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Abstract: This final report contains the analytical results supporting characterization of soil samples for an interim barrier for S Farm. It also contains the results for associated field and equipment blanks supporting the sampling effort.

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FINAL ANALYTICAL REPORT FOR SOIL SAMPLES IN SUPPORT OF AN INTERIM BARRIER AT S FARM

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222-S LABORATORY

FINAL ANALYTICAL REPORT FOR SOIL SAMPLES IN SUPPORT OF AN INTERIM BARRIER AT S FARM

1.0 INTRODUCTION

This final report presents the results for the samples taken from seven direct push locations in S Farm between July13, 2011 and September 7, 2011. The samples were analyzed in accordance with RPP-PLAN-49132, *Field Sampling and Analysis Plan for Soil Samples in Support of an Interim Barrier at S Farm* (SAP); ATL-MP-1011, *ATL Quality Assurance Project Plan for 222-S Laboratory* (QAPP); SW-846, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*; and the additional guidance given by the client's point of contact.

Because the 222-S Laboratory facility was designed to analyze hazardous and complex tank waste samples, most SW-846 test methods performed at the 222-S Laboratory contain deviations that are listed in an appendix in the analytical procedures. All other known deviations or variances from SW-846 are documented in this narrative. The following attachments are included in this report.

Attachment 1	Data Summary Report
Attachment 2	Sample Breakdown Diagrams
Attachment 3	Holding Time Report
Attachment 4	Vadose Water Digest Results
Attachment 5	Additional Mercury Analyses QC Results
Attachment 6	Analytical Batch and Laboratory Sample Identification Number Index
Attachment 7	Geological Report
Attachment 8	Characterization Change Notices (CCN), and Correspondence
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Attachment 10	Receipt Paperwork Waste Sample Characterization Facility (WSCF)
Appendix A	WSCF – Analytical Report

2.0 SAMPLE RECEIPT AND BREAKDOWN

2.1 SAMPLE RECEIPT

A total of 21 core intervals from seven core holes, two field blanks, and one equipment blank were received by the 222-S Laboratory and WSCF from July 13, 2011 to September 8, 2011. The samples received at 222S laboratory were delivered in a cooler with ice. The temperatures of the temperature blanks were measured and recorded on the sample receipt check list and/or the chain of custody form.

2.2 SAMPLE BREAKDOWN

The laboratory received each core interval as three liner samples and one shoe sample when complete core recovery was obtained. All core intervals experienced full recovery. The liner

samples from each core interval were extruded, described, and composited by the Washington River Protection Solutions, Inc. (WRPS) geologist. The WRPS geologist also measured the bulk density for core liners that had sufficient recovery. The geologist's report is included in Attachment 7. The composite for each core interval was analyzed as described in the SAP.

Due to the extended power outage experienced by the 222-S Laboratory during the period of July, August, and the first two weeks of September 2011, five out of the seven core intervals were extruded and composited at WSCF: C8396, C8398, C8400, C8406, and C8408 (see Attachment 10). Only cores C8394 and C8402 were extruded and composited at the 222-S Laboratory. The composites made at WSCF were later delivered to the 222-S Laboratory for analysis (see Attachment 9). Only the Vadose water digest analysis for nitrate and ^{99}Tc was performed at WSCF (see Appendix A).

3.0 ANALYTICAL RESULTS SUMMARY

The Data Summary Report (Attachment 1) presents the final analytical results for those analytes requested in the SAP. Secondary analytes are only reported if detected. In addition to the required isotopes, all isotopes with positive gamma energy analysis (GEA) results were reported.

The "Det Limit" column in Attachment 1 contains the method detection limit (MDL) for non-radionuclide analyses, or the minimum detectable activity (MDA) for radionuclides.

In Attachment 1, the column labeled "A#" indicates the aliquot class or the method used for sample preparation before analysis. For solid samples, the aliquot classes are defined as follows:

"A" indicates samples that were prepared by SW-846 3050B.

"E" indicates samples that were prepared by a strong acid digest.

"S" indicates samples that were prepared by a distillation.

"W" indicates samples that were prepared by a standard water digest.

"WV" indicates samples that were prepared by a Vadose water digest.

Samples without a letter identifier in the "A#" column were analyzed directly with no separate preparation or with sample preparation performed as a part of the procedure steps.

The "Qual Flags" column in Attachment 1 contains data qualifier flags from CP-15383, *Common Requirements of the Format for Electronic Analytical Data* (FEAD) that are defined as follows:

"B" for organic or radiochemistry results is used to indicate that the analyte was detected in the method or preparation blank and in the sample.

"B" for inorganic results is used to indicate that the reported result should be considered an estimate because it is below the quantitation limit. The "B" flag is applied to sample concentrations that are greater than the MDL but less than the quantitation limit.

"C" for inorganic results is used to indicate that the analyte was detected in the method or preparation blank and in the sample, and the result for the blank was greater than or equal to 20% of the reported sample result.

"N" for all but gas chromatography/mass spectrometry is used to indicate that the matrix spike (MS) recovery or matrix spike duplicate recovery was outside of the specified range in the QAPP or SAP.

"M" for inorganic results is used to indicate that the relative percent difference (RPD) between the sample and the duplicate is greater than 30%.

"U" for all results is used to indicate that the reported result is less than the calculated detection limit.

"E" for inorganic results is used to indicate an estimated result due to interference.

"X" for radiochemistry results is used to indicate an estimated result due to interference.

Manual calculations using rounded results from the Data Summary Report (Attachment 1) or result calculation forms may differ slightly from the actual results derived from the raw data.

3.1 SAMPLE DIGESTIONS

3.1.1 Radiochemistry Strong Acid Digestion

Strong acid digestions with a hot plate for the heat source were performed using a mixture of concentrated nitric and hydrochloric acids. For each digest, approximately 1 to 10 g of sample was digested depending on the analysis being performed. The digestate was then filtered and diluted to a final volume. This digestion was used for all radiochemical analyses except ^{3}H, ^{14}C, and ^{129}I. This digestion is a leach of the acid soluble species only.

3.1.2 SW-846 3050B – Acid Digestion-Heating Block

This acid digestion follows SW-846 3050B using a heating block and nitric and hydrochloric acids. An aliquot of approximately 5 g of sample was digested. All heating-block digestions were filtered and diluted to a final volume of 50 mL. In soil, this digestion is a leach of the acid soluble species only. This digestion was used for all inductively coupled plasma/mass spectrometry (ICP/MS) and inductively coupled plasma/atomic emission spectroscopy (ICP/AES) analyses except for ^{99}Tc, isotopic tin (^{117}Sn and ^{126}Sn),and antimony analysis. The digestion is modified for the ^{99}Tc analysis by using only nitric acid. This is done to eliminate the possibility of the formation a $ZnCl^{-}$ ion pair of mass 99. The laboratory believes this ion, when present, is responsible for low level false positives. A separate digestion for antimony was prepared using additional hydrochloric acid, as recommended in SW-846.

3.1.3 Water Digestion

A water digestion or leach was prepared for the anions by ion chromatography (IC), ^{14}C, and ^{3}H analyses using approximately 0.25 to 4 g of sample diluted to 25 mL. Sonification was used, and the leachate was then filtered. In soil, this digestion is a leach of the water soluble species only.

3.1.4 Vadose Water Digestion

A 70-g sample of soil was leached using a ratio of one part water to one part soil. To maintain a one-to-one ratio, the amount of water added to the sample was adjusted based on the percent moisture of the soil. The slurries were placed on a shaker table for about 1 hour, were transferred to a centrifuge tube, centrifuged at 4,000 rpm for 30 minutes, and then filtered using a disposable vacuum filtration system. The filtrates were transferred to a clean bottle and then analyzed for anions using IC nitrate analysis and ^{99}Tc by ICP/MS analysis.

3.2 INORGANIC ANALYSES

3.2.1 Cyanide

The cyanide analysis by distillation and spectrophotometry was performed on the liner composite samples, field blanks, and the equipment blank. There was no required reporting limit in the SAP for cyanide. All analyses met the target detection limit of 0.5µg/g. The SAP listed a holding time requirement of 14 days for cyanide, which was not met for most samples due to the power outage experienced by the 222-S Laboratory during the months of July, August, and September 2011. Only seven samples were analyzed within the required holding time (see Attachment 3). All other quality control (QC) requirements in the SAP and the QAPP were met for these analyses.

3.2.2 Conductivity

The conductivity analysis was performed on all the composite samples. The SAP lists a conductivity holding time requirement of 28 days. All conductivity measurements were taken on the Vadose water digest portion. Some of the measurements were taken outside of the holding time due to the power outage. Only nine samples were analyzed within holding time (see Attachment 3). There were no notable issues with these analyses, and all QC requirements in the SAP and the QAPP were met.

3.2.3 pH Analysis

The pH analysis was performed on liner composite samples, field blanks, and the equipment blank. These analyses met all QC requirements in the SAP and QAPP. The SAP lists a pH holding time requirement of “as soon as possible.” All solid pH measurements were taken after compositing of the sample and the water leach was performed. The sampling to analysis time varied from less than 1 day to 72 days (see Attachment 3). This was due to the power outage. There is no correlation between pH results and days to analysis, and the results fall within an expected range for alkaline soils. This indicates that the variation in time has no apparent effect on the results. There were no notable issues with these batches, and all QC requirements in the SAP and the QAPP were met.

3.2.4 Mercury

Analysis for mercury by cold-vapor/atomic absorption was performed on the liner composite samples, field blanks, and the equipment blank. This analysis met the required and target

detection limits. The laboratory met the required holding time of 28 days for eight samples only, due to the facility outage that impacted the 222-S Laboratory in the months of July, August, and September 2011 (see Attachment 3).

Batches 29870, 30413, and 31119: There were no notable issues with these batches, and all results met the QC requirements in the SAP and QAPP.

Batch 30135: Mercury was detected in the initial calibration blank (ICB) and in the samples. Since all of the sample results for mercury were below the estimated quantitation limit, re-analysis was not required. A "C" flag was applied to all mercury results where the concentration of mercury in the blank was greater than 20% of the sample results.

Batch 30137: Mercury was detected in the ICB and in one of the samples. Since the sample result for mercury was below the estimated quantitation limit, re-analysis was not required. Also, no flag was applied because the concentration of mercury in the blank was lower than 20% of the sample result.

3.2.5 Ion Chromatography – Ammonium

Analysis for ammonium was performed using a distillation preparation of the liner composite samples, field blanks, and the equipment blank. The SAP lists an administrative holding time of 7 days for distillation of ammonium in soil, and 28 days for preserved distillate. This holding time requirement was not met for most samples due to the power outage experienced by the 222-S Laboratory from July to September 2011. Also, some of the samples were received from WSCF after their holding time had expired. Only three samples were analyzed within the required holding time. The holding time report for ammonium is presented in Attachment 3.

These analyses met the target detection limit of 0.5 µg/g listed in the SAP, except for one sample, which had a detection limit of 0.6 µg/g. There was no required reporting limit in the SAP for ammonium.

Batches 30048, 30551, 30674, and 30676: There were no notable issues with these batches, and all QC requirements in the SAP and the QAPP were met.

Batch 29968: Ammonium was detected in the preparation blank at a level above the quantitation limit. Ammonium was also detected at a similar level in two of the samples included in this analytical batch. This issue was discussed with the client, and results were accepted (see Attachment 8). A "C" flag was applied to these results.

3.2.6 Ion Chromatography – Anions and Small Organic Acids

Ion chromatography analysis was performed on a standard water digest of subsamples from all liner composite samples and directly on the field and equipment blanks. The sample spikes used for the standard water digestions are predigestion spikes. The laboratory met all of the required and target detection limits. For the standard water digest, all analyses were within the applicable holding times. The holding time for the field blank associated with C8398 exceeded the SW-846 requirement due to the power outage.

In addition, all liner composites were analyzed for nitrate by IC on a Vadose water digest fraction (see Attachment 4) and were reported on a "Quick Turnaround" basis along with ^{99}Tc. These results were used primarily to help assess the adequacy of the current drilling plan and placement of subsequent core holes. There is no additional discussion of these results in this narrative. Only the standard water digestion results are discussed below.

Standard Water Digestion Batches

Batch 29670: The results for chloride in the initial and ending instrument blanks were above the MDL but below the quantitation limit. All sample results for chloride were less than the MDL; therefore, the data quality was not affected.

Batch 29709: The results for sulfate in the initial and ending instrument blanks were above the MDL but below the quantitation limit. All sample results for sulfate were less than the MDL; therefore, the data quality was not affected.

Batch 29918: The pre-digestion spike recoveries (MS) for fluoride, oxalate, and phosphate were below the QC acceptance limits of 75-125%. All post spike recoveries were within the required 75-125% range. The laboratory believes that there is a matrix effect issue that is responsible for the pre-digestion spike recovery failure. This was discussed with the client, and the results were accepted (see Attachment 6). All results for fluoride, oxalate, and phosphate have been flagged with an "N". Chloride was detected in the second and ending instrument blanks at a level above the MDL but below the quantitation limit. The concentration of chloride was greater than 20% of one sample result; therefore, this sample result for chloride has been flagged with a "C". Since the blank result was below the quantitation limit, re-analysis was not required.

Batch 30679: Acetate and formate were detected in the preparation blank at a level above the MDL but below the quantitation limit. The concentration of acetate and formate in the preparation blank was greater than 20% of the sample results and the sample results were flagged with a "C". Since the blank results were below the quantitation limit, re-analysis was not required. The RPDs for chloride, nitrate, phosphate, and sulfate exceeded the required 30% in the SAP. Samples were re-digested and re-analyzed. However, due to matrix interferences, the results did not improve. The results from the first run were reported, and an "M" flag was applied to the sample results for these analytes, except where the result was less than the quantitation limit. Also, the pre-digestion spike recovery for phosphate was below the QC acceptance limits of 75-125%, at 62%. All sample results for phosphate were flagged with an "N".

Batch 31872: The pre-digestion spike recovery for nitrate was below the QC acceptance limits of 75-125%. The post-digestion spike recovery passed at 96.5%. Since sample results were more than four times the spike concentration, this criterion does not apply; therefore, no flags were applied to the samples results.

3.2.7 Inductively Coupled Plasma/Atomic Emission Spectroscopy

The ICP/AES analysis was performed on an acid-digest (SW-846 3050B) of all liner composite samples and directly on the equipment and field blanks. The ICP/AES analysis was unable to

obtain the required detection limit for antimony, arsenic, cadmium, lead, selenium, silver, and thallium. These analytes have been reported from separate ICP/MS analyses. For all other metals reported by ICP/AES, all target and required detection limits were met except for molybdenum, for some samples, nickel for all samples, cobalt for most samples, and copper did not meet the target detection limit for three samples. The MDLs for these analytes were only slightly above the target detection limit. SW-846 lists the holding time for ICP/AES metals as 6 months. All analyses met the holding times.

Batch 30224: There were no notable issues with this batch, and all QC requirements in the SAP and the QAPP were met.

Batch 30205: The preparation blank results for cobalt and vanadium were slightly above the MDL. The blank result for cobalt exceeded the 20% criteria in the SAP for all but one cobalt results. All other results have been flagged with a "C". Since all results—blank and sample—were below the estimated quantitation limit, reanalysis was not required. All sample results for vanadium were more than five times the blank result, therefore no flags were applied. The interference check standard-A (ICSA) had results slightly above the MDL for cobalt, chromium, and manganese. This indicates that minor spectral interference was occurring. The interference check standard-AB (ICSAB) exhibited recoveries for these analytes that were within the required limits, indicating that no spectral interference was occurring at the ICSAB range. It is the laboratory's opinion that there was no affect on the data usability for chromium, cobalt, and manganese because the sample results were all well above the ICSAB level. The MS recoveries for aluminum, calcium, iron, magnesium, phosphorous, potassium, sodium, and titanium were outside of the required limits of 75-125 % for recovery listed in the SAP. Since the sample results for these analytes exceeded the matrix spike level by more than four times, this criterion does not apply. The MS recoveries for silicon and zirconium were below the required limits of 75-125%, at 10% and 23%, respectively. All sample results in this batch for silicon have been flagged with an "N". Reanalysis was not required since these are secondary analytes. The laboratory control sample (LCS) recovery for silicon was outside the required limit of 80-120% listed in the SAP, at 65%. Reanalysis was not required since this is secondary analyte. It should be noted that silicon is not listed with other analytes in SW-846 3050B, section 1.1, under "Scope and Application" for the method and does not perform consistently when using this digest. The MS recovery for zirconium, at 23%, could indicate that the results for this analyte are biased low. All sample results in this batch for zirconium have been flagged with an "N". Reanalysis was not required because zirconium is a secondary analyte. The LCS recoveries for calcium and potassium were below the 80-120% recovery limits listed in the SAP and QAPP, at 79%. This was discussed with the client and the laboratory was instructed to report these results with notation in the narrative (see Attachment 8).

Batch 31407: The preparation blank result for iron was above the MDL. All sample results for iron were more than five times the blank result, therefore no flags were applied. Since the blank result was below the MDL, reanalysis was not required. The ICSA had results slightly above the MDL for chromium and manganese. This indicates that minor spectral interference was occurring. The ICSAB exhibited recoveries for these elements that were within the required limits, indicating that no spectral interference was occurring at the ICSAB range. It is the laboratory's opinion that there was not affect on the data usability for chromium and manganese because the sample results were all well above the level of the ICSAB. The MS recoveries for

aluminum, calcium, iron, magnesium, sodium, and titanium were outside of the required recovery limits of 75-125% listed in the SAP. Since the sample results for these elements exceeded the matrix spike level by more than four times, this criterion does not apply. The MS recoveries for barium, silicon, and zirconium exceeded the ±25% requirement at 53%, 0.24%, and 30%, respectively. All sample results in this batch for silicon have been flagged with an "N". Reanalysis was not required since this is secondary element. It should be noted that silicon is not listed with other elements in SW-846 3050B, section 1.1, under "Scope and Application" for the method and does not perform consistently when using this digest. The MS recovery for zirconium, at 30%, could indicate that the results for this element are biased low. All sample results in this batch for zirconium have been flagged with an "N". Reanalysis was not required since zirconium is a secondary analyte. The laboratory believes the low recovery for barium may be due to sample inhomogeneity. If the sample duplicate result is used to calculate the MS recovery, the recovery is 101%. However, all sample results for barium were flagged with an 'N". The LCS recoveries for calcium and silicon were below the ±20% requirement in the SAP and QAPP at 76%. Since the client provided instruction for a similar occurrence (batch 30250), the laboratory followed these instructions for batch 31407. In addition, 11 samples were bracketed between CCV/CCB instead of 10 in this analytical batch; this issue was communicated to the client via e-mail and the results were accepted (see Attachment 8).

3.2.8 Inductively Coupled Plasma/Mass Spectroscopy

The ICP/MS actinide and trace metal analyses were performed on the standard SW-846 3050B acid digestion of all grab samples and liner composite samples. The ICP/MS ^{99}Tc analysis was performed on the sample digest without the addition of hydrochloric acid. Hydrochloric acid is not used for ^{99}Tc analysis because of the potential formation of a ZnCl ion pair with mass 99. ICP/MS analysis for antimony and ^{126}Sn was performed on the same digest with additional hydrochloric acid, which is required to keep antimony in solution. In addition to these acid digests, ICP/MS ^{99}Tc analysis was performed on a Vadose water digest (see Attachment 4) of all solid samples.

Direct is the most accurate type of calibration; however, standard material is not commercially available for all isotopes of interest. Concentrations of those isotopes without available standards are estimated based on the instrument's mass-response curve, which is generated by using the intensity/concentration relationship for the available isotope standards. Results estimated in this manner are designated "semi-quantitative."

Table 1. Inductively Coupled Plasma-Mass Spectroscopy Standards and Spikes

Standard Type	Analytes Analyzed
Initial calibration verification (nondigested)	^{232}Th, ^{233}U,^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
Acid digest standard (laboratory control standard)	^{232}Th, ^{233}U,^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
Predigest spike (MS)	^{232}Th, ^{233}U,^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
Post-digest spike	^{232}Th, ^{233}U,^{235}U, ^{238}U, ^{237}Np, ^{99}Tc, ^{117}Sn
No standard or spike of either type	^{126}Sn, ^{230}Th, ^{234}U, ^{236}U

Technetium-99

The MDL for the water digested aliquot for ^{99}Tc met the target detection limit, but the acid digested aliquot MDL did not. The acid-digested ^{99}Tc analysis is subject to isobaric interference from natural ruthenium, cobalt argide, and zinc chloride ions. However, these samples were analyzed using an ICP/MS with a collision cell, which eliminates the polyatomic interferences. Interference from natural ^{99}Ru seems unlikely since none of the more abundant natural isotopes (100, 101, and 102) were detected.

The SAP lists the holding time for isotopic analytes as 6 months. All samples were analyzed within the holding time.

Batches 30509 and 31715: There were no notable issues with these batches, and all QC requirements in the SAP and the QAPP were met.

Batch 30550: The recovery for the MS was slightly below the QC acceptance criteria of 75-125% listed in the SAP. The laboratory believes that there was a matrix effect issue since the post-digestion spike passed at 96.6%. This was discussed with the client, and the results were accepted (see Attachment 8). Sample results for ^{99}Tc were flagged with an "N".

Tin-126 and Antimony

The required and target detection limits for antimony were met in all samples. There were not target or required detection limits for ^{126}Sn. For the solid samples, antimony and ^{126}Sn were analyzed from the same digest because of the need for additional hydrochloric acid, which results in better MS recoveries. However, this appears to cause an isobaric interference with ^{126}Sn. The laboratory has concluded that the most likely interferences are from the polyatomic ions, zirconium chloride, strontium argide, and yttrium chloride—all with mass of 126. A preliminary investigation indicated that using an ICP/MS with a collision cell will eliminate this interference. However, the instrument needed for this analysis is not currently able to operate in a "semi-quantitative" mode. The laboratory is currently working on resolving this issue. Based on the client's earlier instructions (see Attachment 8), samples with a positive result for ^{126}Sn have been flagged with an "E".

Batches 30082, 32852, and 32945: There were no notable issues with these batches, and all QC requirements in the SAP and the QAPP were met.

Batch 32167 and 32198: The RPD for ^{126}Sn exceeded the ±30% requirement in the SAP. Since the sample result was below the quantitation limit, this criterion does not apply.

Actinides

The required and target detection limits were met for all isotopes and in all samples except for ^{233}U, which exceeded the target detection limit. The SAP lists the holding time for isotopic analytes as 6 months. All samples were analyzed within the holding time.

Batches 30006: There were no notable issues with this batch, and all QC requirements in the SAP and the QAPP were met.

Batches 32195: The middle CCB result for ^{237}Np was above the MDL, but all the sample results for ^{237}Np were below the MDL; therefore the usability of the data was not affected and reanalysis was not required.

Batch 32196: The LCS for this analytical batch did not include ^{233}U. The method blank result for ^{236}U was above the MDL but below the quantitation limit. Since all sample results were below the MDL, reanalysis was not required and the data usability was not affected. The RPD for ^{234}U exceeded the QC acceptance requirement listed in the SAP. However, the sample result was lower than the quantitation limit and this criteria does not apply. In addition, the serial dilution % difference for ^{234}U was higher than 10%, but the sample result was less than the detection limit, so the criteria does not apply.

Batch 32709: The method blank result for ^{236}U was above the MDL but below the quantitation limit. All sample results except one were below the MDL. The sample result above the MDL has been flagged with a "B". Since all results were below the quantitation limit, reanalysis was not required and the data usability was not affected.

Trace Metals

Antimony, arsenic, cadmium, lead, selenium, silver, and thallium were analyzed by ICP/MS to obtain the required detection limits in the SAP. Antimony results were discussed in the Tin-126 and Antimony section above. Except for the required detection limit for selenium, all required detection limits were met or the sample results were above the quantitation limit and the sample detection limit criteria do not apply. All target detection limits were met. The required detection limit for selenium was approximately an order of magnitude below the detection limit obtained by ICP/MS. The laboratory does not anticipate reaching this detection limit for future projects. The adjusted MDL for selenium varied from approximately 0.2 μg/g to 0.6 μg/g. SW-846 lists the holding time for metals as 6 months. All samples were analyzed within the holding times (see Attachment 3).

Batch 32126: Thallium was detected in the preparation blank above the MDL, but below the EQL. The blank result was greater than 20% of all the sample results and these results have been flagged with a "C". Since the blank result was below the EQL, reanalysis was not required. The MS recovery for thallium exceeded the ±25% requirement in the SAP at 127%. The thallium results have been flagged with an "N". Thallium results may be biased slightly high. The initial and closing LLS for silver exceeded the required ±30% at 38% and 36%, respectively. Results near the MDL may be biased low. All silver results were below either the EQL or MDL and well below the RDL of 0.2 μg/g. The LCS for arsenic exceeded the ±20% in requirement in the SAP at 77%. Since the MS recovery was 81%, the accuracy requirement for the batch is satisfied and the data usability was not affected. This was discussed with the customer (see Attachment 8) and it was agreed to report these results with notation in this narrative.

Batch 32233: There were no notable issues with this batch, and all QC requirements in the SAP and the QAPP were met.

Batch 32697: The preparation QC (LCS, MS, sample duplicate, and preparation blank) were analyzed in batch 32126. QC failures were discussed in the section above and the applicable flags were applied to results for the samples reanalyzed in batch 32697.The closing LLS for

arsenic and selenium exceeded the ±30%requirement, at 51% and 131%, respectively. The sample result for selenium was well below the MDL, and the data usability was not affected. The arsenic results were significantly above the level of the LLS, so the effect on the sample results is negligible.

Batch 32947: The preparation QC (LCS, MS, sample duplicate, and preparation blank) were analyzed in batch 32126. QC failures were discussed in the section above and the applicable flags were applied to results for samples reanalyzed in batch 32947. The RPD for selenium exceeded the required 30% in the SAP. Since the selenium result was below the EQL, this criterion does not apply.

Batch 33419: The middle continuing calibration blank result for arsenic exceeded the EQL and was more than 20% of all sample results. All arsenic results above the MDL have been flagged with a "C". The blank result appears to be from carryover. The batch was analyzed for only arsenic and selenium. The selenium result, though below the MDL, was markedly higher than the other blanks or sample results, which indicates carryover. The sample result that followed the blank was 1.26 µg/g, which is lower than the average for S Farm samples indicating it was not affected by carryover. This was discussed with the client and it was decided to report these results with this notation in the narrative (see Attachment 8).

Batch 33436: The preparation QC (LCS, MS, sample duplicate, and preparation blank) were analyzed in batch 32126. QC failures were discussed in the section above and the applicable flags were applied to results for samples reanalyzed in batch 33436.

3.3 RADIOCHEMICAL ANALYSIS

The holding time listed in the SAP for radioactive isotopes is 6 months. SW-846 does not address holding times for radiochemical analytes. All radiochemical analyses meet the 6-month holding time requirement.

3.3.1 Gamma Energy Analysis

Gamma energy analysis was performed directly on approximately 60 mL of material from liner composite samples, the field blanks, and the equipment blank. The SAP requires the reporting of all isotopes with positive results above the MDA; therefore, isotopes additional to those required in the SAP were reported when detected. All of the required detection limits for the isotopes listed in the SAP were met. However, the laboratory was only able to meet the target detection limits for ^{125}Sb and ^{137}Cs (for some samples).

Batch 29130: The RPDs for ^{212}Bi, ^{212}Pb, and ^{208}Tl exceeded the 30% requirement in the SAP. However, since these are secondary analytes, reanalysis was not required.

Batch 29684: Europium-154 was detected in one of the field blanks below the quantitation limit. It is the laboratory's opinion that this is a false positive and most likely an artifact of counting statistics.

Batches 29874 and 30368: There were no notable issues with these batches, and all QC requirements in the SAP and the QAPP were met.

Batch 30872: The RPDs for ^{214}Pb, ^{228}Ac, and ^{208}Tl exceeded the 30% requirement in the SAP. However, since these are secondary analytes, reanalysis was not required. There is no flag for precision failure for radiochemical analyses. Actinium-228 was detected in the blank and the samples, but since this isotope was not a required analyte in the SAP, a “B" flag was applied.

3.3.2 Strontium-89/90

Strontium-89/90 analysis was performed on the liner composite samples and the equipment blank. All of the sample analyses met the required and target detection limits. The SAP requested ^{90}Sr, not $^{89/90}$Sr, be reported. The 222-S Laboratory only performs the latter analysis. Since the half-life for ^{89}Sr is approximately 51 days and ^{89}Sr has not been produced at Hanford for years, $^{89/90}$Sr is essentially ^{90}Sr. There were no notable issues with these batches, and all QC requirements in the SAP and the QAPP were met.

3.3.3 Tritium

The ^{3}H analysis by liquid scintillation counting (LSC) was performed directly on the field and equipment blanks, and a water leach of the liner composite samples. This method only measured the ^{3}H in the samples that could be dissolved in water. This analysis achieved the required and target detection limits in the SAP.

Batches 29683, 30477, 31202, and 31203: There were no notable issues with these batches, and all QC requirements in the SAP and the QAPP were met.

Batch 31204: The RPD exceeded the 30% requirement in the SAP. Since the result was below the quantitation limit, this criterion does not apply.

3.3.4 Selenium-79

The ^{79}Se analysis by LSC was performed on the liner composite samples and the field and equipment blanks. The analysis achieved the target detection limit in the SAP. No required detection limit was listed. No standard is currently available for ^{79}Se; a cold carrier is used to monitor recovery and is measured gravimetrically. The ^{14}C LSC curve is used to determine the ^{79}Se results since their energies are similar. Since both ^{63}Ni and ^{79}Se use a single digestion batch that is equally split prior to the separation step, the maximum tracer/carrier recovery is 50%.

Batches 30193, 30761, and 31230: There were no notable issues with these batches, and all QC requirements in the SAP and the QAPP were met.

Batch 31007: The preparation blank had a positive result below the quantitation limit with large counting error, as did the sample and duplicate. The sample has been flagged with a “B”. These very low positive results were caused by an elevated quench, which resulted in an insufficient background subtraction. These results should be considered false positives and have been

flagged with an "X". Since all results were below the quantitation limit, reanalysis was not required.

Batch 31347: Most samples in this batch demonstrated very low positive results. The laboratory believes these were caused by an elevated quench, resulting in insufficient background subtraction. These results should be considered false positives and have been flagged with an "X". Since all results were below the quantitation limit, reanalysis was not required.

3.3.5 Carbon-14

The ^{14}C analysis by LSC was performed on a water leach of the liner composite samples and directly on the field and equipment blanks. The analysis achieved the required detection limit in the SAP but slightly exceeded the target detection limit for approximately half of the samples. This analysis will only detect water soluble forms of ^{14}C.

Batches 30672, 31417, 31761, 31869, and 31905: There were no notable issues with these batches, and all QC requirements in the SAP and the QAPP were met.

Batch 31726: The preparation blank demonstrated a positive result below the quantitation limit, with a large relative counting error. All samples except two in this batch had results below the MDA. The two samples with results above the MDA were reanalyzed in batch 31905 along with two samples from 31761. All results from batch 31905 were below the MDA. These result were reported in Attachment 1.

3.3.6 Nickel-63

The ^{63}Ni analysis by LSC was performed on the liner composite samples and the field and equipment blanks. The analysis achieved the required and target detection limits in the SAP. There were no notable issues with these batches, and all QC requirements in the SAP and the QAPP were met.

3.3.7 Iodine-129

Analysis for ^{129}I by low energy GEA was performed on the liner composite samples and the field and equipment blanks. The required detection limit in the SAP was met. All but three samples met the target detection limit. There were no notable issues with these batches, and all QC requirements in the SAP and the QAPP were met.

3.3.8 Americium-241, Curium-243/244, and Curium-242

Analysis for ^{241}Am, $^{243/244}Cm$, and ^{242}Cm by alpha energy analysis (AEA) was performed on the liner composite samples and the field and equipment blanks. The required and target detection limits in the SAP were met. The SAP requested ^{243}Cm and ^{244}Cm be reported separately. Since it is not possible to resolve these individual isotopes when using AEA, these isotopes have been reported as $^{243/244}Cm$.

Batch 29857: The blank results for ^{241}Am and $^{243/244}$Cm were above the MDA. All sample results for $^{243/244}$Cm were below the MDA. Two sample results for ^{241}Am were above the MDA and have been flagged with a "B". Since all results—blank and sample—were below the quantitation limit, reanalysis was not required.

Batches 30678, 30922, 31144, 31345, and 31418: There were no notable issues with these batches and all QC requirements in the SAP and the QAPP were met.

3.3.9 Plutonium-238 and Plutonium-239/240

Plutonium isotopic (^{238}Pu and $^{239/240}$Pu) analysis by AEA was performed on the liner composite samples and the field and equipment blanks. The required and target detection limits in the SAP were met.

Batches 29845, 30680, 31339 and 31340: There were no notable issues with these batches, and all QC requirements in the SAP and the QAPP were met.

Batch 30923: The blank result for $^{239/240}$Pu was above the MDA. Since all sample results for $^{239/240}$Pu were below the MDA, the data usability was not affected.

4.0 PROCEDURES

Table 2 lists the analytical procedures used for analysis of the S Farm samples.

Table 2. Analytical Procedures

Analysis	Preparation Method	Analysis Procedure
Inorganic Analyses		
Cyanide	LA-695-103, Rev. K-0 LA-695-102, Rev. M-0 (SW-846 9010C)	LA-695-103, Rev. K-0 LA-695-102, Rev. M-0 (SW-846 9014)
Conductivity	LA-504-102, Rev. A-0 Vadose Water Digest	LA-512-107, Rev. G-0
pH (solid)	LA-212-105, Rev. H-0, I-0 (SW-846 9045D)	LA-212-105, Rev. H-0 (SW-846 9045D)
pH (liquid)	Direct	LA-212-106 Rev. I-0
Mercury – Cold Vapor Atomic Absorption	LA-325-110, Rev. A-0 (SW-846 7470A, 7471B)	LA-325-110, Rev. A-0 (SW-846 7470A, 7471A)
Ammonia – IC	LA-544-112, Rev. E-0	LA-533-101, Rev. Q-0
Anions & Organic Acids – IC	LA-504-101, Rev. M-0 LA-504-102, Rev. A-0 Vadose Water Digest	LA-533-115, Rev. K-0 (SW-846 9056A)
Metals – ICP /AES	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-505-161, Rev. K-0 (SW-846 6010C)

Analysis	Preparation Method	Analysis Procedure
^{99}Tc – ICP/MS	LA-505-163, Rev. G-0 (SW-846 3050B) LA-504-102 Rev. A-0 Vadose Water Digest	LA-506-102, Rev. F-1 LA-506-103, Rev. B-0
^{126}Sn, Antimony – ICP/MS	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-506-102, Rev. F-1
Metals – ICP/MS	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-506-102, Rev. F-1 LA-506-103, Rev. B-0 (SW-846 6020A)
Actinides – ICP/MS	LA-505-163, Rev. G-0 (SW-846 3050B)	LA-506-102, Rev. F-1
Radiochemical Analyses		
GEA	Direct	LA-548-121, Rev. J-0 LA-508-167, Rev. A-0
^{3}H – LSC	Digest LA-504-101, Rev. M-0 Separation LA-218-116, Rev. A-0	LA-508-121, Rev. G-0
^{14}C – LSC	Digest LA-504-101, Rev. M-0 Separation LA-348-104, Rev. J-0	LA-508-121, Rev. G-0
^{79}Se – Separation/LSC	Digest LA-544-101, Rev. H-0 Separation LA-365-132, Rev. J-0	LA-508-121, Rev. G-0
$^{89/90}$Sr- Separation/GPC	Digest LA-544-101, Rev. H-0 Separation LA-220-104, Rev. J-0-A LA-220-103, Rev. K-0	LA-508-124, Rev. B-0 LA-508-114, Rev. G-0
^{63}Ni – Separation/LSC	Digest LA-544-101, Rev. H-0 Separation LA-285-102, Rev. E-0	LA-508-121, Rev. G-0
^{129}I – Separation/GEA	Separation LA-378-105, Rev. E-0	LA-508-167, Rev. A-0
^{241}Am, $^{243/244, 242}$Cm – Separation/AEA	Digest LA-544-101, Rev. H-0 Separation LA-953-104, Rev. I-0	LA-508-168, Rev. A-0 LA-508-167, Rev. A-0

Analysis	Preparation Method	Analysis Procedure
$^{239/240,\ 238}$Pu – Separation/AEA	Digest LA-544-101, Rev. H-0 Separation LA-953-104, Rev. I-0	LA-508-168, Rev. A-0

5.0 REFERENCES

ATL-MP-1011, 2011, *ATL Quality Assurance Project Plan for 222-S Laboratory*, Rev. 10-A, Advanced Technologies and Laboratories International, Inc., Richland, Washington.

SW-846, 1986, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*, Third Edition, as amended, U.S. Environmental Protection Agency, Washington, D.C.

RPP-PLAN-49132, 2011, *Field Sampling and Analysis Plan for Soil Samples in Support of an Interim Barrier at S Farm*, Rev. 0, Washington River Protection Solutions, Inc.

FEAD CP-15383, *Common Requirements of the Format for Electronic Analytical Data*, Version 8, CH2M Hill Plateau Remediation Co., Richland, WA.

