					
Oct-07	1.3					
Jan-08	0.8	1.3	1.4	1.3	1.20	0.073
Apr-08	1.3	1.4	1.3	0.8	1.20	0.073
Jul-08	1.3	1.3	0.8	1.3	1.18	0.063
Oct-08	1.1	0.8	1.3	1.3	1.13	0.056

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	0.1							
Jul-07	0.1							
Oct-07	0.063							
Jan-08	0.1	0.1	0.1	0.063	0.091	0.000	0.019	*-8.17*
Apr-08	0.101	0.1	0.063	0.1	0.091	0.000	0.019	*-8.17*
Jul-08	0.119	0.063	0.1	0.101	0.096	0.001	0.024	*-7.94*
Oct-08	0.107	0.1	0.101	0.119	0.107	0.000	0.009	*-7.52*

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	0.1							
Jul-07	0.1							
Oct-07	0.088							
Jan-08	0.1	0.1	0.1	0.088	0.10	0.000	0.006	*-8.14*
Apr-08	0.161	0.1	0.088	0.1	0.11	0.001	0.033	*-7.97*
Jul-08	0.137	0.088	0.1	0.161	0.12	0.001	0.034	*-7.72*
Oct-08	0.159	0.1	0.161	0.137	0.14	0.001	0.028	*-7.24*

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	13.9							
Jul-07	11.3							
Oct-07	9.4							
Jan-08	14	13.9	11.3	9.4	12.15	4.92	2.22	**9.80**
Apr-08	9.6	11.3	9.4	14	11.08	4.53	2.13	**9.21**
Jul-08	6.2	9.4	14	9.6	9.80	10.27	3.20	**5.36**
Oct-08	6.7	14	9.6	6.2	9.13	12.81	3.58	**4.46**

Notes:

X_{bar} Average Concentration

s^2 Sample variance

s^1 Sample variance

s Sample Standard Deviation

t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).

Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for Downgradient Well, South Landfill

Tannin and Lignin

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples n = 4

Critical Statistic t_c = 2.447

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
Apr-07	0.3					
Jul-07	0.3					
Oct-07	0.3					
Jan-08	0.3	0.3	0.3	0.3	0.30	0.000
Apr-08	0.3	0.3	0.3	0.3	0.30	0.000
Jul-08	0.2	0.3	0.3	0.3	0.28	0.0025
Oct-08	0.3	0.3	0.3	0.2	0.28	0.0025

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	11.9							
Jul-07	13.4							
Oct-07	4.7							
Jan-08	8	11.9	13.4	4.7	9.50	15.42	3.93	**4.69**
Apr-08	22.5	13.4	4.7	8	12.15	60.47	7.78	**3.05**
Jul-08	11.5	4.7	8	22.5	11.68	59.79	7.73	**2.95**
Oct-08	2.5	8	22.5	11.5	11.13	71.23	8.44	**2.57**

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	1.3							
Jul-07	1.3							
Oct-07	1.1							
Jan-08	1.2	1.3	1.3	1.1	1.23	0.009	0.096	**19.32**
Apr-08	1.2	1.3	1.1	1.2	1.20	0.007	0.082	**22.05**
Jul-08	1.2	1.1	1.2	1.2	1.18	0.002	0.050	**36.00**
Oct-08	1.1	1.2	1.2	1.2	1.18	0.002	0.050	**36.00**

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	0.1							
Jul-07	0.12							
Oct-07	0.3							
Jan-08	0.3	0.1	0.12	0.3	0.21	0.01	0.11	-1.73
Apr-08	0.2	0.12	0.3	0.3	0.23	0.01	0.09	-1.61
Jul-08	0.2	0.3	0.3	0.2	0.25	0.00	0.06	-0.87
Oct-08	0.2	0.3	0.2	0.2	0.23	0.00	0.05	-2.00

Notes:

X_{bar} Average Concentration
s^2 Sample variance
s^1 Sample variance
s Sample Standard Deviation
t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic). Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for Downgradient Well, South Landfill