Attachment 1

DATA SUMMARY REPORT

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20110713
Core Number: C8394
Customer Sample ID: B2D441
Sample Depth: 43'-45'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V004603			%WATERA	%WATER-APD	%	n/a	n/a	2.680	n/a	n/a	n/a	n/a	0.01000	n/a	
S11V004603			57-12-5	Cyanide	ug/g	99.7	<0.0370	<0.480	<0.480	n/a	n/a	96.3	0.480	n/a	U
S11V004603			WT%SOLID	Weight percent solids	%	n/a	n/a	97.3	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V004603			7439-97-6	Mercury	ug/g	95.7	<1.10E-05	2.00E-03	n/a	n/a	n/a	84.2	9.99E-04	n/a	B
S11V004603			PH	pH	unitless	n/a	n/a	8.57	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V004604			13966-00-2	Potassium-40	uCi/g	n/a	<2.59E-06	1.11E-05	1.03E-05	1.07E-05	8.06	n/a	2.37E-06	5.97	
S11V004604			10198-40-0	Cobalt-60	uCi/g	101	<8.87E-08	<6.29E-08	<1.29E-07	n/a	n/a	n/a	6.29E-08	n/a	U
S11V004604			14234-35-6	Antimony-125	uCi/g	n/a	<1.91E-07	<1.45E-07	<3.44E-07	n/a	n/a	n/a	1.45E-07	n/a	U
S11V004604			10045-97-3	Cesium-137	uCi/g	100	<8.00E-08	<7.41E-08	<1.28E-07	n/a	n/a	n/a	7.41E-08	n/a	U
S11V004604			14683-23-9	Europium-152	uCi/g	n/a	<2.50E-07	<2.51E-07	<3.78E-07	n/a	n/a	n/a	2.51E-07	n/a	U
S11V004604			15585-10-1	Europium-154	uCi/g	n/a	<2.59E-07	<2.29E-07	<3.74E-07	n/a	n/a	n/a	2.29E-07	n/a	U
S11V004604			14391-16-3	Europium-155	uCi/g	n/a	<2.58E-07	<2.56E-07	<2.87E-07	n/a	n/a	n/a	2.56E-07	n/a	U
S11V004604			14913-50-9	Thallium-208	uCi/g	n/a	n/a	2.35E-07	9.26E-07	5.80E-07	119	n/a	9.21E-08	11.05	
S11V004604			14913-49-6	Bismuth-212	uCi/g	n/a	n/a	1.21E-06	1.68E-06	1.44E-06	32.3	n/a	1.00E-06	24.22	
S11V004604			15092-94-1	Lead-212	uCi/g	n/a	<1.28E-07	1.40E-06	4.21E-07	9.12E-07	108	n/a	1.26E-07	3.05	
S11V004604			14733-03-0	Bismuth-214	uCi/g	n/a	n/a	3.97E-07	4.93E-07	4.45E-07	21.4	n/a	1.90E-07	12.77	
S11V004604			15067-28-4	Lead-214	uCi/g	n/a	<1.60E-07	1.66E-06	1.78E-06	1.72E-06	6.81	n/a	1.53E-07	3.20	
S11V004604			14331-83-0	Actinium-228	uCi/g	n/a	n/a	5.35E-07	6.27E-07	5.81E-07	15.8	n/a	3.49E-07	17.48	
S11V004604			14274-82-9	Thorium-228	uCi/g	n/a	<4.38E-05	<4.37E-05	<4.99E-05	n/a	n/a	n/a	4.37E-05	n/a	U
S11V004604			15065-10-8	Thorium-234	uCi/g	n/a	<6.24E-06	<7.39E-06	<8.40E-06	n/a	n/a	n/a	7.39E-06	n/a	U
S11V004604			15046-84-1	Iodine-129	uCi/g	104	<1.02E-06	<1.10E-06	n/a	n/a	n/a	n/a	1.10E-06	n/a	U
S11V004605			CONDUCT	Conductivity	uMHO/cm	99.7	1.03	191	n/a	n/a	n/a	n/a	1.00	n/a	
S11V004607		A	7440-36-0	Antimony	ug/g	105	<2.00E-04	0.0899	0.113	0.102	22.8	102	6.55E-03	n/a	
S11V004607		A	SN-117	Tin-117	ug/g	119	<2.00E-03	<0.0655	<0.0656	n/a	n/a	118	0.0655	n/a	U
S11V004607		A	15832-50-5	Tin-126	ug/g	n/a	<4.00E-05	<1.31E-03	<1.31E-03	n/a	n/a	n/a	1.31E-03	n/a	U
S11V004608		W	16984-48-8	Fluoride	ug/g	94.5	<1.61E-03	2.03	2.66	2.34	27.0	74.4	0.0154	n/a	N
S11V004608		W	GLYCOLAT	Glycolate	ug/g	93.2	<9.37E-03	<0.0897	<0.0900	n/a	n/a	88.4	0.0897	n/a	U
S11V004608		W	71-50-1	Acetate	ug/g	97.3	<6.04E-03	0.365	0.402	0.383	9.79	95.1	0.0578	n/a	B

NA = Not Analyzed, ND = Not Detected

B - Estimated
C - Blank Contamination
U - Less Than Detection Limit
B - Blank Contamination
M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20110713
Core Number: C8394
Customer Sample ID: B2D441
Sample Depth: 43'-45'

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V004608	W	FORMATE	Formate	ug/g	94.2	<4.67E-03	0.259	0.300	0.280	14.7	92.4	0.0447	n/a	B
S11V004608	W	16887-00-6	Chloride	ug/g	100	<9.98E-03	3.04	3.77	3.40	21.6	104	0.0956	n/a	
S11V004608	W	14797-65-0	Nitrite	ug/g	98.3	<0.0192	<0.184	0.708	n/a	n/a	97.8	0.184	n/a	U
S11V004608	W	14808-79-8	Sulfate	ug/g	101	<0.0187	18.6	23.0	20.8	21.3	89.3	0.179	n/a	
S11V004608	W	338-70-5	Oxalate	ug/g	101	<0.0231	<0.221	0.491	n/a	n/a	50.0	0.221	n/a	UN
S11V004608	W	24959-67-9	Bromide	ug/g	93.4	<0.0580	<0.555	<0.557	n/a	n/a	95.2	0.555	n/a	U
S11V004608	W	14797-55-8	Nitrate	ug/g	102	<0.0208	3.36	3.77	3.57	11.4	102	0.199	n/a	
S11V004608	W	14265-44-2	Phosphate	ug/g	101	<0.0167	0.869	1.05	0.960	19.1	35.3	0.160	n/a	BN
S11V004609	A	7429-90-5	Aluminum	ug/g	86.0	<0.0300	6.77E+03	n/a	n/a	n/a	n/a	5.83	n/a	
S11V004609	A	7440-39-3	Barium	ug/g	89.3	<3.00E-03	100	n/a	n/a	n/a	n/a	0.583	n/a	
S11V004609	A	7440-41-7	Beryllium	ug/g	91.7	<1.00E-03	<0.194	n/a	n/a	n/a	n/a	0.194	n/a	U
S11V004609	A	7440-70-2	Calcium	ug/g	79.0	<0.0500	1.26E+04	n/a	n/a	n/a	n/a	9.72	n/a	
S11V004609	A	7440-45-1	Cerium	ug/g	92.7	<0.0300	24.8	n/a	n/a	n/a	n/a	5.83	n/a	B
S11V004609	A	7440-48-4	Cobalt	ug/g	83.7	0.0142	10.8	n/a	n/a	n/a	n/a	1.94	n/a	CB
S11V004609	A	7440-47-3	Chromium	ug/g	84.1	<5.00E-03	16.6	n/a	n/a	n/a	n/a	0.972	n/a	
S11V004609	A	7440-50-8	Copper	ug/g	92.5	<5.00E-03	15.1	n/a	n/a	n/a	n/a	0.972	n/a	
S11V004609	A	7439-89-6	Iron	ug/g	84.8	<5.00E-03	2.21E+04	n/a	n/a	n/a	n/a	0.972	n/a	
S11V004609	A	7440-09-7	Potassium	ug/g	78.6	<0.500	892	n/a	n/a	n/a	n/a	97.2	n/a	B
S11V004609	A	7439-91-0	Lanthanum	ug/g	89.2	<3.00E-03	11.2	n/a	n/a	n/a	n/a	0.583	n/a	
S11V004609	A	7439-93-2	Lithium	ug/g	92.4	<3.00E-03	5.58	n/a	n/a	n/a	n/a	0.583	n/a	B
S11V004609	A	7439-95-4	Magnesium	ug/g	82.5	<0.0500	4.11E+03	n/a	n/a	n/a	n/a	9.72	n/a	
S11V004609	A	7439-96-5	Manganese	ug/g	83.3	<3.00E-03	259	n/a	n/a	n/a	n/a	0.583	n/a	
S11V004609	A	7439-98-7	Molybdenum	ug/g	88.6	<0.0200	<3.89	n/a	n/a	n/a	n/a	3.89	n/a	U
S11V004609	A	7440-23-5	Sodium	ug/g	91.6	<0.100	847	n/a	n/a	n/a	n/a	19.4	n/a	
S11V004609	A	7440-02-0	Nickel	ug/g	83.1	<0.0200	6.84	n/a	n/a	n/a	n/a	3.89	n/a	B
S11V004609	A	7723-14-0	Phosphorus	ug/g	89.0	<0.0500	989	n/a	n/a	n/a	n/a	9.72	n/a	
S11V004609	A	7440-10-0	Praseodymium	ug/g	95.7	<0.0100	2.40	n/a	n/a	n/a	n/a	1.94	n/a	B
S11V004609	A	7704-34-9	Sulfur	ug/g	87.6	<0.100	75.6	n/a	n/a	n/a	n/a	19.4	n/a	B

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M - RPD Outside Range
N - MS/MSD Outside Range
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S Farm Barrier 2011
Data Summary Report

Sample Group: 20110713
Core Number: C8394
Customer Sample ID: B2D441
Sample Depth: 43'-45'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V004609		A	7440-21-3	Silicon	ug/g	64.6	<0.0300	89.3	n/a	n/a	n/a	n/a	5.83	n/a	N
S11V004609		A	7440-24-6	Strontium	ug/g	89.0	<3.00E-03	43.2	n/a	n/a	n/a	n/a	0.583	n/a	
S11V004609		A	7440-32-6	Titanium	ug/g	88.4	<5.00E-03	1.99E+03	n/a	n/a	n/a	n/a	0.972	n/a	
S11V004609		A	7440-62-2	Vanadium	ug/g	86.3	5.56E-03	58.3	n/a	n/a	n/a	n/a	0.972	n/a	
S11V004609		A	7440-65-5	Yttrium	ug/g	87.9	<2.00E-03	11.0	n/a	n/a	n/a	n/a	0.389	n/a	
S11V004609		A	7440-66-6	Zinc	ug/g	84.7	<5.00E-03	41.5	n/a	n/a	n/a	n/a	0.972	n/a	
S11V004609		A	7440-67-7	Zirconium	ug/g	85.9	<5.00E-03	7.02	n/a	n/a	n/a	n/a	0.972	n/a	BN
S11V004609		A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-06	<3.40E-05	n/a	n/a	n/a	n/a	3.40E-05	n/a	U
S11V004609		A	TH-232	Thorium-232	ug/g	93.6	<2.50E-04	2.02	n/a	n/a	n/a	n/a	2.43E-03	n/a	
S11V004609		A	13968-55-3	Uranium-233	ug/g	102	<1.00E-04	<9.72E-04	n/a	n/a	n/a	n/a	9.72E-04	n/a	U
S11V004609		A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-06	<2.43E-05	n/a	n/a	n/a	n/a	2.43E-05	n/a	U
S11V004609		A	15117-96-1	Uranium-235	ug/g	92.6	<5.00E-06	3.65E-03	n/a	n/a	n/a	n/a	4.86E-05	n/a	
S11V004609		A	13982-70-2	Uranium-236	ug/g	n/a	<2.00E-06	<1.94E-05	n/a	n/a	n/a	n/a	1.94E-05	n/a	U
S11V004609		A	13994-20-2	Neptunium-237	ug/g	100	<5.00E-05	<4.86E-04	n/a	n/a	n/a	n/a	4.86E-04	n/a	U
S11V004609		A	U-238	Uranium-238	ug/g	97.9	<2.50E-04	0.501	n/a	n/a	n/a	n/a	2.43E-03	n/a	
S11V004609		A	7440-22-4	Silver	ug/g	98.6	<2.00E-03	0.0465	n/a	n/a	n/a	n/a	0.0194	n/a	B
S11V004609		A	7440-38-2	Arsenic	ug/g	93.0	<0.0168	0.812	n/a	n/a	n/a	n/a	0.163	n/a	CB
S11V004609		A	7440-43-9	Cadmium	ug/g	99.2	<6.00E-03	0.0903	n/a	n/a	n/a	n/a	0.0583	n/a	B
S11V004609		A	7439-92-1	Lead	ug/g	99.9	<0.0150	9.63	n/a	n/a	n/a	n/a	0.146	n/a	
S11V004609		A	7782-49-2	Selenium	ug/g	92.0	<0.0244	<0.237	n/a	n/a	n/a	n/a	0.237	n/a	U
S11V004609		A	7440-28-0	Thallium	ug/g	108	<4.00E-03	0.0678	n/a	n/a	n/a	n/a	0.0389	n/a	B
S11V004610		S	14798-03-9	Ammonium	ug/g	99.0	1.18	<0.470	<0.471	n/a	n/a	98.8	0.470	n/a	U
S11V004611		A	14133-76-7	Technetium-99	ug/g	103	<6.00E-05	<5.99E-04	<6.00E-04	n/a	n/a	74.3	5.99E-04	n/a	UN
S11V004612		W	14762-75-5	Carbon-14	uCi/g	95.5	<6.29E-07	6.48E-07	n/a	n/a	n/a	n/a	6.29E-07	132.732	
S11V004612		W	10028-17-8	Tritium	uCi/g	93.4	<1.19E-06	<1.15E-06	1.89E-06	n/a	n/a	93.7	1.15E-06	n/a	U
S11V004613		E	CM-243/244	Curium-243/244	uCi/g	n/a	<3.19E-08	<2.25E-08	n/a	n/a	n/a	n/a	2.25E-08	n/a	U
S11V004613		E	14596-10-2	Americium-241	uCi/g	100	<3.11E-08	2.78E-08	n/a	n/a	n/a	n/a	1.78E-08	37.65	
S11V004613		E	15510-73-3	Curium-242	uCi/g	n/a	<1.72E-08	<1.42E-08	n/a	n/a	n/a	n/a	1.42E-08	n/a	U

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20110713
Core Number: C8394
Customer Sample ID: B2D441
Sample Depth: 43'-45'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V004613		E	PU-239/240	Plutonium-239/240	uCi/g	98.6	<5.98E-08	<4.50E-08	n/a	n/a	n/a	n/a	4.50E-08	n/a	U
S11V004613		E	13981-16-3	Plutonium-238	uCi/g	n/a	<3.99E-08	<3.44E-08	n/a	n/a	n/a	n/a	3.44E-08	n/a	U
S11V004614		E	SR-89/90	Strontium-89/90	uCi/g	96.0	<2.18E-07	<5.96E-07	n/a	n/a	n/a	n/a	5.96E-07	n/a	U
S11V004615		E	7440-02-0	Nickel	ug/mL	n/a	n/a	187	n/a	n/a	n/a	n/a	0.200	n/a	
S11V004615		E	13981-37-8	Nickel-63	uCi/g	99.8	<6.89E-06	<4.40E-06	n/a	n/a	n/a	n/a	4.40E-06	n/a	U
S11V004616		E	15758-45-9	Selenium-79	uCi/g	n/a	<1.17E-06	<1.49E-06	n/a	n/a	n/a	n/a	1.49E-06	n/a	U

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20110713
Core Number: C8394
Customer Sample ID: B2D442
Sample Depth: 88'-90'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V004621			%WATERA	%WATER-APD	%	n/a	n/a	4.400	n/a	n/a	n/a	n/a	0.01000	n/a	
S11V004621			57-12-5	Cyanide	ug/g	99.7	<0.0370	<0.480	n/a	n/a	n/a	n/a	0.480	n/a	U
S11V004621			WT%SOLID	Weight percent solids	%	n/a	n/a	95.6	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V004621			7439-97-6	Mercury	ug/g	95.7	<1.10E-05	3.09E-03	n/a	n/a	n/a	n/a	1.00E-03	n/a	B
S11V004621			PH	pH	unitless	n/a	n/a	8.18	8.14	8.16	0.490	n/a	0.0100	n/a	
S11V004622			13966-00-2	Potassium-40	uCi/g	n/a	<2.59E-06	1.70E-05	n/a	n/a	n/a	n/a	3.42E-06	5.36	
S11V004622			10198-40-0	Cobalt-60	uCi/g	101	<8.87E-08	<1.19E-07	n/a	n/a	n/a	n/a	1.19E-07	n/a	U
S11V004622			14234-35-6	Antimony-125	uCi/g	n/a	<1.91E-07	<2.59E-07	n/a	n/a	n/a	n/a	2.59E-07	n/a	U
S11V004622			10045-97-3	Cesium-137	uCi/g	100	<8.00E-08	<1.17E-07	n/a	n/a	n/a	n/a	1.17E-07	n/a	U
S11V004622			14683-23-9	Europium-152	uCi/g	n/a	<2.50E-07	<3.32E-07	n/a	n/a	n/a	n/a	3.32E-07	n/a	U
S11V004622			15585-10-1	Europium-154	uCi/g	n/a	<2.59E-07	<3.35E-07	n/a	n/a	n/a	n/a	3.35E-07	n/a	U
S11V004622			14391-16-3	Europium-155	uCi/g	n/a	<2.58E-07	<2.86E-07	n/a	n/a	n/a	n/a	2.86E-07	n/a	U
S11V004622			14913-50-9	Thallium-208	uCi/g	n/a	n/a	1.25E-06	n/a	n/a	n/a	n/a	9.22E-08	2.84	
S11V004622			14913-49-6	Bismuth-212	uCi/g	n/a	n/a	1.50E-06	n/a	n/a	n/a	n/a	1.37E-06	26.70	
S11V004622			15092-94-1	Lead-212	uCi/g	n/a	<1.28E-07	9.66E-07	n/a	n/a	n/a	n/a	1.87E-07	5.78	
S11V004622			14733-03-0	Bismuth-214	uCi/g	n/a	n/a	5.43E-07	n/a	n/a	n/a	n/a	2.77E-07	16.75	
S11V004622			15067-28-4	Lead-214	uCi/g	n/a	<1.60E-07	2.43E-06	n/a	n/a	n/a	n/a	2.28E-07	4.03	
S11V004622			14331-83-0	Actinium-228	uCi/g	n/a	n/a	8.62E-07	n/a	n/a	n/a	n/a	4.63E-07	14.38	
S11V004622			14274-82-9	Thorium-228	uCi/g	n/a	<4.38E-05	<5.12E-05	n/a	n/a	n/a	n/a	5.12E-05	n/a	U
S11V004622			15065-10-8	Thorium-234	uCi/g	n/a	<6.24E-06	<7.72E-06	n/a	n/a	n/a	n/a	7.72E-06	n/a	U
S11V004622			15046-84-1	Iodine-129	uCi/g	104	<1.02E-06	<9.32E-07	n/a	n/a	n/a	n/a	9.32E-07	n/a	U
S11V004625		A	7440-36-0	Antimony	ug/g	105	<2.00E-04	0.294	n/a	n/a	n/a	n/a	6.56E-03	n/a	
S11V004625		A	SN-117	Tin-117	ug/g	119	<2.00E-03	<0.0656	n/a	n/a	n/a	n/a	0.0656	n/a	U
S11V004625		A	15832-50-5	Tin-126	ug/g	n/a	<4.00E-05	<1.31E-03	n/a	n/a	n/a	n/a	1.31E-03	n/a	U
S11V004626		W	16984-48-8	Fluoride	ug/g	94.5	<1.61E-03	0.999	n/a	n/a	n/a	n/a	0.0153	n/a	N
S11V004626		W	GLYCOLAT	Glycolate	ug/g	93.2	<9.37E-03	<0.0893	n/a	n/a	n/a	n/a	0.0893	n/a	U
S11V004626		W	71-50-1	Acetate	ug/g	97.3	<6.04E-03	<0.0575	n/a	n/a	n/a	n/a	0.0575	n/a	U
S11V004626		W	FORMATE	Formate	ug/g	94.2	<4.67E-03	<0.0445	n/a	n/a	n/a	n/a	0.0445	n/a	U

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20110713
Core Number: C8394
Customer Sample ID: B2D442
Sample Depth: 88'-90'

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V004626	W	16887-00-6	Chloride	ug/g	100	<9.98E-03	2.02	n/a	n/a	n/a	n/a	0.0951	n/a	
S11V004626	W	14797-65-0	Nitrite	ug/g	98.3	<0.0192	0.458	n/a	n/a	n/a	n/a	0.183	n/a	B
S11V004626	W	14808-79-8	Sulfate	ug/g	101	<0.0187	13.0	n/a	n/a	n/a	n/a	0.178	n/a	
S11V004626	W	338-70-5	Oxalate	ug/g	101	<0.0231	<0.220	n/a	n/a	n/a	n/a	0.220	n/a	UN
S11V004626	W	24959-67-9	Bromide	ug/g	93.4	<0.0580	<0.552	n/a	n/a	n/a	n/a	0.552	n/a	U
S11V004626	W	14797-55-8	Nitrate	ug/g	102	<0.0208	12.9	n/a	n/a	n/a	n/a	0.198	n/a	
S11V004626	W	14265-44-2	Phosphate	ug/g	101	<0.0167	<0.159	n/a	n/a	n/a	n/a	0.159	n/a	UN
S11V004627	A	7429-90-5	Aluminum	ug/g	86.0	<0.0300	9.04E+03	n/a	n/a	n/a	n/a	5.98	n/a	
S11V004627	A	7440-39-3	Barium	ug/g	89.3	<3.00E-03	82.8	n/a	n/a	n/a	n/a	0.598	n/a	
S11V004627	A	7440-41-7	Beryllium	ug/g	91.7	<1.00E-03	0.218	n/a	n/a	n/a	n/a	0.199	n/a	B
S11V004627	A	7440-70-2	Calcium	ug/g	79.0	<0.0500	9.69E+03	n/a	n/a	n/a	n/a	9.96	n/a	
S11V004627	A	7440-45-1	Cerium	ug/g	92.7	<0.0300	28.2	n/a	n/a	n/a	n/a	5.98	n/a	B
S11V004627	A	7440-48-4	Cobalt	ug/g	83.7	0.0142	9.12	n/a	n/a	n/a	n/a	1.99	n/a	CB
S11V004627	A	7440-47-3	Chromium	ug/g	84.1	<5.00E-03	30.3	n/a	n/a	n/a	n/a	0.996	n/a	
S11V004627	A	7440-50-8	Copper	ug/g	92.5	<5.00E-03	11.2	n/a	n/a	n/a	n/a	0.996	n/a	
S11V004627	A	7439-89-6	Iron	ug/g	84.8	<5.00E-03	1.80E+04	n/a	n/a	n/a	n/a	0.996	n/a	
S11V004627	A	7440-09-7	Potassium	ug/g	78.6	<0.500	1.63E+03	n/a	n/a	n/a	n/a	99.6	n/a	
S11V004627	A	7439-91-0	Lanthanum	ug/g	89.2	<3.00E-03	12.5	n/a	n/a	n/a	n/a	0.598	n/a	
S11V004627	A	7439-93-2	Lithium	ug/g	92.4	<3.00E-03	13.0	n/a	n/a	n/a	n/a	0.598	n/a	
S11V004627	A	7439-95-4	Magnesium	ug/g	82.5	<0.0500	5.99E+03	n/a	n/a	n/a	n/a	9.96	n/a	
S11V004627	A	7439-96-5	Manganese	ug/g	83.3	<3.00E-03	324	n/a	n/a	n/a	n/a	0.598	n/a	
S11V004627	A	7439-98-7	Molybdenum	ug/g	88.6	<0.0200	<3.98	n/a	n/a	n/a	n/a	3.98	n/a	U
S11V004627	A	7440-23-5	Sodium	ug/g	91.6	<0.100	209	n/a	n/a	n/a	n/a	19.9	n/a	
S11V004627	A	7440-02-0	Nickel	ug/g	83.1	<0.0200	17.6	n/a	n/a	n/a	n/a	3.98	n/a	B
S11V004627	A	7723-14-0	Phosphorus	ug/g	89.0	<0.0500	547	n/a	n/a	n/a	n/a	9.96	n/a	
S11V004627	A	7440-10-0	Praseodymium	ug/g	95.7	<0.0100	2.54	n/a	n/a	n/a	n/a	1.99	n/a	B
S11V004627	A	7704-34-9	Sulfur	ug/g	87.6	<0.100	52.3	n/a	n/a	n/a	n/a	19.9	n/a	B
S11V004627	A	7440-21-3	Silicon	ug/g	64.6	<0.0300	110	n/a	n/a	n/a	n/a	5.98	n/a	N

NA = Not Analyzed, ND = Not Detected

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U - Less Than Detection Limit
B - Blank Contamination
M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20110713
Core Number: C8394
Customer Sample ID: B2D442
Sample Depth: 88'-90'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V004627		A	7440-24-6	Strontium	ug/g	89.0	<3.00E-03	33.3	n/a	n/a	n/a	n/a	0.598	n/a	
S11V004627		A	7440-32-6	Titanium	ug/g	88.4	<5.00E-03	830	n/a	n/a	n/a	n/a	0.996	n/a	
S11V004627		A	7440-62-2	Vanadium	ug/g	86.3	5.56E-03	35.9	n/a	n/a	n/a	n/a	0.996	n/a	
S11V004627		A	7440-65-5	Yttrium	ug/g	87.9	<2.00E-03	6.29	n/a	n/a	n/a	n/a	0.398	n/a	
S11V004627		A	7440-66-6	Zinc	ug/g	84.7	<5.00E-03	39.4	n/a	n/a	n/a	n/a	0.996	n/a	
S11V004627		A	7440-67-7	Zirconium	ug/g	85.9	<5.00E-03	5.95	n/a	n/a	n/a	n/a	0.996	n/a	BN
S11V004627		A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-06	3.70E-05	n/a	n/a	n/a	n/a	3.49E-05	n/a	
S11V004627		A	TH-232	Thorium-232	ug/g	93.6	<2.50E-04	5.04	n/a	n/a	n/a	n/a	2.49E-03	n/a	
S11V004627		A	13968-55-3	Uranium-233	ug/g	102	<1.00E-04	<9.96E-04	n/a	n/a	n/a	n/a	9.96E-04	n/a	U
S11V004627		A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-06	4.35E-05	n/a	n/a	n/a	n/a	2.49E-05	n/a	
S11V004627		A	15117-96-1	Uranium-235	ug/g	92.6	<5.00E-06	5.70E-03	n/a	n/a	n/a	n/a	4.98E-05	n/a	
S11V004627		A	13982-70-2	Uranium-236	ug/g	n/a	<2.00E-06	<1.99E-05	n/a	n/a	n/a	n/a	1.99E-05	n/a	U
S11V004627		A	13994-20-2	Neptunium-237	ug/g	100	<5.00E-05	<4.98E-04	n/a	n/a	n/a	n/a	4.98E-04	n/a	U
S11V004627		A	U-238	Uranium-238	ug/g	97.9	<2.50E-04	0.776	n/a	n/a	n/a	n/a	2.49E-03	n/a	
S11V004627		A	7440-22-4	Silver	ug/g	98.6	<2.00E-03	0.0464	n/a	n/a	n/a	n/a	0.0199	n/a	B
S11V004627		A	7440-38-2	Arsenic	ug/g	93.0	<0.0168	2.24	n/a	n/a	n/a	n/a	0.167	n/a	C
S11V004627		A	7440-43-9	Cadmium	ug/g	99.2	<6.00E-03	0.0857	n/a	n/a	n/a	n/a	0.0598	n/a	B
S11V004627		A	7439-92-1	Lead	ug/g	99.9	<0.0150	5.71	n/a	n/a	n/a	n/a	0.149	n/a	
S11V004627		A	7782-49-2	Selenium	ug/g	92.0	<0.0244	<0.243	n/a	n/a	n/a	n/a	0.243	n/a	U
S11V004627		A	7440-28-0	Thallium	ug/g	108	<4.00E-03	0.119	n/a	n/a	n/a	n/a	0.0398	n/a	B
S11V004628		S	14798-03-9	Ammonium	ug/g	99.0	1.18	<0.475	n/a	n/a	n/a	n/a	0.475	n/a	U
S11V004629		A	14133-76-7	Technetium-99	ug/g	103	<6.00E-05	<6.00E-04	n/a	n/a	n/a	n/a	6.00E-04	n/a	UN
S11V004630		W	14762-75-5	Carbon-14	uCi/g	95.5	<6.29E-07	<6.55E-07	n/a	n/a	n/a	n/a	6.55E-07	n/a	U
S11V004630		W	10028-17-8	Tritium	uCi/g	93.4	<1.19E-06	1.45E-05	n/a	n/a	n/a	n/a	1.33E-06	13.975	
S11V004631		E	CM-243/244	Curium-243/244	uCi/g	n/a	<3.19E-08	<2.64E-08	n/a	n/a	n/a	n/a	2.64E-08	n/a	U
S11V004631		E	14596-10-2	Americium-241	uCi/g	100	<3.11E-08	<3.50E-08	n/a	n/a	n/a	n/a	3.50E-08	n/a	U
S11V004631		E	15510-73-3	Curium-242	uCi/g	n/a	<1.72E-08	<1.42E-08	n/a	n/a	n/a	n/a	1.42E-08	n/a	U
S11V004631		E	PU-239/240	Plutonium-239/240	uCi/g	98.6	<5.98E-08	<4.55E-08	n/a	n/a	n/a	n/a	4.55E-08	n/a	U

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20110713
Core Number: C8394
Customer Sample ID: B2D442
Sample Depth: 88'-90'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V004631		E	13981-16-3	Plutonium-238	uCi/g	n/a	<3.99E-08	<2.63E-08	n/a	n/a	n/a	n/a	2.63E-08	n/a	U
S11V004632		E	SR-89/90	Strontium-89/90	uCi/g	96.0	<2.18E-07	<2.10E-07	n/a	n/a	n/a	n/a	2.10E-07	n/a	U
S11V004633		E	7440-02-0	Nickel	ug/mL	n/a	n/a	188	n/a	n/a	n/a	n/a	0.200	n/a	
S11V004633		E	13981-37-8	Nickel-63	uCi/g	99.8	<6.89E-06	<5.87E-06	n/a	n/a	n/a	n/a	5.88E-06	n/a	U
S11V004634		E	15758-45-9	Selenium-79	uCi/g	n/a	<1.17E-06	<1.15E-06	n/a	n/a	n/a	n/a	1.15E-06	n/a	U
S11V004623			CONDUCT	Conductivity	uMHO/cm	99.7	1.03	180	179	180	0.780	n/a	1.00	n/a	

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20110713
Core Number: C8394
Customer Sample ID: B2D443
Sample Depth: 126'-128'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V004639			%WATERA	%WATER-APD	%	n/a	n/a	7.000	n/a	n/a	n/a	n/a	0.01000	n/a	
S11V004639			57-12-5	Cyanide	ug/g	99.7	<0.0370	<0.480	n/a	n/a	n/a	n/a	0.480	n/a	U
S11V004639			WT%SOLID	Weight percent solids	%	n/a	n/a	93.0	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V004639			7439-97-6	Mercury	ug/g	95.7	<1.10E-05	6.72E-03	n/a	n/a	n/a	n/a	1.00E-03	n/a	B
S11V004639			PH	pH	unitless	n/a	n/a	8.01	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V004640			13966-00-2	Potassium-40	uCi/g	n/a	<2.59E-06	1.61E-05	n/a	n/a	n/a	n/a	2.60E-06	4.13	
S11V004640			10198-40-0	Cobalt-60	uCi/g	101	<8.87E-08	<9.11E-08	n/a	n/a	n/a	n/a	9.11E-08	n/a	U
S11V004640			14234-35-6	Antimony-125	uCi/g	n/a	<1.91E-07	<2.38E-07	n/a	n/a	n/a	n/a	2.38E-07	n/a	U
S11V004640			10045-97-3	Cesium-137	uCi/g	100	<8.00E-08	<8.58E-08	n/a	n/a	n/a	n/a	8.58E-08	n/a	U
S11V004640			14683-23-9	Europium-152	uCi/g	n/a	<2.50E-07	<2.53E-07	n/a	n/a	n/a	n/a	2.53E-07	n/a	U
S11V004640			15585-10-1	Europium-154	uCi/g	n/a	<2.59E-07	<2.50E-07	n/a	n/a	n/a	n/a	2.50E-07	n/a	U
S11V004640			14391-16-3	Europium-155	uCi/g	n/a	<2.58E-07	<1.63E-07	n/a	n/a	n/a	n/a	1.63E-07	n/a	U
S11V004640			14913-50-9	Thallium-208	uCi/g	n/a	n/a	1.40E-06	n/a	n/a	n/a	n/a	8.20E-08	2.74	
S11V004640			14913-49-6	Bismuth-212	uCi/g	n/a	n/a	1.55E-06	n/a	n/a	n/a	n/a	1.15E-06	28.81	
S11V004640			15092-94-1	Lead-212	uCi/g	n/a	<1.28E-07	1.14E-06	n/a	n/a	n/a	n/a	1.42E-07	3.74	
S11V004640			14733-03-0	Bismuth-214	uCi/g	n/a	n/a	7.62E-07	n/a	n/a	n/a	n/a	2.12E-07	9.30	
S11V004640			15067-28-4	Lead-214	uCi/g	n/a	<1.60E-07	2.68E-06	n/a	n/a	n/a	n/a	1.48E-07	2.02	
S11V004640			13982-63-3	Radium-226	uCi/g	n/a	n/a	1.78E-06	n/a	n/a	n/a	n/a	1.36E-06	23.25	
S11V004640			14331-83-0	Actinium-228	uCi/g	n/a	n/a	1.08E-06	n/a	n/a	n/a	n/a	3.52E-07	8.80	
S11V004640			14274-82-9	Thorium-228	uCi/g	n/a	<4.38E-05	<3.91E-05	n/a	n/a	n/a	n/a	3.91E-05	n/a	U
S11V004640			15065-10-8	Thorium-234	uCi/g	n/a	<6.24E-06	8.22E-06	n/a	n/a	n/a	n/a	5.66E-06	20.02	
S11V004640			15046-84-1	Iodine-129	uCi/g	104	<1.02E-06	<1.06E-06	n/a	n/a	n/a	n/a	1.06E-06	n/a	U
S11V004641			CONDUCT	Conductivity	uMHO/cm	99.7	1.03	214	n/a	n/a	n/a	n/a	1.00	n/a	
S11V004643		A	7440-36-0	Antimony	ug/g	105	<2.00E-04	0.392	n/a	n/a	n/a	n/a	6.52E-03	n/a	
S11V004643		A	SN-117	Tin-117	ug/g	119	<2.00E-03	<0.0652	n/a	n/a	n/a	n/a	0.0652	n/a	U
S11V004643		A	15832-50-5	Tin-126	ug/g	n/a	<4.00E-05	<1.30E-03	n/a	n/a	n/a	n/a	1.30E-03	n/a	U
S11V004644		W	16984-48-8	Fluoride	ug/g	94.5	<1.61E-03	1.16	n/a	n/a	n/a	n/a	0.0156	n/a	N
S11V004644		W	GLYCOLAT	Glycolate	ug/g	93.2	<9.37E-03	<0.0910	n/a	n/a	n/a	n/a	0.0910	n/a	U

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E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20110713
Core Number: C8394
Customer Sample ID: B2D443
Sample Depth: 126'-128'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V004644		W	71-50-1	Acetate	ug/g	97.3	<6.04E-03	0.230	n/a	n/a	n/a	n/a	0.0587	n/a	B
S11V004644		W	FORMATE	Formate	ug/g	94.2	<4.67E-03	0.772	n/a	n/a	n/a	n/a	0.0454	n/a	B
S11V004644		W	16887-00-6	Chloride	ug/g	100	<9.98E-03	6.85	n/a	n/a	n/a	n/a	0.0969	n/a	
S11V004644		W	14797-65-0	Nitrite	ug/g	98.3	<0.0192	0.409	n/a	n/a	n/a	n/a	0.186	n/a	B
S11V004644		W	14808-79-8	Sulfate	ug/g	101	<0.0187	28.9	n/a	n/a	n/a	n/a	0.182	n/a	
S11V004644		W	338-70-5	Oxalate	ug/g	101	<0.0231	0.913	n/a	n/a	n/a	n/a	0.224	n/a	BN
S11V004644		W	24959-67-9	Bromide	ug/g	93.4	<0.0580	<0.563	n/a	n/a	n/a	n/a	0.563	n/a	U
S11V004644		W	14797-55-8	Nitrate	ug/g	102	<0.0208	26.7	n/a	n/a	n/a	n/a	0.202	n/a	
S11V004644		W	14265-44-2	Phosphate	ug/g	101	<0.0167	0.490	n/a	n/a	n/a	n/a	0.162	n/a	BN
S11V004645		A	7429-90-5	Aluminum	ug/g	86.0	<0.0300	1.09E+04	1.07E+04	1.08E+04	1.90	3.91E+03	5.99	n/a	
S11V004645		A	7440-39-3	Barium	ug/g	89.3	<3.00E-03	87.1	83.7	85.4	3.95	108	0.599	n/a	
S11V004645		A	7440-41-7	Beryllium	ug/g	91.7	<1.00E-03	0.344	0.314	0.329	9.16	94.9	0.200	n/a	B
S11V004645		A	7440-70-2	Calcium	ug/g	79.0	<0.0500	1.36E+04	1.29E+04	1.33E+04	4.70	506	9.98	n/a	
S11V004645		A	7440-45-1	Cerium	ug/g	92.7	<0.0300	34.4	33.1	33.8	3.79	110	5.99	n/a	B
S11V004645		A	7440-48-4	Cobalt	ug/g	83.7	0.0142	10.7	9.67	10.2	9.93	93.6	2.00	n/a	CB
S11V004645		A	7440-47-3	Chromium	ug/g	84.1	<5.00E-03	26.0	26.7	26.3	2.48	103	0.998	n/a	
S11V004645		A	7440-50-8	Copper	ug/g	92.5	<5.00E-03	17.4	17.1	17.2	1.51	99.4	0.998	n/a	
S11V004645		A	7439-89-6	Iron	ug/g	84.8	<5.00E-03	1.98E+04	1.94E+04	1.96E+04	2.45	713	0.998	n/a	
S11V004645		A	7440-09-7	Potassium	ug/g	78.6	<0.500	1.73E+03	1.68E+03	1.70E+03	2.96	367	99.8	n/a	
S11V004645		A	7439-91-0	Lanthanum	ug/g	89.2	<3.00E-03	14.2	13.8	14.0	2.88	96.3	0.599	n/a	
S11V004645		A	7439-93-2	Lithium	ug/g	92.4	<3.00E-03	13.6	13.8	13.7	1.35	101	0.599	n/a	
S11V004645		A	7439-95-4	Magnesium	ug/g	82.5	<0.0500	6.31E+03	6.21E+03	6.26E+03	1.60	421	9.98	n/a	
S11V004645		A	7439-96-5	Manganese	ug/g	83.3	<3.00E-03	308	296	302	3.93	102	0.599	n/a	
S11V004645		A	7439-98-7	Molybdenum	ug/g	88.6	<0.0200	<3.99	<3.98	n/a	n/a	97.8	3.99	n/a	U
S11V004645		A	7440-23-5	Sodium	ug/g	91.6	<0.100	220	225	222	2.31	272	20.0	n/a	
S11V004645		A	7440-02-0	Nickel	ug/g	83.1	<0.0200	16.1	15.2	15.6	5.73	97.3	3.99	n/a	B
S11V004645		A	7723-14-0	Phosphorus	ug/g	89.0	<0.0500	597	584	590	2.12	55.5	9.98	n/a	
S11V004645		A	7440-10-0	Praseodymium	ug/g	95.7	<0.0100	2.35	2.01	2.18	15.3	94.3	2.00	n/a	B

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20110713
Core Number: C8394
Customer Sample ID: B2D443
Sample Depth: 126'-128'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V004645		A	7704-34-9	Sulfur	ug/g	87.6	<0.100	36.5	39.5	38.0	8.08	113	20.0	n/a	B
S11V004645		A	7440-21-3	Silicon	ug/g	64.6	<0.0300	108	111	109	3.35	10.4	5.99	n/a	N
S11V004645		A	7440-24-6	Strontium	ug/g	89.0	<3.00E-03	40.1	39.4	39.8	1.77	104	0.599	n/a	
S11V004645		A	7440-32-6	Titanium	ug/g	88.4	<5.00E-03	819	805	812	1.74	283	0.998	n/a	
S11V004645		A	7440-62-2	Vanadium	ug/g	86.3	5.56E-03	36.8	35.9	36.3	2.56	102	0.998	n/a	
S11V004645		A	7440-65-5	Yttrium	ug/g	87.9	<2.00E-03	7.32	7.10	7.21	3.11	96.8	0.399	n/a	
S11V004645		A	7440-66-6	Zinc	ug/g	84.7	<5.00E-03	56.6	54.5	55.5	3.75	100	0.998	n/a	
S11V004645		A	7440-67-7	Zirconium	ug/g	85.9	<5.00E-03	7.30	7.43	7.37	1.73	22.9	0.998	n/a	BN
S11V004645		A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-06	3.53E-05	3.53E-05	3.53E-05	0.113	n/a	3.49E-05	n/a	
S11V004645		A	TH-232	Thorium-232	ug/g	93.6	<2.50E-04	4.90	5.06	4.98	3.19	100	2.49E-03	n/a	
S11V004645		A	13968-55-3	Uranium-233	ug/g	102	<1.00E-04	<9.98E-04	<9.95E-04	n/a	n/a	98.6	9.98E-04	n/a	U
S11V004645		A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-06	5.12E-05	<2.49E-05	n/a	n/a	n/a	2.49E-05	n/a	
S11V004645		A	15117-96-1	Uranium-235	ug/g	92.6	<5.00E-06	5.04E-03	4.92E-03	4.98E-03	2.49	93.9	4.99E-05	n/a	
S11V004645		A	13982-70-2	Uranium-236	ug/g	n/a	<2.00E-06	<2.00E-05	<1.99E-05	n/a	n/a	n/a	2.00E-05	n/a	U
S11V004645		A	13994-20-2	Neptunium-237	ug/g	100	<5.00E-05	<4.99E-04	<4.98E-04	n/a	n/a	99.2	4.99E-04	n/a	U
S11V004645		A	U-238	Uranium-238	ug/g	97.9	<2.50E-04	0.716	0.692	0.704	3.54	97.0	2.49E-03	n/a	
S11V004645		A	7440-22-4	Silver	ug/g	98.6	<2.00E-03	0.0573	0.0562	0.0567	2.01	94.5	0.0200	n/a	B
S11V004645		A	7440-38-2	Arsenic	ug/g	93.0	<0.0168	2.75	2.67	2.71	2.88	90.8	0.168	n/a	C
S11V004645		A	7440-43-9	Cadmium	ug/g	99.2	<6.00E-03	0.129	0.120	0.124	7.47	99.6	0.0599	n/a	B
S11V004645		A	7439-92-1	Lead	ug/g	99.9	<0.0150	8.39	7.73	8.06	8.12	98.4	0.150	n/a	
S11V004645		A	7782-49-2	Selenium	ug/g	92.0	<0.0244	<0.243	<0.243	n/a	n/a	82.3	0.243	n/a	U
S11V004645		A	7440-28-0	Thallium	ug/g	108	<4.00E-03	0.151	0.141	0.146	6.93	103	0.0399	n/a	B
S11V004646		S	14798-03-9	Ammonium	ug/g	99.0	1.18	<0.476	n/a	n/a	n/a	n/a	0.476	n/a	U
S11V004647		A	14133-76-7	Technetium-99	ug/g	103	<6.00E-05	<5.99E-04	n/a	n/a	n/a	n/a	5.99E-04	n/a	UN
S11V004648		W	14762-75-5	Carbon-14	uCi/g	95.5	<6.29E-07	<6.19E-07	n/a	n/a	n/a	n/a	6.19E-07	n/a	U
S11V004648		W	10028-17-8	Tritium	uCi/g	93.4	<1.19E-06	4.15E-05	n/a	n/a	n/a	n/a	1.29E-06	5.331	
S11V004649		E	CM-243/244	Curium-243/244	uCi/g	n/a	<3.19E-08	<2.56E-08	n/a	n/a	n/a	n/a	2.56E-08	n/a	U
S11V004649		E	14596-10-2	Americium-241	uCi/g	100	<3.11E-08	<1.86E-08	n/a	n/a	n/a	n/a	1.86E-08	n/a	U

NA = Not Analyzed, ND = Not Detected

B - Estimated
C - Blank Contamination
U - Less Than Detection Limit
B - Blank Contamination
M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20110713
Core Number: C8394
Customer Sample ID: B2D443
Sample Depth: 126'-128'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V004649		E	15510-73-3	Curium-242	uCi/g	n/a	<1.72E-08	<3.89E-08	n/a	n/a	n/a	n/a	3.89E-08	n/a	U
S11V004649		E	PU-239/240	Plutonium-239/240	uCi/g	98.6	<5.98E-08	<4.81E-08	n/a	n/a	n/a	n/a	4.81E-08	n/a	U
S11V004649		E	13981-16-3	Plutonium-238	uCi/g	n/a	<3.99E-08	<5.32E-08	n/a	n/a	n/a	n/a	5.32E-08	n/a	U
S11V004650		E	SR-89/90	Strontium-89/90	uCi/g	96.0	<2.18E-07	2.19E-07	n/a	n/a	n/a	n/a	1.99E-07	141.094	
S11V004651		E	7440-02-0	Nickel	ug/mL	n/a	n/a	182	n/a	n/a	n/a	n/a	0.200	n/a	
S11V004651		E	13981-37-8	Nickel-63	uCi/g	99.8	<6.89E-06	<8.19E-06	n/a	n/a	n/a	n/a	8.19E-06	n/a	U
S11V004652		E	15758-45-9	Selenium-79	uCi/g	n/a	<1.17E-06	<1.24E-06	n/a	n/a	n/a	n/a	1.24E-06	n/a	U

NA = Not Analyzed, ND = Not Detected

B - Estimated
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U - Less Than Detection Limit
B - Blank Contamination
M - RPD Outside Range
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E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111140
Core Number: C8398
Customer Sample ID: B2FDM2
Sample Depth: Field Blank

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005311			16984-48-8	Fluoride	ug/mL	99.4	<1.61E-03	0.0739	0.0838	0.0788	12.6	101	1.61E-03	n/a	
S11V005311			GLYCOLAT	Glycolate	ug/mL	98.0	<9.37E-03	<9.37E-03	<9.37E-03	n/a	n/a	96.7	9.37E-03	n/a	U
S11V005311			71-50-1	Acetate	ug/mL	101	<6.04E-03	<6.04E-03	<6.04E-03	n/a	n/a	98.0	6.04E-03	n/a	U
S11V005311			FORMATE	Formate	ug/mL	98.6	<4.67E-03	<4.67E-03	<4.67E-03	n/a	n/a	96.4	4.67E-03	n/a	U
S11V005311			16887-00-6	Chloride	ug/mL	104	<9.98E-03	<9.98E-03	<9.98E-03	n/a	n/a	102	9.98E-03	n/a	U
S11V005311			14797-65-0	Nitrite	ug/mL	97.3	<0.0192	<0.0192	<0.0192	n/a	n/a	95.6	0.0192	n/a	U
S11V005311			14808-79-8	Sulfate	ug/mL	106	0.0337	<0.0187	<0.0187	n/a	n/a	103	0.0187	n/a	U
S11V005311			338-70-5	Oxalate	ug/mL	98.8	<0.0231	<0.0231	<0.0231	n/a	n/a	95.2	0.0231	n/a	U
S11V005311			24959-67-9	Bromide	ug/mL	106	<0.0580	<0.0580	<0.0580	n/a	n/a	98.2	0.0580	n/a	U
S11V005311			14797-55-8	Nitrate	ug/mL	110	<0.0208	<0.0208	<0.0208	n/a	n/a	102	0.0208	n/a	U
S11V005311			14265-44-2	Phosphate	ug/mL	105	<0.0167	<0.0167	<0.0167	n/a	n/a	102	0.0167	n/a	U
S11V005312			57-12-5	Cyanide	ug/mL	95.6	<4.00E-03	<0.0200	<0.0200	n/a	n/a	103	0.0200	n/a	U
S11V005313		S	14798-03-9	Ammonium	ug/mL	105	<0.194	<0.194	<0.194	n/a	n/a	102	0.194	n/a	U
S11V005314			7439-97-6	Mercury	ug/mL	101	<1.10E-05	<4.40E-05	n/a	n/a	n/a	98.0	4.40E-05	n/a	U
S11V005314			7440-22-4	Silver	ug/mL	99.0	<5.00E-03	<5.00E-03	n/a	n/a	n/a	n/a	5.00E-03	n/a	U
S11V005314			7429-90-5	Aluminum	ug/mL	101	<0.0300	<0.0300	n/a	n/a	n/a	n/a	0.0300	n/a	U
S11V005314			7440-38-2	Arsenic	ug/mL	98.8	<0.0500	<0.0500	n/a	n/a	n/a	n/a	0.0500	n/a	U
S11V005314			7440-39-3	Barium	ug/mL	100	<3.00E-03	<3.00E-03	n/a	n/a	n/a	n/a	3.00E-03	n/a	U
S11V005314			7440-41-7	Beryllium	ug/mL	98.7	<1.00E-03	<1.00E-03	n/a	n/a	n/a	n/a	1.00E-03	n/a	U
S11V005314			7440-70-2	Calcium	ug/mL	102	<0.0500	<0.0500	n/a	n/a	n/a	n/a	0.0500	n/a	U
S11V005314			7440-43-9	Cadmium	ug/mL	102	<5.00E-03	<5.00E-03	n/a	n/a	n/a	n/a	5.00E-03	n/a	U
S11V005314			7440-48-4	Cobalt	ug/mL	102	<0.0100	<0.0100	n/a	n/a	n/a	n/a	0.0100	n/a	U
S11V005314			7440-47-3	Chromium	ug/mL	102	<5.00E-03	<5.00E-03	n/a	n/a	n/a	n/a	5.00E-03	n/a	U
S11V005314			7440-50-8	Copper	ug/mL	99.6	<5.00E-03	<5.00E-03	n/a	n/a	n/a	n/a	5.00E-03	n/a	U
S11V005314			7439-89-6	Iron	ug/mL	101	<5.00E-03	<5.00E-03	n/a	n/a	n/a	n/a	5.00E-03	n/a	U
S11V005314			7440-09-7	Potassium	ug/mL	97.0	<0.500	<0.500	n/a	n/a	n/a	n/a	0.500	n/a	U
S11V005314			7439-93-2	Lithium	ug/mL	102	<3.00E-03	<3.00E-03	n/a	n/a	n/a	n/a	3.00E-03	n/a	U
S11V005314			7439-95-4	Magnesium	ug/mL	101	<0.0500	<0.0500	n/a	n/a	n/a	n/a	0.0500	n/a	U

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U - Less Than Detection Limit
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M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111140
Core Number: C8398
Customer Sample ID: B2FDM2
Sample Depth: Field Blank

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005314			7439-96-5	Manganese	ug/mL	101	<3.00E-03	<3.00E-03	n/a	n/a	n/a	n/a	3.00E-03	n/a	U
S11V005314			7439-98-7	Molybdenum	ug/mL	100	<0.0200	<0.0200	n/a	n/a	n/a	n/a	0.0200	n/a	U
S11V005314			7440-23-5	Sodium	ug/mL	102	<0.100	0.113	n/a	n/a	n/a	n/a	0.100	n/a	B
S11V005314			7440-02-0	Nickel	ug/mL	101	<0.0200	<0.0200	n/a	n/a	n/a	n/a	0.0200	n/a	U
S11V005314			7723-14-0	Phosphorus	ug/mL	102	<0.0500	<0.0500	n/a	n/a	n/a	n/a	0.0500	n/a	U
S11V005314			7439-92-1	Lead	ug/mL	104	<0.0500	<0.0500	n/a	n/a	n/a	n/a	0.0500	n/a	U
S11V005314			7440-36-0	Antimony	ug/mL	99.3	<0.0500	<0.0500	n/a	n/a	n/a	n/a	0.0500	n/a	U
S11V005314			7782-49-2	Selenium	ug/mL	103	<0.100	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S11V005314			7440-24-6	Strontium	ug/mL	100	<3.00E-03	<3.00E-03	n/a	n/a	n/a	n/a	3.00E-03	n/a	U
S11V005314			7440-28-0	Thallium	ug/mL	105	<0.100	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S11V005314			7440-61-1	Uranium	ug/mL	102	<0.100	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S11V005314			7440-62-2	Vanadium	ug/mL	102	<5.00E-03	<5.00E-03	n/a	n/a	n/a	n/a	5.00E-03	n/a	U
S11V005314			7440-66-6	Zinc	ug/mL	99.6	<5.00E-03	<5.00E-03	n/a	n/a	n/a	n/a	5.00E-03	n/a	U
S11V005314			14269-63-7	Thorium-230	ug/mL	n/a	<7.00E-09	<1.40E-08	<1.40E-08	n/a	n/a	n/a	1.40E-08	n/a	U
S11V005314			TH-232	Thorium-232	ug/mL	99.6	<5.00E-07	<1.00E-06	<1.00E-06	n/a	n/a	98.2	1.00E-06	n/a	U
S11V005314			13968-55-3	Uranium-233	ug/mL	96.5	<2.00E-07	<4.00E-07	<4.00E-07	n/a	n/a	97.8	4.00E-07	n/a	U
S11V005314			13966-29-5	Uranium-234	ug/mL	n/a	<5.00E-09	<1.00E-08	<1.00E-08	n/a	n/a	n/a	1.00E-08	n/a	U
S11V005314			15117-96-1	Uranium-235	ug/mL	98.8	<1.00E-08	<2.00E-08	<2.00E-08	n/a	n/a	103	2.00E-08	n/a	U
S11V005314			13982-70-2	Uranium-236	ug/mL	n/a	<4.00E-09	<8.00E-09	9.00E-09	n/a	n/a	n/a	8.00E-09	n/a	U
S11V005314			13994-20-2	Neptunium-237	ug/mL	103	<1.00E-07	<2.00E-07	<2.00E-07	n/a	n/a	97.0	2.00E-07	n/a	U
S11V005314			U-238	Uranium-238	ug/mL	100	<5.00E-07	<1.00E-06	<1.00E-06	n/a	n/a	99.3	1.00E-06	n/a	U
S11V005314			SN-117	Tin-117	ug/mL	106	<1.00E-05	<2.00E-05	<2.00E-05	n/a	n/a	107	2.00E-05	n/a	U
S11V005314			15832-50-5	Tin-126	ug/mL	n/a	<2.00E-07	<4.00E-07	<4.00E-07	n/a	n/a	n/a	4.00E-07	n/a	U
S11V005314			14133-76-7	Technetium-99	ug/mL	99.5	<6.00E-07	<1.20E-06	<1.20E-06	n/a	n/a	95.8	1.20E-06	n/a	U
S11V005315			14762-75-5	Carbon-14	uCi/mL	92.8	<1.20E-07	<1.20E-07	<1.20E-07	n/a	n/a	91.3	1.20E-07	n/a	U
S11V005315			15046-84-1	Iodine-129	uCi/mL	102	<1.53E-07	<9.96E-08	<1.14E-07	n/a	n/a	n/a	9.96E-08	n/a	U
S11V005315			10028-17-8	Tritium	uCi/mL	103	<2.70E-07	<2.69E-07	<2.68E-07	n/a	n/a	93.9	2.69E-07	n/a	U
S11V005316			CM-243/244	Curium-243/244	uCi/mL	n/a	9.11E-11	<9.68E-11	n/a	n/a	n/a	n/a	9.68E-11	n/a	U

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U - Less Than Detection Limit
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M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111140
Core Number: C8398
Customer Sample ID: B2FDM2
Sample Depth: Field Blank

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005316			14596-10-2	Americium-241	uCi/mL	103	2.12E-10	8.88E-11	n/a	n/a	n/a	n/a	7.68E-11	80.0	B
S11V005316			15510-73-3	Curium-242	uCi/mL	n/a	<8.63E-11	7.35E-11	n/a	n/a	n/a	n/a	4.98E-11	98.0	
S11V005316			10198-40-0	Cobalt-60	uCi/mL	96.1	<9.95E-08	<9.38E-08	<9.72E-08	n/a	n/a	n/a	9.38E-08	n/a	U
S11V005316			14234-35-6	Antimony-125	uCi/mL	n/a	<2.39E-07	<2.38E-07	<1.75E-07	n/a	n/a	n/a	2.38E-07	n/a	U
S11V005316			10045-97-3	Cesium-137	uCi/mL	100	<9.30E-08	<9.18E-08	<9.44E-08	n/a	n/a	n/a	9.18E-08	n/a	U
S11V005316			14683-23-9	Europium-152	uCi/mL	n/a	<1.67E-07	<1.68E-07	<1.68E-07	n/a	n/a	n/a	1.68E-07	n/a	U
S11V005316			15585-10-1	Europium-154	uCi/mL	n/a	<8.61E-08	<1.21E-07	<1.20E-07	n/a	n/a	n/a	1.21E-07	n/a	U
S11V005316			14391-16-3	Europium-155	uCi/mL	n/a	<2.05E-07	<2.07E-07	<1.95E-07	n/a	n/a	n/a	2.07E-07	n/a	U
S11V005316			14274-82-9	Thorium-228	uCi/mL	n/a	<3.79E-05	<2.97E-05	<3.74E-05	n/a	n/a	n/a	2.97E-05	n/a	U
S11V005316			15065-10-8	Thorium-234	uCi/mL	n/a	<1.11E-06	<3.25E-06	<3.21E-06	n/a	n/a	n/a	3.25E-06	n/a	U
S11V005316			7440-02-0	Nickel	ug/mL	n/a	n/a	201	n/a	n/a	n/a	n/a	n/a	n/a	
S11V005316			13981-37-8	Nickel-63	uCi/mL	96.3	<4.91E-08	5.03E-08	n/a	n/a	n/a	n/a	4.67E-08	89.205	
S11V005316			PU-239/240	Plutonium-239/240	uCi/mL	116	<2.50E-10	<1.70E-10	n/a	n/a	n/a	n/a	1.70E-10	n/a	U
S11V005316			13981-16-3	Plutonium-238	uCi/mL	n/a	<2.25E-10	<2.07E-10	n/a	n/a	n/a	n/a	2.07E-10	n/a	U
S11V005316			15758-45-9	Selenium-79	uCi/mL	n/a	<3.35E-08	<2.36E-08	n/a	n/a	n/a	n/a	2.36E-08	n/a	U
S11V005316			SR-89/90	Strontium-89/90	uCi/mL	97.8	<1.26E-08	<4.53E-08	n/a	n/a	n/a	n/a	4.53E-08	n/a	U

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111143
Core Number: C8398
Customer Sample ID: B2FDJ8
Sample Depth: 46'-48'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005321			57-12-5	Cyanide	ug/g	96.0	<0.0370	<0.479	n/a	n/a	n/a	n/a	0.479	n/a	U
S11V005321			7439-97-6	Mercury	ug/g	98.9	<1.10E-05	6.02E-03	n/a	n/a	n/a	n/a	1.00E-03	n/a	U
S11V005321			PH	pH	unitless	n/a	n/a	8.44	8.48	8.46	0.473	n/a	0.0100	n/a	
S11V005322			13966-00-2	Potassium-40	uCi/g	n/a	n/a	1.22E-05	1.16E-05	1.19E-05	5.21	n/a	2.62E-06	6.14	
S11V005322			10198-40-0	Cobalt-60	uCi/g	107	<1.31E-07	<1.08E-07	<1.14E-07	n/a	n/a	n/a	1.08E-07	n/a	U
S11V005322			14234-35-6	Antimony-125	uCi/g	n/a	<3.12E-07	<1.67E-07	<2.89E-07	n/a	n/a	n/a	1.67E-07	n/a	U
S11V005322			10045-97-3	Cesium-137	uCi/g	112	<1.23E-07	<1.46E-07	<1.10E-07	n/a	n/a	n/a	1.46E-07	n/a	U
S11V005322			14683-23-9	Europium-152	uCi/g	n/a	<3.07E-07	<2.54E-07	<3.08E-07	n/a	n/a	n/a	2.54E-07	n/a	U
S11V005322			15585-10-1	Europium-154	uCi/g	n/a	<3.58E-07	<2.70E-07	<3.17E-07	n/a	n/a	n/a	2.70E-07	n/a	U
S11V005322			14391-16-3	Europium-155	uCi/g	n/a	<2.71E-07	<2.54E-07	<2.78E-07	n/a	n/a	n/a	2.54E-07	n/a	U
S11V005322			14913-50-9	Thallium-208	uCi/g	n/a	n/a	3.34E-07	8.27E-07	5.81E-07	85.1	n/a	1.18E-07	14.26	
S11V005322			14913-49-6	Bismuth-212	uCi/g	n/a	n/a	1.52E-06	<1.21E-06	n/a	n/a	n/a	1.05E-06	22.59	
S11V005322			15092-94-1	Lead-212	uCi/g	n/a	<1.42E-07	8.02E-07	9.31E-07	8.67E-07	14.8	n/a	1.42E-07	6.15	
S11V005322			14733-03-0	Bismuth-214	uCi/g	n/a	<2.48E-07	6.79E-07	8.22E-07	7.51E-07	19.0	n/a	2.08E-07	9.42	
S11V005322			15067-28-4	Lead-214	uCi/g	n/a	n/a	8.67E-07	1.74E-06	1.30E-06	67.0	n/a	2.01E-07	8.94	
S11V005322			14331-83-0	Actinium-228	uCi/g	n/a	6.16E-07	1.58E-06	1.10E-06	1.34E-06	36.3	n/a	3.22E-07	10.19	B
S11V005322			14274-82-9	Thorium-228	uCi/g	n/a	<3.98E-05	<4.78E-05	<3.99E-05	n/a	n/a	n/a	4.78E-05	n/a	U
S11V005322			15065-10-8	Thorium-234	uCi/g	n/a	<2.22E-06	<6.95E-05	<1.49E-05	n/a	n/a	n/a	6.95E-05	n/a	U
S11V005322			15046-84-1	Iodine-129	uCi/g	97.4	<2.04E-06	<9.70E-07	<9.16E-07	n/a	n/a	n/a	9.70E-07	n/a	U
S11V005323			CONDUCT	Conductivity	uMHO/cm	99.2	1.47	199	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005325		A	7440-36-0	Antimony	ug/g	100	<2.00E-04	0.245	0.230	0.237	6.18	82.0	6.10E-03	n/a	
S11V005325		A	SN-117	Tin-117	ug/g	106	<1.00E-03	0.0366	0.0364	0.0365	0.673	104	0.0305	n/a	
S11V005325		A	15832-50-5	Tin-126	ug/g	n/a	<2.00E-05	2.44E-03	1.27E-03	1.85E-03	63.4	n/a	6.10E-04	n/a	E
S11V005326		W	16984-48-8	Fluoride	ug/g	102	<1.61E-03	2.33	n/a	n/a	n/a	n/a	0.0153	n/a	
S11V005326		W	GLYCOLAT	Glycolate	ug/g	98.7	<9.37E-03	<0.0888	n/a	n/a	n/a	n/a	0.0888	n/a	U
S11V005326		W	71-50-1	Acetate	ug/g	101	0.0331	0.355	n/a	n/a	n/a	n/a	0.0572	n/a	CB
S11V005326		W	FORMATE	Formate	ug/g	101	0.0306	0.413	n/a	n/a	n/a	n/a	0.0443	n/a	CB
S11V005326		W	16887-00-6	Chloride	ug/g	100	<9.98E-03	0.807	n/a	n/a	n/a	n/a	0.0946	n/a	B

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X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111143
Core Number: C8398
Customer Sample ID: B2FDJ8
Sample Depth: 46'-48'

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005326	W	14797-65-0	Nitrite	ug/g	99.9	<0.0192	0.214	n/a	n/a	n/a	n/a	0.182	n/a	B
S11V005326	W	14808-79-8	Sulfate	ug/g	101	<0.0187	11.6	n/a	n/a	n/a	n/a	0.177	n/a	M
S11V005326	W	338-70-5	Oxalate	ug/g	101	<0.0231	0.259	n/a	n/a	n/a	n/a	0.219	n/a	B
S11V005326	W	24959-67-9	Bromide	ug/g	99.6	<0.0580	<0.550	n/a	n/a	n/a	n/a	0.550	n/a	U
S11V005326	W	14797-55-8	Nitrate	ug/g	100	<0.0208	6.31	n/a	n/a	n/a	n/a	0.197	n/a	M
S11V005326	W	14265-44-2	Phosphate	ug/g	99.8	<0.0167	1.02	n/a	n/a	n/a	n/a	0.158	n/a	BN
S11V005327	A	7429-90-5	Aluminum	ug/g	87.7	<0.0300	1.17E+04	1.09E+04	1.13E+04	6.54	3.35E+03	7.11	n/a	
S11V005327	A	7440-39-3	Barium	ug/g	88.7	<3.00E-03	119	96.3	108	21.3	53.4	0.711	n/a	N
S11V005327	A	7440-41-7	Beryllium	ug/g	92.7	<1.00E-03	0.349	0.277	0.313	22.9	94.2	0.237	n/a	B
S11V005327	A	7440-70-2	Calcium	ug/g	75.9	<0.0500	1.07E+04	1.19E+04	1.13E+04	10.8	-252	11.9	n/a	
S11V005327	A	7440-45-1	Cerium	ug/g	91.7	<0.0300	26.8	27.7	27.2	3.21	124	7.11	n/a	B
S11V005327	A	7440-48-4	Cobalt	ug/g	84.2	<0.0100	10.2	9.64	9.94	5.97	93.0	2.37	n/a	B
S11V005327	A	7440-47-3	Chromium	ug/g	83.2	<5.00E-03	23.4	18.3	20.8	24.4	94.4	1.19	n/a	
S11V005327	A	7440-50-8	Copper	ug/g	94.7	<5.00E-03	13.6	13.0	13.3	4.40	95.1	1.19	n/a	
S11V005327	A	7439-89-6	Iron	ug/g	85.7	0.0201	2.51E+04	2.44E+04	2.47E+04	2.54	1.34E+03	1.19	n/a	
S11V005327	A	7440-09-7	Potassium	ug/g	81.0	<0.500	1.61E+03	1.48E+03	1.55E+03	8.55	117	119	n/a	
S11V005327	A	7439-91-0	Lanthanum	ug/g	89.7	<3.00E-03	10.7	10.4	10.5	2.50	94.5	0.711	n/a	
S11V005327	A	7439-93-2	Lithium	ug/g	96.2	<3.00E-03	11.4	10.3	10.8	11.0	96.1	0.711	n/a	
S11V005327	A	7439-95-4	Magnesium	ug/g	84.2	<0.0500	5.86E+03	5.50E+03	5.68E+03	6.25	-81.0	11.9	n/a	
S11V005327	A	7439-96-5	Manganese	ug/g	82.9	<3.00E-03	441	415	428	5.97	85.0	0.711	n/a	
S11V005327	A	7439-98-7	Molybdenum	ug/g	85.5	<0.0200	<4.74	<4.77	n/a	n/a	89.8	4.74	n/a	U
S11V005327	A	7440-23-5	Sodium	ug/g	97.1	<0.100	418	425	421	1.65	491	23.7	n/a	
S11V005327	A	7440-00-8	Neodymium	ug/g	92.6	<0.0100	10.1	10.0	10.1	1.01	110	2.37	n/a	B
S11V005327	A	7440-02-0	Nickel	ug/g	83.3	<0.0200	24.4	17.6	21.0	32.6	82.7	4.74	n/a	B
S11V005327	A	7723-14-0	Phosphorus	ug/g	85.9	<0.0500	643	651	647	1.19	109	11.9	n/a	
S11V005327	A	7704-34-9	Sulfur	ug/g	85.5	<0.100	41.5	38.5	40.0	7.63	80.5	23.7	n/a	B
S11V005327	A	7440-21-3	Silicon	ug/g	74.7	<0.0300	50.5	54.3	52.4	7.18	0.295	7.11	n/a	BN
S11V005327	A	7440-24-6	Strontium	ug/g	88.9	<3.00E-03	41.4	42.7	42.0	3.19	98.4	0.711	n/a	

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111143
Core Number: C8398
Customer Sample ID: B2FDJ8
Sample Depth: 46'-48'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005327		A	7440-32-6	Titanium	ug/g	84.5	<5.00E-03	1.30E+03	1.27E+03	1.29E+03	2.43	357	1.19	n/a	
S11V005327		A	7440-62-2	Vanadium	ug/g	86.5	<5.00E-03	57.3	55.7	56.5	2.85	105	1.19	n/a	
S11V005327		A	7440-65-5	Yttrium	ug/g	84.5	<2.00E-03	8.77	9.11	8.94	3.80	110	0.474	n/a	
S11V005327		A	7440-66-6	Zinc	ug/g	85.9	<5.00E-03	46.6	44.1	45.4	5.34	94.5	1.19	n/a	
S11V005327		A	7440-67-7	Zirconium	ug/g	84.5	<5.00E-03	2.50	2.15	2.32	15.2	30.1	1.19	n/a	BN
S11V005327		A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-06	<3.32E-05	<3.34E-05	n/a	n/a	n/a	3.32E-05	n/a	U
S11V005327		A	TH-232	Thorium-232	ug/g	94.2	<2.50E-04	3.49	3.23	3.36	7.89	106	2.37E-03	n/a	
S11V005327		A	13968-55-3	Uranium-233	ug/g	102	<1.00E-04	<9.48E-04	<9.54E-04	n/a	n/a	113	9.48E-04	n/a	U
S11V005327		A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-06	3.17E-05	6.02E-05	4.59E-05	61.9	n/a	2.37E-05	n/a	
S11V005327		A	15117-96-1	Uranium-235	ug/g	94.6	<5.00E-06	4.37E-03	4.59E-03	4.48E-03	5.05	108	4.74E-05	n/a	
S11V005327		A	13982-70-2	Uranium-236	ug/g	n/a	3.08E-06	<1.90E-05	<1.91E-05	n/a	n/a	n/a	1.90E-05	n/a	U
S11V005327		A	13994-20-2	Neptunium-237	ug/g	101	<5.00E-05	<4.74E-04	<4.77E-04	n/a	n/a	116	4.74E-04	n/a	U
S11V005327		A	U-238	Uranium-238	ug/g	95.4	<2.50E-04	0.619	0.620	0.620	0.0837	109	2.37E-03	n/a	
S11V005327		A	7440-22-4	Silver	ug/g	92.7	<4.00E-03	0.0623	<0.0382	n/a	n/a	84.1	0.0379	n/a	B
S11V005327		A	7440-38-2	Arsenic	ug/g	77.0	<0.0210	3.62	3.12	3.37	14.7	80.7	0.199	n/a	
S11V005327		A	7440-43-9	Cadmium	ug/g	97.4	<1.50E-03	0.0791	0.0771	0.0781	2.59	93.5	0.0142	n/a	B
S11V005327		A	7439-92-1	Lead	ug/g	109	<0.0155	6.68	5.42	6.05	20.8	98.3	0.147	n/a	
S11V005327		A	7782-49-2	Selenium	ug/g	100	<0.0305	0.750	0.454	0.602	49.2	88.7	0.289	n/a	B
S11V005327		A	7440-28-0	Thallium	ug/g	114	0.0128	0.232	0.179	0.205	26.0	127	0.0190	n/a	CN
S11V005328		S	14798-03-9	Ammonium	ug/g	105	<0.0120	<0.520	n/a	n/a	n/a	n/a	0.520	n/a	U
S11V005329		A	14133-76-7	Technetium-99	ug/g	102	<6.00E-05	<5.33E-04	<5.30E-04	n/a	n/a	116	5.33E-04	n/a	U
S11V005330		W	14762-75-5	Carbon-14	uCi/g	92.4	<8.89E-07	<8.88E-07	n/a	n/a	n/a	n/a	8.88E-07	n/a	U
S11V005330		W	10028-17-8	Tritium	uCi/g	97.9	<1.47E-06	<2.38E-06	<1.79E-06	n/a	n/a	91.3	2.38E-06	n/a	U
S11V005331		E	CM-243/244	Curium-243/244	uCi/g	n/a	<1.64E-08	<2.88E-08	<2.29E-07	n/a	n/a	n/a	2.88E-08	n/a	U
S11V005331		E	14596-10-2	Americium-241	uCi/g	101	<3.29E-08	<2.58E-08	<3.33E-07	n/a	n/a	n/a	2.58E-08	n/a	U
S11V005331		E	15510-73-3	Curium-242	uCi/g	n/a	<1.71E-08	<1.55E-08	<2.92E-07	n/a	n/a	n/a	1.55E-08	n/a	U
S11V005331		E	PU-239/240	Plutonium-239/240	uCi/g	104	<8.11E-08	<2.62E-08	<2.61E-08	n/a	n/a	n/a	2.62E-08	n/a	U
S11V005331		E	13981-16-3	Plutonium-238	uCi/g	n/a	<5.27E-08	<1.98E-08	<2.62E-08	n/a	n/a	n/a	1.98E-08	n/a	U

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111143
Core Number: C8398
Customer Sample ID: B2FDJ8
Sample Depth: 46'-48'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005332		E	SR-89/90	Strontium-89/90	uCi/g	102	<8.04E-07	<8.26E-07	<2.20E-07	n/a	n/a	n/a	8.26E-07	n/a	U
S11V005333		E	7440-02-0	Nickel	ug/mL	n/a	n/a	181	n/a	n/a	n/a	n/a	0.200	n/a	
S11V005333		E	13981-37-8	Nickel-63	uCi/g	102	<6.63E-06	<4.66E-06	<4.82E-06	n/a	n/a	n/a	4.66E-06	n/a	U
S11V005334		E	15758-45-9	Selenium-79	uCi/g	n/a	<1.16E-06	<1.34E-06	<1.42E-06	n/a	n/a	n/a	1.34E-06	n/a	U
S11V005625			%WATERA	%WATER-APD	%	n/a	n/a	13.00	n/a	n/a	n/a	n/a	0.01000	n/a	
S11V005625			WT%SOLID	Weight percent solids	%	n/a	n/a	87.0	n/a	n/a	n/a	n/a	0.0100	n/a	

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111143
Core Number: C8398
Customer Sample ID: B2FDJ9
Sample Depth: 86'-88'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005339			57-12-5	Cyanide	ug/g	98.2	<0.0370	<0.480	n/a	n/a	n/a	n/a	0.480	n/a	U
S11V005339			7439-97-6	Mercury	ug/g	98.9	<1.10E-05	5.54E-03	n/a	n/a	n/a	94.4	1.05E-03	n/a	U
S11V005339			PH	pH	unitless	n/a	n/a	8.39	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005340			13966-00-2	Potassium-40	uCi/g	n/a	n/a	1.78E-05	n/a	n/a	n/a	n/a	3.07E-06	4.31	
S11V005340			10198-40-0	Cobalt-60	uCi/g	107	<1.31E-07	<1.13E-07	n/a	n/a	n/a	n/a	1.13E-07	n/a	U
S11V005340			14234-35-6	Antimony-125	uCi/g	n/a	<3.12E-07	<2.42E-07	n/a	n/a	n/a	n/a	2.42E-07	n/a	U
S11V005340			10045-97-3	Cesium-137	uCi/g	112	<1.23E-07	<1.06E-07	n/a	n/a	n/a	n/a	1.06E-07	n/a	U
S11V005340			14683-23-9	Europium-152	uCi/g	n/a	<3.07E-07	<2.88E-07	n/a	n/a	n/a	n/a	2.88E-07	n/a	U
S11V005340			15585-10-1	Europium-154	uCi/g	n/a	<3.58E-07	<3.30E-07	n/a	n/a	n/a	n/a	3.30E-07	n/a	U
S11V005340			14391-16-3	Europium-155	uCi/g	n/a	<2.71E-07	<2.84E-07	n/a	n/a	n/a	n/a	2.84E-07	n/a	U
S11V005340			14913-50-9	Thallium-208	uCi/g	n/a	n/a	9.55E-07	n/a	n/a	n/a	n/a	1.05E-07	5.25	
S11V005340			15092-94-1	Lead-212	uCi/g	n/a	<1.42E-07	1.28E-06	n/a	n/a	n/a	n/a	1.74E-07	4.39	
S11V005340			14733-03-0	Bismuth-214	uCi/g	n/a	<2.48E-07	1.23E-06	n/a	n/a	n/a	n/a	2.54E-07	7.73	
S11V005340			15067-28-4	Lead-214	uCi/g	n/a	n/a	2.12E-06	n/a	n/a	n/a	n/a	2.04E-07	4.14	
S11V005340			14331-83-0	Actinium-228	uCi/g	n/a	6.16E-07	1.22E-06	n/a	n/a	n/a	n/a	4.47E-07	13.46	B
S11V005340			14274-82-9	Thorium-228	uCi/g	n/a	<3.98E-05	<5.19E-05	n/a	n/a	n/a	n/a	5.19E-05	n/a	U
S11V005340			15065-10-8	Thorium-234	uCi/g	n/a	<2.22E-06	<1.59E-05	n/a	n/a	n/a	n/a	1.59E-05	n/a	U
S11V005340			15046-84-1	Iodine-129	uCi/g	97.4	<2.04E-06	<9.19E-07	n/a	n/a	n/a	n/a	9.19E-07	n/a	U
S11V005341			CONDUCT	Conductivity	uMHO/cm	99.2	1.47	178	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005343		A	7440-36-0	Antimony	ug/g	100	<2.00E-04	0.416	n/a	n/a	n/a	n/a	6.04E-03	n/a	
S11V005343		A	SN-117	Tin-117	ug/g	106	<1.00E-03	<0.0302	n/a	n/a	n/a	n/a	0.0302	n/a	U
S11V005343		A	15832-50-5	Tin-126	ug/g	n/a	<2.00E-05	4.65E-03	n/a	n/a	n/a	n/a	6.04E-04	n/a	E
S11V005344		W	16984-48-8	Fluoride	ug/g	102	<1.61E-03	0.989	n/a	n/a	n/a	n/a	0.0140	n/a	
S11V005344		W	GLYCOLAT	Glycolate	ug/g	98.7	<9.37E-03	<0.0817	n/a	n/a	n/a	n/a	0.0817	n/a	U
S11V005344		W	71-50-1	Acetate	ug/g	101	0.0331	0.335	n/a	n/a	n/a	n/a	0.0527	n/a	CB
S11V005344		W	FORMATE	Formate	ug/g	101	0.0306	0.438	n/a	n/a	n/a	n/a	0.0407	n/a	CB
S11V005344		W	16887-00-6	Chloride	ug/g	100	<9.98E-03	2.02	n/a	n/a	n/a	n/a	0.0870	n/a	M
S11V005344		W	14797-65-0	Nitrite	ug/g	99.9	<0.0192	0.722	n/a	n/a	n/a	n/a	0.167	n/a	B

NA = Not Analyzed, ND = Not Detected

B - Estimated
C - Blank Contamination
U - Less Than Detection Limit
B - Blank Contamination
M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111143
Core Number: C8398
Customer Sample ID: B2FDJ9
Sample Depth: 86'-88'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005344		W	14808-79-8	Sulfate	ug/g	101	<0.0187	11.3	n/a	n/a	n/a	n/a	0.163	n/a	M
S11V005344		W	338-70-5	Oxalate	ug/g	101	<0.0231	<0.201	n/a	n/a	n/a	n/a	0.201	n/a	U
S11V005344		W	24959-67-9	Bromide	ug/g	99.6	<0.0580	<0.506	n/a	n/a	n/a	n/a	0.506	n/a	U
S11V005344		W	14797-55-8	Nitrate	ug/g	100	<0.0208	11.2	n/a	n/a	n/a	n/a	0.181	n/a	M
S11V005344		W	14265-44-2	Phosphate	ug/g	99.8	<0.0167	0.616	n/a	n/a	n/a	n/a	0.146	n/a	BN
S11V005345		A	7429-90-5	Aluminum	ug/g	87.7	<0.0300	1.21E+04	n/a	n/a	n/a	n/a	6.74	n/a	
S11V005345		A	7440-39-3	Barium	ug/g	88.7	<3.00E-03	95.6	n/a	n/a	n/a	n/a	0.674	n/a	N
S11V005345		A	7440-41-7	Beryllium	ug/g	92.7	<1.00E-03	0.394	n/a	n/a	n/a	n/a	0.225	n/a	B
S11V005345		A	7440-70-2	Calcium	ug/g	75.9	<0.0500	1.06E+04	n/a	n/a	n/a	n/a	11.2	n/a	
S11V005345		A	7440-45-1	Cerium	ug/g	91.7	<0.0300	33.6	n/a	n/a	n/a	n/a	6.74	n/a	B
S11V005345		A	7440-48-4	Cobalt	ug/g	84.2	<0.0100	4.25	n/a	n/a	n/a	n/a	2.25	n/a	B
S11V005345		A	7440-47-3	Chromium	ug/g	83.2	<5.00E-03	25.3	n/a	n/a	n/a	n/a	1.12	n/a	
S11V005345		A	7440-50-8	Copper	ug/g	94.7	<5.00E-03	13.9	n/a	n/a	n/a	n/a	1.12	n/a	
S11V005345		A	7439-89-6	Iron	ug/g	85.7	0.0201	1.96E+04	n/a	n/a	n/a	n/a	1.12	n/a	
S11V005345		A	7440-09-7	Potassium	ug/g	81.0	<0.500	2.03E+03	n/a	n/a	n/a	n/a	112	n/a	
S11V005345		A	7439-91-0	Lanthanum	ug/g	89.7	<3.00E-03	15.1	n/a	n/a	n/a	n/a	0.674	n/a	
S11V005345		A	7439-93-2	Lithium	ug/g	96.2	<3.00E-03	15.4	n/a	n/a	n/a	n/a	0.674	n/a	
S11V005345		A	7439-95-4	Magnesium	ug/g	84.2	<0.0500	6.44E+03	n/a	n/a	n/a	n/a	11.2	n/a	
S11V005345		A	7439-96-5	Manganese	ug/g	82.9	<3.00E-03	403	n/a	n/a	n/a	n/a	0.674	n/a	
S11V005345		A	7439-98-7	Molybdenum	ug/g	85.5	<0.0200	<4.49	n/a	n/a	n/a	n/a	4.49	n/a	U
S11V005345		A	7440-23-5	Sodium	ug/g	97.1	<0.100	220	n/a	n/a	n/a	n/a	22.5	n/a	B
S11V005345		A	7440-00-8	Neodymium	ug/g	92.6	<0.0100	14.0	n/a	n/a	n/a	n/a	2.25	n/a	B
S11V005345		A	7440-02-0	Nickel	ug/g	83.3	<0.0200	22.0	n/a	n/a	n/a	n/a	4.49	n/a	B
S11V005345		A	7723-14-0	Phosphorus	ug/g	85.9	<0.0500	473	n/a	n/a	n/a	n/a	11.2	n/a	
S11V005345		A	7440-21-3	Silicon	ug/g	74.7	<0.0300	40.1	n/a	n/a	n/a	n/a	6.74	n/a	BN
S11V005345		A	7440-24-6	Strontium	ug/g	88.9	<3.00E-03	34.3	n/a	n/a	n/a	n/a	0.674	n/a	
S11V005345		A	7440-32-6	Titanium	ug/g	84.5	<5.00E-03	675	n/a	n/a	n/a	n/a	1.12	n/a	
S11V005345		A	7440-62-2	Vanadium	ug/g	86.5	<5.00E-03	35.4	n/a	n/a	n/a	n/a	1.12	n/a	