Total Organic Carbon

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples **n** = 4

Critical Statistic t_c = **2.447**

BXS-4

(Upgradient well)

					Average Concentration m_o	s^1
Apr-07	1					
Jul-07	0.9					
Oct-07	1					
Jan-08	0.8	1	0.9	1	0.93	0.009
Apr-08	0.9	0.9	1	0.8	0.90	0.007
Jul-08	0.9	1	0.8	0.9	0.90	0.007
Oct-08	0.9	0.8	0.9	0.9	0.88	0.003

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	28.4							
Jul-07	28.6							
Oct-07	26.4							
Jan-08	23.9	28.4	28.6	26.4	26.83	4.79	2.19	**23.65**
Apr-08	27.8	28.6	26.4	23.9	26.68	4.25	2.06	**24.98**
Jul-08	27.9	26.4	23.9	27.8	26.50	3.47	1.86	**27.44**
Oct-08	23.8	23.9	27.8	27.9	25.85	5.34	2.31	**21.60**

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	16.7							
Jul-07	15.6							
Oct-07	15.5							
Jan-08	15.8	16.7	15.6	15.5	15.90	0.30	0.55	**53.86**
Apr-08	17.5	15.6	15.5	15.8	16.10	0.89	0.94	**32.12**
Jul-08	15.9	15.5	15.8	17.5	16.18	0.81	0.90	**33.77**
Oct-08	15.5	15.8	17.5	15.9	16.18	0.81	0.90	**33.83**

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	4.8							
Jul-07	5.2							
Oct-07	7.1							
Jan-08	6	4.8	5.2	7.1	5.78	1.03	1.01	**9.52**
Apr-08	5.9	5.2	7.1	6	6.05	0.62	0.79	**13.02**
Jul-08	8.3	7.1	6	5.9	6.83	1.26	1.12	**10.51**
Oct-08	6.6	6	5.9	8.3	6.70	1.23	1.11	**10.45**

Notes:

X_{bar} Average Concentration
s^2 Sample variance
s^1 Sample variance
s Sample Standard Deviation
t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).
Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for Downgradient Well, South Landfill

Total Coliform

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples n = 4

Critical Statistic t_c = 2.447

BXS-4

(Upgradient well)

					Average Concentration m_o	s^1
Apr-07	0.5					
Jul-07	1					
Oct-07	0.5					
Jan-08	0.5	0.5	1	0.5	0.63	0.06
Apr-08	0.5	1	0.5	0.5	0.63	0.06
Jul-08	0.5	0.5	0.5	0.5	0.50	0.00
Oct-08	0.5	0.5	0.5	0.5	0.50	0.00

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	0.5							
Jul-07	6							
Oct-07	0.5							
Jan-08	0.5	0.5	6	0.5	1.9	7.6	2.8	0.91
Apr-08	0.5	6	0.5	0.5	1.9	7.6	2.8	0.91
Jul-08	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.00
Oct-08	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.00

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	0.5							
Jul-07	2419.6							
Oct-07	5.1							
Jan-08	0.5	0.5	2419.6	5.1	606	1461162	1209	1.00
Apr-08	2	2419.6	5.1	0.5	607	1460556	1209	1.00
Jul-08	248.9	5.1	0.5	2	64	15178	123	1.03
Oct-08	0.5	0.5	2	248.9	63	15364	124	1.01

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	0.5							
Jul-07	0.5							
Oct-07	0.5							
Jan-08	0.5	0.5	0.5	0.5	0.5	0.0	0.0	-1.00
Apr-08	0.5	0.5	0.5	0.5	0.5	0.0	0.0	-1.00
Jul-08	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.00
Oct-08	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.00

Notes:

- X_{bar} Average Concentration
- s^2 Sample variance
- s^1 Sample variance
- s Sample Standard Deviation
- t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic). Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for Downgradient Well, South Landfill

Arsenic

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples **n** = **4**

Critical Statistic t_c = **2.447**

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
Apr-07	6					
Jul-07	5.4					
Oct-07	5.4					
Jan-08	6.7	6	5.4	5.4	5.88	0.38
Apr-08	4.4	5.4	5.4	6.7	5.48	0.89
Jul-08	5.4	5.4	6.7	4.4	5.48	0.89
Oct-08	7.2	6.7	4.4	5.4	5.93	1.61