NA = Not Analyzed, ND = Not Detected

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B - Blank Contamination
M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111143
Core Number: C8398
Customer Sample ID: B2FDJ9
Sample Depth: 86'-88'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005345		A	7440-65-5	Yttrium	ug/g	84.5	<2.00E-03	7.63	n/a	n/a	n/a	n/a	0.449	n/a	
S11V005345		A	7440-66-6	Zinc	ug/g	85.9	<5.00E-03	48.3	n/a	n/a	n/a	n/a	1.12	n/a	
S11V005345		A	7440-67-7	Zirconium	ug/g	84.5	<5.00E-03	4.15	n/a	n/a	n/a	n/a	1.12	n/a	BN
S11V005345		A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-06	<3.14E-05	n/a	n/a	n/a	n/a	3.14E-05	n/a	U
S11V005345		A	TH-232	Thorium-232	ug/g	94.2	<2.50E-04	5.26	n/a	n/a	n/a	n/a	2.25E-03	n/a	
S11V005345		A	13968-55-3	Uranium-233	ug/g	102	<1.00E-04	<8.99E-04	n/a	n/a	n/a	n/a	8.99E-04	n/a	U
S11V005345		A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-06	3.46E-05	n/a	n/a	n/a	n/a	2.25E-05	n/a	
S11V005345		A	15117-96-1	Uranium-235	ug/g	94.6	<5.00E-06	5.27E-03	n/a	n/a	n/a	n/a	4.49E-05	n/a	
S11V005345		A	13982-70-2	Uranium-236	ug/g	n/a	3.08E-06	<1.80E-05	n/a	n/a	n/a	n/a	1.80E-05	n/a	U
S11V005345		A	13994-20-2	Neptunium-237	ug/g	101	<5.00E-05	<4.49E-04	n/a	n/a	n/a	n/a	4.49E-04	n/a	U
S11V005345		A	U-238	Uranium-238	ug/g	95.4	<2.50E-04	0.816	n/a	n/a	n/a	n/a	2.25E-03	n/a	
S11V005345		A	7440-22-4	Silver	ug/g	92.7	<4.00E-03	0.0424	n/a	n/a	n/a	n/a	0.0359	n/a	B
S11V005345		A	7440-38-2	Arsenic	ug/g	77.0	<0.0210	7.89	n/a	n/a	n/a	n/a	0.189	n/a	
S11V005345		A	7440-43-9	Cadmium	ug/g	97.4	<1.50E-03	0.110	n/a	n/a	n/a	n/a	0.0135	n/a	B
S11V005345		A	7439-92-1	Lead	ug/g	109	<0.0155	12.3	n/a	n/a	n/a	n/a	0.139	n/a	
S11V005345		A	7782-49-2	Selenium	ug/g	100	<0.0305	0.477	n/a	n/a	n/a	n/a	0.274	n/a	B
S11V005345		A	7440-28-0	Thallium	ug/g	114	0.0128	0.237	n/a	n/a	n/a	n/a	0.0180	n/a	CN
S11V005346		S	14798-03-9	Ammonium	ug/g	104	<0.120	<0.492	n/a	n/a	n/a	n/a	0.492	n/a	U
S11V005347		A	14133-76-7	Technetium-99	ug/g	102	<6.00E-05	<5.63E-04	n/a	n/a	n/a	n/a	5.63E-04	n/a	U
S11V005348		W	14762-75-5	Carbon-14	uCi/g	95.1	<8.89E-07	<1.08E-06	n/a	n/a	n/a	n/a	1.08E-06	n/a	U
S11V005348		W	10028-17-8	Tritium	uCi/g	97.9	<1.47E-06	<1.58E-06	n/a	n/a	n/a	n/a	1.58E-06	n/a	U
S11V005349		E	CM-243/244	Curium-243/244	uCi/g	n/a	<2.52E-08	<2.73E-08	n/a	n/a	n/a	n/a	2.73E-08	n/a	U
S11V005349		E	14596-10-2	Americium-241	uCi/g	95.6	<4.32E-08	<3.30E-08	n/a	n/a	n/a	n/a	3.30E-08	n/a	U
S11V005349		E	15510-73-3	Curium-242	uCi/g	n/a	<1.00E-08	<3.17E-08	n/a	n/a	n/a	n/a	3.17E-08	n/a	U
S11V005349		E	PU-239/240	Plutonium-239/240	uCi/g	104	<8.11E-08	<2.77E-08	n/a	n/a	n/a	n/a	2.77E-08	n/a	U
S11V005349		E	13981-16-3	Plutonium-238	uCi/g	n/a	<5.27E-08	<3.33E-08	n/a	n/a	n/a	n/a	3.33E-08	n/a	U
S11V005350		E	SR-89/90	Strontium-89/90	uCi/g	102	<8.04E-07	<2.27E-07	n/a	n/a	n/a	n/a	2.27E-07	n/a	U
S11V005351		E	7440-02-0	Nickel	ug/mL	n/a	n/a	162	n/a	n/a	n/a	n/a	0.200	n/a	

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X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111143
Core Number: C8398
Customer Sample ID: B2FDJ9
Sample Depth: 86'-88'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005351		E	13981-37-8	Nickel-63	uCi/g	102	<6.63E-06	<4.98E-06	n/a	n/a	n/a	n/a	4.98E-06	n/a	U
S11V005352		E	15758-45-9	Selenium-79	uCi/g	n/a	<1.16E-06	<1.33E-06	n/a	n/a	n/a	n/a	1.33E-06	n/a	U
S11V005626			%WATERA	%WATER-APD	%	n/a	n/a	10.00	n/a	n/a	n/a	n/a	0.01000	n/a	
S11V005626			WT%SOLID	Weight percent solids	%	n/a	n/a	90.0	n/a	n/a	n/a	n/a	0.0100	n/a	

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111143
Core Number: C8398
Customer Sample ID: B2FDK0
Sample Depth: 131'-137'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005357			57-12-5	Cyanide	ug/g	96.0	<0.0370	<0.480	n/a	n/a	n/a	n/a	0.480	n/a	U
S11V005357			7439-97-6	Mercury	ug/g	98.9	<1.10E-05	9.72E-03	n/a	n/a	n/a	n/a	1.05E-03	n/a	U
S11V005357			PH	pH	unitless	n/a	n/a	8.45	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005358			13966-00-2	Potassium-40	uCi/g	n/a	n/a	1.49E-05	n/a	n/a	n/a	n/a	2.37E-06	5.32	
S11V005358			10198-40-0	Cobalt-60	uCi/g	107	<1.31E-07	<1.32E-07	n/a	n/a	n/a	n/a	1.32E-07	n/a	U
S11V005358			14234-35-6	Antimony-125	uCi/g	n/a	<3.12E-07	<2.81E-07	n/a	n/a	n/a	n/a	2.81E-07	n/a	U
S11V005358			10045-97-3	Cesium-137	uCi/g	112	<1.23E-07	<1.11E-07	n/a	n/a	n/a	n/a	1.11E-07	n/a	U
S11V005358			14683-23-9	Europium-152	uCi/g	n/a	<3.07E-07	<2.99E-07	n/a	n/a	n/a	n/a	2.99E-07	n/a	U
S11V005358			15585-10-1	Europium-154	uCi/g	n/a	<3.58E-07	<2.58E-07	n/a	n/a	n/a	n/a	2.58E-07	n/a	U
S11V005358			14391-16-3	Europium-155	uCi/g	n/a	<2.71E-07	<2.62E-07	n/a	n/a	n/a	n/a	2.62E-07	n/a	U
S11V005358			14913-50-9	Thallium-208	uCi/g	n/a	n/a	4.19E-07	n/a	n/a	n/a	n/a	1.05E-07	8.73	
S11V005358			14913-49-6	Bismuth-212	uCi/g	n/a	n/a	2.35E-06	n/a	n/a	n/a	n/a	1.20E-06	17.13	
S11V005358			15092-94-1	Lead-212	uCi/g	n/a	<1.42E-07	1.32E-06	n/a	n/a	n/a	n/a	1.37E-07	4.26	
S11V005358			14733-03-0	Bismuth-214	uCi/g	n/a	<2.48E-07	8.37E-07	n/a	n/a	n/a	n/a	1.97E-07	8.07	
S11V005358			15067-28-4	Lead-214	uCi/g	n/a	n/a	8.65E-07	n/a	n/a	n/a	n/a	2.29E-07	10.23	
S11V005358			14331-83-0	Actinium-228	uCi/g	n/a	6.16E-07	1.51E-06	n/a	n/a	n/a	n/a	3.09E-07	8.19	B
S11V005358			14274-82-9	Thorium-228	uCi/g	n/a	<3.98E-05	<5.06E-05	n/a	n/a	n/a	n/a	5.06E-05	n/a	U
S11V005358			15065-10-8	Thorium-234	uCi/g	n/a	<2.22E-06	<2.15E-05	n/a	n/a	n/a	n/a	2.15E-05	n/a	U
S11V005358			15046-84-1	Iodine-129	uCi/g	97.4	<2.04E-06	<1.02E-06	n/a	n/a	n/a	n/a	1.02E-06	n/a	U
S11V005359			CONDUCT	Conductivity	uMHO/cm	98.8	1.47	189	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005361		A	7440-36-0	Antimony	ug/g	100	<2.00E-04	0.429	n/a	n/a	n/a	n/a	5.99E-03	n/a	
S11V005361		A	SN-117	Tin-117	ug/g	106	<1.00E-03	<0.0300	n/a	n/a	n/a	n/a	0.0300	n/a	U
S11V005361		A	15832-50-5	Tin-126	ug/g	n/a	<2.00E-05	3.66E-03	n/a	n/a	n/a	n/a	5.99E-04	n/a	E
S11V005362		W	16984-48-8	Fluoride	ug/g	102	<1.61E-03	0.967	n/a	n/a	n/a	n/a	0.0145	n/a	
S11V005362		W	GLYCOLAT	Glycolate	ug/g	98.7	<9.37E-03	<0.0845	n/a	n/a	n/a	n/a	0.0845	n/a	U
S11V005362		W	71-50-1	Acetate	ug/g	101	0.0331	0.293	n/a	n/a	n/a	n/a	0.0545	n/a	CB
S11V005362		W	FORMATE	Formate	ug/g	101	0.0306	0.394	n/a	n/a	n/a	n/a	0.0421	n/a	CB
S11V005362		W	16887-00-6	Chloride	ug/g	100	<9.98E-03	4.02	n/a	n/a	n/a	n/a	0.0900	n/a	M

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B - Blank Contamination
M - RPD Outside Range
N - MS/MSD Outside Range
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X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111143
Core Number: C8398
Customer Sample ID: B2FDK0
Sample Depth: 131'-137'

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005362	W	14797-65-0	Nitrite	ug/g	99.9	<0.0192	1.82	n/a	n/a	n/a	n/a	0.173	n/a	B
S11V005362	W	14808-79-8	Sulfate	ug/g	101	<0.0187	18.2	n/a	n/a	n/a	n/a	0.169	n/a	M
S11V005362	W	338-70-5	Oxalate	ug/g	101	<0.0231	<0.208	n/a	n/a	n/a	n/a	0.208	n/a	U
S11V005362	W	24959-67-9	Bromide	ug/g	99.6	<0.0580	<0.523	n/a	n/a	n/a	n/a	0.523	n/a	U
S11V005362	W	14797-55-8	Nitrate	ug/g	100	<0.0208	4.03	n/a	n/a	n/a	n/a	0.188	n/a	M
S11V005362	W	14265-44-2	Phosphate	ug/g	99.8	<0.0167	1.06	n/a	n/a	n/a	n/a	0.151	n/a	BN
S11V005363	A	7429-90-5	Aluminum	ug/g	87.7	<0.0300	1.09E+04	n/a	n/a	n/a	n/a	6.79	n/a	
S11V005363	A	7440-39-3	Barium	ug/g	88.7	<3.00E-03	97.1	n/a	n/a	n/a	n/a	0.679	n/a	N
S11V005363	A	7440-41-7	Beryllium	ug/g	92.7	<1.00E-03	0.392	n/a	n/a	n/a	n/a	0.226	n/a	B
S11V005363	A	7440-70-2	Calcium	ug/g	75.9	<0.0500	1.15E+04	n/a	n/a	n/a	n/a	11.3	n/a	
S11V005363	A	7440-45-1	Cerium	ug/g	91.7	<0.0300	31.7	n/a	n/a	n/a	n/a	6.79	n/a	B
S11V005363	A	7440-48-4	Cobalt	ug/g	84.2	<0.0100	5.67	n/a	n/a	n/a	n/a	2.26	n/a	B
S11V005363	A	7440-47-3	Chromium	ug/g	83.2	<5.00E-03	23.8	n/a	n/a	n/a	n/a	1.13	n/a	
S11V005363	A	7440-50-8	Copper	ug/g	94.7	<5.00E-03	14.3	n/a	n/a	n/a	n/a	1.13	n/a	
S11V005363	A	7439-89-6	Iron	ug/g	85.7	0.0201	1.80E+04	n/a	n/a	n/a	n/a	1.13	n/a	
S11V005363	A	7440-09-7	Potassium	ug/g	81.0	<0.500	1.46E+03	n/a	n/a	n/a	n/a	113	n/a	
S11V005363	A	7439-91-0	Lanthanum	ug/g	89.7	<3.00E-03	13.8	n/a	n/a	n/a	n/a	0.679	n/a	
S11V005363	A	7439-93-2	Lithium	ug/g	96.2	<3.00E-03	13.0	n/a	n/a	n/a	n/a	0.679	n/a	
S11V005363	A	7439-95-4	Magnesium	ug/g	84.2	<0.0500	5.87E+03	n/a	n/a	n/a	n/a	11.3	n/a	
S11V005363	A	7439-96-5	Manganese	ug/g	82.9	<3.00E-03	296	n/a	n/a	n/a	n/a	0.679	n/a	
S11V005363	A	7439-98-7	Molybdenum	ug/g	85.5	<0.0200	<4.53	n/a	n/a	n/a	n/a	4.53	n/a	U
S11V005363	A	7440-23-5	Sodium	ug/g	97.1	<0.100	209	n/a	n/a	n/a	n/a	22.6	n/a	B
S11V005363	A	7440-00-8	Neodymium	ug/g	92.6	<0.0100	12.6	n/a	n/a	n/a	n/a	2.26	n/a	B
S11V005363	A	7440-02-0	Nickel	ug/g	83.3	<0.0200	19.1	n/a	n/a	n/a	n/a	4.53	n/a	B
S11V005363	A	7723-14-0	Phosphorus	ug/g	85.9	<0.0500	554	n/a	n/a	n/a	n/a	11.3	n/a	
S11V005363	A	7440-10-0	Praseodymium	ug/g	94.2	<0.0100	3.21	n/a	n/a	n/a	n/a	2.26	n/a	B
S11V005363	A	7440-21-3	Silicon	ug/g	74.7	<0.0300	34.0	n/a	n/a	n/a	n/a	6.79	n/a	BN
S11V005363	A	7440-24-6	Strontium	ug/g	88.9	<3.00E-03	37.0	n/a	n/a	n/a	n/a	0.679	n/a	

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U - Less Than Detection Limit
B - Blank Contamination
M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111143
Core Number: C8398
Customer Sample ID: B2FDK0
Sample Depth: 131'-137'

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005363	A	7440-32-6	Titanium	ug/g	84.5	<5.00E-03	694	n/a	n/a	n/a	n/a	1.13	n/a	
S11V005363	A	7440-62-2	Vanadium	ug/g	86.5	<5.00E-03	33.1	n/a	n/a	n/a	n/a	1.13	n/a	
S11V005363	A	7440-65-5	Yttrium	ug/g	84.5	<2.00E-03	7.16	n/a	n/a	n/a	n/a	0.453	n/a	
S11V005363	A	7440-66-6	Zinc	ug/g	85.9	<5.00E-03	45.8	n/a	n/a	n/a	n/a	1.13	n/a	
S11V005363	A	7440-67-7	Zirconium	ug/g	84.5	<5.00E-03	2.85	n/a	n/a	n/a	n/a	1.13	n/a	BN
S11V005363	A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-06	<3.17E-05	n/a	n/a	n/a	n/a	3.17E-05	n/a	U
S11V005363	A	TH-232	Thorium-232	ug/g	94.2	<2.50E-04	5.02	n/a	n/a	n/a	n/a	2.26E-03	n/a	
S11V005363	A	13968-55-3	Uranium-233	ug/g	102	<1.00E-04	<9.06E-04	n/a	n/a	n/a	n/a	9.06E-04	n/a	U
S11V005363	A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-06	4.81E-05	n/a	n/a	n/a	n/a	2.26E-05	n/a	
S11V005363	A	15117-96-1	Uranium-235	ug/g	94.6	<5.00E-06	6.66E-03	n/a	n/a	n/a	n/a	4.53E-05	n/a	
S11V005363	A	13982-70-2	Uranium-236	ug/g	n/a	3.08E-06	<1.81E-05	n/a	n/a	n/a	n/a	1.81E-05	n/a	U
S11V005363	A	13994-20-2	Neptunium-237	ug/g	101	<5.00E-05	<4.53E-04	n/a	n/a	n/a	n/a	4.53E-04	n/a	U
S11V005363	A	U-238	Uranium-238	ug/g	95.4	<2.50E-04	0.902	n/a	n/a	n/a	n/a	2.26E-03	n/a	
S11V005363	A	7440-22-4	Silver	ug/g	92.7	<4.00E-03	0.0388	n/a	n/a	n/a	n/a	0.0362	n/a	B
S11V005363	A	7440-38-2	Arsenic	ug/g	77.0	<0.0210	3.25	n/a	n/a	n/a	n/a	0.190	n/a	
S11V005363	A	7440-43-9	Cadmium	ug/g	97.4	<1.50E-03	0.113	n/a	n/a	n/a	n/a	0.0136	n/a	B
S11V005363	A	7439-92-1	Lead	ug/g	109	<0.0155	9.67	n/a	n/a	n/a	n/a	0.140	n/a	
S11V005363	A	7782-49-2	Selenium	ug/g	100	<0.0305	0.421	n/a	n/a	n/a	n/a	0.276	n/a	B
S11V005363	A	7440-28-0	Thallium	ug/g	114	0.0128	0.207	n/a	n/a	n/a	n/a	0.0181	n/a	CN
S11V005364	S	14798-03-9	Ammonium	ug/g	105	<0.0120	1.59	<0.509	n/a	n/a	106	0.528	n/a	B
S11V005365	A	14133-76-7	Technetium-99	ug/g	102	<6.00E-05	<5.39E-04	n/a	n/a	n/a	n/a	5.39E-04	n/a	U
S11V005366	W	14762-75-5	Carbon-14	uCi/g	95.1	<8.89E-07	<6.06E-07	n/a	n/a	n/a	n/a	6.06E-07	n/a	U
S11V005366	W	10028-17-8	Tritium	uCi/g	97.9	<1.47E-06	<2.07E-06	n/a	n/a	n/a	n/a	2.07E-06	n/a	U
S11V005367	E	CM-243/244	Curium-243/244	uCi/g	n/a	<2.52E-08	<2.52E-08	n/a	n/a	n/a	n/a	2.52E-08	n/a	U
S11V005367	E	14596-10-2	Americium-241	uCi/g	95.6	<4.32E-08	<2.29E-08	n/a	n/a	n/a	n/a	2.29E-08	n/a	U
S11V005367	E	15510-73-3	Curium-242	uCi/g	n/a	<1.00E-08	<1.50E-08	n/a	n/a	n/a	n/a	1.50E-08	n/a	U
S11V005367	E	PU-239/240	Plutonium-239/240	uCi/g	104	<8.11E-08	<4.94E-08	n/a	n/a	n/a	n/a	4.94E-08	n/a	U
S11V005367	E	13981-16-3	Plutonium-238	uCi/g	n/a	<5.27E-08	<4.13E-08	n/a	n/a	n/a	n/a	4.13E-08	n/a	U

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111143
Core Number: C8398
Customer Sample ID: B2FDK0
Sample Depth: 131'-137'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005368		E	SR-89/90	Strontium-89/90	uCi/g	102	<8.04E-07	<7.39E-07	n/a	n/a	n/a	n/a	7.39E-07	n/a	U
S11V005369		E	7440-02-0	Nickel	ug/mL	n/a	n/a	173	n/a	n/a	n/a	n/a	0.200	n/a	
S11V005369		E	13981-37-8	Nickel-63	uCi/g	102	<6.63E-06	<6.83E-06	n/a	n/a	n/a	n/a	6.83E-06	n/a	U
S11V005370		E	15758-45-9	Selenium-79	uCi/g	n/a	<1.16E-06	<1.67E-06	n/a	n/a	n/a	n/a	1.67E-06	n/a	U
S11V005627			%WATERA	%WATER-APD	%	n/a	n/a	9.000	n/a	n/a	n/a	n/a	0.01000	n/a	
S11V005627			WT%SOLID	Weight percent solids	%	n/a	n/a	91.0	n/a	n/a	n/a	n/a	0.0100	n/a	

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111159
Core Number: C8402
Customer Sample ID: B2FDM0
Sample Depth: Equipment

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005375			16984-48-8	Fluoride	ug/mL	101	<1.61E-03	0.164	0.163	0.164	0.586	108	1.61E-03	n/a	
S11V005375			GLYCOLAT	Glycolate	ug/mL	96.9	<9.37E-03	<9.37E-03	<9.37E-03	n/a	n/a	102	9.37E-03	n/a	U
S11V005375			71-50-1	Acetate	ug/mL	100	<6.04E-03	<6.04E-03	<6.04E-03	n/a	n/a	106	6.04E-03	n/a	U
S11V005375			FORMATE	Formate	ug/mL	98.6	<4.67E-03	0.0312	0.0303	0.0308	2.99	103	4.67E-03	n/a	B
S11V005375			16887-00-6	Chloride	ug/mL	106	0.0118	<9.98E-03	<9.98E-03	n/a	n/a	109	9.98E-03	n/a	U
S11V005375			14797-65-0	Nitrite	ug/mL	103	<0.0192	<0.0192	<0.0192	n/a	n/a	119	0.0192	n/a	U
S11V005375			14808-79-8	Sulfate	ug/mL	103	<0.0187	0.157	0.154	0.156	1.48	110	0.0187	n/a	B
S11V005375			338-70-5	Oxalate	ug/mL	98.1	<0.0231	<0.0231	<0.0231	n/a	n/a	105	0.0231	n/a	U
S11V005375			24959-67-9	Bromide	ug/mL	98.6	<0.0580	<0.0580	<0.0580	n/a	n/a	104	0.0580	n/a	U
S11V005375			14797-55-8	Nitrate	ug/mL	103	<0.0208	0.0898	0.0800	0.0849	11.6	110	0.0208	n/a	B
S11V005375			14265-44-2	Phosphate	ug/mL	103	<0.0167	<0.0167	<0.0167	n/a	n/a	110	0.0167	n/a	U
S11V005376			57-12-5	Cyanide	ug/mL	95.6	<4.00E-03	<0.0200	n/a	n/a	n/a	n/a	0.0200	n/a	U
S11V005377		S	14798-03-9	Ammonium	ug/mL	103	<0.120	<0.120	<0.120	n/a	n/a	107	0.120	n/a	U
S11V005378			7439-97-6	Mercury	ug/mL	99.1	<1.10E-05	1.04E-04	n/a	n/a	n/a	99.8	4.40E-05	n/a	B
S11V005378			7440-22-4	Silver	ug/mL	99.0	<5.00E-03	<5.00E-03	n/a	n/a	n/a	n/a	5.00E-03	n/a	U
S11V005378			7429-90-5	Aluminum	ug/mL	101	<0.0300	<0.0300	n/a	n/a	n/a	n/a	0.0300	n/a	U
S11V005378			7440-38-2	Arsenic	ug/mL	98.8	<0.0500	<0.0500	n/a	n/a	n/a	n/a	0.0500	n/a	U
S11V005378			7440-39-3	Barium	ug/mL	100	<3.00E-03	<3.00E-03	n/a	n/a	n/a	n/a	3.00E-03	n/a	U
S11V005378			7440-41-7	Beryllium	ug/mL	98.7	<1.00E-03	<1.00E-03	n/a	n/a	n/a	n/a	1.00E-03	n/a	U
S11V005378			7440-70-2	Calcium	ug/mL	102	<0.0500	0.0659	n/a	n/a	n/a	n/a	0.0500	n/a	B
S11V005378			7440-43-9	Cadmium	ug/mL	102	<5.00E-03	<5.00E-03	n/a	n/a	n/a	n/a	5.00E-03	n/a	U
S11V005378			7440-48-4	Cobalt	ug/mL	102	<0.0100	<0.0100	n/a	n/a	n/a	n/a	0.0100	n/a	U
S11V005378			7440-47-3	Chromium	ug/mL	102	<5.00E-03	<5.00E-03	n/a	n/a	n/a	n/a	5.00E-03	n/a	U
S11V005378			7440-50-8	Copper	ug/mL	99.6	<5.00E-03	<5.00E-03	n/a	n/a	n/a	n/a	5.00E-03	n/a	U
S11V005378			7439-89-6	Iron	ug/mL	101	<5.00E-03	0.0497	n/a	n/a	n/a	n/a	5.00E-03	n/a	B
S11V005378			7440-09-7	Potassium	ug/mL	97.0	<0.500	<0.500	n/a	n/a	n/a	n/a	0.500	n/a	U
S11V005378			7439-93-2	Lithium	ug/mL	102	<3.00E-03	<3.00E-03	n/a	n/a	n/a	n/a	3.00E-03	n/a	U
S11V005378			7439-95-4	Magnesium	ug/mL	101	<0.0500	<0.0500	n/a	n/a	n/a	n/a	0.0500	n/a	U

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X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111159
Core Number: C8402
Customer Sample ID: B2FDM0
Sample Depth: Equipment

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005378			7439-96-5	Manganese	ug/mL	101	<3.00E-03	<3.00E-03	n/a	n/a	n/a	n/a	3.00E-03	n/a	U
S11V005378			7439-98-7	Molybdenum	ug/mL	100	<0.0200	<0.0200	n/a	n/a	n/a	n/a	0.0200	n/a	U
S11V005378			7440-23-5	Sodium	ug/mL	102	<0.100	0.232	n/a	n/a	n/a	n/a	0.100	n/a	B
S11V005378			7440-02-0	Nickel	ug/mL	101	<0.0200	<0.0200	n/a	n/a	n/a	n/a	0.0200	n/a	U
S11V005378			7723-14-0	Phosphorus	ug/mL	102	<0.0500	<0.0500	n/a	n/a	n/a	n/a	0.0500	n/a	U
S11V005378			7439-92-1	Lead	ug/mL	104	<0.0500	<0.0500	n/a	n/a	n/a	n/a	0.0500	n/a	U
S11V005378			7440-36-0	Antimony	ug/mL	99.3	<0.0500	<0.0500	n/a	n/a	n/a	n/a	0.0500	n/a	U
S11V005378			7782-49-2	Selenium	ug/mL	103	<0.100	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S11V005378			7440-24-6	Strontium	ug/mL	100	<3.00E-03	<3.00E-03	n/a	n/a	n/a	n/a	3.00E-03	n/a	U
S11V005378			7440-28-0	Thallium	ug/mL	105	<0.100	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S11V005378			7440-61-1	Uranium	ug/mL	102	<0.100	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S11V005378			7440-62-2	Vanadium	ug/mL	102	<5.00E-03	<5.00E-03	n/a	n/a	n/a	n/a	5.00E-03	n/a	U
S11V005378			7440-66-6	Zinc	ug/mL	99.6	<5.00E-03	<5.00E-03	n/a	n/a	n/a	n/a	5.00E-03	n/a	U
S11V005378			14269-63-7	Thorium-230	ug/mL	n/a	<7.00E-09	<1.40E-08	n/a	n/a	n/a	n/a	1.40E-08	n/a	U
S11V005378			TH-232	Thorium-232	ug/mL	99.6	<5.00E-07	<1.00E-06	n/a	n/a	n/a	n/a	1.00E-06	n/a	U
S11V005378			13968-55-3	Uranium-233	ug/mL	96.5	<2.00E-07	<4.00E-07	n/a	n/a	n/a	n/a	4.00E-07	n/a	U
S11V005378			13966-29-5	Uranium-234	ug/mL	n/a	<5.00E-09	<1.00E-08	n/a	n/a	n/a	n/a	1.00E-08	n/a	U
S11V005378			15117-96-1	Uranium-235	ug/mL	98.8	<1.00E-08	<2.00E-08	n/a	n/a	n/a	n/a	2.00E-08	n/a	U
S11V005378			13982-70-2	Uranium-236	ug/mL	n/a	<4.00E-09	<8.00E-09	n/a	n/a	n/a	n/a	8.00E-09	n/a	U
S11V005378			13994-20-2	Neptunium-237	ug/mL	103	<1.00E-07	<2.00E-07	n/a	n/a	n/a	n/a	2.00E-07	n/a	U
S11V005378			U-238	Uranium-238	ug/mL	100	<5.00E-07	<1.00E-06	n/a	n/a	n/a	n/a	1.00E-06	n/a	U
S11V005378			SN-117	Tin-117	ug/mL	106	<1.00E-05	<2.00E-05	n/a	n/a	n/a	n/a	2.00E-05	n/a	U
S11V005378			15832-50-5	Tin-126	ug/mL	n/a	<2.00E-07	<4.00E-07	n/a	n/a	n/a	n/a	4.00E-07	n/a	U
S11V005378			14133-76-7	Technetium-99	ug/mL	99.5	<6.00E-07	<1.20E-06	n/a	n/a	n/a	n/a	1.20E-06	n/a	U
S11V005379			14762-75-5	Carbon-14	uCi/mL	92.8	<1.20E-07	<1.20E-07	n/a	n/a	n/a	n/a	1.20E-07	n/a	U
S11V005379			15046-84-1	Iodine-129	uCi/mL	102	<1.53E-07	<1.61E-07	n/a	n/a	n/a	n/a	1.61E-07	n/a	U
S11V005379			10028-17-8	Tritium	uCi/mL	103	<2.70E-07	<2.71E-07	n/a	n/a	n/a	n/a	2.71E-07	n/a	U
S11V005380			CM-243/244	Curium-243/244	uCi/mL	n/a	9.11E-11	<7.95E-11	n/a	n/a	n/a	n/a	7.95E-11	n/a	U

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111159
Core Number: C8402
Customer Sample ID: B2FDM0
Sample Depth: Equipment

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005380			14596-10-2	Americium-241	uCi/mL	103	2.12E-10	<8.40E-11	n/a	n/a	n/a	n/a	8.40E-11	n/a	U
S11V005380			15510-73-3	Curium-242	uCi/mL	n/a	<8.63E-11	<7.20E-12	n/a	n/a	n/a	n/a	7.20E-11	n/a	U
S11V005380			10198-40-0	Cobalt-60	uCi/mL	96.1	<9.95E-08	<9.11E-08	n/a	n/a	n/a	n/a	9.11E-08	n/a	U
S11V005380			14234-35-6	Antimony-125	uCi/mL	n/a	<2.39E-07	<2.33E-07	n/a	n/a	n/a	n/a	2.33E-07	n/a	U
S11V005380			10045-97-3	Cesium-137	uCi/mL	100	<9.30E-08	<8.85E-08	n/a	n/a	n/a	n/a	8.85E-08	n/a	U
S11V005380			14683-23-9	Europium-152	uCi/mL	n/a	<1.67E-07	<1.54E-07	n/a	n/a	n/a	n/a	1.54E-07	n/a	U
S11V005380			15585-10-1	Europium-154	uCi/mL	n/a	<8.61E-08	<1.20E-07	n/a	n/a	n/a	n/a	1.20E-07	n/a	U
S11V005380			14391-16-3	Europium-155	uCi/mL	n/a	<2.05E-07	<2.06E-07	n/a	n/a	n/a	n/a	2.06E-07	n/a	U
S11V005380			14274-82-9	Thorium-228	uCi/mL	n/a	<3.79E-05	<3.79E-05	n/a	n/a	n/a	n/a	3.79E-05	n/a	U
S11V005380			15065-10-8	Thorium-234	uCi/mL	n/a	<1.11E-06	<1.26E-06	n/a	n/a	n/a	n/a	1.26E-06	n/a	U
S11V005380			7440-02-0	Nickel	ug/mL	n/a	n/a	196	n/a	n/a	n/a	n/a	n/a	n/a	
S11V005380			13981-37-8	Nickel-63	uCi/mL	96.3	<4.91E-08	<9.02E-08	<8.30E-08	n/a	n/a	n/a	9.02E-08	n/a	U
S11V005380			PU-239/240	Plutonium-239/240	uCi/mL	116	<2.50E-10	<2.00E-10	n/a	n/a	n/a	n/a	2.00E-10	n/a	U
S11V005380			13981-16-3	Plutonium-238	uCi/mL	n/a	<2.25E-10	<1.22E-10	n/a	n/a	n/a	n/a	1.22E-10	n/a	U
S11V005380			15758-45-9	Selenium-79	uCi/mL	n/a	<3.35E-08	<2.34E-08	<3.18E-08	n/a	n/a	n/a	2.34E-08	n/a	U
S11V005380			SR-89/90	Strontium-89/90	uCi/mL	97.8	<1.26E-08	<1.16E-08	<1.22E-08	n/a	n/a	n/a	1.16E-08	n/a	U

NA = Not Analyzed, ND = Not Detected

B - Estimated
C - Blank Contamination
U - Less Than Detection Limit
B - Blank Contamination
M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111160
Core Number: C8402
Customer Sample ID: B2FDM1
Sample Depth: Field Blank

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005381			16984-48-8	Fluoride	ug/mL	101	<1.61E-03	0.103	n/a	n/a	n/a	n/a	1.61E-03	n/a	
S11V005381			GLYCOLAT	Glycolate	ug/mL	96.9	<9.37E-03	<9.37E-03	n/a	n/a	n/a	n/a	9.37E-03	n/a	U
S11V005381			71-50-1	Acetate	ug/mL	100	<6.04E-03	<6.04E-03	n/a	n/a	n/a	n/a	6.04E-03	n/a	U
S11V005381			FORMATE	Formate	ug/mL	98.6	<4.67E-03	<4.67E-03	n/a	n/a	n/a	n/a	4.67E-03	n/a	U
S11V005381			16887-00-6	Chloride	ug/mL	106	0.0118	<9.98E-03	n/a	n/a	n/a	n/a	9.98E-03	n/a	U
S11V005381			14797-65-0	Nitrite	ug/mL	103	<0.0192	<0.0192	n/a	n/a	n/a	n/a	0.0192	n/a	U
S11V005381			14808-79-8	Sulfate	ug/mL	103	<0.0187	<0.0187	n/a	n/a	n/a	n/a	0.0187	n/a	U
S11V005381			338-70-5	Oxalate	ug/mL	98.1	<0.0231	<0.0231	n/a	n/a	n/a	n/a	0.0231	n/a	U
S11V005381			24959-67-9	Bromide	ug/mL	98.6	<0.0580	<0.0580	n/a	n/a	n/a	n/a	0.0580	n/a	U
S11V005381			14797-55-8	Nitrate	ug/mL	103	<0.0208	<0.0208	n/a	n/a	n/a	n/a	0.0208	n/a	U
S11V005381			14265-44-2	Phosphate	ug/mL	103	<0.0167	<0.0167	n/a	n/a	n/a	n/a	0.0167	n/a	U
S11V005382			57-12-5	Cyanide	ug/mL	95.6	<4.00E-03	<0.0200	n/a	n/a	n/a	n/a	0.0200	n/a	U
S11V005383		S	14798-03-9	Ammonium	ug/mL	105	<0.194	<0.194	n/a	n/a	n/a	n/a	0.194	n/a	U
S11V005384			7439-97-6	Mercury	ug/mL	99.1	<1.10E-05	<4.40E-05	n/a	n/a	n/a	n/a	4.40E-05	n/a	U
S11V005384			7440-22-4	Silver	ug/mL	99.0	<5.00E-03	<5.00E-03	n/a	n/a	n/a	n/a	5.00E-03	n/a	U
S11V005384			7429-90-5	Aluminum	ug/mL	101	<0.0300	<0.0300	n/a	n/a	n/a	n/a	0.0300	n/a	U
S11V005384			7440-38-2	Arsenic	ug/mL	98.8	<0.0500	<0.0500	n/a	n/a	n/a	n/a	0.0500	n/a	U
S11V005384			7440-39-3	Barium	ug/mL	100	<3.00E-03	<3.00E-03	n/a	n/a	n/a	n/a	3.00E-03	n/a	U
S11V005384			7440-41-7	Beryllium	ug/mL	98.7	<1.00E-03	<1.00E-03	n/a	n/a	n/a	n/a	1.00E-03	n/a	U
S11V005384			7440-70-2	Calcium	ug/mL	102	<0.0500	<0.0500	n/a	n/a	n/a	n/a	0.0500	n/a	U
S11V005384			7440-43-9	Cadmium	ug/mL	102	<5.00E-03	<5.00E-03	n/a	n/a	n/a	n/a	5.00E-03	n/a	U
S11V005384			7440-48-4	Cobalt	ug/mL	102	<0.0100	<0.0100	n/a	n/a	n/a	n/a	0.0100	n/a	U
S11V005384			7440-47-3	Chromium	ug/mL	102	<5.00E-03	<5.00E-03	n/a	n/a	n/a	n/a	5.00E-03	n/a	U
S11V005384			7440-50-8	Copper	ug/mL	99.6	<5.00E-03	<5.00E-03	n/a	n/a	n/a	n/a	5.00E-03	n/a	U
S11V005384			7439-89-6	Iron	ug/mL	101	<5.00E-03	<5.00E-03	n/a	n/a	n/a	n/a	5.00E-03	n/a	U
S11V005384			7440-09-7	Potassium	ug/mL	97.0	<0.500	<0.500	n/a	n/a	n/a	n/a	0.500	n/a	U
S11V005384			7439-93-2	Lithium	ug/mL	102	<3.00E-03	<3.00E-03	n/a	n/a	n/a	n/a	3.00E-03	n/a	U
S11V005384			7439-95-4	Magnesium	ug/mL	101	<0.0500	<0.0500	n/a	n/a	n/a	n/a	0.0500	n/a	U

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M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111160
Core Number: C8402
Customer Sample ID: B2FDM1
Sample Depth: Field Blank

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005384			7439-96-5	Manganese	ug/mL	101	<3.00E-03	<3.00E-03	n/a	n/a	n/a	n/a	3.00E-03	n/a	U
S11V005384			7439-98-7	Molybdenum	ug/mL	100	<0.0200	<0.0200	n/a	n/a	n/a	n/a	0.0200	n/a	U
S11V005384			7440-23-5	Sodium	ug/mL	102	<0.100	0.243	n/a	n/a	n/a	n/a	0.100	n/a	B
S11V005384			7440-02-0	Nickel	ug/mL	101	<0.0200	<0.0200	n/a	n/a	n/a	n/a	0.0200	n/a	U
S11V005384			7723-14-0	Phosphorus	ug/mL	102	<0.0500	<0.0500	n/a	n/a	n/a	n/a	0.0500	n/a	U
S11V005384			7439-92-1	Lead	ug/mL	104	<0.0500	<0.0500	n/a	n/a	n/a	n/a	0.0500	n/a	U
S11V005384			7440-36-0	Antimony	ug/mL	99.3	<0.0500	<0.0500	n/a	n/a	n/a	n/a	0.0500	n/a	U
S11V005384			7782-49-2	Selenium	ug/mL	103	<0.100	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S11V005384			7440-24-6	Strontium	ug/mL	100	<3.00E-03	<3.00E-03	n/a	n/a	n/a	n/a	3.00E-03	n/a	U
S11V005384			7440-28-0	Thallium	ug/mL	105	<0.100	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S11V005384			7440-61-1	Uranium	ug/mL	102	<0.100	<0.100	n/a	n/a	n/a	n/a	0.100	n/a	U
S11V005384			7440-62-2	Vanadium	ug/mL	102	<5.00E-03	<5.00E-03	n/a	n/a	n/a	n/a	5.00E-03	n/a	U
S11V005384			7440-66-6	Zinc	ug/mL	99.6	<5.00E-03	<5.00E-03	n/a	n/a	n/a	n/a	5.00E-03	n/a	U
S11V005384			14269-63-7	Thorium-230	ug/mL	n/a	<7.00E-09	<1.40E-08	n/a	n/a	n/a	n/a	1.40E-08	n/a	U
S11V005384			TH-232	Thorium-232	ug/mL	99.6	<5.00E-07	<1.00E-06	n/a	n/a	n/a	n/a	1.00E-06	n/a	U
S11V005384			13968-55-3	Uranium-233	ug/mL	96.5	<2.00E-07	<4.00E-07	n/a	n/a	n/a	n/a	4.00E-07	n/a	U
S11V005384			13966-29-5	Uranium-234	ug/mL	n/a	<5.00E-09	<1.00E-08	n/a	n/a	n/a	n/a	1.00E-08	n/a	U
S11V005384			15117-96-1	Uranium-235	ug/mL	98.8	<1.00E-08	<2.00E-08	n/a	n/a	n/a	n/a	2.00E-08	n/a	U
S11V005384			13982-70-2	Uranium-236	ug/mL	n/a	<4.00E-09	<8.00E-09	n/a	n/a	n/a	n/a	8.00E-09	n/a	U
S11V005384			13994-20-2	Neptunium-237	ug/mL	103	<1.00E-07	<2.00E-07	n/a	n/a	n/a	n/a	2.00E-07	n/a	U
S11V005384			U-238	Uranium-238	ug/mL	100	<5.00E-07	<1.00E-06	n/a	n/a	n/a	n/a	1.00E-06	n/a	U
S11V005384			SN-117	Tin-117	ug/mL	106	<1.00E-05	<2.00E-05	n/a	n/a	n/a	n/a	2.00E-05	n/a	U
S11V005384			15832-50-5	Tin-126	ug/mL	n/a	<2.00E-07	<4.00E-07	n/a	n/a	n/a	n/a	4.00E-07	n/a	U
S11V005384			14133-76-7	Technetium-99	ug/mL	99.5	<6.00E-07	<1.20E-06	n/a	n/a	n/a	n/a	1.20E-06	n/a	U
S11V005385			14762-75-5	Carbon-14	uCi/mL	92.8	<1.20E-07	<1.79E-07	n/a	n/a	n/a	n/a	1.79E-07	n/a	U
S11V005385			15046-84-1	Iodine-129	uCi/mL	102	<1.53E-07	<1.30E-07	n/a	n/a	n/a	n/a	1.30E-07	n/a	U
S11V005385			10028-17-8	Tritium	uCi/mL	103	<2.70E-07	<4.59E-07	n/a	n/a	n/a	n/a	4.59E-07	n/a	U
S11V005386			CM-243/244	Curium-243/244	uCi/mL	n/a	9.11E-11	<1.12E-10	<1.38E-10	n/a	n/a	n/a	1.12E-10	n/a	U

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U - Less Than Detection Limit
B - Blank Contamination
M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111160
Core Number: C8402
Customer Sample ID: B2FDM1
Sample Depth: Field Blank