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	113							
Jul-07	113							
Oct-07	67.2							
Jan-08	42.6	113	113	67.2	83.95	1226.06	35.02	**4.46**
Apr-08	117	113	67.2	42.6	84.95	1307.53	36.16	**4.40**
Jul-08	111	67.2	42.6	117	84.45	1271.13	35.65	**4.43**
Oct-08	46.5	42.6	117	111	79.28	1616.30	40.20	**3.65**

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	0.7							
Jul-07	2.5							
Oct-07	2.5							
Jan-08	2.5	0.7	2.5	2.5	2.05	0.81	0.90	*-7.01*
Apr-08	2.5	2.5	2.5	2.5	2.50	0.00	0.00	*-9.62*
Jul-08	0.8	2.5	2.5	2.5	2.08	0.72	0.85	*-6.47*
Oct-08	2.5	2.5	2.5	0.8	2.08	0.72	0.85	*-7.33*

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	2.5							
Jul-07	2.5							
Oct-07	2.5							
Jan-08	2.5	2.5	2.5	2.5	2.50	0.00	0.00	*-10.91*
Apr-08	2.5	2.5	2.5	2.5	2.50	0.00	0.00	*-9.62*
Jul-08	2.5	2.5	2.5	2.5	2.50	0.00	0.00	*-9.62*
Oct-08	1.1	2.5	2.5	2.5	2.15	0.49	0.70	*-8.08*

Notes:

X_{bar} Average Concentration
s^2 Sample variance
s^1 Sample variance
s Sample Standard Deviation
t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).
Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for Downgradient Well, South Landfill

Barium

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples n = 4

Critical Statistic t_c = 2.447

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
Apr-07	25.6					
Jul-07	33					
Oct-07	29.4					
Jan-08	26.7	25.6	33	29.4	28.68	10.86
Apr-08	27.6	33	29.4	26.7	29.18	7.76
Jul-08	29.7	29.4	26.7	27.6	28.35	2.07
Oct-08	26.7	26.7	27.6	29.7	27.68	2.00

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	73.8							
Jul-07	80.6							
Oct-07	83.2							
Jan-08	65.4	73.8	80.6	83.2	75.75	63.32	7.96	**10.93**
Apr-08	111	80.6	83.2	65.4	85.05	360.92	19.00	**5.80**
Jul-08	122	83.2	65.4	111	95.40	666.59	25.82	**5.15**
Oct-08	72.2	65.4	111	122	92.65	786.30	28.04	**4.60**

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	39.8							
Jul-07	50.1							
Oct-07	48.3							
Jan-08	42.3	39.8	50.1	48.3	45.13	23.72	4.87	**5.59**
Apr-08	41.7	50.1	48.3	42.3	45.60	17.88	4.23	**6.13**
Jul-08	49.5	48.3	42.3	41.7	45.45	16.17	4.02	**6.58**
Oct-08	41.9	42.3	41.7	49.5	43.85	14.25	3.77	**6.46**

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	24.5							
Jul-07	24.6							
Oct-07	26.5							
Jan-08	18.3	24.5	24.6	26.5	23.48	12.75	3.57	-2.14
Apr-08	22.1	24.6	26.5	18.3	22.88	12.55	3.54	*-2.60*
Jul-08	31.5	26.5	18.3	22.1	24.60	32.39	5.69	-1.14
Oct-08	24.8	18.3	22.1	31.5	24.18	30.96	5.56	-1.08

Notes:

X_{bar} Average Concentration
s^2 Sample variance
s^1 Sample variance
s Sample Standard Deviation
t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic). Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for Downgradient Well, South Landfill

Copper

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples **n** = **4**

Critical Statistic t_c = **2.447**

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
Apr-07	5					
Jul-07	5					
Oct-07	5					
Jan-08	5	5	5	5	5.00	0.00
Apr-08	5	5	5	5	5.00	0.00
Jul-08	5	5	5	5	5.00	0.00
Oct-08	5	5	5	5	5.00	0.00

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	5							
Jul-07	4.4							
Oct-07	5							
Jan-08	5	5	4.4	5	4.85	0.09	0.30	-1.00
Apr-08	5	4.4	5	5	4.85	0.09	0.30	-1.00
Jul-08	5	5	5	5	5.00	0.00	0.00	#DIV/0!
Oct-08	5	5	5	5	5.00	0.00	0.00	#DIV/0!

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	5							
Jul-07	5.4							
Oct-07	5							
Jan-08	5	5	5.4	5	5.10	0.04	0.20	1.00
Apr-08	5	5.4	5	5	5.10	0.04	0.20	1.00
Jul-08	1.4	5	5	5	4.10	3.24	1.80	-1.00
Oct-08	5	5	5	1.4	4.10	3.24	1.80	-1.00

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	5							
Jul-07	4.2							
Oct-07	5							
Jan-08	5	5	4.2	5	4.80	0.16	0.40	-1.00
Apr-08	5	4.2	5	5	4.80	0.16	0.40	-1.00
Jul-08	3.3	5	5	5	4.58	0.72	0.85	-1.00
Oct-08	5	5	5	3.3	4.58	0.72	0.85	-1.00

Notes:

X_{bar} Average Concentration
s^2 Sample variance
s^1 Sample variance
s Sample Standard Deviation
t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).
Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for Downgradient Well, South Landfill

Cadmium

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples n = 4

Critical Statistic t_c = 2.447

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
Apr-07	2.5					
Jul-07	2.5					
Oct-07	2.5					
Jan-08	2.5	2.5	2.5	2.5	2.50	0.00
Apr-08	2.5	2.5	2.5	2.5	2.50	0.00
Jul-08	2.5	2.5	2.5	2.5	2.50	0.00
Oct-08	2.5	2.5	2.5	2.5	2.50	0.00

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	2.9							
Jul-07	2.5							
Oct-07	2.5							
Jan-08	1.8	2.9	2.5	2.5	2.43	0.21	0.46	-0.33
Apr-08	2.5	2.5	2.5	1.8	2.33	0.12	0.35	-1.00
Jul-08	4.3	2.5	1.8	2.5	2.78	1.14	1.07	0.51
Oct-08	2.5	1.8	2.5	4.3	2.78	1.14	1.07	0.51

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	0.7							
Jul-07	2.5							
Oct-07	2.5							
Jan-08	1.4	0.7	2.5	2.5	1.78	0.78	0.88	-1.64
Apr-08	1.1	2.5	2.5	1.4	1.88	0.54	0.73	-1.71
Jul-08	2.5	2.5	1.4	1.1	1.88	0.54	0.73	-1.71
Oct-08	2.5	1.4	1.1	2.5	1.88	0.54	0.73	-1.71

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	1.9							
Jul-07	2.5							
Oct-07	2.5							
Jan-08	2.5	1.9	2.5	2.5	2.35	0.09	0.30	-1.00
Apr-08	2.5	2.5	2.5	2.5	2.50	0.00	0.00	#DIV/0!
Jul-08	0.2	2.5	2.5	2.5	1.93	1.32	1.15	-1.00
Oct-08	2.5	2.5	2.5	0.2	1.93	1.32	1.15	-1.00

Notes:

X_{bar} Average Concentration
s^2 Sample variance
s^1 Sample variance
s Sample Standard Deviation
t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic). Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for Downgradient Well, South Landfill

Iron

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples **n** = 4

Critical Statistic t_c = **2.447**

BXS-4

(Upgradient well)

					Average Concentration	
Apr-07	42.8				m_o	s^1
Jul-07	38.3					
Oct-07	36.1					
Jan-08	41.3	42.8	38.3	36.1	39.63	9.02
Apr-08	41.5	38.3	36.1	41.3	39.30	6.69
Jul-08	35.2	36.1	41.3	41.5	38.53	11.16
Oct-08	74.8	41.3	41.5	35.2	48.20	323.02