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005386			14596-10-2	Americium-241	uCi/mL	103	2.12E-10	3.92E-10	<1.33E-10	n/a	n/a	n/a	1.54E-10	39.2	B
S11V005386			15510-73-3	Curium-242	uCi/mL	n/a	<8.63E-11	<7.70E-11	<4.30E-11	n/a	n/a	n/a	7.70E-11	n/a	U
S11V005386			10198-40-0	Cobalt-60	uCi/mL	96.1	<9.95E-08	<5.37E-08	n/a	n/a	n/a	n/a	5.37E-08	n/a	U
S11V005386			14234-35-6	Antimony-125	uCi/mL	n/a	<2.39E-07	<1.13E-07	n/a	n/a	n/a	n/a	1.13E-07	n/a	U
S11V005386			10045-97-3	Cesium-137	uCi/mL	100	<9.30E-08	<5.35E-08	n/a	n/a	n/a	n/a	5.35E-08	n/a	U
S11V005386			14683-23-9	Europium-152	uCi/mL	n/a	<1.67E-07	<9.56E-08	n/a	n/a	n/a	n/a	9.56E-08	n/a	U
S11V005386			15585-10-1	Europium-154	uCi/mL	n/a	<8.61E-08	9.06E-08	n/a	n/a	n/a	n/a	6.38E-08	21.88	
S11V005386			14391-16-3	Europium-155	uCi/mL	n/a	<2.05E-07	<1.19E-07	n/a	n/a	n/a	n/a	1.19E-07	n/a	U
S11V005386			14733-03-0	Bismuth-214	uCi/mL	n/a	n/a	2.81E-07	n/a	n/a	n/a	n/a	1.28E-07	23.71	
S11V005386			14274-82-9	Thorium-228	uCi/mL	n/a	<3.79E-05	<2.09E-05	n/a	n/a	n/a	n/a	2.09E-05	n/a	U
S11V005386			15065-10-8	Thorium-234	uCi/mL	n/a	<1.11E-06	<7.49E-07	n/a	n/a	n/a	n/a	7.49E-07	n/a	U
S11V005386			7440-02-0	Nickel	ug/mL	n/a	n/a	196	n/a	n/a	n/a	n/a	n/a	n/a	
S11V005386			13981-37-8	Nickel-63	uCi/mL	96.3	<4.91E-08	<8.25E-08	n/a	n/a	n/a	n/a	8.25E-08	n/a	U
S11V005386			PU-239/240	Plutonium-239/240	uCi/mL	116	<2.50E-10	9.56E-10	<2.04E-10	n/a	n/a	n/a	2.36E-10	36.5	
S11V005386			13981-16-3	Plutonium-238	uCi/mL	n/a	<2.25E-10	4.01E-10	<2.17E-10	n/a	n/a	n/a	1.94E-10	81.7	
S11V005386			15758-45-9	Selenium-79	uCi/mL	n/a	<3.35E-08	<1.93E-08	n/a	n/a	n/a	n/a	1.93E-08	n/a	U
S11V005386			SR-89/90	Strontium-89/90	uCi/mL	97.8	<1.26E-08	<1.19E-08	n/a	n/a	n/a	n/a	1.19E-08	n/a	U

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M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111161
Core Number: C8402
Customer Sample ID: B2FDL3
Sample Depth: 47'-49'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005392			13966-00-2	Potassium-40	uCi/g	n/a	n/a	1.09E-05	1.18E-05	1.14E-05	8.09	n/a	3.22E-06	7.48	
S11V005392			10198-40-0	Cobalt-60	uCi/g	99.9	<8.89E-08	<1.17E-07	<7.11E-08	n/a	n/a	n/a	1.17E-07	n/a	U
S11V005392			14234-35-6	Antimony-125	uCi/g	n/a	<2.24E-07	<2.68E-07	<1.81E-07	n/a	n/a	n/a	2.68E-07	n/a	U
S11V005392			10045-97-3	Cesium-137	uCi/g	100	<8.46E-08	<1.06E-07	<6.68E-08	n/a	n/a	n/a	1.06E-07	n/a	U
S11V005392			14683-23-9	Europium-152	uCi/g	n/a	<2.42E-07	<3.16E-07	<2.00E-07	n/a	n/a	n/a	3.16E-07	n/a	U
S11V005392			15585-10-1	Europium-154	uCi/g	n/a	<2.47E-07	<2.05E-07	<1.95E-07	n/a	n/a	n/a	2.05E-07	n/a	U
S11V005392			14391-16-3	Europium-155	uCi/g	n/a	<1.99E-07	<2.83E-07	<1.76E-07	n/a	n/a	n/a	2.83E-07	n/a	U
S11V005392			14913-50-9	Thallium-208	uCi/g	n/a	n/a	2.79E-07	2.79E-07	2.79E-07	0.0646	n/a	1.15E-07	11.72	
S11V005392			15092-94-1	Lead-212	uCi/g	n/a	n/a	7.69E-07	7.52E-07	7.60E-07	2.24	n/a	1.69E-07	6.81	
S11V005392			14733-03-0	Bismuth-214	uCi/g	n/a	n/a	7.34E-07	8.03E-07	7.68E-07	8.98	n/a	2.55E-07	12.00	
S11V005392			15067-28-4	Lead-214	uCi/g	n/a	n/a	8.16E-07	8.85E-07	8.50E-07	8.12	n/a	2.51E-07	10.91	
S11V005392			14331-83-0	Actinium-228	uCi/g	n/a	n/a	8.62E-07	6.91E-07	7.76E-07	22.0	n/a	4.41E-07	14.14	
S11V005392			14274-82-9	Thorium-228	uCi/g	n/a	<3.66E-05	<4.86E-05	<2.85E-05	n/a	n/a	n/a	4.86E-05	n/a	U
S11V005392			15065-10-8	Thorium-234	uCi/g	n/a	<1.07E-06	<1.87E-06	<1.22E-06	n/a	n/a	n/a	1.87E-06	n/a	U
S11V005392			15046-84-1	Iodine-129	uCi/g	104	<1.02E-06	<1.60E-06	<9.58E-07	n/a	n/a	n/a	1.60E-06	n/a	U
S11V005393			CONDUCT	Conductivity	uMHO/cm	97.2	0.430	98.9	110	105	10.8	n/a	0.0100	n/a	
S11V005395		A	7440-36-0	Antimony	ug/g	102	<2.00E-04	0.195	0.215	0.205	9.56	95.2	9.94E-03	n/a	
S11V005395		A	SN-117	Tin-117	ug/g	105	<1.00E-03	<0.0497	<0.0489	n/a	n/a	106	0.0497	n/a	U
S11V005395		A	15832-50-5	Tin-126	ug/g	n/a	<2.00E-05	2.48E-03	1.74E-03	2.11E-03	35.1	n/a	9.94E-04	n/a	E
S11V005396		W	16984-48-8	Fluoride	ug/g	94.5	<1.61E-03	0.997	n/a	n/a	n/a	n/a	0.0154	n/a	N
S11V005396		W	GLYCOLAT	Glycolate	ug/g	93.2	<9.37E-03	<0.0894	n/a	n/a	n/a	n/a	0.0894	n/a	U
S11V005396		W	71-50-1	Acetate	ug/g	97.3	<6.04E-03	0.476	n/a	n/a	n/a	n/a	0.0577	n/a	B
S11V005396		W	FORMATE	Formate	ug/g	94.2	<4.67E-03	0.395	n/a	n/a	n/a	n/a	0.0446	n/a	B
S11V005396		W	16887-00-6	Chloride	ug/g	100	<9.98E-03	0.637	n/a	n/a	n/a	n/a	0.0953	n/a	CB
S11V005396		W	14797-65-0	Nitrite	ug/g	98.3	<0.0192	0.252	n/a	n/a	n/a	n/a	0.183	n/a	B
S11V005396		W	14808-79-8	Sulfate	ug/g	101	<0.0187	4.94	n/a	n/a	n/a	n/a	0.178	n/a	
S11V005396		W	338-70-5	Oxalate	ug/g	101	<0.0231	0.274	n/a	n/a	n/a	n/a	0.220	n/a	BN
S11V005396		W	24959-67-9	Bromide	ug/g	93.4	<0.0580	<0.554	n/a	n/a	n/a	n/a	0.554	n/a	U

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X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111161
Core Number: C8402
Customer Sample ID: B2FDL3
Sample Depth: 47'-49'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005396		W	14797-55-8	Nitrate	ug/g	102	<0.0208	6.86	n/a	n/a	n/a	n/a	0.199	n/a	
S11V005396		W	14265-44-2	Phosphate	ug/g	101	<0.0167	0.831	n/a	n/a	n/a	n/a	0.159	n/a	BN
S11V005397		A	7429-90-5	Aluminum	ug/g	86.0	<0.0300	1.22E+04	n/a	n/a	n/a	n/a	5.97	n/a	
S11V005397		A	7440-39-3	Barium	ug/g	89.3	<3.00E-03	111	n/a	n/a	n/a	n/a	0.597	n/a	
S11V005397		A	7440-41-7	Beryllium	ug/g	91.7	<1.00E-03	0.292	n/a	n/a	n/a	n/a	0.199	n/a	B
S11V005397		A	7440-70-2	Calcium	ug/g	79.0	<0.0500	1.15E+04	n/a	n/a	n/a	n/a	9.95	n/a	
S11V005397		A	7440-45-1	Cerium	ug/g	92.7	<0.0300	26.0	n/a	n/a	n/a	n/a	5.97	n/a	B
S11V005397		A	7440-48-4	Cobalt	ug/g	83.7	0.0142	12.2	n/a	n/a	n/a	n/a	1.99	n/a	CB
S11V005397		A	7440-47-3	Chromium	ug/g	84.1	<5.00E-03	16.1	n/a	n/a	n/a	n/a	0.995	n/a	
S11V005397		A	7440-50-8	Copper	ug/g	92.5	<5.00E-03	12.6	n/a	n/a	n/a	n/a	0.995	n/a	
S11V005397		A	7439-89-6	Iron	ug/g	84.8	<5.00E-03	2.52E+04	n/a	n/a	n/a	n/a	0.995	n/a	
S11V005397		A	7440-09-7	Potassium	ug/g	78.6	<0.500	1.42E+03	n/a	n/a	n/a	n/a	99.5	n/a	
S11V005397		A	7439-91-0	Lanthanum	ug/g	89.2	<3.00E-03	11.2	n/a	n/a	n/a	n/a	0.597	n/a	
S11V005397		A	7439-93-2	Lithium	ug/g	92.4	<3.00E-03	10.5	n/a	n/a	n/a	n/a	0.597	n/a	
S11V005397		A	7439-95-4	Magnesium	ug/g	82.5	<0.0500	5.70E+03	n/a	n/a	n/a	n/a	9.95	n/a	
S11V005397		A	7439-96-5	Manganese	ug/g	83.3	<3.00E-03	457	n/a	n/a	n/a	n/a	0.597	n/a	
S11V005397		A	7439-98-7	Molybdenum	ug/g	88.6	<0.0200	<3.98	n/a	n/a	n/a	n/a	3.98	n/a	U
S11V005397		A	7440-23-5	Sodium	ug/g	91.6	<0.100	333	n/a	n/a	n/a	n/a	19.9	n/a	
S11V005397		A	7440-02-0	Nickel	ug/g	83.1	<0.0200	17.1	n/a	n/a	n/a	n/a	3.98	n/a	B
S11V005397		A	7723-14-0	Phosphorus	ug/g	89.0	<0.0500	578	n/a	n/a	n/a	n/a	9.95	n/a	
S11V005397		A	7704-34-9	Sulfur	ug/g	87.6	<0.100	33.3	n/a	n/a	n/a	n/a	19.9	n/a	B
S11V005397		A	7440-21-3	Silicon	ug/g	64.6	<0.0300	85.1	n/a	n/a	n/a	n/a	5.97	n/a	N
S11V005397		A	7440-24-6	Strontium	ug/g	89.0	<3.00E-03	42.6	n/a	n/a	n/a	n/a	0.597	n/a	
S11V005397		A	7440-32-6	Titanium	ug/g	88.4	<5.00E-03	1.36E+03	n/a	n/a	n/a	n/a	0.995	n/a	
S11V005397		A	7440-62-2	Vanadium	ug/g	86.3	5.56E-03	57.3	n/a	n/a	n/a	n/a	0.995	n/a	
S11V005397		A	7440-65-5	Yttrium	ug/g	87.9	<2.00E-03	8.57	n/a	n/a	n/a	n/a	0.398	n/a	
S11V005397		A	7440-66-6	Zinc	ug/g	84.7	<5.00E-03	43.0	n/a	n/a	n/a	n/a	0.995	n/a	
S11V005397		A	7440-67-7	Zirconium	ug/g	85.9	<5.00E-03	7.32	n/a	n/a	n/a	n/a	0.995	n/a	BN

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111161
Core Number: C8402
Customer Sample ID: B2FDL3
Sample Depth: 47'-49'

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005397	A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-06	<3.48E-05	n/a	n/a	n/a	n/a	3.48E-05	n/a	U
S11V005397	A	TH-232	Thorium-232	ug/g	93.6	<2.50E-04	4.37	n/a	n/a	n/a	n/a	2.49E-03	n/a	
S11V005397	A	13968-55-3	Uranium-233	ug/g	102	<1.00E-04	<9.95E-04	n/a	n/a	n/a	n/a	9.95E-04	n/a	U
S11V005397	A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-06	7.04E-05	n/a	n/a	n/a	n/a	2.49E-05	n/a	
S11V005397	A	15117-96-1	Uranium-235	ug/g	92.6	<5.00E-06	5.20E-03	n/a	n/a	n/a	n/a	4.98E-05	n/a	
S11V005397	A	13982-70-2	Uranium-236	ug/g	n/a	<2.00E-06	<1.99E-05	n/a	n/a	n/a	n/a	1.99E-05	n/a	U
S11V005397	A	13994-20-2	Neptunium-237	ug/g	100	<5.00E-05	<4.98E-04	n/a	n/a	n/a	n/a	4.98E-04	n/a	U
S11V005397	A	U-238	Uranium-238	ug/g	97.9	<2.50E-04	0.730	n/a	n/a	n/a	n/a	2.49E-03	n/a	
S11V005397	A	7440-22-4	Silver	ug/g	98.6	<2.00E-03	0.0445	n/a	n/a	n/a	n/a	0.0199	n/a	B
S11V005397	A	7440-38-2	Arsenic	ug/g	93.0	<0.0168	<0.167	n/a	n/a	n/a	n/a	0.167	n/a	U
S11V005397	A	7440-43-9	Cadmium	ug/g	99.2	<6.00E-03	0.0843	n/a	n/a	n/a	n/a	0.0597	n/a	B
S11V005397	A	7439-92-1	Lead	ug/g	99.9	<0.0150	5.00	n/a	n/a	n/a	n/a	0.149	n/a	
S11V005397	A	7782-49-2	Selenium	ug/g	92.0	<0.0244	<0.243	n/a	n/a	n/a	n/a	0.243	n/a	U
S11V005397	A	7440-28-0	Thallium	ug/g	108	<4.00E-03	0.141	n/a	n/a	n/a	n/a	0.0398	n/a	B
S11V005398	S	14798-03-9	Ammonium	ug/g	99.0	1.18	<0.478	n/a	n/a	n/a	n/a	0.478	n/a	U
S11V005399	A	14133-76-7	Technetium-99	ug/g	103	<6.00E-05	<5.99E-04	n/a	n/a	n/a	n/a	5.99E-04	n/a	UN
S11V005400	W	14762-75-5	Carbon-14	uCi/g	95.5	<6.29E-07	<6.27E-07	n/a	n/a	n/a	n/a	6.27E-07	n/a	U
S11V005400	W	10028-17-8	Tritium	uCi/g	93.4	<1.19E-06	<1.32E-06	n/a	n/a	n/a	n/a	1.32E-06	n/a	U
S11V005401	E	CM-243/244	Curium-243/244	uCi/g	n/a	<3.19E-08	<2.24E-08	<2.27E-08	n/a	n/a	n/a	2.24E-08	n/a	U
S11V005401	E	14596-10-2	Americium-241	uCi/g	100	<3.11E-08	<3.85E-08	<2.71E-08	n/a	n/a	n/a	3.85E-08	n/a	U
S11V005401	E	15510-73-3	Curium-242	uCi/g	n/a	<1.72E-08	<1.18E-08	<1.93E-08	n/a	n/a	n/a	1.18E-08	n/a	U
S11V005401	E	PU-239/240	Plutonium-239/240	uCi/g	98.6	<5.98E-08	<7.02E-08	<7.84E-08	n/a	n/a	n/a	7.02E-08	n/a	U
S11V005401	E	13981-16-3	Plutonium-238	uCi/g	n/a	<3.99E-08	<5.09E-08	<4.81E-08	n/a	n/a	n/a	5.09E-08	n/a	U
S11V005402	E	SR-89/90	Strontium-89/90	uCi/g	96.0	<2.18E-07	<8.00E-07	<2.05E-07	n/a	n/a	n/a	8.00E-07	n/a	U
S11V005403	E	7440-02-0	Nickel	ug/mL	n/a	n/a	182	n/a	n/a	n/a	n/a	0.200	n/a	
S11V005403	E	13981-37-8	Nickel-63	uCi/g	99.8	<6.89E-06	<4.22E-06	<6.87E-06	n/a	n/a	n/a	4.22E-06	n/a	U
S11V005404	E	15758-45-9	Selenium-79	uCi/g	n/a	<1.17E-06	<1.42E-06	<1.24E-06	n/a	n/a	n/a	1.42E-06	n/a	U
S11V005669		%WATERA	%WATER-APD	%	n/a	n/a	14.73	15.28	15.00	3.665	n/a	0.01000	n/a	

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111161
Core Number: C8402
Customer Sample ID: B2FDL3
Sample Depth: 47'-49'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005669			57-12-5	Cyanide	ug/g	102	<0.0370	<0.480	n/a	n/a	n/a	n/a	0.480	n/a	U
S11V005669			WT%SOLID	Weight percent solids	%	n/a	n/a	85.3	84.7	85.0	0.647	n/a	0.0100	n/a	
S11V005669			7439-97-6	Mercury	ug/g	98.9	3.10E-05	6.80E-03	n/a	n/a	n/a	n/a	1.10E-03	n/a	CB
S11V005669			PH	pH	unitless	n/a	n/a	8.45	8.39	8.42	0.713	n/a	0.0100	n/a	

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111161
Core Number: C8402
Customer Sample ID: B2FDL4
Sample Depth: 107'-109'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005410			13966-00-2	Potassium-40	uCi/g	n/a	n/a	1.50E-05	n/a	n/a	n/a	n/a	3.28E-06	5.96	
S11V005410			10198-40-0	Cobalt-60	uCi/g	99.9	<8.89E-08	<8.66E-08	n/a	n/a	n/a	n/a	8.66E-08	n/a	U
S11V005410			14234-35-6	Antimony-125	uCi/g	n/a	<2.24E-07	<2.87E-07	n/a	n/a	n/a	n/a	2.87E-07	n/a	U
S11V005410			10045-97-3	Cesium-137	uCi/g	100	<8.46E-08	<1.04E-07	n/a	n/a	n/a	n/a	1.04E-07	n/a	U
S11V005410			14683-23-9	Europium-152	uCi/g	n/a	<2.42E-07	<3.20E-07	n/a	n/a	n/a	n/a	3.20E-07	n/a	U
S11V005410			15585-10-1	Europium-154	uCi/g	n/a	<2.47E-07	<2.37E-07	n/a	n/a	n/a	n/a	2.37E-07	n/a	U
S11V005410			14391-16-3	Europium-155	uCi/g	n/a	<1.99E-07	<2.51E-07	n/a	n/a	n/a	n/a	2.51E-07	n/a	U
S11V005410			14913-50-9	Thallium-208	uCi/g	n/a	n/a	3.53E-07	n/a	n/a	n/a	n/a	1.22E-07	12.20	
S11V005410			14913-49-6	Bismuth-212	uCi/g	n/a	n/a	1.25E-06	n/a	n/a	n/a	n/a	1.23E-06	28.79	
S11V005410			15092-94-1	Lead-212	uCi/g	n/a	n/a	1.01E-06	n/a	n/a	n/a	n/a	1.72E-07	5.39	
S11V005410			14733-03-0	Bismuth-214	uCi/g	n/a	n/a	9.07E-07	n/a	n/a	n/a	n/a	2.73E-07	11.28	
S11V005410			15067-28-4	Lead-214	uCi/g	n/a	n/a	1.18E-06	n/a	n/a	n/a	n/a	2.56E-07	8.14	
S11V005410			14331-83-0	Actinium-228	uCi/g	n/a	n/a	9.52E-07	n/a	n/a	n/a	n/a	4.78E-07	17.77	
S11V005410			14274-82-9	Thorium-228	uCi/g	n/a	<3.66E-05	<4.91E-05	n/a	n/a	n/a	n/a	4.91E-05	n/a	U
S11V005410			15065-10-8	Thorium-234	uCi/g	n/a	<1.07E-06	<1.90E-06	n/a	n/a	n/a	n/a	1.90E-06	n/a	U
S11V005410			15046-84-1	Iodine-129	uCi/g	104	<1.02E-06	<8.56E-07	n/a	n/a	n/a	n/a	8.56E-07	n/a	U
S11V005411			CONDUCT	Conductivity	uMHO/cm	97.2	0.430	83.0	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005413		A	7440-36-0	Antimony	ug/g	102	<2.00E-04	0.387	n/a	n/a	n/a	n/a	9.61E-03	n/a	
S11V005413		A	SN-117	Tin-117	ug/g	105	<1.00E-03	<0.0481	n/a	n/a	n/a	n/a	0.0481	n/a	U
S11V005413		A	15832-50-5	Tin-126	ug/g	n/a	<2.00E-05	4.17E-03	n/a	n/a	n/a	n/a	9.61E-04	n/a	E
S11V005414		W	16984-48-8	Fluoride	ug/g	94.5	<1.61E-03	2.02	n/a	n/a	n/a	n/a	0.0150	n/a	N
S11V005414		W	GLYCOLAT	Glycolate	ug/g	93.2	<9.37E-03	<0.0872	n/a	n/a	n/a	n/a	0.0872	n/a	U
S11V005414		W	71-50-1	Acetate	ug/g	97.3	<6.04E-03	0.404	n/a	n/a	n/a	n/a	0.0562	n/a	B
S11V005414		W	FORMATE	Formate	ug/g	94.2	<4.67E-03	0.268	n/a	n/a	n/a	n/a	0.0434	n/a	B
S11V005414		W	16887-00-6	Chloride	ug/g	100	<9.98E-03	2.39	n/a	n/a	n/a	n/a	0.0928	n/a	
S11V005414		W	14797-65-0	Nitrite	ug/g	98.3	<0.0192	1.04	n/a	n/a	n/a	n/a	0.179	n/a	B
S11V005414		W	14808-79-8	Sulfate	ug/g	101	<0.0187	22.8	n/a	n/a	n/a	n/a	0.174	n/a	
S11V005414		W	338-70-5	Oxalate	ug/g	101	<0.0231	0.512	n/a	n/a	n/a	n/a	0.215	n/a	BN

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111161
Core Number: C8402
Customer Sample ID: B2FDL4
Sample Depth: 107'-109'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005414		W	24959-67-9	Bromide	ug/g	93.4	<0.0580	<0.540	n/a	n/a	n/a	n/a	0.540	n/a	U
S11V005414		W	14797-55-8	Nitrate	ug/g	102	<0.0208	13.2	n/a	n/a	n/a	n/a	0.194	n/a	
S11V005414		W	14265-44-2	Phosphate	ug/g	101	<0.0167	1.45	n/a	n/a	n/a	n/a	0.155	n/a	BN
S11V005415		A	7429-90-5	Aluminum	ug/g	86.0	<0.0300	1.02E+04	n/a	n/a	n/a	n/a	5.76	n/a	
S11V005415		A	7440-39-3	Barium	ug/g	89.3	<3.00E-03	95.1	n/a	n/a	n/a	n/a	0.576	n/a	
S11V005415		A	7440-41-7	Beryllium	ug/g	91.7	<1.00E-03	0.274	n/a	n/a	n/a	n/a	0.192	n/a	B
S11V005415		A	7440-70-2	Calcium	ug/g	79.0	<0.0500	9.69E+03	n/a	n/a	n/a	n/a	9.61	n/a	
S11V005415		A	7440-45-1	Cerium	ug/g	92.7	<0.0300	29.2	n/a	n/a	n/a	n/a	5.76	n/a	B
S11V005415		A	7440-48-4	Cobalt	ug/g	83.7	0.0142	8.85	n/a	n/a	n/a	n/a	1.92	n/a	CB
S11V005415		A	7440-47-3	Chromium	ug/g	84.1	<5.00E-03	21.4	n/a	n/a	n/a	n/a	0.961	n/a	
S11V005415		A	7440-50-8	Copper	ug/g	92.5	<5.00E-03	12.1	n/a	n/a	n/a	n/a	0.961	n/a	
S11V005415		A	7439-89-6	Iron	ug/g	84.8	<5.00E-03	1.82E+04	n/a	n/a	n/a	n/a	0.961	n/a	
S11V005415		A	7440-09-7	Potassium	ug/g	78.6	<0.500	1.69E+03	n/a	n/a	n/a	n/a	96.1	n/a	
S11V005415		A	7439-91-0	Lanthanum	ug/g	89.2	<3.00E-03	13.4	n/a	n/a	n/a	n/a	0.576	n/a	
S11V005415		A	7439-93-2	Lithium	ug/g	92.4	<3.00E-03	13.2	n/a	n/a	n/a	n/a	0.576	n/a	
S11V005415		A	7439-95-4	Magnesium	ug/g	82.5	<0.0500	5.62E+03	n/a	n/a	n/a	n/a	9.61	n/a	
S11V005415		A	7439-96-5	Manganese	ug/g	83.3	<3.00E-03	344	n/a	n/a	n/a	n/a	0.576	n/a	
S11V005415		A	7439-98-7	Molybdenum	ug/g	88.6	<0.0200	<3.84	n/a	n/a	n/a	n/a	3.84	n/a	U
S11V005415		A	7440-23-5	Sodium	ug/g	91.6	<0.100	327	n/a	n/a	n/a	n/a	19.2	n/a	
S11V005415		A	7440-02-0	Nickel	ug/g	83.1	<0.0200	18.5	n/a	n/a	n/a	n/a	3.84	n/a	B
S11V005415		A	7723-14-0	Phosphorus	ug/g	89.0	<0.0500	542	n/a	n/a	n/a	n/a	9.61	n/a	
S11V005415		A	7440-10-0	Praseodymium	ug/g	95.7	<0.0100	2.88	n/a	n/a	n/a	n/a	1.92	n/a	B
S11V005415		A	7704-34-9	Sulfur	ug/g	87.6	<0.100	23.0	n/a	n/a	n/a	n/a	19.2	n/a	B
S11V005415		A	7440-21-3	Silicon	ug/g	64.6	<0.0300	89.3	n/a	n/a	n/a	n/a	5.76	n/a	N
S11V005415		A	7440-24-6	Strontium	ug/g	89.0	<3.00E-03	34.9	n/a	n/a	n/a	n/a	0.576	n/a	
S11V005415		A	7440-32-6	Titanium	ug/g	88.4	<5.00E-03	885	n/a	n/a	n/a	n/a	0.961	n/a	
S11V005415		A	7440-62-2	Vanadium	ug/g	86.3	5.56E-03	37.5	n/a	n/a	n/a	n/a	0.961	n/a	
S11V005415		A	7440-65-5	Yttrium	ug/g	87.9	<2.00E-03	6.89	n/a	n/a	n/a	n/a	0.384	n/a	

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X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111161
Core Number: C8402
Customer Sample ID: B2FDL4
Sample Depth: 107'-109'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005415		A	7440-66-6	Zinc	ug/g	84.7	<5.00E-03	40.8	n/a	n/a	n/a	n/a	0.961	n/a	
S11V005415		A	7440-67-7	Zirconium	ug/g	85.9	<5.00E-03	7.77	n/a	n/a	n/a	n/a	0.961	n/a	BN
S11V005415		A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-06	4.68E-05	n/a	n/a	n/a	n/a	3.36E-05	n/a	
S11V005415		A	TH-232	Thorium-232	ug/g	93.6	<2.50E-04	4.41	n/a	n/a	n/a	n/a	2.40E-03	n/a	
S11V005415		A	13968-55-3	Uranium-233	ug/g	102	<1.00E-04	<9.61E-04	n/a	n/a	n/a	n/a	9.61E-04	n/a	U
S11V005415		A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-06	<2.40E-05	n/a	n/a	n/a	n/a	2.40E-05	n/a	U
S11V005415		A	15117-96-1	Uranium-235	ug/g	92.6	<5.00E-06	4.05E-03	n/a	n/a	n/a	n/a	4.80E-05	n/a	
S11V005415		A	13982-70-2	Uranium-236	ug/g	n/a	<2.00E-06	<1.92E-05	n/a	n/a	n/a	n/a	1.92E-05	n/a	U
S11V005415		A	13994-20-2	Neptunium-237	ug/g	100	<5.00E-05	<4.80E-04	n/a	n/a	n/a	n/a	4.80E-04	n/a	U
S11V005415		A	U-238	Uranium-238	ug/g	97.9	<2.50E-04	0.600	n/a	n/a	n/a	n/a	2.40E-03	n/a	
S11V005415		A	7440-22-4	Silver	ug/g	98.6	<2.00E-03	0.0489	n/a	n/a	n/a	n/a	0.0192	n/a	B
S11V005415		A	7440-38-2	Arsenic	ug/g	93.0	<0.0168	1.36	n/a	n/a	n/a	n/a	0.161	n/a	CB
S11V005415		A	7440-43-9	Cadmium	ug/g	99.2	<6.00E-03	0.0976	n/a	n/a	n/a	n/a	0.0576	n/a	B
S11V005415		A	7439-92-1	Lead	ug/g	99.9	<0.0150	6.23	n/a	n/a	n/a	n/a	0.144	n/a	
S11V005415		A	7782-49-2	Selenium	ug/g	92.0	<0.0244	<0.234	n/a	n/a	n/a	n/a	0.234	n/a	U
S11V005415		A	7440-28-0	Thallium	ug/g	108	<4.00E-03	0.126	n/a	n/a	n/a	n/a	0.0384	n/a	B
S11V005416		S	14798-03-9	Ammonium	ug/g	99.0	1.18	<0.473	n/a	n/a	n/a	n/a	0.473	n/a	U
S11V005417		A	14133-76-7	Technetium-99	ug/g	103	<6.00E-05	<5.98E-04	n/a	n/a	n/a	n/a	5.98E-04	n/a	UN
S11V005418		W	14762-75-5	Carbon-14	uCi/g	95.5	<6.29E-07	2.11E-06	n/a	n/a	n/a	n/a	6.24E-07	37.336	
S11V005418		W	10028-17-8	Tritium	uCi/g	93.4	<1.19E-06	<1.29E-06	n/a	n/a	n/a	n/a	1.29E-06	n/a	U
S11V005419		E	CM-243/244	Curium-243/244	uCi/g	n/a	<3.19E-08	<2.34E-08	n/a	n/a	n/a	n/a	2.34E-08	n/a	U
S11V005419		E	14596-10-2	Americium-241	uCi/g	100	<3.11E-08	<3.36E-08	n/a	n/a	n/a	n/a	3.36E-08	n/a	U
S11V005419		E	15510-73-3	Curium-242	uCi/g	n/a	<1.72E-08	<1.43E-08	n/a	n/a	n/a	n/a	1.43E-08	n/a	U
S11V005419		E	PU-239/240	Plutonium-239/240	uCi/g	98.6	<5.98E-08	<5.48E-08	n/a	n/a	n/a	n/a	5.48E-08	n/a	U
S11V005419		E	13981-16-3	Plutonium-238	uCi/g	n/a	<3.99E-08	<5.49E-08	n/a	n/a	n/a	n/a	5.49E-08	n/a	U
S11V005420		E	SR-89/90	Strontium-89/90	uCi/g	96.0	<2.18E-07	<2.24E-07	n/a	n/a	n/a	n/a	2.24E-07	n/a	U
S11V005421		E	7440-02-0	Nickel	ug/mL	n/a	n/a	190	n/a	n/a	n/a	n/a	0.200	n/a	
S11V005421		E	13981-37-8	Nickel-63	uCi/g	99.8	<6.89E-06	<4.57E-06	n/a	n/a	n/a	n/a	4.57E-06	n/a	U

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111161
Core Number: C8402
Customer Sample ID: B2FDL4
Sample Depth: 107'-109'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005422		E	15758-45-9	Selenium-79	uCi/g	n/a	<1.17E-06	<1.49E-06	n/a	n/a	n/a	n/a	1.49E-06	n/a	U
S11V005670			%WATERA	%WATER-APD	%	n/a	n/a	7.810	n/a	n/a	n/a	n/a	0.01000	n/a	
S11V005670			57-12-5	Cyanide	ug/g	102	<0.0370	<0.480	n/a	n/a	n/a	n/a	0.480	n/a	U
S11V005670			WT%SOLID	Weight percent solids	%	n/a	n/a	92.2	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005670			7439-97-6	Mercury	ug/g	98.9	3.10E-05	4.46E-03	n/a	n/a	n/a	n/a	1.04E-03	n/a	CB
S11V005670			PH	pH	unitless	n/a	n/a	8.59	n/a	n/a	n/a	n/a	0.0100	n/a	

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111161
Core Number: C8402
Customer Sample ID: B2FDL5
Sample Depth: 126'-128'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005428			13966-00-2	Potassium-40	uCi/g	n/a	n/a	1.47E-05	n/a	n/a	n/a	n/a	2.58E-06	5.32	
S11V005428			10198-40-0	Cobalt-60	uCi/g	99.9	<8.89E-08	<1.05E-07	n/a	n/a	n/a	n/a	1.05E-07	n/a	U
S11V005428			14234-35-6	Antimony-125	uCi/g	n/a	<2.24E-07	<2.44E-07	n/a	n/a	n/a	n/a	2.44E-07	n/a	U
S11V005428			10045-97-3	Cesium-137	uCi/g	100	<8.46E-08	<1.42E-07	n/a	n/a	n/a	n/a	1.42E-07	n/a	U
S11V005428			14683-23-9	Europium-152	uCi/g	n/a	<2.42E-07	<1.99E-07	n/a	n/a	n/a	n/a	1.99E-07	n/a	U
S11V005428			15585-10-1	Europium-154	uCi/g	n/a	<2.47E-07	<2.70E-07	n/a	n/a	n/a	n/a	2.70E-07	n/a	U
S11V005428			14391-16-3	Europium-155	uCi/g	n/a	<1.99E-07	<3.44E-07	n/a	n/a	n/a	n/a	3.44E-07	n/a	U
S11V005428			14913-50-9	Thallium-208	uCi/g	n/a	n/a	3.87E-07	n/a	n/a	n/a	n/a	1.03E-07	10.66	
S11V005428			14913-49-6	Bismuth-212	uCi/g	n/a	n/a	1.69E-06	n/a	n/a	n/a	n/a	1.02E-06	19.91	
S11V005428			15092-94-1	Lead-212	uCi/g	n/a	n/a	1.03E-06	n/a	n/a	n/a	n/a	1.39E-07	4.91	
S11V005428			14733-03-0	Bismuth-214	uCi/g	n/a	n/a	8.38E-07	n/a	n/a	n/a	n/a	2.28E-07	10.44	
S11V005428			15067-28-4	Lead-214	uCi/g	n/a	n/a	9.75E-07	n/a	n/a	n/a	n/a	2.22E-07	9.39	
S11V005428			14331-83-0	Actinium-228	uCi/g	n/a	n/a	1.27E-06	n/a	n/a	n/a	n/a	4.27E-07	13.41	
S11V005428			14274-82-9	Thorium-228	uCi/g	n/a	<3.66E-05	<4.73E-05	n/a	n/a	n/a	n/a	4.73E-05	n/a	U
S11V005428			15065-10-8	Thorium-234	uCi/g	n/a	<1.07E-06	<8.36E-06	n/a	n/a	n/a	n/a	8.36E-06	n/a	U
S11V005428			15046-84-1	Iodine-129	uCi/g	104	<1.02E-06	<6.71E-07	n/a	n/a	n/a	n/a	6.71E-07	n/a	U
S11V005429			CONDUCT	Conductivity	uMHO/cm	97.2	0.430	196	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005431		A	7440-36-0	Antimony	ug/g	102	<2.00E-04	0.490	n/a	n/a	n/a	n/a	9.80E-03	n/a	
S11V005431		A	SN-117	Tin-117	ug/g	105	<1.00E-03	<0.0490	n/a	n/a	n/a	n/a	0.0490	n/a	U
S11V005431		A	15832-50-5	Tin-126	ug/g	n/a	<2.00E-05	5.74E-03	n/a	n/a	n/a	n/a	9.80E-04	n/a	E
S11V005432		W	16984-48-8	Fluoride	ug/g	94.5	<1.61E-03	1.45	n/a	n/a	n/a	n/a	0.0158	n/a	N
S11V005432		W	GLYCOLAT	Glycolate	ug/g	93.2	<9.37E-03	<0.0920	n/a	n/a	n/a	n/a	0.0920	n/a	U
S11V005432		W	71-50-1	Acetate	ug/g	97.3	<6.04E-03	<0.0593	n/a	n/a	n/a	n/a	0.0593	n/a	U
S11V005432		W	FORMATE	Formate	ug/g	94.2	<4.67E-03	0.520	n/a	n/a	n/a	n/a	0.0459	n/a	
S11V005432		W	16887-00-6	Chloride	ug/g	100	<9.98E-03	4.11	n/a	n/a	n/a	n/a	0.0980	n/a	
S11V005432		W	14797-65-0	Nitrite	ug/g	98.3	<0.0192	0.722	n/a	n/a	n/a	n/a	0.189	n/a	B
S11V005432		W	14808-79-8	Sulfate	ug/g	101	<0.0187	30.5	n/a	n/a	n/a	n/a	0.184	n/a	
S11V005432		W	338-70-5	Oxalate	ug/g	101	<0.0231	<0.227	n/a	n/a	n/a	n/a	0.227	n/a	UN

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111161
Core Number: C8402
Customer Sample ID: B2FDL5
Sample Depth: 126'-128'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005432		W	24959-67-9	Bromide	ug/g	93.4	<0.0580	<0.570	n/a	n/a	n/a	n/a	0.570	n/a	U
S11V005432		W	14797-55-8	Nitrate	ug/g	102	<0.0208	34.0	n/a	n/a	n/a	n/a	0.204	n/a	
S11V005432		W	14265-44-2	Phosphate	ug/g	101	<0.0167	1.44	n/a	n/a	n/a	n/a	0.164	n/a	BN
S11V005433		A	7429-90-5	Aluminum	ug/g	86.0	<0.0300	1.23E+04	n/a	n/a	n/a	n/a	5.92	n/a	
S11V005433		A	7440-39-3	Barium	ug/g	89.3	<3.00E-03	88.0	n/a	n/a	n/a	n/a	0.592	n/a	
S11V005433		A	7440-41-7	Beryllium	ug/g	91.7	<1.00E-03	0.376	n/a	n/a	n/a	n/a	0.197	n/a	B
S11V005433		A	7440-70-2	Calcium	ug/g	79.0	<0.0500	1.11E+04	n/a	n/a	n/a	n/a	9.86	n/a	
S11V005433		A	7440-45-1	Cerium	ug/g	92.7	<0.0300	34.0	n/a	n/a	n/a	n/a	5.92	n/a	B
S11V005433		A	7440-48-4	Cobalt	ug/g	83.7	0.0142	10.2	n/a	n/a	n/a	n/a	1.97	n/a	CB
S11V005433		A	7440-47-3	Chromium	ug/g	84.1	<5.00E-03	25.2	n/a	n/a	n/a	n/a	0.986	n/a	
S11V005433		A	7440-50-8	Copper	ug/g	92.5	<5.00E-03	16.5	n/a	n/a	n/a	n/a	0.986	n/a	
S11V005433		A	7439-89-6	Iron	ug/g	84.8	<5.00E-03	1.87E+04	n/a	n/a	n/a	n/a	0.986	n/a	
S11V005433		A	7440-09-7	Potassium	ug/g	78.6	<0.500	1.83E+03	n/a	n/a	n/a	n/a	98.6	n/a	
S11V005433		A	7439-91-0	Lanthanum	ug/g	89.2	<3.00E-03	15.2	n/a	n/a	n/a	n/a	0.592	n/a	
S11V005433		A	7439-93-2	Lithium	ug/g	92.4	<3.00E-03	15.4	n/a	n/a	n/a	n/a	0.592	n/a	
S11V005433		A	7439-95-4	Magnesium	ug/g	82.5	<0.0500	6.44E+03	n/a	n/a	n/a	n/a	9.86	n/a	
S11V005433		A	7439-96-5	Manganese	ug/g	83.3	<3.00E-03	272	n/a	n/a	n/a	n/a	0.592	n/a	
S11V005433		A	7439-98-7	Molybdenum	ug/g	88.6	<0.0200	<3.94	n/a	n/a	n/a	n/a	3.94	n/a	U
S11V005433		A	7440-23-5	Sodium	ug/g	91.6	<0.100	319	n/a	n/a	n/a	n/a	19.7	n/a	
S11V005433		A	7440-02-0	Nickel	ug/g	83.1	<0.0200	17.6	n/a	n/a	n/a	n/a	3.94	n/a	B
S11V005433		A	7723-14-0	Phosphorus	ug/g	89.0	<0.0500	609	n/a	n/a	n/a	n/a	9.86	n/a	
S11V005433		A	7440-10-0	Praseodymium	ug/g	95.7	<0.0100	3.10	n/a	n/a	n/a	n/a	1.97	n/a	B
S11V005433		A	7704-34-9	Sulfur	ug/g	87.6	<0.100	23.1	n/a	n/a	n/a	n/a	19.7	n/a	B
S11V005433		A	7440-21-3	Silicon	ug/g	64.6	<0.0300	88.6	n/a	n/a	n/a	n/a	5.92	n/a	N
S11V005433		A	7440-24-6	Strontium	ug/g	89.0	<3.00E-03	37.9	n/a	n/a	n/a	n/a	0.592	n/a	
S11V005433		A	7440-32-6	Titanium	ug/g	88.4	<5.00E-03	759	n/a	n/a	n/a	n/a	0.986	n/a	
S11V005433		A	7440-62-2	Vanadium	ug/g	86.3	5.56E-03	34.5	n/a	n/a	n/a	n/a	0.986	n/a	
S11V005433		A	7440-65-5	Yttrium	ug/g	87.9	<2.00E-03	7.82	n/a	n/a	n/a	n/a	0.394	n/a	