BXS-3

(Downgradient well)

Apr-07	90,500				X_{bar}	s^2	s	t_{stat}
Jul-07	88,100							
Oct-07	62,700							
Jan-08	35,500	90,500	88,100	62,700	69,200	662,946,667	25747.75	**5.37**
Apr-08	102,000	88,100	62,700	35,500	72,075	859,309,167	29313.98	**4.91**
Jul-08	96,800	62,700	35,500	102,000	74,250	971,176,667	31163.71	**4.76**
Oct-08	53,800	35,500	102,000	96,800	72,025	1,059,509,167	32550.10	**4.42**

BXS-2

(Downgradient well)

Apr-07	771				X_{bar}	s^2	s	t_{stat}
Jul-07	699							
Oct-07	656							
Jan-08	608	771	699	656	684	4784	69.17	**18.60**
Apr-08	624	699	656	608	647	1612	40.14	**30.18**
Jul-08	593	656	608	624	620	728	26.99	**42.85**
Oct-08	560	608	624	593	596	744	27.28	**39.94**

BXS-1

(Downgradient well)

Apr-07	10.1				X_{bar}	s^2	s	t_{stat}
Jul-07	10							
Oct-07	10							
Jan-08	7.8	10.1	10	10	9.48	1.25	1.12	*-18.81*
Apr-08	8.8	10	10	7.8	9.15	1.13	1.06	*-18.92*
Jul-08	10	10	7.8	8.8	9.15	1.13	1.06	*-18.44*
Oct-08	8.8	7.8	8.8	10	8.85	0.81	0.90	*-25.10*

Notes:

X_{bar} Average Concentration
s^2 Sample variance
s^1 Sample variance
s Sample Standard Deviation
t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).
Items with no difference at all (zero difference) will indicate #DIV/0!
* t_{stat} value invalid, data not normally distributed

Appendix C. Statistical Analysis of Groundwater Quality Results for Downgradient Well, South Landfill

Manganese

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples n = 4

Critical Statistic t_c = 2.447

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
Apr-07	107					
Jul-07	118					
Oct-07	121					
Jan-08	125	107	118	121	117.75	59.58
Apr-08	110	118	121	125	118.50	40.33
Jul-08	111	121	125	110	116.75	54.92
Oct-08	111	125	110	111	114.25	51.58

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	13,500							
Jul-07	14,000							
Oct-07	14,700							
Jan-08	17,900	13,500	14,000	14,700	15,025	3,915,833	1,978.85	**15.07**
Apr-08	12,600	14,000	14,700	17,900	14,800	5,033,333	2,243.51	**13.09**
Jul-08	13,100	14,700	17,900	12,600	14,575	5,715,833	2,390.78	**12.09**
Oct-08	15,400	17,900	12,600	13,100	14,750	5,896,667	2,428.31	**12.05**

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	1330							
Jul-07	1330							
Oct-07	1280							
Jan-08	1270	1330	1330	1280	1303	1025	32.02	**71.95**
Apr-08	1150	1330	1280	1270	1258	5825	76.32	**29.70**
Jul-08	1190	1280	1270	1150	1223	3958	62.92	**34.89**
Oct-08	1290	1270	1150	1190	1225	4367	66.08	**33.39**

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	123							
Jul-07	268							
Oct-07	353							
Jan-08	422	123	268	353	292	16586	128.79	**2.69**
Apr-08	240	268	353	422	321	6865	82.85	**4.86**
Jul-08	309	353	422	240	331	5843	76.44	**5.58**
Oct-08	297	422	240	309	317	5806	76.20	**5.29**

Notes:

X_{bar} Average Concentration
s^2 Sample variance
s^1 Sample variance
s Sample Standard Deviation
t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic). Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for Downgradient Well, South Landfill

Nickel

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples **n** = 4

Critical Statistic t_c = **2.447**

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
Apr-07	10					
Jul-07	10					
Oct-07	10					
Jan-08	10	10	10	10	10.00	0.00
Apr-08	10	10	10	10	10.00	0.00
Jul-08	10	10	10	10	10.00	0.00
Oct-08	10	10	10	10	10.00	0.00

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	18.2							
Jul-07	20.4							
Oct-07	10							
Jan-08	17	18.2	20.4	10	16.40	20.19	4.49	**2.85**
Apr-08	20.2	20.4	10	17	16.90	23.59	4.86	**2.84**
Jul-08	4.5	10	17	20.2	12.93	49.69	7.05	0.83
Oct-08	22.8	17	20.2	4.5	16.13	65.69	8.10	1.51

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	33.9							
Jul-07	30.1							
Oct-07	31.4							
Jan-08	30.6	33.9	30.1	31.4	31.50	2.85	1.69	**25.49**
Apr-08	31.8	30.1	31.4	30.6	30.98	0.59	0.77	**54.65**
Jul-08	24.8	31.4	30.6	31.8	29.65	10.70	3.27	**12.01**
Oct-08	31.7	30.6	31.8	24.8	29.73	11.08	3.33	**11.85**

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	10.4							
Jul-07	10							
Oct-07	10							
Jan-08	16	10.4	10	10	11.60	8.64	2.94	1.09
Apr-08	11.1	10	10	16	11.78	8.20	2.86	1.24
Jul-08	10.2	10	16	11.1	11.83	7.98	2.82	1.29
Oct-08	15.5	16	11.1	10.2	13.20	8.85	2.97	2.15

Notes:

X_{bar} Average Concentration

s^2 Sample variance

s^1 Sample variance

s Sample Standard Deviation

t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic).

Items with no difference at all (zero difference) will indicate #DIV/0!

Appendix C. Statistical Analysis of Groundwater Quality Results for Downgradient Well, South Landfill

Zinc

$$t_{stat} = (X_{bar} - m_o)/sqrt(s^1/n+s^2/n)$$

Number of Samples n = 4

Critical Statistic t_c = 2.447

BXS-4

(Upgradient well)

					Average Concentration	
					m_o	s^1
Apr-07	5					
Jul-07	5					
Oct-07	5					
Jan-08	8.3	5	5	5	5.83	2.72
Apr-08	5	5	5	8.3	5.83	2.72
Jul-08	1	5	8.3	5	4.83	8.92
Oct-08	5	8.3	5	1	4.83	8.92

BXS-3

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	8.5							
Jul-07	12.4							
Oct-07	15.9							
Jan-08	5	8.5	12.4	15.9	10.45	22.34	4.73	1.85
Apr-08	5	12.4	15.9	5	9.58	29.95	5.47	1.31
Jul-08	4.8	15.9	5	5	7.68	30.08	5.48	1.00
Oct-08	3.9	5	5	4.8	4.68	0.28	0.53	-0.17

BXS-2

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	30.2							
Jul-07	11.1							
Oct-07	22.3							
Jan-08	14.8	30.2	11.1	22.3	19.60	71.65	8.46	**3.19**
Apr-08	5	11.1	22.3	14.8	13.30	52.33	7.23	2.01
Jul-08	4.4	22.3	14.8	5	11.63	73.38	8.57	1.56
Oct-08	6.2	14.8	5	4.4	7.60	23.60	4.86	1.08

BXS-1

(Downgradient well)

					X_{bar}	s^2	s	t_{stat}
Apr-07	5							
Jul-07	8							
Oct-07	7.9							
Jan-08	5	5	8	7.9	6.48	2.90	1.70	0.55
Apr-08	5	8	7.9	5	6.48	2.90	1.70	0.55
Jul-08	9.1	7.9	5	5	6.75	4.32	2.08	1.45
Oct-08	12.1	5	5	9.1	7.80	11.95	3.46	1.55

Notes:

- X_{bar} Average Concentration
- s^2 Sample variance
- s^1 Sample variance
- s Sample Standard Deviation
- t_{stat} Student's T-Test Statistic

Item shown in **bold** or *gray italics* indicate a statistically valid detection (according to the student's T-Test statistic). Items with no difference at all (zero difference) will indicate #DIV/0!