NA = Not Analyzed, ND = Not Detected

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U - Less Than Detection Limit
B - Blank Contamination
M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111161
Core Number: C8402
Customer Sample ID: B2FDL5
Sample Depth: 126'-128'

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005433	A	7440-66-6	Zinc	ug/g	84.7	<5.00E-03	48.5	n/a	n/a	n/a	n/a	0.986	n/a	
S11V005433	A	7440-67-7	Zirconium	ug/g	85.9	<5.00E-03	6.94	n/a	n/a	n/a	n/a	0.986	n/a	BN
S11V005433	A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-06	7.27E-05	n/a	n/a	n/a	n/a	3.45E-05	n/a	
S11V005433	A	TH-232	Thorium-232	ug/g	93.6	<2.50E-04	5.30	n/a	n/a	n/a	n/a	2.46E-03	n/a	
S11V005433	A	13968-55-3	Uranium-233	ug/g	102	<1.00E-04	<9.86E-04	n/a	n/a	n/a	n/a	9.86E-04	n/a	U
S11V005433	A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-06	6.40E-05	n/a	n/a	n/a	n/a	2.46E-05	n/a	
S11V005433	A	15117-96-1	Uranium-235	ug/g	92.6	<5.00E-06	5.58E-03	n/a	n/a	n/a	n/a	4.93E-05	n/a	
S11V005433	A	13982-70-2	Uranium-236	ug/g	n/a	<2.00E-06	<1.97E-05	n/a	n/a	n/a	n/a	1.97E-05	n/a	U
S11V005433	A	13994-20-2	Neptunium-237	ug/g	100	<5.00E-05	<4.93E-04	n/a	n/a	n/a	n/a	4.93E-04	n/a	U
S11V005433	A	U-238	Uranium-238	ug/g	97.9	<2.50E-04	0.808	n/a	n/a	n/a	n/a	2.46E-03	n/a	
S11V005433	A	7440-22-4	Silver	ug/g	98.6	<2.00E-03	0.0587	n/a	n/a	n/a	n/a	0.0197	n/a	B
S11V005433	A	7440-38-2	Arsenic	ug/g	93.0	<0.0168	2.86	n/a	n/a	n/a	n/a	0.166	n/a	C
S11V005433	A	7440-43-9	Cadmium	ug/g	99.2	<6.00E-03	0.149	n/a	n/a	n/a	n/a	0.0592	n/a	B
S11V005433	A	7439-92-1	Lead	ug/g	99.9	<0.0150	8.45	n/a	n/a	n/a	n/a	0.148	n/a	
S11V005433	A	7782-49-2	Selenium	ug/g	92.0	<0.0244	<0.241	n/a	n/a	n/a	n/a	0.241	n/a	U
S11V005433	A	7440-28-0	Thallium	ug/g	108	<4.00E-03	0.154	n/a	n/a	n/a	n/a	0.0394	n/a	B
S11V005434	S	14798-03-9	Ammonium	ug/g	99.0	1.18	<0.476	n/a	n/a	n/a	n/a	0.476	n/a	U
S11V005435	A	14133-76-7	Technetium-99	ug/g	103	<6.00E-05	<6.00E-04	n/a	n/a	n/a	n/a	6.00E-04	n/a	UN
S11V005436	W	14762-75-5	Carbon-14	uCi/g	95.5	<6.29E-07	<7.39E-07	<6.23E-07	n/a	n/a	94.3	7.39E-07	n/a	U
S11V005436	W	10028-17-8	Tritium	uCi/g	93.4	<1.19E-06	1.51E-06	n/a	n/a	n/a	n/a	1.30E-06	146.752	
S11V005437	E	CM-243/244	Curium-243/244	uCi/g	n/a	<3.19E-08	<2.92E-08	n/a	n/a	n/a	n/a	2.92E-08	n/a	U
S11V005437	E	14596-10-2	Americium-241	uCi/g	100	<3.11E-08	<2.90E-08	n/a	n/a	n/a	n/a	2.90E-08	n/a	U
S11V005437	E	15510-73-3	Curium-242	uCi/g	n/a	<1.72E-08	<1.16E-08	n/a	n/a	n/a	n/a	1.16E-08	n/a	U
S11V005437	E	PU-239/240	Plutonium-239/240	uCi/g	98.6	<5.98E-08	<2.80E-08	n/a	n/a	n/a	n/a	2.80E-08	n/a	U
S11V005437	E	13981-16-3	Plutonium-238	uCi/g	n/a	<3.99E-08	<3.55E-08	n/a	n/a	n/a	n/a	3.55E-08	n/a	U
S11V005438	E	SR-89/90	Strontium-89/90	uCi/g	96.0	<2.18E-07	<2.08E-07	n/a	n/a	n/a	n/a	2.08E-07	n/a	U
S11V005439	E	7440-02-0	Nickel	ug/mL	n/a	n/a	176	n/a	n/a	n/a	n/a	0.200	n/a	
S11V005439	E	13981-37-8	Nickel-63	uCi/g	99.8	<6.89E-06	<4.39E-06	n/a	n/a	n/a	n/a	4.39E-06	n/a	U

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111161
Core Number: C8402
Customer Sample ID: B2FDL5
Sample Depth: 126'-128'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005440		E	15758-45-9	Selenium-79	uCi/g	n/a	<1.17E-06	<1.72E-06	n/a	n/a	n/a	n/a	1.72E-06	n/a	U
S11V005671			%WATERA	%WATER-APD	%	n/a	n/a	13.63	n/a	n/a	n/a	n/a	0.01000	n/a	
S11V005671			57-12-5	Cyanide	ug/g	102	<0.0370	<0.480	n/a	n/a	n/a	n/a	0.480	n/a	U
S11V005671			WT%SOLID	Weight percent solids	%	n/a	n/a	86.4	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005671			7439-97-6	Mercury	ug/g	98.9	3.10E-05	5.00E-03	n/a	n/a	n/a	n/a	1.10E-03	n/a	CB
S11V005671			PH	pH	unitless	n/a	n/a	8.54	n/a	n/a	n/a	n/a	0.0100	n/a	

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111250
Core Number: C8406
Customer Sample ID: B2FXM5
Sample Depth: 52'-54'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005517			57-12-5	Cyanide	ug/g	93.7	<0.0370	<0.480	<0.480	n/a	n/a	93.1	0.480	n/a	U
S11V005517			7439-97-6	Mercury	ug/g	98.9	<1.10E-05	6.79E-03	n/a	n/a	n/a	n/a	1.10E-03	n/a	U
S11V005517			PH	pH	unitless	n/a	n/a	8.84	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005518			13966-00-2	Potassium-40	uCi/g	n/a	n/a	1.23E-05	n/a	n/a	n/a	n/a	2.32E-06	5.07	
S11V005518			10198-40-0	Cobalt-60	uCi/g	107	<1.31E-07	<8.37E-08	n/a	n/a	n/a	n/a	8.37E-08	n/a	U
S11V005518			14234-35-6	Antimony-125	uCi/g	n/a	<3.12E-07	<2.14E-07	n/a	n/a	n/a	n/a	2.14E-07	n/a	U
S11V005518			10045-97-3	Cesium-137	uCi/g	112	<1.23E-07	<7.53E-08	n/a	n/a	n/a	n/a	7.53E-08	n/a	U
S11V005518			14683-23-9	Europium-152	uCi/g	n/a	<3.07E-07	<2.29E-07	n/a	n/a	n/a	n/a	2.29E-07	n/a	U
S11V005518			15585-10-1	Europium-154	uCi/g	n/a	<3.58E-07	<2.29E-07	n/a	n/a	n/a	n/a	2.29E-07	n/a	U
S11V005518			14391-16-3	Europium-155	uCi/g	n/a	<2.71E-07	<2.03E-07	n/a	n/a	n/a	n/a	2.03E-07	n/a	U
S11V005518			14913-50-9	Thallium-208	uCi/g	n/a	n/a	8.84E-07	n/a	n/a	n/a	n/a	7.86E-08	4.22	
S11V005518			15092-94-1	Lead-212	uCi/g	n/a	<1.42E-07	8.32E-07	n/a	n/a	n/a	n/a	1.30E-07	4.77	
S11V005518			14733-03-0	Bismuth-214	uCi/g	n/a	<2.48E-07	6.64E-07	n/a	n/a	n/a	n/a	1.94E-07	10.86	
S11V005518			15067-28-4	Lead-214	uCi/g	n/a	n/a	1.80E-06	n/a	n/a	n/a	n/a	1.56E-07	3.74	
S11V005518			14331-83-0	Actinium-228	uCi/g	n/a	6.16E-07	6.54E-07	n/a	n/a	n/a	n/a	3.26E-07	16.96	B
S11V005518			14274-82-9	Thorium-228	uCi/g	n/a	<3.98E-05	<3.45E-05	n/a	n/a	n/a	n/a	3.45E-05	n/a	U
S11V005518			15065-10-8	Thorium-234	uCi/g	n/a	<2.22E-06	<1.65E-05	n/a	n/a	n/a	n/a	1.65E-05	n/a	U
S11V005518			15046-84-1	Iodine-129	uCi/g	97.4	<2.04E-06	<9.54E-07	n/a	n/a	n/a	n/a	9.54E-07	n/a	U
S11V005519			CONDUCT	Conductivity	uMHO/cm	99.2	1.47	170	178	174	5.00	n/a	0.0100	n/a	
S11V005521		A	7440-36-0	Antimony	ug/g	100	<2.00E-04	0.189	n/a	n/a	n/a	n/a	5.99E-03	n/a	
S11V005521		A	SN-117	Tin-117	ug/g	106	<1.00E-03	<0.0299	n/a	n/a	n/a	n/a	0.0299	n/a	U
S11V005521		A	15832-50-5	Tin-126	ug/g	n/a	<2.00E-05	8.44E-04	n/a	n/a	n/a	n/a	5.99E-04	n/a	E
S11V005522		W	16984-48-8	Fluoride	ug/g	102	<1.61E-03	1.70	1.75	1.72	2.43	92.1	0.0146	n/a	
S11V005522		W	GLYCOLAT	Glycolate	ug/g	98.7	<9.37E-03	<0.0848	<0.0817	n/a	n/a	94.3	0.0848	n/a	U
S11V005522		W	71-50-1	Acetate	ug/g	101	0.0331	0.368	0.372	0.370	1.11	96.4	0.0546	n/a	CB
S11V005522		W	FORMATE	Formate	ug/g	101	0.0306	0.538	0.484	0.511	10.5	95.8	0.0422	n/a	CB
S11V005522		W	16887-00-6	Chloride	ug/g	100	<9.98E-03	1.03	0.725	0.877	34.6	94.0	0.0903	n/a	M
S11V005522		W	14797-65-0	Nitrite	ug/g	99.9	<0.0192	<0.174	0.199	0.186	13.6	94.9	0.174	n/a	U

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X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111250
Core Number: C8406
Customer Sample ID: B2FXM5
Sample Depth: 52'-54'

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005522	W	14808-79-8	Sulfate	ug/g	101	<0.0187	16.4	11.5	13.9	35.5	86.3	0.169	n/a	M
S11V005522	W	338-70-5	Oxalate	ug/g	101	<0.0231	0.486	0.616	0.551	23.6	93.1	0.209	n/a	B
S11V005522	W	24959-67-9	Bromide	ug/g	99.6	<0.0580	<0.525	<0.506	n/a	n/a	94.9	0.525	n/a	U
S11V005522	W	14797-55-8	Nitrate	ug/g	100	<0.0208	2.62	1.82	2.22	36.2	94.7	0.188	n/a	M
S11V005522	W	14265-44-2	Phosphate	ug/g	99.8	<0.0167	0.862	2.68	1.77	103	62.2	0.151	n/a	BN
S11V005523	A	7429-90-5	Aluminum	ug/g	87.7	<0.0300	1.09E+04	n/a	n/a	n/a	n/a	6.57	n/a	
S11V005523	A	7440-39-3	Barium	ug/g	88.7	<3.00E-03	98.0	n/a	n/a	n/a	n/a	0.657	n/a	N
S11V005523	A	7440-41-7	Beryllium	ug/g	92.7	<1.00E-03	0.248	n/a	n/a	n/a	n/a	0.219	n/a	B
S11V005523	A	7440-70-2	Calcium	ug/g	75.9	<0.0500	9.77E+03	n/a	n/a	n/a	n/a	10.9	n/a	
S11V005523	A	7440-45-1	Cerium	ug/g	91.7	<0.0300	23.6	n/a	n/a	n/a	n/a	6.57	n/a	B
S11V005523	A	7440-48-4	Cobalt	ug/g	84.2	<0.0100	5.41	n/a	n/a	n/a	n/a	2.19	n/a	B
S11V005523	A	7440-47-3	Chromium	ug/g	83.2	<5.00E-03	31.3	n/a	n/a	n/a	n/a	1.09	n/a	
S11V005523	A	7440-50-8	Copper	ug/g	94.7	<5.00E-03	11.9	n/a	n/a	n/a	n/a	1.09	n/a	
S11V005523	A	7439-89-6	Iron	ug/g	85.7	0.0201	1.89E+04	n/a	n/a	n/a	n/a	1.09	n/a	
S11V005523	A	7440-09-7	Potassium	ug/g	81.0	<0.500	1.61E+03	n/a	n/a	n/a	n/a	109	n/a	
S11V005523	A	7439-91-0	Lanthanum	ug/g	89.7	<3.00E-03	7.98	n/a	n/a	n/a	n/a	0.657	n/a	
S11V005523	A	7439-93-2	Lithium	ug/g	96.2	<3.00E-03	11.9	n/a	n/a	n/a	n/a	0.657	n/a	
S11V005523	A	7439-95-4	Magnesium	ug/g	84.2	<0.0500	5.37E+03	n/a	n/a	n/a	n/a	10.9	n/a	
S11V005523	A	7439-96-5	Manganese	ug/g	82.9	<3.00E-03	371	n/a	n/a	n/a	n/a	0.657	n/a	
S11V005523	A	7439-98-7	Molybdenum	ug/g	85.5	<0.0200	<4.38	n/a	n/a	n/a	n/a	4.38	n/a	U
S11V005523	A	7440-23-5	Sodium	ug/g	97.1	<0.100	334	n/a	n/a	n/a	n/a	21.9	n/a	
S11V005523	A	7440-00-8	Neodymium	ug/g	92.6	<0.0100	7.29	n/a	n/a	n/a	n/a	2.19	n/a	B
S11V005523	A	7440-02-0	Nickel	ug/g	83.3	<0.0200	25.9	n/a	n/a	n/a	n/a	4.38	n/a	B
S11V005523	A	7723-14-0	Phosphorus	ug/g	85.9	<0.0500	503	n/a	n/a	n/a	n/a	10.9	n/a	
S11V005523	A	7704-34-9	Sulfur	ug/g	85.5	<0.100	28.9	n/a	n/a	n/a	n/a	21.9	n/a	B
S11V005523	A	7440-21-3	Silicon	ug/g	74.7	<0.0300	44.9	n/a	n/a	n/a	n/a	6.57	n/a	BN
S11V005523	A	7440-24-6	Strontium	ug/g	88.9	<3.00E-03	45.5	n/a	n/a	n/a	n/a	0.657	n/a	
S11V005523	A	7440-32-6	Titanium	ug/g	84.5	<5.00E-03	906	n/a	n/a	n/a	n/a	1.09	n/a	

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111250
Core Number: C8406
Customer Sample ID: B2FXM5
Sample Depth: 52'-54'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005523		A	7440-62-2	Vanadium	ug/g	86.5	<5.00E-03	41.8	n/a	n/a	n/a	n/a	1.09	n/a	
S11V005523		A	7440-65-5	Yttrium	ug/g	84.5	<2.00E-03	6.09	n/a	n/a	n/a	n/a	0.438	n/a	
S11V005523		A	7440-66-6	Zinc	ug/g	85.9	<5.00E-03	41.2	n/a	n/a	n/a	n/a	1.09	n/a	
S11V005523		A	7440-67-7	Zirconium	ug/g	84.5	<5.00E-03	2.99	n/a	n/a	n/a	n/a	1.09	n/a	BN
S11V005523		A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-06	<3.07E-05	n/a	n/a	n/a	n/a	3.07E-05	n/a	U
S11V005523		A	TH-232	Thorium-232	ug/g	94.2	<2.50E-04	2.55	n/a	n/a	n/a	n/a	2.19E-03	n/a	
S11V005523		A	13968-55-3	Uranium-233	ug/g	102	<1.00E-04	<8.76E-04	n/a	n/a	n/a	n/a	8.76E-04	n/a	U
S11V005523		A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-06	<2.19E-05	n/a	n/a	n/a	n/a	2.19E-05	n/a	U
S11V005523		A	15117-96-1	Uranium-235	ug/g	94.6	<5.00E-06	3.35E-03	n/a	n/a	n/a	n/a	4.38E-05	n/a	
S11V005523		A	13982-70-2	Uranium-236	ug/g	n/a	3.08E-06	<1.75E-05	n/a	n/a	n/a	n/a	1.75E-05	n/a	U
S11V005523		A	13994-20-2	Neptunium-237	ug/g	101	<5.00E-05	<4.38E-04	n/a	n/a	n/a	n/a	4.38E-04	n/a	U
S11V005523		A	U-238	Uranium-238	ug/g	95.4	<2.50E-04	0.460	n/a	n/a	n/a	n/a	2.19E-03	n/a	
S11V005523		A	7440-22-4	Silver	ug/g	92.7	<4.00E-03	<0.0350	n/a	n/a	n/a	n/a	0.0350	n/a	U
S11V005523		A	7440-38-2	Arsenic	ug/g	77.0	<0.0210	3.66	n/a	n/a	n/a	n/a	0.184	n/a	
S11V005523		A	7440-43-9	Cadmium	ug/g	97.4	<1.50E-03	0.0676	n/a	n/a	n/a	n/a	0.0131	n/a	B
S11V005523		A	7439-92-1	Lead	ug/g	109	<0.0155	5.03	n/a	n/a	n/a	n/a	0.136	n/a	
S11V005523		A	7782-49-2	Selenium	ug/g	100	<0.0305	0.358	n/a	n/a	n/a	n/a	0.267	n/a	B
S11V005523		A	7440-28-0	Thallium	ug/g	114	0.0128	0.179	n/a	n/a	n/a	n/a	0.0175	n/a	CN
S11V005524		S	14798-03-9	Ammonium	ug/g	104	<0.120	<0.514	<0.495	n/a	n/a	102	0.514	n/a	U
S11V005525		A	14133-76-7	Technetium-99	ug/g	102	<6.00E-05	<5.53E-04	n/a	n/a	n/a	n/a	5.53E-04	n/a	U
S11V005526		W	14762-75-5	Carbon-14	uCi/g	95.1	<8.89E-07	<1.12E-06	n/a	n/a	n/a	n/a	1.12E-06	n/a	U
S11V005526		W	10028-17-8	Tritium	uCi/g	97.9	<1.47E-06	<1.89E-06	n/a	n/a	n/a	n/a	1.89E-06	n/a	U
S11V005527		E	CM-243/244	Curium-243/244	uCi/g	n/a	<2.52E-08	<2.75E-08	n/a	n/a	n/a	n/a	2.75E-08	n/a	U
S11V005527		E	14596-10-2	Americium-241	uCi/g	95.6	<4.32E-08	<2.88E-08	n/a	n/a	n/a	n/a	2.88E-08	n/a	U
S11V005527		E	15510-73-3	Curium-242	uCi/g	n/a	<1.00E-08	<2.73E-08	n/a	n/a	n/a	n/a	2.73E-08	n/a	U
S11V005527		E	PU-239/240	Plutonium-239/240	uCi/g	104	<8.11E-08	<4.55E-08	n/a	n/a	n/a	n/a	4.55E-08	n/a	U
S11V005527		E	13981-16-3	Plutonium-238	uCi/g	n/a	<5.27E-08	<4.22E-08	n/a	n/a	n/a	n/a	4.22E-08	n/a	U
S11V005528		E	SR-89/90	Strontium-89/90	uCi/g	102	<8.04E-07	<1.27E-06	n/a	n/a	n/a	n/a	1.27E-06	n/a	U

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111250
Core Number: C8406
Customer Sample ID: B2FXM5
Sample Depth: 52'-54'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005529		E	7440-02-0	Nickel	ug/mL	n/a	n/a	170	n/a	n/a	n/a	n/a	0.200	n/a	
S11V005529		E	13981-37-8	Nickel-63	uCi/g	102	<6.63E-06	<5.40E-06	n/a	n/a	n/a	n/a	5.40E-06	n/a	U
S11V005530		E	15758-45-9	Selenium-79	uCi/g	n/a	<1.16E-06	<1.24E-06	n/a	n/a	n/a	n/a	1.24E-06	n/a	U
S11V005666			%WATERA	%WATER-APD	%	n/a	n/a	8.000	n/a	n/a	n/a	n/a	0.01000	n/a	
S11V005666			WT%SOLID	Weight percent solids	%	n/a	n/a	92.0	n/a	n/a	n/a	n/a	0.0100	n/a	

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111250
Core Number: C8406
Customer Sample ID: B2FXM6
Sample Depth: 98'-100'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005535			57-12-5	Cyanide	ug/g	93.7	<0.0370	<0.479	n/a	n/a	n/a	n/a	0.479	n/a	U
S11V005535			7439-97-6	Mercury	ug/g	98.9	<1.10E-05	7.08E-03	n/a	n/a	n/a	n/a	1.10E-03	n/a	U
S11V005535			PH	pH	unitless	n/a	n/a	8.94	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005536			13966-00-2	Potassium-40	uCi/g	n/a	n/a	1.47E-05	n/a	n/a	n/a	n/a	2.80E-06	4.67	
S11V005536			10198-40-0	Cobalt-60	uCi/g	107	<1.31E-07	<9.78E-08	n/a	n/a	n/a	n/a	9.78E-08	n/a	U
S11V005536			14234-35-6	Antimony-125	uCi/g	n/a	<3.12E-07	<2.75E-07	n/a	n/a	n/a	n/a	2.75E-07	n/a	U
S11V005536			10045-97-3	Cesium-137	uCi/g	112	<1.23E-07	<9.09E-08	n/a	n/a	n/a	n/a	9.09E-08	n/a	U
S11V005536			14683-23-9	Europium-152	uCi/g	n/a	<3.07E-07	<2.94E-07	n/a	n/a	n/a	n/a	2.94E-07	n/a	U
S11V005536			15585-10-1	Europium-154	uCi/g	n/a	<3.58E-07	<1.83E-07	n/a	n/a	n/a	n/a	1.83E-07	n/a	U
S11V005536			14391-16-3	Europium-155	uCi/g	n/a	<2.71E-07	<3.22E-07	n/a	n/a	n/a	n/a	3.22E-07	n/a	U
S11V005536			14913-50-9	Thallium-208	uCi/g	n/a	n/a	3.03E-07	n/a	n/a	n/a	n/a	1.14E-07	10.71	
S11V005536			14913-49-6	Bismuth-212	uCi/g	n/a	n/a	1.64E-06	n/a	n/a	n/a	n/a	1.27E-06	22.92	
S11V005536			15092-94-1	Lead-212	uCi/g	n/a	<1.42E-07	1.52E-06	n/a	n/a	n/a	n/a	1.46E-07	3.37	
S11V005536			14733-03-0	Bismuth-214	uCi/g	n/a	<2.48E-07	7.75E-07	n/a	n/a	n/a	n/a	2.46E-07	11.82	
S11V005536			15067-28-4	Lead-214	uCi/g	n/a	n/a	1.70E-06	n/a	n/a	n/a	n/a	1.95E-07	4.78	
S11V005536			14331-83-0	Actinium-228	uCi/g	n/a	6.16E-07	1.00E-06	n/a	n/a	n/a	n/a	4.32E-07	15.63	B
S11V005536			14274-82-9	Thorium-228	uCi/g	n/a	<3.98E-05	<5.03E-05	n/a	n/a	n/a	n/a	5.03E-05	n/a	U
S11V005536			15065-10-8	Thorium-234	uCi/g	n/a	<2.22E-06	<2.43E-05	n/a	n/a	n/a	n/a	2.43E-05	n/a	U
S11V005536			15046-84-1	Iodine-129	uCi/g	97.4	<2.04E-06	<2.03E-06	n/a	n/a	n/a	n/a	2.03E-06	n/a	U
S11V005537			CONDUCT	Conductivity	uMHO/cm	99.2	1.47	193	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005539		A	7440-36-0	Antimony	ug/g	100	<2.00E-04	0.353	n/a	n/a	n/a	n/a	6.27E-03	n/a	
S11V005539		A	SN-117	Tin-117	ug/g	106	<1.00E-03	<0.0313	n/a	n/a	n/a	n/a	0.0313	n/a	U
S11V005539		A	15832-50-5	Tin-126	ug/g	n/a	<2.00E-05	7.20E-04	n/a	n/a	n/a	n/a	6.27E-04	n/a	E
S11V005540		W	16984-48-8	Fluoride	ug/g	102	<1.61E-03	1.18	n/a	n/a	n/a	n/a	0.0151	n/a	
S11V005540		W	GLYCOLAT	Glycolate	ug/g	98.7	<9.37E-03	<0.0881	n/a	n/a	n/a	n/a	0.0881	n/a	U
S11V005540		W	71-50-1	Acetate	ug/g	101	0.0331	0.386	n/a	n/a	n/a	n/a	0.0568	n/a	CB
S11V005540		W	FORMATE	Formate	ug/g	101	0.0306	0.408	n/a	n/a	n/a	n/a	0.0439	n/a	CB
S11V005540		W	16887-00-6	Chloride	ug/g	100	<9.98E-03	1.50	n/a	n/a	n/a	n/a	0.0938	n/a	M

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111250
Core Number: C8406
Customer Sample ID: B2FXM6
Sample Depth: 98'-100'

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005540	W	14797-65-0	Nitrite	ug/g	99.9	<0.0192	1.31	n/a	n/a	n/a	n/a	0.181	n/a	B
S11V005540	W	14808-79-8	Sulfate	ug/g	101	<0.0187	28.1	n/a	n/a	n/a	n/a	0.176	n/a	M
S11V005540	W	338-70-5	Oxalate	ug/g	101	<0.0231	0.804	n/a	n/a	n/a	n/a	0.217	n/a	B
S11V005540	W	24959-67-9	Bromide	ug/g	99.6	<0.0580	<0.545	n/a	n/a	n/a	n/a	0.545	n/a	U
S11V005540	W	14797-55-8	Nitrate	ug/g	100	<0.0208	10.3	n/a	n/a	n/a	n/a	0.196	n/a	M
S11V005540	W	14265-44-2	Phosphate	ug/g	99.8	<0.0167	0.805	n/a	n/a	n/a	n/a	0.157	n/a	BN
S11V005541	A	7429-90-5	Aluminum	ug/g	87.7	<0.0300	9.75E+03	n/a	n/a	n/a	n/a	6.77	n/a	
S11V005541	A	7440-39-3	Barium	ug/g	88.7	<3.00E-03	86.4	n/a	n/a	n/a	n/a	0.677	n/a	N
S11V005541	A	7440-41-7	Beryllium	ug/g	92.7	<1.00E-03	0.305	n/a	n/a	n/a	n/a	0.226	n/a	B
S11V005541	A	7440-70-2	Calcium	ug/g	75.9	<0.0500	8.63E+03	n/a	n/a	n/a	n/a	11.3	n/a	
S11V005541	A	7440-45-1	Cerium	ug/g	91.7	<0.0300	27.4	n/a	n/a	n/a	n/a	6.77	n/a	B
S11V005541	A	7440-48-4	Cobalt	ug/g	84.2	<0.0100	6.14	n/a	n/a	n/a	n/a	2.26	n/a	B
S11V005541	A	7440-47-3	Chromium	ug/g	83.2	<5.00E-03	25.7	n/a	n/a	n/a	n/a	1.13	n/a	
S11V005541	A	7440-50-8	Copper	ug/g	94.7	<5.00E-03	11.3	n/a	n/a	n/a	n/a	1.13	n/a	
S11V005541	A	7439-89-6	Iron	ug/g	85.7	0.0201	1.69E+04	n/a	n/a	n/a	n/a	1.13	n/a	
S11V005541	A	7440-09-7	Potassium	ug/g	81.0	<0.500	1.74E+03	n/a	n/a	n/a	n/a	113	n/a	
S11V005541	A	7439-91-0	Lanthanum	ug/g	89.7	<3.00E-03	11.5	n/a	n/a	n/a	n/a	0.677	n/a	
S11V005541	A	7439-93-2	Lithium	ug/g	96.2	<3.00E-03	12.6	n/a	n/a	n/a	n/a	0.677	n/a	
S11V005541	A	7439-95-4	Magnesium	ug/g	84.2	<0.0500	5.60E+03	n/a	n/a	n/a	n/a	11.3	n/a	
S11V005541	A	7439-96-5	Manganese	ug/g	82.9	<3.00E-03	324	n/a	n/a	n/a	n/a	0.677	n/a	
S11V005541	A	7439-98-7	Molybdenum	ug/g	85.5	<0.0200	<4.52	n/a	n/a	n/a	n/a	4.52	n/a	U
S11V005541	A	7440-23-5	Sodium	ug/g	97.1	<0.100	258	n/a	n/a	n/a	n/a	22.6	n/a	
S11V005541	A	7440-00-8	Neodymium	ug/g	92.6	<0.0100	9.04	n/a	n/a	n/a	n/a	2.26	n/a	B
S11V005541	A	7440-02-0	Nickel	ug/g	83.3	<0.0200	16.3	n/a	n/a	n/a	n/a	4.52	n/a	B
S11V005541	A	7723-14-0	Phosphorus	ug/g	85.9	<0.0500	476	n/a	n/a	n/a	n/a	11.3	n/a	
S11V005541	A	7704-34-9	Sulfur	ug/g	85.5	<0.100	33.1	n/a	n/a	n/a	n/a	22.6	n/a	B
S11V005541	A	7440-21-3	Silicon	ug/g	74.7	<0.0300	52.0	n/a	n/a	n/a	n/a	6.77	n/a	BN
S11V005541	A	7440-24-6	Strontium	ug/g	88.9	<3.00E-03	33.8	n/a	n/a	n/a	n/a	0.677	n/a	

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111250
Core Number: C8406
Customer Sample ID: B2FXM6
Sample Depth: 98'-100'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005541		A	7440-32-6	Titanium	ug/g	84.5	<5.00E-03	751	n/a	n/a	n/a	n/a	1.13	n/a	
S11V005541		A	7440-62-2	Vanadium	ug/g	86.5	<5.00E-03	32.6	n/a	n/a	n/a	n/a	1.13	n/a	
S11V005541		A	7440-65-5	Yttrium	ug/g	84.5	<2.00E-03	6.03	n/a	n/a	n/a	n/a	0.452	n/a	
S11V005541		A	7440-66-6	Zinc	ug/g	85.9	<5.00E-03	40.5	n/a	n/a	n/a	n/a	1.13	n/a	
S11V005541		A	7440-67-7	Zirconium	ug/g	84.5	<5.00E-03	4.80	n/a	n/a	n/a	n/a	1.13	n/a	BN
S11V005541		A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-06	<3.16E-05	n/a	n/a	n/a	n/a	3.16E-05	n/a	U
S11V005541		A	TH-232	Thorium-232	ug/g	94.2	<2.50E-04	3.83	n/a	n/a	n/a	n/a	2.26E-03	n/a	
S11V005541		A	13968-55-3	Uranium-233	ug/g	102	<1.00E-04	<9.03E-04	n/a	n/a	n/a	n/a	9.03E-04	n/a	U
S11V005541		A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-06	5.25E-05	n/a	n/a	n/a	n/a	2.26E-05	n/a	
S11V005541		A	15117-96-1	Uranium-235	ug/g	94.6	<5.00E-06	4.18E-03	n/a	n/a	n/a	n/a	4.52E-05	n/a	
S11V005541		A	13982-70-2	Uranium-236	ug/g	n/a	3.08E-06	<1.81E-05	n/a	n/a	n/a	n/a	1.81E-05	n/a	U
S11V005541		A	13994-20-2	Neptunium-237	ug/g	101	<5.00E-05	<4.52E-04	n/a	n/a	n/a	n/a	4.52E-04	n/a	U
S11V005541		A	U-238	Uranium-238	ug/g	95.4	<2.50E-04	0.572	n/a	n/a	n/a	n/a	2.26E-03	n/a	
S11V005541		A	7440-22-4	Silver	ug/g	92.7	<4.00E-03	<0.0361	n/a	n/a	n/a	n/a	0.0361	n/a	U
S11V005541		A	7440-38-2	Arsenic	ug/g	77.0	<0.0210	5.33	n/a	n/a	n/a	n/a	0.190	n/a	
S11V005541		A	7440-43-9	Cadmium	ug/g	97.4	<1.50E-03	0.0988	n/a	n/a	n/a	n/a	0.0135	n/a	B
S11V005541		A	7439-92-1	Lead	ug/g	109	<0.0155	6.77	n/a	n/a	n/a	n/a	0.140	n/a	
S11V005541		A	7782-49-2	Selenium	ug/g	100	<0.0305	0.389	n/a	n/a	n/a	n/a	0.275	n/a	B
S11V005541		A	7440-28-0	Thallium	ug/g	114	0.0128	0.205	n/a	n/a	n/a	n/a	0.0181	n/a	CN
S11V005542		S	14798-03-9	Ammonium	ug/g	104	<0.120	<0.518	n/a	n/a	n/a	n/a	0.518	n/a	U
S11V005543		A	14133-76-7	Technetium-99	ug/g	102	<6.00E-05	<5.45E-04	n/a	n/a	n/a	n/a	5.45E-04	n/a	U
S11V005544		W	14762-75-5	Carbon-14	uCi/g	92.4	<8.89E-07	<5.93E-07	n/a	n/a	n/a	n/a	5.93E-07	n/a	U
S11V005544		W	10028-17-8	Tritium	uCi/g	97.9	<1.47E-06	4.60E-06	n/a	n/a	n/a	n/a	1.48E-06	47.623	
S11V005545		E	CM-243/244	Curium-243/244	uCi/g	n/a	<2.52E-08	<3.01E-08	n/a	n/a	n/a	n/a	3.01E-08	n/a	U
S11V005545		E	14596-10-2	Americium-241	uCi/g	95.6	<4.32E-08	<3.15E-08	n/a	n/a	n/a	n/a	3.15E-08	n/a	U
S11V005545		E	15510-73-3	Curium-242	uCi/g	n/a	<1.00E-08	<2.64E-08	n/a	n/a	n/a	n/a	2.64E-08	n/a	U
S11V005545		E	PU-239/240	Plutonium-239/240	uCi/g	104	<8.11E-08	<4.09E-08	n/a	n/a	n/a	n/a	4.09E-08	n/a	U
S11V005545		E	13981-16-3	Plutonium-238	uCi/g	n/a	<5.27E-08	<2.74E-08	n/a	n/a	n/a	n/a	2.74E-08	n/a	U

NA = Not Analyzed, ND = Not Detected

B - Estimated
C - Blank Contamination
U - Less Than Detection Limit
B - Blank Contamination
M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111250
Core Number: C8406
Customer Sample ID: B2FXM6
Sample Depth: 98'-100'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005546		E	SR-89/90	Strontium-89/90	uCi/g	102	<8.04E-07	<2.26E-07	n/a	n/a	n/a	n/a	2.26E-07	n/a	U
S11V005547		E	7440-02-0	Nickel	ug/mL	n/a	n/a	161	n/a	n/a	n/a	n/a	0.200	n/a	
S11V005547		E	13981-37-8	Nickel-63	uCi/g	102	<6.63E-06	<5.17E-06	n/a	n/a	n/a	n/a	5.17E-06	n/a	U
S11V005548		E	15758-45-9	Selenium-79	uCi/g	n/a	<1.16E-06	<1.65E-06	n/a	n/a	n/a	n/a	1.65E-06	n/a	U
S11V005667			%WATERA	%WATER-APD	%	n/a	n/a	9.000	n/a	n/a	n/a	n/a	0.01000	n/a	
S11V005667			WT%SOLID	Weight percent solids	%	n/a	n/a	91.0	n/a	n/a	n/a	n/a	0.0100	n/a	

NA = Not Analyzed, ND = Not Detected

B - Estimated
C - Blank Contamination
U - Less Than Detection Limit
B - Blank Contamination
M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111250
Core Number: C8406
Customer Sample ID: B2FXM7
Sample Depth: 130'-132'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005553			57-12-5	Cyanide	ug/g	93.7	<0.0370	<0.479	n/a	n/a	n/a	n/a	0.479	n/a	U
S11V005553			7439-97-6	Mercury	ug/g	98.9	<1.10E-05	0.0101	n/a	n/a	n/a	n/a	1.06E-03	n/a	U
S11V005553			PH	pH	unitless	n/a	n/a	8.41	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005554			13966-00-2	Potassium-40	uCi/g	n/a	n/a	1.61E-05	n/a	n/a	n/a	n/a	2.22E-06	4.10	
S11V005554			10198-40-0	Cobalt-60	uCi/g	107	<1.31E-07	<9.94E-08	n/a	n/a	n/a	n/a	9.94E-08	n/a	U
S11V005554			14234-35-6	Antimony-125	uCi/g	n/a	<3.12E-07	<2.30E-07	n/a	n/a	n/a	n/a	2.30E-07	n/a	U
S11V005554			10045-97-3	Cesium-137	uCi/g	112	<1.23E-07	<1.23E-07	n/a	n/a	n/a	n/a	1.23E-07	n/a	U
S11V005554			14683-23-9	Europium-152	uCi/g	n/a	<3.07E-07	<2.33E-07	n/a	n/a	n/a	n/a	2.33E-07	n/a	U
S11V005554			15585-10-1	Europium-154	uCi/g	n/a	<3.58E-07	<1.98E-07	n/a	n/a	n/a	n/a	1.98E-07	n/a	U
S11V005554			14391-16-3	Europium-155	uCi/g	n/a	<2.71E-07	<3.14E-07	n/a	n/a	n/a	n/a	3.14E-07	n/a	U
S11V005554			14913-50-9	Thallium-208	uCi/g	n/a	n/a	4.50E-07	n/a	n/a	n/a	n/a	1.01E-07	9.22	
S11V005554			14913-49-6	Bismuth-212	uCi/g	n/a	n/a	2.15E-06	n/a	n/a	n/a	n/a	9.03E-07	14.43	
S11V005554			15092-94-1	Lead-212	uCi/g	n/a	<1.42E-07	1.23E-06	n/a	n/a	n/a	n/a	1.29E-07	3.93	
S11V005554			14733-03-0	Bismuth-214	uCi/g	n/a	<2.48E-07	7.70E-07	n/a	n/a	n/a	n/a	1.80E-07	7.45	
S11V005554			15067-28-4	Lead-214	uCi/g	n/a	n/a	9.96E-07	n/a	n/a	n/a	n/a	1.88E-07	7.62	
S11V005554			14331-83-0	Actinium-228	uCi/g	n/a	6.16E-07	2.00E-06	n/a	n/a	n/a	n/a	2.82E-07	7.23	B
S11V005554			14274-82-9	Thorium-228	uCi/g	n/a	<3.98E-05	<3.61E-05	n/a	n/a	n/a	n/a	3.61E-05	n/a	U
S11V005554			15065-10-8	Thorium-234	uCi/g	n/a	<2.22E-06	<8.07E-05	n/a	n/a	n/a	n/a	8.07E-05	n/a	U
S11V005554			15046-84-1	Iodine-129	uCi/g	97.4	<2.04E-06	<8.65E-07	n/a	n/a	n/a	n/a	8.65E-07	n/a	U
S11V005555			CONDUCT	Conductivity	uMHO/cm	102	<1.00	707	702	704	0.710	n/a	1.00	n/a	
S11V005557		A	7440-36-0	Antimony	ug/g	100	<2.00E-04	0.398	n/a	n/a	n/a	n/a	6.29E-03	n/a	
S11V005557		A	SN-117	Tin-117	ug/g	106	<1.00E-03	<0.0314	n/a	n/a	n/a	n/a	0.0314	n/a	U
S11V005557		A	15832-50-5	Tin-126	ug/g	n/a	<2.00E-05	2.64E-03	n/a	n/a	n/a	n/a	6.29E-04	n/a	E
S11V005558		W	16984-48-8	Fluoride	ug/g	102	<1.61E-03	1.42	n/a	n/a	n/a	n/a	0.0143	n/a	
S11V005558		W	GLYCOLAT	Glycolate	ug/g	98.7	<9.37E-03	<0.0831	n/a	n/a	n/a	n/a	0.0831	n/a	U
S11V005558		W	71-50-1	Acetate	ug/g	101	0.0331	0.317	n/a	n/a	n/a	n/a	0.0536	n/a	CB
S11V005558		W	FORMATE	Formate	ug/g	101	0.0306	0.575	n/a	n/a	n/a	n/a	0.0414	n/a	CB
S11V005558		W	16887-00-6	Chloride	ug/g	100	<9.98E-03	15.2	n/a	n/a	n/a	n/a	0.0885	n/a	M

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B - Blank Contamination
M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111250
Core Number: C8406
Customer Sample ID: B2FXM7
Sample Depth: 130'-132'

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005558	W	14797-65-0	Nitrite	ug/g	99.9	<0.0192	1.57	n/a	n/a	n/a	n/a	0.170	n/a	B
S11V005558	W	14808-79-8	Sulfate	ug/g	101	<0.0187	35.8	n/a	n/a	n/a	n/a	0.166	n/a	M
S11V005558	W	338-70-5	Oxalate	ug/g	101	<0.0231	0.379	n/a	n/a	n/a	n/a	0.205	n/a	B
S11V005558	W	24959-67-9	Bromide	ug/g	99.6	<0.0580	<0.515	n/a	n/a	n/a	n/a	0.515	n/a	U
S11V005558	W	14797-55-8	Nitrate	ug/g	98.3	<0.0208	324	285	305	12.8	51.6	0.912	n/a	
S11V005558	W	14265-44-2	Phosphate	ug/g	99.8	<0.0167	0.668	n/a	n/a	n/a	n/a	0.148	n/a	BN
S11V005559	A	7429-90-5	Aluminum	ug/g	87.7	<0.0300	1.27E+04	n/a	n/a	n/a	n/a	6.79	n/a	
S11V005559	A	7440-39-3	Barium	ug/g	88.7	<3.00E-03	95.0	n/a	n/a	n/a	n/a	0.679	n/a	N
S11V005559	A	7440-41-7	Beryllium	ug/g	92.7	<1.00E-03	0.372	n/a	n/a	n/a	n/a	0.226	n/a	B
S11V005559	A	7440-70-2	Calcium	ug/g	75.9	<0.0500	1.23E+04	n/a	n/a	n/a	n/a	11.3	n/a	
S11V005559	A	7440-45-1	Cerium	ug/g	91.7	<0.0300	31.3	n/a	n/a	n/a	n/a	6.79	n/a	B
S11V005559	A	7440-48-4	Cobalt	ug/g	84.2	<0.0100	8.15	n/a	n/a	n/a	n/a	2.26	n/a	B
S11V005559	A	7440-47-3	Chromium	ug/g	83.2	<5.00E-03	28.7	n/a	n/a	n/a	n/a	1.13	n/a	
S11V005559	A	7440-50-8	Copper	ug/g	94.7	<5.00E-03	18.0	n/a	n/a	n/a	n/a	1.13	n/a	
S11V005559	A	7439-89-6	Iron	ug/g	85.7	0.0201	1.94E+04	n/a	n/a	n/a	n/a	1.13	n/a	
S11V005559	A	7440-09-7	Potassium	ug/g	81.0	<0.500	1.64E+03	n/a	n/a	n/a	n/a	113	n/a	
S11V005559	A	7439-91-0	Lanthanum	ug/g	89.7	<3.00E-03	15.4	n/a	n/a	n/a	n/a	0.679	n/a	
S11V005559	A	7439-93-2	Lithium	ug/g	96.2	<3.00E-03	15.3	n/a	n/a	n/a	n/a	0.679	n/a	
S11V005559	A	7439-95-4	Magnesium	ug/g	84.2	<0.0500	6.78E+03	n/a	n/a	n/a	n/a	11.3	n/a	
S11V005559	A	7439-96-5	Manganese	ug/g	82.9	<3.00E-03	286	n/a	n/a	n/a	n/a	0.679	n/a	
S11V005559	A	7439-98-7	Molybdenum	ug/g	85.5	<0.0200	<4.53	n/a	n/a	n/a	n/a	4.53	n/a	U
S11V005559	A	7440-23-5	Sodium	ug/g	97.1	<0.100	277	n/a	n/a	n/a	n/a	22.6	n/a	
S11V005559	A	7440-00-8	Neodymium	ug/g	92.6	<0.0100	13.0	n/a	n/a	n/a	n/a	2.26	n/a	B
S11V005559	A	7440-02-0	Nickel	ug/g	83.3	<0.0200	23.0	n/a	n/a	n/a	n/a	4.53	n/a	B
S11V005559	A	7723-14-0	Phosphorus	ug/g	85.9	<0.0500	604	n/a	n/a	n/a	n/a	11.3	n/a	
S11V005559	A	7704-34-9	Sulfur	ug/g	85.5	<0.100	26.2	n/a	n/a	n/a	n/a	22.6	n/a	B
S11V005559	A	7440-21-3	Silicon	ug/g	74.7	<0.0300	33.8	n/a	n/a	n/a	n/a	6.79	n/a	BN
S11V005559	A	7440-24-6	Strontium	ug/g	88.9	<3.00E-03	41.5	n/a	n/a	n/a	n/a	0.679	n/a	

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B - Blank Contamination
M - RPD Outside Range
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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111250
Core Number: C8406
Customer Sample ID: B2FXM7
Sample Depth: 130'-132'

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005559	A	7440-32-6	Titanium	ug/g	84.5	<5.00E-03	728	n/a	n/a	n/a	n/a	1.13	n/a	
S11V005559	A	7440-62-2	Vanadium	ug/g	86.5	<5.00E-03	37.1	n/a	n/a	n/a	n/a	1.13	n/a	
S11V005559	A	7440-65-5	Yttrium	ug/g	84.5	<2.00E-03	7.75	n/a	n/a	n/a	n/a	0.453	n/a	
S11V005559	A	7440-66-6	Zinc	ug/g	85.9	<5.00E-03	51.1	n/a	n/a	n/a	n/a	1.13	n/a	
S11V005559	A	7440-67-7	Zirconium	ug/g	84.5	<5.00E-03	2.06	n/a	n/a	n/a	n/a	1.13	n/a	BN
S11V005559	A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-06	<3.17E-05	n/a	n/a	n/a	n/a	3.17E-05	n/a	U
S11V005559	A	TH-232	Thorium-232	ug/g	94.2	<2.50E-04	4.96	n/a	n/a	n/a	n/a	2.26E-03	n/a	
S11V005559	A	13968-55-3	Uranium-233	ug/g	102	<1.00E-04	<9.05E-04	n/a	n/a	n/a	n/a	9.05E-04	n/a	U
S11V005559	A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-06	7.95E-05	n/a	n/a	n/a	n/a	2.26E-05	n/a	
S11V005559	A	15117-96-1	Uranium-235	ug/g	94.6	<5.00E-06	6.01E-03	n/a	n/a	n/a	n/a	4.53E-05	n/a	
S11V005559	A	13982-70-2	Uranium-236	ug/g	n/a	3.08E-06	<1.81E-05	n/a	n/a	n/a	n/a	1.81E-05	n/a	U
S11V005559	A	13994-20-2	Neptunium-237	ug/g	101	<5.00E-05	<4.53E-04	n/a	n/a	n/a	n/a	4.53E-04	n/a	U
S11V005559	A	U-238	Uranium-238	ug/g	95.4	<2.50E-04	0.840	n/a	n/a	n/a	n/a	2.26E-03	n/a	
S11V005559	A	7440-22-4	Silver	ug/g	92.7	<4.00E-03	0.0397	n/a	n/a	n/a	n/a	0.0362	n/a	B
S11V005559	A	7440-38-2	Arsenic	ug/g	77.0	<0.0210	3.61	n/a	n/a	n/a	n/a	0.190	n/a	
S11V005559	A	7440-43-9	Cadmium	ug/g	97.4	<1.50E-03	0.112	n/a	n/a	n/a	n/a	0.0136	n/a	B
S11V005559	A	7439-92-1	Lead	ug/g	109	<0.0155	9.34	n/a	n/a	n/a	n/a	0.140	n/a	
S11V005559	A	7782-49-2	Selenium	ug/g	100	<0.0305	<0.276	n/a	n/a	n/a	n/a	0.276	n/a	U
S11V005559	A	7440-28-0	Thallium	ug/g	114	0.0128	0.214	n/a	n/a	n/a	n/a	0.0181	n/a	CN
S11V005560	S	14798-03-9	Ammonium	ug/g	104	<0.120	1.53	n/a	n/a	n/a	n/a	0.510	n/a	B
S11V005561	A	14133-76-7	Technetium-99	ug/g	102	<6.00E-05	1.03E-03	n/a	n/a	n/a	n/a	5.65E-04	n/a	
S11V005562	W	14762-75-5	Carbon-14	uCi/g	95.1	<8.89E-07	<1.04E-06	<8.07E-07	n/a	n/a	94.8	1.04E-06	n/a	U
S11V005562	W	10028-17-8	Tritium	uCi/g	97.9	<1.47E-06	1.08E-05	n/a	n/a	n/a	n/a	1.49E-06	19.391	
S11V005563	E	CM-243/244	Curium-243/244	uCi/g	n/a	<2.52E-08	1.04E-08	n/a	n/a	n/a	n/a	9.42E-09	66.67	
S11V005563	E	14596-10-2	Americium-241	uCi/g	95.6	<4.32E-08	<2.37E-08	n/a	n/a	n/a	n/a	2.37E-08	n/a	U
S11V005563	E	15510-73-3	Curium-242	uCi/g	n/a	<1.00E-08	<1.43E-08	n/a	n/a	n/a	n/a	1.43E-08	n/a	U
S11V005563	E	PU-239/240	Plutonium-239/240	uCi/g	104	<8.11E-08	<2.85E-08	n/a	n/a	n/a	n/a	2.85E-08	n/a	U
S11V005563	E	13981-16-3	Plutonium-238	uCi/g	n/a	<5.27E-08	<3.44E-08	n/a	n/a	n/a	n/a	3.44E-08	n/a	U

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111250
Core Number: C8406
Customer Sample ID: B2FXM7
Sample Depth: 130'-132'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005564		E	SR-89/90	Strontium-89/90	uCi/g	99.5	<4.70E-07	<1.64E-07	n/a	n/a	n/a	n/a	1.64E-07	n/a	U
S11V005565		E	7440-02-0	Nickel	ug/mL	n/a	n/a	175	n/a	n/a	n/a	n/a	0.200	n/a	
S11V005565		E	13981-37-8	Nickel-63	uCi/g	102	<6.63E-06	<4.82E-06	n/a	n/a	n/a	n/a	4.82E-06	n/a	U
S11V005566		E	15758-45-9	Selenium-79	uCi/g	n/a	<1.16E-06	<1.45E-06	n/a	n/a	n/a	n/a	1.45E-06	n/a	U
S11V005668			%WATERA	%WATER-APD	%	n/a	n/a	14.00	n/a	n/a	n/a	n/a	0.01000	n/a	
S11V005668			WT%SOLID	Weight percent solids	%	n/a	n/a	86.0	n/a	n/a	n/a	n/a	0.0100	n/a	

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111272
Core Number: C8396
Customer Sample ID: B2FYT0
Sample Depth: 55'-57'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005573			57-12-5	Cyanide	ug/g	93.7	<0.0370	<0.480	n/a	n/a	n/a	n/a	0.480	n/a	U
S11V005573			7439-97-6	Mercury	ug/g	98.9	<1.10E-05	5.11E-03	n/a	n/a	n/a	n/a	1.06E-03	n/a	U
S11V005573			PH	pH	unitless	n/a	n/a	8.80	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005574			13966-00-2	Potassium-40	uCi/g	n/a	n/a	1.38E-05	n/a	n/a	n/a	n/a	3.10E-06	5.47	
S11V005574			10198-40-0	Cobalt-60	uCi/g	107	<1.31E-07	<1.10E-07	n/a	n/a	n/a	n/a	1.10E-07	n/a	U
S11V005574			14234-35-6	Antimony-125	uCi/g	n/a	<3.12E-07	<2.65E-07	n/a	n/a	n/a	n/a	2.65E-07	n/a	U
S11V005574			10045-97-3	Cesium-137	uCi/g	112	<1.23E-07	<1.03E-07	n/a	n/a	n/a	n/a	1.03E-07	n/a	U
S11V005574			14683-23-9	Europium-152	uCi/g	n/a	<3.07E-07	<2.21E-07	n/a	n/a	n/a	n/a	2.21E-07	n/a	U
S11V005574			15585-10-1	Europium-154	uCi/g	n/a	<3.58E-07	<2.92E-07	n/a	n/a	n/a	n/a	2.92E-07	n/a	U
S11V005574			14391-16-3	Europium-155	uCi/g	n/a	<2.71E-07	<2.75E-07	n/a	n/a	n/a	n/a	2.75E-07	n/a	U
S11V005574			14913-50-9	Thallium-208	uCi/g	n/a	n/a	9.30E-07	n/a	n/a	n/a	n/a	1.01E-07	5.11	
S11V005574			15092-94-1	Lead-212	uCi/g	n/a	<1.42E-07	1.14E-06	n/a	n/a	n/a	n/a	1.75E-07	4.88	
S11V005574			14733-03-0	Bismuth-214	uCi/g	n/a	<2.48E-07	8.56E-07	n/a	n/a	n/a	n/a	2.51E-07	10.42	
S11V005574			15067-28-4	Lead-214	uCi/g	n/a	n/a	1.76E-06	n/a	n/a	n/a	n/a	1.82E-07	3.83	
S11V005574			14331-83-0	Actinium-228	uCi/g	n/a	6.16E-07	1.03E-06	n/a	n/a	n/a	n/a	4.57E-07	16.40	B
S11V005574			14274-82-9	Thorium-228	uCi/g	n/a	<3.98E-05	<4.70E-05	n/a	n/a	n/a	n/a	4.70E-05	n/a	U
S11V005574			15065-10-8	Thorium-234	uCi/g	n/a	<2.22E-06	<1.89E-05	n/a	n/a	n/a	n/a	1.89E-05	n/a	U
S11V005574			15046-84-1	Iodine-129	uCi/g	100	<9.56E-07	<8.67E-07	<9.36E-07	n/a	n/a	n/a	8.67E-07	n/a	U
S11V005575			CONDUCT	Conductivity	uMHO/cm	99.2	1.47	250	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005577		A	7440-36-0	Antimony	ug/g	100	<2.00E-04	0.302	n/a	n/a	n/a	n/a	6.04E-03	n/a	
S11V005577		A	SN-117	Tin-117	ug/g	106	<1.00E-03	<0.0302	n/a	n/a	n/a	n/a	0.0302	n/a	U
S11V005577		A	15832-50-5	Tin-126	ug/g	n/a	<2.00E-05	2.56E-03	n/a	n/a	n/a	n/a	6.04E-04	n/a	E
S11V005578		W	16984-48-8	Fluoride	ug/g	102	<1.61E-03	0.915	n/a	n/a	n/a	n/a	0.0137	n/a	
S11V005578		W	GLYCOLAT	Glycolate	ug/g	98.7	<9.37E-03	<0.0800	n/a	n/a	n/a	n/a	0.0800	n/a	U
S11V005578		W	71-50-1	Acetate	ug/g	101	0.0331	0.365	n/a	n/a	n/a	n/a	0.0516	n/a	CB
S11V005578		W	FORMATE	Formate	ug/g	101	0.0306	0.356	n/a	n/a	n/a	n/a	0.0399	n/a	CB
S11V005578		W	16887-00-6	Chloride	ug/g	100	<9.98E-03	1.28	n/a	n/a	n/a	n/a	0.0852	n/a	M
S11V005578		W	14797-65-0	Nitrite	ug/g	99.9	<0.0192	1.12	n/a	n/a	n/a	n/a	0.164	n/a	B

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X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111272
Core Number: C8396
Customer Sample ID: B2FYT0
Sample Depth: 55'-57'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005578		W	14808-79-8	Sulfate	ug/g	101	<0.0187	16.6	n/a	n/a	n/a	n/a	0.160	n/a	M
S11V005578		W	338-70-5	Oxalate	ug/g	101	<0.0231	0.256	n/a	n/a	n/a	n/a	0.197	n/a	B
S11V005578		W	24959-67-9	Bromide	ug/g	99.6	<0.0580	<0.495	n/a	n/a	n/a	n/a	0.495	n/a	U
S11V005578		W	14797-55-8	Nitrate	ug/g	100	<0.0208	28.0	n/a	n/a	n/a	n/a	0.178	n/a	M
S11V005578		W	14265-44-2	Phosphate	ug/g	99.8	<0.0167	0.823	n/a	n/a	n/a	n/a	0.143	n/a	BN
S11V005579		A	7429-90-5	Aluminum	ug/g	87.7	<0.0300	1.05E+04	n/a	n/a	n/a	n/a	7.09	n/a	
S11V005579		A	7440-39-3	Barium	ug/g	88.7	<3.00E-03	98.2	n/a	n/a	n/a	n/a	0.709	n/a	N
S11V005579		A	7440-41-7	Beryllium	ug/g	92.7	<1.00E-03	0.368	n/a	n/a	n/a	n/a	0.236	n/a	B
S11V005579		A	7440-70-2	Calcium	ug/g	75.9	<0.0500	9.77E+03	n/a	n/a	n/a	n/a	11.8	n/a	
S11V005579		A	7440-45-1	Cerium	ug/g	91.7	<0.0300	28.8	n/a	n/a	n/a	n/a	7.09	n/a	B
S11V005579		A	7440-48-4	Cobalt	ug/g	84.2	<0.0100	6.90	n/a	n/a	n/a	n/a	2.36	n/a	B
S11V005579		A	7440-47-3	Chromium	ug/g	83.2	<5.00E-03	25.3	n/a	n/a	n/a	n/a	1.18	n/a	
S11V005579		A	7440-50-8	Copper	ug/g	94.7	<5.00E-03	11.7	n/a	n/a	n/a	n/a	1.18	n/a	B
S11V005579		A	7439-89-6	Iron	ug/g	85.7	0.0201	1.81E+04	n/a	n/a	n/a	n/a	1.18	n/a	
S11V005579		A	7440-09-7	Potassium	ug/g	81.0	<0.500	1.82E+03	n/a	n/a	n/a	n/a	118	n/a	
S11V005579		A	7439-91-0	Lanthanum	ug/g	89.7	<3.00E-03	12.4	n/a	n/a	n/a	n/a	0.709	n/a	
S11V005579		A	7439-93-2	Lithium	ug/g	96.2	<3.00E-03	13.5	n/a	n/a	n/a	n/a	0.709	n/a	
S11V005579		A	7439-95-4	Magnesium	ug/g	84.2	<0.0500	5.51E+03	n/a	n/a	n/a	n/a	11.8	n/a	
S11V005579		A	7439-96-5	Manganese	ug/g	82.9	<3.00E-03	361	n/a	n/a	n/a	n/a	0.709	n/a	
S11V005579		A	7439-98-7	Molybdenum	ug/g	85.5	<0.0200	<4.73	n/a	n/a	n/a	n/a	4.73	n/a	U
S11V005579		A	7440-23-5	Sodium	ug/g	97.1	<0.100	268	n/a	n/a	n/a	n/a	23.6	n/a	
S11V005579		A	7440-02-0	Nickel	ug/g	83.3	<0.0200	17.9	n/a	n/a	n/a	n/a	4.73	n/a	B
S11V005579		A	7723-14-0	Phosphorus	ug/g	85.9	<0.0500	476	n/a	n/a	n/a	n/a	11.8	n/a	
S11V005579		A	7704-34-9	Sulfur	ug/g	85.5	<0.100	33.2	n/a	n/a	n/a	n/a	23.6	n/a	B
S11V005579		A	7440-21-3	Silicon	ug/g	74.7	<0.0300	41.3	n/a	n/a	n/a	n/a	7.09	n/a	BN
S11V005579		A	7440-24-6	Strontium	ug/g	88.9	<3.00E-03	38.8	n/a	n/a	n/a	n/a	0.709	n/a	
S11V005579		A	7440-32-6	Titanium	ug/g	84.5	<5.00E-03	817	n/a	n/a	n/a	n/a	1.18	n/a	
S11V005579		A	7440-62-2	Vanadium	ug/g	86.5	<5.00E-03	35.2	n/a	n/a	n/a	n/a	1.18	n/a	

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111272
Core Number: C8396
Customer Sample ID: B2FYT0
Sample Depth: 55'-57'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005579		A	7440-65-5	Yttrium	ug/g	84.5	<2.00E-03	6.77	n/a	n/a	n/a	n/a	0.473	n/a	
S11V005579		A	7440-66-6	Zinc	ug/g	85.9	<5.00E-03	42.9	n/a	n/a	n/a	n/a	1.18	n/a	
S11V005579		A	7440-67-7	Zirconium	ug/g	84.5	<5.00E-03	4.86	n/a	n/a	n/a	n/a	1.18	n/a	BN
S11V005579		A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-06	1.02E-05	n/a	n/a	n/a	n/a	6.62E-06	n/a	
S11V005579		A	TH-232	Thorium-232	ug/g	94.2	<2.50E-04	4.13	n/a	n/a	n/a	n/a	0.0473	n/a	
S11V005579		A	13968-55-3	Uranium-233	ug/g	95.9	<1.00E-04	2.46E-04	n/a	n/a	n/a	n/a	1.89E-04	n/a	
S11V005579		A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-06	9.07E-06	n/a	n/a	n/a	n/a	4.73E-06	n/a	
S11V005579		A	15117-96-1	Uranium-235	ug/g	94.6	<5.00E-06	4.44E-03	n/a	n/a	n/a	n/a	9.46E-06	n/a	
S11V005579		A	13982-70-2	Uranium-236	ug/g	n/a	3.08E-06	4.22E-06	n/a	n/a	n/a	n/a	3.78E-06	n/a	B
S11V005579		A	13994-20-2	Neptunium-237	ug/g	101	<5.00E-05	<9.46E-05	n/a	n/a	n/a	n/a	9.46E-05	n/a	U
S11V005579		A	U-238	Uranium-238	ug/g	95.4	<2.50E-04	0.593	n/a	n/a	n/a	n/a	0.0473	n/a	
S11V005579		A	7440-22-4	Silver	ug/g	92.7	<4.00E-03	0.0388	n/a	n/a	n/a	n/a	7.57E-03	n/a	B
S11V005579		A	7440-38-2	Arsenic	ug/g	77.0	<0.0210	6.28	n/a	n/a	n/a	n/a	0.298	n/a	
S11V005579		A	7440-43-9	Cadmium	ug/g	97.4	<1.50E-03	0.113	n/a	n/a	n/a	n/a	0.0284	n/a	B
S11V005579		A	7439-92-1	Lead	ug/g	109	<0.0155	6.55	n/a	n/a	n/a	n/a	0.0709	n/a	
S11V005579		A	7782-49-2	Selenium	ug/g	100	<0.0305	<0.639	n/a	n/a	n/a	n/a	0.639	n/a	U
S11V005579		A	7440-28-0	Thallium	ug/g	114	0.0128	0.126	n/a	n/a	n/a	n/a	0.0189	n/a	CBN
S11V005580		S	14798-03-9	Ammonium	ug/g	104	<0.120	2.02	n/a	n/a	n/a	n/a	0.518	n/a	B
S11V005581		A	14133-76-7	Technetium-99	ug/g	102	<6.00E-05	<5.35E-04	n/a	n/a	n/a	n/a	5.35E-04	n/a	U
S11V005582		W	14762-75-5	Carbon-14	uCi/g	92.4	3.77E-06	<6.72E-07	<7.61E-07	n/a	n/a	n/a	6.72E-07	n/a	U
S11V005582		W	10028-17-8	Tritium	uCi/g	101	<1.32E-06	<2.43E-06	1.37E-06	n/a	n/a	99.4	2.43E-06	n/a	U
S11V005583		E	CM-243/244	Curium-243/244	uCi/g	n/a	<3.31E-08	<1.56E-08	<1.64E-08	n/a	n/a	n/a	1.56E-08	n/a	U
S11V005583		E	14596-10-2	Americium-241	uCi/g	95.6	<2.98E-08	<1.63E-08	<2.49E-08	n/a	n/a	n/a	1.63E-08	n/a	U
S11V005583		E	15510-73-3	Curium-242	uCi/g	n/a	<3.17E-08	<2.87E-08	<2.55E-08	n/a	n/a	n/a	2.87E-08	n/a	U
S11V005583		E	PU-239/240	Plutonium-239/240	uCi/g	104	<3.41E-08	<3.92E-08	<3.67E-08	n/a	n/a	n/a	3.92E-08	n/a	U
S11V005583		E	13981-16-3	Plutonium-238	uCi/g	n/a	<3.39E-08	<2.56E-08	<3.01E-08	n/a	n/a	n/a	2.56E-08	n/a	U
S11V005584		E	SR-89/90	Strontium-89/90	uCi/g	89.8	<7.10E-07	<7.07E-07	<2.04E-07	n/a	n/a	n/a	7.07E-07	n/a	U
S11V005585		E	7440-02-0	Nickel	ug/mL	n/a	n/a	190	n/a	n/a	n/a	n/a	0.200	n/a	

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111272
Core Number: C8396
Customer Sample ID: B2FYT0
Sample Depth: 55'-57'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005585		E	13981-37-8	Nickel-63	uCi/g	89.7	<4.31E-06	<3.92E-06	<4.04E-06	n/a	n/a	n/a	3.92E-06	n/a	U
S11V005586		E	15758-45-9	Selenium-79	uCi/g	n/a	<1.34E-06	<1.32E-06	1.87E-06	n/a	n/a	n/a	1.32E-06	n/a	U
S11V005623			%WATERA	%WATER-APD	%	n/a	n/a	12.00	n/a	n/a	n/a	n/a	0.01000	n/a	
S11V005623			WT%SOLID	Weight percent solids	%	n/a	n/a	88.0	n/a	n/a	n/a	n/a	0.0100	n/a	

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111272
Core Number: C8396
Customer Sample ID: B2FYT1
Sample Depth: 103'-105'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005591			57-12-5	Cyanide	ug/g	98.2	<0.0370	<0.480	<0.480	n/a	n/a	93.1	0.480	n/a	U
S11V005591			7439-97-6	Mercury	ug/g	98.9	<1.10E-05	4.49E-03	n/a	n/a	n/a	n/a	1.07E-03	n/a	U
S11V005591			PH	pH	unitless	n/a	n/a	8.87	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005592			13966-00-2	Potassium-40	uCi/g	n/a	n/a	1.64E-05	n/a	n/a	n/a	n/a	2.86E-06	4.69	
S11V005592			10198-40-0	Cobalt-60	uCi/g	107	<1.31E-07	<1.07E-07	n/a	n/a	n/a	n/a	1.07E-07	n/a	U
S11V005592			14234-35-6	Antimony-125	uCi/g	n/a	<3.12E-07	<2.55E-07	n/a	n/a	n/a	n/a	2.55E-07	n/a	U
S11V005592			10045-97-3	Cesium-137	uCi/g	112	<1.23E-07	<9.17E-08	n/a	n/a	n/a	n/a	9.17E-08	n/a	U
S11V005592			14683-23-9	Europium-152	uCi/g	n/a	<3.07E-07	<2.81E-07	n/a	n/a	n/a	n/a	2.81E-07	n/a	U
S11V005592			15585-10-1	Europium-154	uCi/g	n/a	<3.58E-07	<2.80E-07	n/a	n/a	n/a	n/a	2.80E-07	n/a	U
S11V005592			14391-16-3	Europium-155	uCi/g	n/a	<2.71E-07	<2.63E-07	n/a	n/a	n/a	n/a	2.63E-07	n/a	U
S11V005592			14913-50-9	Thallium-208	uCi/g	n/a	n/a	7.81E-07	n/a	n/a	n/a	n/a	8.11E-08	4.04	
S11V005592			14913-49-6	Bismuth-212	uCi/g	n/a	n/a	1.66E-06	n/a	n/a	n/a	n/a	1.16E-06	20.78	
S11V005592			15092-94-1	Lead-212	uCi/g	n/a	<1.42E-07	9.21E-07	n/a	n/a	n/a	n/a	1.63E-07	5.55	
S11V005592			14733-03-0	Bismuth-214	uCi/g	n/a	<2.48E-07	7.42E-07	n/a	n/a	n/a	n/a	2.12E-07	7.99	
S11V005592			15067-28-4	Lead-214	uCi/g	n/a	n/a	1.60E-06	n/a	n/a	n/a	n/a	1.94E-07	5.31	
S11V005592			14331-83-0	Actinium-228	uCi/g	n/a	6.16E-07	7.73E-07	n/a	n/a	n/a	n/a	4.28E-07	20.36	B
S11V005592			14274-82-9	Thorium-228	uCi/g	n/a	<3.98E-05	<4.75E-05	n/a	n/a	n/a	n/a	4.75E-05	n/a	U
S11V005592			15065-10-8	Thorium-234	uCi/g	n/a	<2.22E-06	<1.55E-05	n/a	n/a	n/a	n/a	1.55E-05	n/a	U
S11V005592			15046-84-1	Iodine-129	uCi/g	100	<9.56E-07	<9.31E-07	n/a	n/a	n/a	n/a	9.31E-07	n/a	U
S11V005593			CONDUCT	Conductivity	uMHO/cm	99.2	1.47	222	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005595		A	7440-36-0	Antimony	ug/g	100	<2.00E-04	0.284	n/a	n/a	n/a	n/a	6.48E-03	n/a	
S11V005595		A	SN-117	Tin-117	ug/g	106	<1.00E-03	<0.0324	n/a	n/a	n/a	n/a	0.0324	n/a	U
S11V005595		A	15832-50-5	Tin-126	ug/g	n/a	<2.00E-05	2.85E-03	n/a	n/a	n/a	n/a	6.48E-04	n/a	E
S11V005596		W	16984-48-8	Fluoride	ug/g	102	<1.61E-03	2.00	n/a	n/a	n/a	n/a	0.0154	n/a	
S11V005596		W	GLYCOLAT	Glycolate	ug/g	98.7	<9.37E-03	<0.0894	n/a	n/a	n/a	n/a	0.0894	n/a	U
S11V005596		W	71-50-1	Acetate	ug/g	101	0.0331	0.389	n/a	n/a	n/a	n/a	0.0576	n/a	CB
S11V005596		W	FORMATE	Formate	ug/g	101	0.0306	0.415	n/a	n/a	n/a	n/a	0.0446	n/a	CB
S11V005596		W	16887-00-6	Chloride	ug/g	100	<9.98E-03	2.44	n/a	n/a	n/a	n/a	0.0952	n/a	M

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B - Estimated
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U - Less Than Detection Limit
B - Blank Contamination
M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111272
Core Number: C8396
Customer Sample ID: B2FYT1
Sample Depth: 103'-105'

Sample# R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005596	W	14797-65-0	Nitrite	ug/g	99.9	<0.0192	1.36	n/a	n/a	n/a	n/a	0.183	n/a	B
S11V005596	W	14808-79-8	Sulfate	ug/g	101	<0.0187	25.5	n/a	n/a	n/a	n/a	0.178	n/a	M
S11V005596	W	338-70-5	Oxalate	ug/g	101	<0.0231	0.311	n/a	n/a	n/a	n/a	0.220	n/a	B
S11V005596	W	24959-67-9	Bromide	ug/g	99.6	<0.0580	<0.553	n/a	n/a	n/a	n/a	0.553	n/a	U
S11V005596	W	14797-55-8	Nitrate	ug/g	100	<0.0208	25.3	n/a	n/a	n/a	n/a	0.198	n/a	M
S11V005596	W	14265-44-2	Phosphate	ug/g	99.8	<0.0167	1.43	n/a	n/a	n/a	n/a	0.159	n/a	BN
S11V005597	A	7429-90-5	Aluminum	ug/g	87.7	<0.0300	8.40E+03	n/a	n/a	n/a	n/a	6.53	n/a	
S11V005597	A	7440-39-3	Barium	ug/g	88.7	<3.00E-03	82.0	n/a	n/a	n/a	n/a	0.653	n/a	N
S11V005597	A	7440-41-7	Beryllium	ug/g	92.7	<1.00E-03	0.248	n/a	n/a	n/a	n/a	0.218	n/a	B
S11V005597	A	7440-70-2	Calcium	ug/g	75.9	<0.0500	7.89E+03	n/a	n/a	n/a	n/a	10.9	n/a	
S11V005597	A	7440-45-1	Cerium	ug/g	91.7	<0.0300	24.0	n/a	n/a	n/a	n/a	6.53	n/a	B
S11V005597	A	7440-48-4	Cobalt	ug/g	84.2	<0.0100	5.53	n/a	n/a	n/a	n/a	2.18	n/a	B
S11V005597	A	7440-47-3	Chromium	ug/g	83.2	<5.00E-03	27.6	n/a	n/a	n/a	n/a	1.09	n/a	
S11V005597	A	7440-50-8	Copper	ug/g	94.7	<5.00E-03	10.8	n/a	n/a	n/a	n/a	1.09	n/a	B
S11V005597	A	7439-89-6	Iron	ug/g	85.7	0.0201	1.70E+04	n/a	n/a	n/a	n/a	1.09	n/a	
S11V005597	A	7440-09-7	Potassium	ug/g	81.0	<0.500	1.38E+03	n/a	n/a	n/a	n/a	109	n/a	
S11V005597	A	7439-91-0	Lanthanum	ug/g	89.7	<3.00E-03	10.3	n/a	n/a	n/a	n/a	0.653	n/a	
S11V005597	A	7439-93-2	Lithium	ug/g	96.2	<3.00E-03	11.0	n/a	n/a	n/a	n/a	0.653	n/a	
S11V005597	A	7439-95-4	Magnesium	ug/g	84.2	<0.0500	4.94E+03	n/a	n/a	n/a	n/a	10.9	n/a	
S11V005597	A	7439-96-5	Manganese	ug/g	82.9	<3.00E-03	338	n/a	n/a	n/a	n/a	0.653	n/a	
S11V005597	A	7439-98-7	Molybdenum	ug/g	85.5	<0.0200	<4.36	n/a	n/a	n/a	n/a	4.36	n/a	U
S11V005597	A	7440-23-5	Sodium	ug/g	97.1	<0.100	257	n/a	n/a	n/a	n/a	21.8	n/a	
S11V005597	A	7440-00-8	Neodymium	ug/g	92.6	<0.0100	9.30	n/a	n/a	n/a	n/a	2.18	n/a	B
S11V005597	A	7440-02-0	Nickel	ug/g	83.3	<0.0200	21.4	n/a	n/a	n/a	n/a	4.36	n/a	B
S11V005597	A	7723-14-0	Phosphorus	ug/g	85.9	<0.0500	523	n/a	n/a	n/a	n/a	10.9	n/a	
S11V005597	A	7704-34-9	Sulfur	ug/g	85.5	<0.100	24.6	n/a	n/a	n/a	n/a	21.8	n/a	B
S11V005597	A	7440-21-3	Silicon	ug/g	74.7	<0.0300	29.7	n/a	n/a	n/a	n/a	6.53	n/a	BN
S11V005597	A	7440-24-6	Strontium	ug/g	88.9	<3.00E-03	33.6	n/a	n/a	n/a	n/a	0.653	n/a	

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X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111272
Core Number: C8396
Customer Sample ID: B2FYT1
Sample Depth: 103'-105'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005597		A	7440-32-6	Titanium	ug/g	84.5	<5.00E-03	741	n/a	n/a	n/a	n/a	1.09	n/a	
S11V005597		A	7440-62-2	Vanadium	ug/g	86.5	<5.00E-03	36.0	n/a	n/a	n/a	n/a	1.09	n/a	
S11V005597		A	7440-65-5	Yttrium	ug/g	84.5	<2.00E-03	5.86	n/a	n/a	n/a	n/a	0.436	n/a	
S11V005597		A	7440-66-6	Zinc	ug/g	85.9	<5.00E-03	37.3	n/a	n/a	n/a	n/a	1.09	n/a	
S11V005597		A	7440-67-7	Zirconium	ug/g	84.5	<5.00E-03	3.35	n/a	n/a	n/a	n/a	1.09	n/a	BN
S11V005597		A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-06	3.89E-05	n/a	n/a	n/a	n/a	3.05E-05	n/a	
S11V005597		A	TH-232	Thorium-232	ug/g	94.2	<2.50E-04	3.79	n/a	n/a	n/a	n/a	2.18E-03	n/a	
S11V005597		A	13968-55-3	Uranium-233	ug/g	99.4	<1.00E-04	<8.71E-04	n/a	n/a	n/a	n/a	8.71E-04	n/a	U
S11V005597		A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-06	4.23E-05	n/a	n/a	n/a	n/a	2.18E-05	n/a	
S11V005597		A	15117-96-1	Uranium-235	ug/g	94.6	<5.00E-06	3.72E-03	n/a	n/a	n/a	n/a	4.36E-05	n/a	
S11V005597		A	13982-70-2	Uranium-236	ug/g	n/a	3.08E-06	<1.74E-05	n/a	n/a	n/a	n/a	1.74E-05	n/a	U
S11V005597		A	13994-20-2	Neptunium-237	ug/g	101	<5.00E-05	<4.36E-04	n/a	n/a	n/a	n/a	4.36E-04	n/a	U
S11V005597		A	U-238	Uranium-238	ug/g	95.4	<2.50E-04	0.516	n/a	n/a	n/a	n/a	2.18E-03	n/a	
S11V005597		A	7440-22-4	Silver	ug/g	92.7	<4.00E-03	<0.0348	n/a	n/a	n/a	n/a	0.0348	n/a	U
S11V005597		A	7440-38-2	Arsenic	ug/g	77.0	<0.0210	4.72	n/a	n/a	n/a	n/a	0.183	n/a	
S11V005597		A	7440-43-9	Cadmium	ug/g	97.4	<1.50E-03	0.0746	n/a	n/a	n/a	n/a	0.0131	n/a	B
S11V005597		A	7439-92-1	Lead	ug/g	109	<0.0155	5.02	n/a	n/a	n/a	n/a	0.135	n/a	
S11V005597		A	7782-49-2	Selenium	ug/g	100	<0.0305	<0.266	n/a	n/a	n/a	n/a	0.266	n/a	U
S11V005597		A	7440-28-0	Thallium	ug/g	114	0.0128	0.174	n/a	n/a	n/a	n/a	0.0174	n/a	CBN
S11V005598		S	14798-03-9	Ammonium	ug/g	104	<0.120	<0.489	n/a	n/a	n/a	n/a	0.489	n/a	U
S11V005599		A	14133-76-7	Technetium-99	ug/g	102	<6.00E-05	<5.24E-04	n/a	n/a	n/a	n/a	5.24E-04	n/a	U
S11V005600		W	14762-75-5	Carbon-14	uCi/g	92.4	3.77E-06	<1.10E-06	n/a	n/a	n/a	n/a	1.10E-06	n/a	U
S11V005600		W	10028-17-8	Tritium	uCi/g	101	<1.32E-06	<2.26E-06	n/a	n/a	n/a	n/a	2.26E-06	n/a	U
S11V005601		E	CM-243/244	Curium-243/244	uCi/g	n/a	<3.31E-08	<1.81E-08	n/a	n/a	n/a	n/a	1.81E-08	n/a	U
S11V005601		E	14596-10-2	Americium-241	uCi/g	95.6	<2.98E-08	<3.44E-08	n/a	n/a	n/a	n/a	3.44E-08	n/a	U
S11V005601		E	15510-73-3	Curium-242	uCi/g	n/a	<3.17E-08	<1.53E-08	n/a	n/a	n/a	n/a	1.53E-08	n/a	U
S11V005601		E	PU-239/240	Plutonium-239/240	uCi/g	104	<3.41E-08	<2.90E-08	n/a	n/a	n/a	n/a	2.90E-08	n/a	U
S11V005601		E	13981-16-3	Plutonium-238	uCi/g	n/a	<3.39E-08	<2.43E-08	n/a	n/a	n/a	n/a	2.43E-08	n/a	U

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111272
Core Number: C8396
Customer Sample ID: B2FYT1
Sample Depth: 103'-105'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005602		E	SR-89/90	Strontium-89/90	uCi/g	89.8	<7.10E-07	<7.07E-07	n/a	n/a	n/a	n/a	7.07E-07	n/a	U
S11V005603		E	7440-02-0	Nickel	ug/mL	n/a	n/a	192	n/a	n/a	n/a	n/a	0.200	n/a	
S11V005603		E	13981-37-8	Nickel-63	uCi/g	89.7	<4.31E-06	<4.06E-06	n/a	n/a	n/a	n/a	4.06E-06	n/a	U
S11V005604		E	15758-45-9	Selenium-79	uCi/g	n/a	<1.34E-06	1.88E-06	n/a	n/a	n/a	n/a	1.56E-06	63.858	X
S11V005624			%WATERA	%WATER-APD	%	n/a	n/a	10.00	n/a	n/a	n/a	n/a	0.01000	n/a	
S11V005624			WT%SOLID	Weight percent solids	%	n/a	n/a	90.0	n/a	n/a	n/a	n/a	0.0100	n/a	

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111272
Core Number: C8396
Customer Sample ID: B2FYT2
Sample Depth: 117'-119'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005609			57-12-5	Cyanide	ug/g	98.2	<0.0370	<0.480	n/a	n/a	n/a	n/a	0.480	n/a	U
S11V005609			7439-97-6	Mercury	ug/g	98.9	<1.10E-05	2.91E-03	n/a	n/a	n/a	n/a	1.00E-03	n/a	U
S11V005609			PH	pH	unitless	n/a	n/a	8.82	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005610			13966-00-2	Potassium-40	uCi/g	n/a	n/a	1.65E-05	n/a	n/a	n/a	n/a	2.92E-06	4.42	
S11V005610			10198-40-0	Cobalt-60	uCi/g	107	<1.31E-07	<1.08E-07	n/a	n/a	n/a	n/a	1.08E-07	n/a	U
S11V005610			14234-35-6	Antimony-125	uCi/g	n/a	<3.12E-07	<2.49E-07	n/a	n/a	n/a	n/a	2.49E-07	n/a	U
S11V005610			10045-97-3	Cesium-137	uCi/g	112	<1.23E-07	<9.53E-08	n/a	n/a	n/a	n/a	9.53E-08	n/a	U
S11V005610			14683-23-9	Europium-152	uCi/g	n/a	<3.07E-07	<2.52E-07	n/a	n/a	n/a	n/a	2.52E-07	n/a	U
S11V005610			15585-10-1	Europium-154	uCi/g	n/a	<3.58E-07	<2.73E-07	n/a	n/a	n/a	n/a	2.73E-07	n/a	U
S11V005610			14391-16-3	Europium-155	uCi/g	n/a	<2.71E-07	<2.61E-07	n/a	n/a	n/a	n/a	2.61E-07	n/a	U
S11V005610			14913-50-9	Thallium-208	uCi/g	n/a	n/a	8.36E-07	n/a	n/a	n/a	n/a	9.52E-08	5.37	
S11V005610			15092-94-1	Lead-212	uCi/g	n/a	<1.42E-07	1.10E-06	n/a	n/a	n/a	n/a	1.65E-07	4.79	
S11V005610			14733-03-0	Bismuth-214	uCi/g	n/a	<2.48E-07	9.06E-07	n/a	n/a	n/a	n/a	2.37E-07	9.49	
S11V005610			15067-28-4	Lead-214	uCi/g	n/a	n/a	1.87E-06	n/a	n/a	n/a	n/a	1.95E-07	4.58	
S11V005610			14331-83-0	Actinium-228	uCi/g	n/a	6.16E-07	1.11E-06	n/a	n/a	n/a	n/a	4.23E-07	13.71	B
S11V005610			14274-82-9	Thorium-228	uCi/g	n/a	<3.98E-05	<4.70E-05	n/a	n/a	n/a	n/a	4.70E-05	n/a	U
S11V005610			15065-10-8	Thorium-234	uCi/g	n/a	<2.22E-06	<1.61E-05	n/a	n/a	n/a	n/a	1.61E-05	n/a	U
S11V005610			15046-84-1	Iodine-129	uCi/g	100	<9.56E-07	<2.49E-06	n/a	n/a	n/a	n/a	2.49E-06	n/a	U
S11V005611			CONDUCT	Conductivity	uMHO/cm	99.2	1.47	238	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005613		A	7440-36-0	Antimony	ug/g	100	<2.00E-04	0.224	n/a	n/a	n/a	n/a	6.27E-03	n/a	
S11V005613		A	SN-117	Tin-117	ug/g	106	<1.00E-03	<0.0313	n/a	n/a	n/a	n/a	0.0313	n/a	U
S11V005613		A	15832-50-5	Tin-126	ug/g	n/a	<2.00E-05	2.53E-03	n/a	n/a	n/a	n/a	6.27E-04	n/a	E
S11V005614		W	16984-48-8	Fluoride	ug/g	102	<1.61E-03	1.04	n/a	n/a	n/a	n/a	0.0149	n/a	
S11V005614		W	GLYCOLAT	Glycolate	ug/g	98.7	<9.37E-03	<0.0865	n/a	n/a	n/a	n/a	0.0865	n/a	U
S11V005614		W	71-50-1	Acetate	ug/g	101	0.0331	0.433	n/a	n/a	n/a	n/a	0.0557	n/a	CB
S11V005614		W	FORMATE	Formate	ug/g	101	0.0306	0.455	n/a	n/a	n/a	n/a	0.0431	n/a	CB
S11V005614		W	16887-00-6	Chloride	ug/g	100	<9.98E-03	7.09	n/a	n/a	n/a	n/a	0.0921	n/a	M
S11V005614		W	14797-65-0	Nitrite	ug/g	99.9	<0.0192	0.300	n/a	n/a	n/a	n/a	0.177	n/a	B

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111272
Core Number: C8396
Customer Sample ID: B2FYT2
Sample Depth: 117'-119'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005614		W	14808-79-8	Sulfate	ug/g	101	<0.0187	22.1	n/a	n/a	n/a	n/a	0.173	n/a	M
S11V005614		W	338-70-5	Oxalate	ug/g	101	<0.0231	0.547	n/a	n/a	n/a	n/a	0.213	n/a	B
S11V005614		W	24959-67-9	Bromide	ug/g	99.6	<0.0580	<0.535	n/a	n/a	n/a	n/a	0.535	n/a	U
S11V005614		W	14797-55-8	Nitrate	ug/g	100	<0.0208	62.0	n/a	n/a	n/a	n/a	0.192	n/a	M
S11V005614		W	14265-44-2	Phosphate	ug/g	99.8	<0.0167	0.279	n/a	n/a	n/a	n/a	0.154	n/a	BN
S11V005615		A	7429-90-5	Aluminum	ug/g	87.7	<0.0300	7.92E+03	n/a	n/a	n/a	n/a	6.51	n/a	
S11V005615		A	7440-39-3	Barium	ug/g	88.7	<3.00E-03	80.6	n/a	n/a	n/a	n/a	0.651	n/a	N
S11V005615		A	7440-41-7	Beryllium	ug/g	92.7	<1.00E-03	0.218	n/a	n/a	n/a	n/a	0.217	n/a	B
S11V005615		A	7440-70-2	Calcium	ug/g	75.9	<0.0500	8.99E+03	n/a	n/a	n/a	n/a	10.8	n/a	
S11V005615		A	7440-45-1	Cerium	ug/g	91.7	<0.0300	22.3	n/a	n/a	n/a	n/a	6.51	n/a	B
S11V005615		A	7440-48-4	Cobalt	ug/g	84.2	<0.0100	5.35	n/a	n/a	n/a	n/a	2.17	n/a	B
S11V005615		A	7440-47-3	Chromium	ug/g	83.2	<5.00E-03	19.4	n/a	n/a	n/a	n/a	1.08	n/a	
S11V005615		A	7440-50-8	Copper	ug/g	94.7	<5.00E-03	10.0	n/a	n/a	n/a	n/a	1.08	n/a	B
S11V005615		A	7439-89-6	Iron	ug/g	85.7	0.0201	1.70E+04	n/a	n/a	n/a	n/a	1.08	n/a	
S11V005615		A	7440-09-7	Potassium	ug/g	81.0	<0.500	1.40E+03	n/a	n/a	n/a	n/a	108	n/a	
S11V005615		A	7439-91-0	Lanthanum	ug/g	89.7	<3.00E-03	11.2	n/a	n/a	n/a	n/a	0.651	n/a	
S11V005615		A	7439-93-2	Lithium	ug/g	96.2	<3.00E-03	10.9	n/a	n/a	n/a	n/a	0.651	n/a	
S11V005615		A	7439-95-4	Magnesium	ug/g	84.2	<0.0500	4.62E+03	n/a	n/a	n/a	n/a	10.8	n/a	
S11V005615		A	7439-96-5	Manganese	ug/g	82.9	<3.00E-03	294	n/a	n/a	n/a	n/a	0.651	n/a	
S11V005615		A	7439-98-7	Molybdenum	ug/g	85.5	<0.0200	<4.34	n/a	n/a	n/a	n/a	4.34	n/a	U
S11V005615		A	7440-23-5	Sodium	ug/g	97.1	<0.100	288	n/a	n/a	n/a	n/a	21.7	n/a	
S11V005615		A	7440-00-8	Neodymium	ug/g	92.6	<0.0100	8.79	n/a	n/a	n/a	n/a	2.17	n/a	B
S11V005615		A	7440-02-0	Nickel	ug/g	83.3	<0.0200	10.2	n/a	n/a	n/a	n/a	4.34	n/a	B
S11V005615		A	7723-14-0	Phosphorus	ug/g	85.9	<0.0500	477	n/a	n/a	n/a	n/a	10.8	n/a	
S11V005615		A	7704-34-9	Sulfur	ug/g	85.5	<0.100	31.2	n/a	n/a	n/a	n/a	21.7	n/a	B
S11V005615		A	7440-21-3	Silicon	ug/g	74.7	<0.0300	32.7	n/a	n/a	n/a	n/a	6.51	n/a	BN
S11V005615		A	7440-24-6	Strontium	ug/g	88.9	<3.00E-03	34.4	n/a	n/a	n/a	n/a	0.651	n/a	
S11V005615		A	7440-32-6	Titanium	ug/g	84.5	<5.00E-03	817	n/a	n/a	n/a	n/a	1.08	n/a	

NA = Not Analyzed, ND = Not Detected

B - Estimated
C - Blank Contamination
U - Less Than Detection Limit
B - Blank Contamination
M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111272
Core Number: C8396
Customer Sample ID: B2FYT2
Sample Depth: 117'-119'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005615		A	7440-62-2	Vanadium	ug/g	86.5	<5.00E-03	36.8	n/a	n/a	n/a	n/a	1.08	n/a	
S11V005615		A	7440-65-5	Yttrium	ug/g	84.5	<2.00E-03	5.79	n/a	n/a	n/a	n/a	0.434	n/a	
S11V005615		A	7440-66-6	Zinc	ug/g	85.9	<5.00E-03	38.6	n/a	n/a	n/a	n/a	1.08	n/a	
S11V005615		A	7440-67-7	Zirconium	ug/g	84.5	<5.00E-03	4.46	n/a	n/a	n/a	n/a	1.08	n/a	BN
S11V005615		A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-06	<3.04E-05	n/a	n/a	n/a	n/a	3.04E-05	n/a	U
S11V005615		A	TH-232	Thorium-232	ug/g	94.2	<2.50E-04	3.94	n/a	n/a	n/a	n/a	2.17E-03	n/a	
S11V005615		A	13968-55-3	Uranium-233	ug/g	99.4	<1.00E-04	<8.68E-04	n/a	n/a	n/a	n/a	8.68E-04	n/a	U
S11V005615		A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-06	<2.17E-05	n/a	n/a	n/a	n/a	2.17E-05	n/a	U
S11V005615		A	15117-96-1	Uranium-235	ug/g	94.6	<5.00E-06	3.93E-03	n/a	n/a	n/a	n/a	4.34E-05	n/a	
S11V005615		A	13982-70-2	Uranium-236	ug/g	n/a	3.08E-06	<1.74E-05	n/a	n/a	n/a	n/a	1.74E-05	n/a	U
S11V005615		A	13994-20-2	Neptunium-237	ug/g	101	<5.00E-05	<4.34E-04	n/a	n/a	n/a	n/a	4.34E-04	n/a	U
S11V005615		A	U-238	Uranium-238	ug/g	95.4	<2.50E-04	0.548	n/a	n/a	n/a	n/a	2.17E-03	n/a	
S11V005615		A	7440-22-4	Silver	ug/g	92.7	<4.00E-03	<0.0347	n/a	n/a	n/a	n/a	0.0347	n/a	U
S11V005615		A	7440-38-2	Arsenic	ug/g	77.0	<0.0210	3.55	n/a	n/a	n/a	n/a	0.182	n/a	
S11V005615		A	7440-43-9	Cadmium	ug/g	97.4	<1.50E-03	0.0733	n/a	n/a	n/a	n/a	0.0130	n/a	B
S11V005615		A	7439-92-1	Lead	ug/g	109	<0.0155	5.02	n/a	n/a	n/a	n/a	0.134	n/a	
S11V005615		A	7782-49-2	Selenium	ug/g	100	<0.0305	<0.265	n/a	n/a	n/a	n/a	0.265	n/a	U
S11V005615		A	7440-28-0	Thallium	ug/g	114	0.0128	0.164	n/a	n/a	n/a	n/a	0.0174	n/a	CBN
S11V005616		S	14798-03-9	Ammonium	ug/g	105	<0.0120	<0.480	n/a	n/a	n/a	n/a	0.480	n/a	U
S11V005617		A	14133-76-7	Technetium-99	ug/g	102	<6.00E-05	<5.49E-04	n/a	n/a	n/a	n/a	5.49E-04	n/a	U
S11V005618		W	14762-75-5	Carbon-14	uCi/g	93.6	3.77E-06	<1.29E-06	n/a	n/a	n/a	n/a	1.29E-06	n/a	U
S11V005618		W	10028-17-8	Tritium	uCi/g	101	<1.32E-06	<2.56E-06	n/a	n/a	n/a	n/a	2.56E-06	n/a	U
S11V005619		E	CM-243/244	Curium-243/244	uCi/g	n/a	<3.31E-08	<3.01E-08	n/a	n/a	n/a	n/a	3.01E-08	n/a	U
S11V005619		E	14596-10-2	Americium-241	uCi/g	95.6	<2.98E-08	<3.70E-08	n/a	n/a	n/a	n/a	3.70E-08	n/a	U
S11V005619		E	15510-73-3	Curium-242	uCi/g	n/a	<3.17E-08	<4.10E-08	n/a	n/a	n/a	n/a	4.10E-08	n/a	U
S11V005619		E	PU-239/240	Plutonium-239/240	uCi/g	104	<3.41E-08	<4.26E-08	n/a	n/a	n/a	n/a	4.26E-08	n/a	U
S11V005619		E	13981-16-3	Plutonium-238	uCi/g	n/a	<3.39E-08	<3.15E-08	n/a	n/a	n/a	n/a	3.15E-08	n/a	U
S11V005620		E	SR-89/90	Strontium-89/90	uCi/g	89.8	<7.10E-07	<8.12E-07	n/a	n/a	n/a	n/a	8.12E-07	n/a	U

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111272
Core Number: C8396
Customer Sample ID: B2FYT2
Sample Depth: 117'-119'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005621		E	7440-02-0	Nickel	ug/mL	n/a	n/a	173	n/a	n/a	n/a	n/a	0.200	n/a	
S11V005621		E	13981-37-8	Nickel-63	uCi/g	89.7	<4.31E-06	<5.31E-06	n/a	n/a	n/a	n/a	5.32E-06	n/a	U
S11V005622		E	15758-45-9	Selenium-79	uCi/g	n/a	<1.34E-06	4.34E-06	n/a	n/a	n/a	n/a	1.35E-06	147.034	X
S11V005628			%WATERA	%WATER-APD	%	n/a	n/a	4.000	n/a	n/a	n/a	n/a	0.01000	n/a	
S11V005628			WT%SOLID	Weight percent solids	%	n/a	n/a	96.0	n/a	n/a	n/a	n/a	0.0100	n/a	

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111290
Core Number: C8400
Customer Sample ID: B2FYY0
Sample Depth: 54'-56'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005634			%WATERA	%WATER-APD	%	n/a	n/a	7.000	n/a	n/a	n/a	n/a	0.01000	n/a	
S11V005634			WT%SOLID	Weight percent solids	%	n/a	n/a	93.0	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005635			57-12-5	Cyanide	ug/g	96.0	<0.0370	<0.480	n/a	n/a	n/a	n/a	0.480	n/a	U
S11V005635			7439-97-6	Mercury	ug/g	98.9	<1.10E-05	5.99E-03	n/a	n/a	n/a	n/a	1.05E-03	n/a	U
S11V005635			PH	pH	unitless	n/a	n/a	8.93	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005636			13966-00-2	Potassium-40	uCi/g	n/a	n/a	1.25E-05	n/a	n/a	n/a	n/a	2.89E-06	6.15	
S11V005636			10198-40-0	Cobalt-60	uCi/g	107	<1.31E-07	<8.47E-08	n/a	n/a	n/a	n/a	8.47E-08	n/a	U
S11V005636			14234-35-6	Antimony-125	uCi/g	n/a	<3.12E-07	<2.84E-07	n/a	n/a	n/a	n/a	2.84E-07	n/a	U
S11V005636			10045-97-3	Cesium-137	uCi/g	112	<1.23E-07	<9.16E-08	n/a	n/a	n/a	n/a	9.16E-08	n/a	U
S11V005636			14683-23-9	Europium-152	uCi/g	n/a	<3.07E-07	<2.85E-07	n/a	n/a	n/a	n/a	2.85E-07	n/a	U
S11V005636			15585-10-1	Europium-154	uCi/g	n/a	<3.58E-07	<2.81E-07	n/a	n/a	n/a	n/a	2.81E-07	n/a	U
S11V005636			14391-16-3	Europium-155	uCi/g	n/a	<2.71E-07	<2.58E-07	n/a	n/a	n/a	n/a	2.58E-07	n/a	U
S11V005636			14913-50-9	Thallium-208	uCi/g	n/a	n/a	7.97E-07	n/a	n/a	n/a	n/a	8.87E-08	5.14	
S11V005636			15092-94-1	Lead-212	uCi/g	n/a	<1.42E-07	9.03E-07	n/a	n/a	n/a	n/a	1.62E-07	5.62	
S11V005636			14733-03-0	Bismuth-214	uCi/g	n/a	<2.48E-07	6.85E-07	n/a	n/a	n/a	n/a	2.10E-07	8.52	
S11V005636			15067-28-4	Lead-214	uCi/g	n/a	n/a	1.59E-06	n/a	n/a	n/a	n/a	1.92E-07	5.24	
S11V005636			14331-83-0	Actinium-228	uCi/g	n/a	6.16E-07	1.09E-06	n/a	n/a	n/a	n/a	4.38E-07	15.93	B
S11V005636			14274-82-9	Thorium-228	uCi/g	n/a	<3.98E-05	<3.48E-05	n/a	n/a	n/a	n/a	3.48E-05	n/a	U
S11V005636			15065-10-8	Thorium-234	uCi/g	n/a	<2.22E-06	<1.38E-05	n/a	n/a	n/a	n/a	1.38E-05	n/a	U
S11V005636			15046-84-1	Iodine-129	uCi/g	100	<9.56E-07	<8.06E-07	n/a	n/a	n/a	n/a	8.06E-07	n/a	U
S11V005637			CONDUCT	Conductivity	uMHO/cm	98.8	1.47	184	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005638		A	7440-36-0	Antimony	ug/g	100	<2.00E-04	0.198	n/a	n/a	n/a	n/a	6.16E-03	n/a	
S11V005638		A	SN-117	Tin-117	ug/g	106	<1.00E-03	<0.0308	n/a	n/a	n/a	n/a	0.0308	n/a	U
S11V005638		A	15832-50-5	Tin-126	ug/g	n/a	<2.00E-05	1.36E-03	n/a	n/a	n/a	n/a	6.16E-04	n/a	E
S11V005639		W	16984-48-8	Fluoride	ug/g	102	<1.61E-03	1.33	n/a	n/a	n/a	n/a	0.0146	n/a	
S11V005639		W	GLYCOLAT	Glycolate	ug/g	98.7	<9.37E-03	<0.0850	n/a	n/a	n/a	n/a	0.0850	n/a	U
S11V005639		W	71-50-1	Acetate	ug/g	101	0.0331	0.459	n/a	n/a	n/a	n/a	0.0548	n/a	CB
S11V005639		W	FORMATE	Formate	ug/g	101	0.0306	0.491	n/a	n/a	n/a	n/a	0.0424	n/a	CB

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111290
Core Number: C8400
Customer Sample ID: B2FYY0
Sample Depth: 54'-56'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005639		W	16887-00-6	Chloride	ug/g	100	<9.98E-03	0.577	n/a	n/a	n/a	n/a	0.0905	n/a	M
S11V005639		W	14797-65-0	Nitrite	ug/g	99.9	<0.0192	<0.174	n/a	n/a	n/a	n/a	0.174	n/a	U
S11V005639		W	14808-79-8	Sulfate	ug/g	101	<0.0187	9.61	n/a	n/a	n/a	n/a	0.170	n/a	M
S11V005639		W	338-70-5	Oxalate	ug/g	101	<0.0231	<0.210	n/a	n/a	n/a	n/a	0.210	n/a	U
S11V005639		W	24959-67-9	Bromide	ug/g	99.6	<0.0580	<0.526	n/a	n/a	n/a	n/a	0.526	n/a	U
S11V005639		W	14797-55-8	Nitrate	ug/g	100	<0.0208	1.56	n/a	n/a	n/a	n/a	0.189	n/a	B
S11V005639		W	14265-44-2	Phosphate	ug/g	99.8	<0.0167	0.711	n/a	n/a	n/a	n/a	0.151	n/a	BN
S11V005640		A	7429-90-5	Aluminum	ug/g	87.7	<0.0300	1.06E+04	n/a	n/a	n/a	n/a	6.58	n/a	
S11V005640		A	7440-39-3	Barium	ug/g	88.7	<3.00E-03	91.9	n/a	n/a	n/a	n/a	0.658	n/a	N
S11V005640		A	7440-41-7	Beryllium	ug/g	92.7	<1.00E-03	0.279	n/a	n/a	n/a	n/a	0.219	n/a	B
S11V005640		A	7440-70-2	Calcium	ug/g	75.9	<0.0500	1.03E+04	n/a	n/a	n/a	n/a	11.0	n/a	
S11V005640		A	7440-45-1	Cerium	ug/g	91.7	<0.0300	24.3	n/a	n/a	n/a	n/a	6.58	n/a	B
S11V005640		A	7440-48-4	Cobalt	ug/g	84.2	<0.0100	6.94	n/a	n/a	n/a	n/a	2.19	n/a	B
S11V005640		A	7440-47-3	Chromium	ug/g	83.2	<5.00E-03	29.0	n/a	n/a	n/a	n/a	1.10	n/a	
S11V005640		A	7440-50-8	Copper	ug/g	94.7	<5.00E-03	11.1	n/a	n/a	n/a	n/a	1.10	n/a	
S11V005640		A	7439-89-6	Iron	ug/g	85.7	0.0201	2.02E+04	n/a	n/a	n/a	n/a	1.10	n/a	
S11V005640		A	7440-09-7	Potassium	ug/g	81.0	<0.500	1.50E+03	n/a	n/a	n/a	n/a	110	n/a	
S11V005640		A	7439-91-0	Lanthanum	ug/g	89.7	<3.00E-03	9.93	n/a	n/a	n/a	n/a	0.658	n/a	
S11V005640		A	7439-93-2	Lithium	ug/g	96.2	<3.00E-03	11.0	n/a	n/a	n/a	n/a	0.658	n/a	
S11V005640		A	7439-95-4	Magnesium	ug/g	84.2	<0.0500	5.39E+03	n/a	n/a	n/a	n/a	11.0	n/a	
S11V005640		A	7439-96-5	Manganese	ug/g	82.9	<3.00E-03	371	n/a	n/a	n/a	n/a	0.658	n/a	
S11V005640		A	7439-98-7	Molybdenum	ug/g	85.5	<0.0200	<4.38	n/a	n/a	n/a	n/a	4.38	n/a	U
S11V005640		A	7440-23-5	Sodium	ug/g	97.1	<0.100	374	n/a	n/a	n/a	n/a	21.9	n/a	
S11V005640		A	7440-00-8	Neodymium	ug/g	92.6	<0.0100	8.94	n/a	n/a	n/a	n/a	2.19	n/a	B
S11V005640		A	7440-02-0	Nickel	ug/g	83.3	<0.0200	19.0	n/a	n/a	n/a	n/a	4.38	n/a	B
S11V005640		A	7723-14-0	Phosphorus	ug/g	85.9	<0.0500	550	n/a	n/a	n/a	n/a	11.0	n/a	
S11V005640		A	7704-34-9	Sulfur	ug/g	85.5	<0.100	27.8	n/a	n/a	n/a	n/a	21.9	n/a	B
S11V005640		A	7440-21-3	Silicon	ug/g	74.7	<0.0300	34.8	n/a	n/a	n/a	n/a	6.58	n/a	BN

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111290
Core Number: C8400
Customer Sample ID: B2FYY0
Sample Depth: 54'-56'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005640		A	7440-24-6	Strontium	ug/g	88.9	<3.00E-03	41.3	n/a	n/a	n/a	n/a	0.658	n/a	
S11V005640		A	7440-32-6	Titanium	ug/g	84.5	<5.00E-03	934	n/a	n/a	n/a	n/a	1.10	n/a	
S11V005640		A	7440-62-2	Vanadium	ug/g	86.5	<5.00E-03	44.7	n/a	n/a	n/a	n/a	1.10	n/a	
S11V005640		A	7440-65-5	Yttrium	ug/g	84.5	<2.00E-03	6.98	n/a	n/a	n/a	n/a	0.438	n/a	
S11V005640		A	7440-66-6	Zinc	ug/g	85.9	<5.00E-03	41.0	n/a	n/a	n/a	n/a	1.10	n/a	
S11V005640		A	7440-67-7	Zirconium	ug/g	84.5	<5.00E-03	2.32	n/a	n/a	n/a	n/a	1.10	n/a	BN
S11V005640		A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-06	<3.07E-05	n/a	n/a	n/a	n/a	3.07E-05	n/a	U
S11V005640		A	TH-232	Thorium-232	ug/g	94.2	<2.50E-04	3.33	n/a	n/a	n/a	n/a	2.19E-03	n/a	
S11V005640		A	13968-55-3	Uranium-233	ug/g	99.4	<1.00E-04	<8.77E-04	n/a	n/a	n/a	n/a	8.77E-04	n/a	U
S11V005640		A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-06	3.76E-05	n/a	n/a	n/a	n/a	2.19E-05	n/a	
S11V005640		A	15117-96-1	Uranium-235	ug/g	94.6	<5.00E-06	3.81E-03	n/a	n/a	n/a	n/a	4.38E-05	n/a	
S11V005640		A	13982-70-2	Uranium-236	ug/g	n/a	3.08E-06	<1.75E-05	n/a	n/a	n/a	n/a	1.75E-05	n/a	U
S11V005640		A	13994-20-2	Neptunium-237	ug/g	101	<5.00E-05	<4.38E-04	n/a	n/a	n/a	n/a	4.38E-04	n/a	U
S11V005640		A	U-238	Uranium-238	ug/g	95.4	<2.50E-04	0.517	n/a	n/a	n/a	n/a	2.19E-03	n/a	
S11V005640		A	7440-22-4	Silver	ug/g	92.7	<4.00E-03	<0.0351	n/a	n/a	n/a	n/a	0.0351	n/a	U
S11V005640		A	7440-38-2	Arsenic	ug/g	77.0	<0.0210	3.80	n/a	n/a	n/a	n/a	0.184	n/a	
S11V005640		A	7440-43-9	Cadmium	ug/g	97.4	<1.50E-03	0.0699	n/a	n/a	n/a	n/a	0.0132	n/a	B
S11V005640		A	7439-92-1	Lead	ug/g	109	<0.0155	5.24	n/a	n/a	n/a	n/a	0.136	n/a	
S11V005640		A	7782-49-2	Selenium	ug/g	100	<0.0305	0.279	n/a	n/a	n/a	n/a	0.267	n/a	B
S11V005640		A	7440-28-0	Thallium	ug/g	114	0.0128	0.178	n/a	n/a	n/a	n/a	0.0175	n/a	CN
S11V005641		S	14798-03-9	Ammonium	ug/g	105	<0.0120	<0.485	n/a	n/a	n/a	n/a	0.485	n/a	U
S11V005642		A	14133-76-7	Technetium-99	ug/g	102	<6.00E-05	<5.62E-04	n/a	n/a	n/a	n/a	5.62E-04	n/a	U
S11V005643		W	14762-75-5	Carbon-14	uCi/g	93.6	3.77E-06	<1.71E-06	n/a	n/a	n/a	n/a	1.71E-06	n/a	U
S11V005643		W	10028-17-8	Tritium	uCi/g	101	<1.32E-06	5.55E-06	n/a	n/a	n/a	n/a	1.55E-06	35.176	
S11V005644		E	CM-243/244	Curium-243/244	uCi/g	n/a	<3.31E-08	<3.48E-08	n/a	n/a	n/a	n/a	3.48E-08	n/a	U
S11V005644		E	14596-10-2	Americium-241	uCi/g	95.6	<2.98E-08	<4.09E-08	n/a	n/a	n/a	n/a	4.09E-08	n/a	U
S11V005644		E	15510-73-3	Curium-242	uCi/g	n/a	<3.17E-08	<4.46E-08	n/a	n/a	n/a	n/a	4.46E-08	n/a	U
S11V005644		E	PU-239/240	Plutonium-239/240	uCi/g	104	<3.41E-08	<4.11E-08	n/a	n/a	n/a	n/a	4.11E-08	n/a	U

NA = Not Analyzed, ND = Not Detected

B - Estimated
C - Blank Contamination
U - Less Than Detection Limit
B - Blank Contamination
M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111290
Core Number: C8400
Customer Sample ID: B2FYY0
Sample Depth: 54'-56'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005644		E	13981-16-3	Plutonium-238	uCi/g	n/a	<3.39E-08	<3.45E-08	n/a	n/a	n/a	n/a	3.45E-08	n/a	U
S11V005645		E	SR-89/90	Strontium-89/90	uCi/g	89.8	<7.10E-07	<2.04E-07	n/a	n/a	n/a	n/a	2.04E-07	n/a	U
S11V005646		E	7440-02-0	Nickel	ug/mL	n/a	n/a	175	n/a	n/a	n/a	n/a	0.200	n/a	
S11V005646		E	13981-37-8	Nickel-63	uCi/g	89.7	<4.31E-06	<4.49E-06	n/a	n/a	n/a	n/a	4.49E-06	n/a	U
S11V005647		E	15758-45-9	Selenium-79	uCi/g	n/a	<1.34E-06	5.19E-06	n/a	n/a	n/a	n/a	1.52E-06	83.935	X

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111290
Core Number: C8400
Customer Sample ID: B2FYY1
Sample Depth: 93'-95'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005652			%WATERA	%WATER-APD	%	n/a	n/a	13.00	n/a	n/a	n/a	n/a	0.01000	n/a	
S11V005652			WT%SOLID	Weight percent solids	%	n/a	n/a	87.0	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005653			57-12-5	Cyanide	ug/g	96.0	<0.0370	<0.480	n/a	n/a	n/a	n/a	0.480	n/a	U
S11V005653			7439-97-6	Mercury	ug/g	98.9	<1.10E-05	7.19E-03	n/a	n/a	n/a	n/a	1.10E-03	n/a	U
S11V005653			PH	pH	unitless	n/a	n/a	8.94	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005654			13966-00-2	Potassium-40	uCi/g	n/a	n/a	1.51E-05	n/a	n/a	n/a	n/a	2.76E-06	5.03	
S11V005654			10198-40-0	Cobalt-60	uCi/g	107	<1.31E-07	<9.68E-08	n/a	n/a	n/a	n/a	9.68E-08	n/a	U
S11V005654			14234-35-6	Antimony-125	uCi/g	n/a	<3.12E-07	<2.59E-07	n/a	n/a	n/a	n/a	2.59E-07	n/a	U
S11V005654			10045-97-3	Cesium-137	uCi/g	112	<1.23E-07	<9.16E-08	n/a	n/a	n/a	n/a	9.16E-08	n/a	U
S11V005654			14683-23-9	Europium-152	uCi/g	n/a	<3.07E-07	<2.71E-07	n/a	n/a	n/a	n/a	2.71E-07	n/a	U
S11V005654			15585-10-1	Europium-154	uCi/g	n/a	<3.58E-07	<3.52E-07	n/a	n/a	n/a	n/a	3.52E-07	n/a	U
S11V005654			14391-16-3	Europium-155	uCi/g	n/a	<2.71E-07	<2.57E-07	n/a	n/a	n/a	n/a	2.57E-07	n/a	U
S11V005654			14913-50-9	Thallium-208	uCi/g	n/a	n/a	9.14E-07	n/a	n/a	n/a	n/a	8.72E-08	4.53	
S11V005654			14913-49-6	Bismuth-212	uCi/g	n/a	n/a	1.53E-06	n/a	n/a	n/a	n/a	1.15E-06	22.28	
S11V005654			15092-94-1	Lead-212	uCi/g	n/a	<1.42E-07	1.30E-06	n/a	n/a	n/a	n/a	1.56E-07	3.94	
S11V005654			14733-03-0	Bismuth-214	uCi/g	n/a	<2.48E-07	1.01E-06	n/a	n/a	n/a	n/a	2.25E-07	8.20	
S11V005654			15067-28-4	Lead-214	uCi/g	n/a	n/a	1.88E-06	n/a	n/a	n/a	n/a	2.01E-07	4.83	
S11V005654			14331-83-0	Actinium-228	uCi/g	n/a	6.16E-07	1.41E-06	n/a	n/a	n/a	n/a	3.93E-07	10.15	B
S11V005654			14274-82-9	Thorium-228	uCi/g	n/a	<3.98E-05	<4.54E-05	n/a	n/a	n/a	n/a	4.54E-05	n/a	U
S11V005654			15065-10-8	Thorium-234	uCi/g	n/a	<2.22E-06	<1.27E-05	n/a	n/a	n/a	n/a	1.27E-05	n/a	U
S11V005654			15046-84-1	Iodine-129	uCi/g	100	<9.56E-07	<1.44E-06	n/a	n/a	n/a	n/a	1.44E-06	n/a	U
S11V005655			CONDUCT	Conductivity	uMHO/cm	98.8	1.47	238	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005656		A	7440-36-0	Antimony	ug/g	100	<2.00E-04	0.447	n/a	n/a	n/a	n/a	6.01E-03	n/a	
S11V005656		A	SN-117	Tin-117	ug/g	106	<1.00E-03	<0.0301	n/a	n/a	n/a	n/a	0.0301	n/a	U
S11V005656		A	15832-50-5	Tin-126	ug/g	n/a	<2.00E-05	3.65E-03	n/a	n/a	n/a	n/a	6.01E-04	n/a	E
S11V005657		W	16984-48-8	Fluoride	ug/g	102	<1.61E-03	1.00	n/a	n/a	n/a	n/a	0.0142	n/a	
S11V005657		W	GLYCOLAT	Glycolate	ug/g	98.7	<9.37E-03	<0.0825	n/a	n/a	n/a	n/a	0.0825	n/a	U
S11V005657		W	71-50-1	Acetate	ug/g	101	0.0331	0.327	n/a	n/a	n/a	n/a	0.0532	n/a	CB

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111290
Core Number: C8400
Customer Sample ID: B2FYY1
Sample Depth: 93'-95'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005657		W	FORMATE	Formate	ug/g	101	0.0306	0.535	n/a	n/a	n/a	n/a	0.0411	n/a	CB
S11V005657		W	16887-00-6	Chloride	ug/g	100	<9.98E-03	3.29	n/a	n/a	n/a	n/a	0.0879	n/a	M
S11V005657		W	14797-65-0	Nitrite	ug/g	99.9	<0.0192	0.706	n/a	n/a	n/a	n/a	0.169	n/a	B
S11V005657		W	14808-79-8	Sulfate	ug/g	101	<0.0187	16.8	n/a	n/a	n/a	n/a	0.165	n/a	M
S11V005657		W	338-70-5	Oxalate	ug/g	101	<0.0231	0.235	n/a	n/a	n/a	n/a	0.203	n/a	B
S11V005657		W	24959-67-9	Bromide	ug/g	99.6	<0.0580	<0.511	n/a	n/a	n/a	n/a	0.511	n/a	U
S11V005657		W	14797-55-8	Nitrate	ug/g	100	<0.0208	37.5	n/a	n/a	n/a	n/a	0.183	n/a	M
S11V005657		W	14265-44-2	Phosphate	ug/g	99.8	<0.0167	0.476	n/a	n/a	n/a	n/a	0.147	n/a	BN
S11V005658		A	7429-90-5	Aluminum	ug/g	87.7	<0.0300	1.17E+04	n/a	n/a	n/a	n/a	6.62	n/a	
S11V005658		A	7440-39-3	Barium	ug/g	88.7	<3.00E-03	75.2	n/a	n/a	n/a	n/a	0.662	n/a	N
S11V005658		A	7440-41-7	Beryllium	ug/g	92.7	<1.00E-03	0.395	n/a	n/a	n/a	n/a	0.221	n/a	B
S11V005658		A	7440-70-2	Calcium	ug/g	75.9	<0.0500	1.13E+04	n/a	n/a	n/a	n/a	11.0	n/a	
S11V005658		A	7440-45-1	Cerium	ug/g	91.7	<0.0300	35.0	n/a	n/a	n/a	n/a	6.62	n/a	B
S11V005658		A	7440-48-4	Cobalt	ug/g	84.2	<0.0100	5.83	n/a	n/a	n/a	n/a	2.21	n/a	B
S11V005658		A	7440-47-3	Chromium	ug/g	83.2	<5.00E-03	24.6	n/a	n/a	n/a	n/a	1.10	n/a	
S11V005658		A	7440-50-8	Copper	ug/g	94.7	<5.00E-03	13.8	n/a	n/a	n/a	n/a	1.10	n/a	
S11V005658		A	7439-89-6	Iron	ug/g	85.7	0.0201	1.82E+04	n/a	n/a	n/a	n/a	1.10	n/a	
S11V005658		A	7440-09-7	Potassium	ug/g	81.0	<0.500	1.64E+03	n/a	n/a	n/a	n/a	110	n/a	
S11V005658		A	7439-91-0	Lanthanum	ug/g	89.7	<3.00E-03	16.5	n/a	n/a	n/a	n/a	0.662	n/a	
S11V005658		A	7439-93-2	Lithium	ug/g	96.2	<3.00E-03	13.6	n/a	n/a	n/a	n/a	0.662	n/a	
S11V005658		A	7439-95-4	Magnesium	ug/g	84.2	<0.0500	5.86E+03	n/a	n/a	n/a	n/a	11.0	n/a	
S11V005658		A	7439-96-5	Manganese	ug/g	82.9	<3.00E-03	357	n/a	n/a	n/a	n/a	0.662	n/a	
S11V005658		A	7439-98-7	Molybdenum	ug/g	85.5	<0.0200	<4.41	n/a	n/a	n/a	n/a	4.41	n/a	U
S11V005658		A	7440-23-5	Sodium	ug/g	97.1	<0.100	232	n/a	n/a	n/a	n/a	22.1	n/a	
S11V005658		A	7440-00-8	Neodymium	ug/g	92.6	<0.0100	15.0	n/a	n/a	n/a	n/a	2.21	n/a	B
S11V005658		A	7440-02-0	Nickel	ug/g	83.3	<0.0200	17.8	n/a	n/a	n/a	n/a	4.41	n/a	B
S11V005658		A	7723-14-0	Phosphorus	ug/g	85.9	<0.0500	504	n/a	n/a	n/a	n/a	11.0	n/a	
S11V005658		A	7440-10-0	Praseodymium	ug/g	94.2	<0.0100	3.32	n/a	n/a	n/a	n/a	2.21	n/a	B

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X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111290
Core Number: C8400
Customer Sample ID: B2FYY1
Sample Depth: 93'-95'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005658		A	7704-34-9	Sulfur	ug/g	85.5	<0.100	22.1	n/a	n/a	n/a	n/a	22.1	n/a	B
S11V005658		A	7440-21-3	Silicon	ug/g	74.7	<0.0300	41.2	n/a	n/a	n/a	n/a	6.62	n/a	BN
S11V005658		A	7440-24-6	Strontium	ug/g	88.9	<3.00E-03	33.4	n/a	n/a	n/a	n/a	0.662	n/a	
S11V005658		A	7440-32-6	Titanium	ug/g	84.5	<5.00E-03	623	n/a	n/a	n/a	n/a	1.10	n/a	
S11V005658		A	7440-62-2	Vanadium	ug/g	86.5	<5.00E-03	32.2	n/a	n/a	n/a	n/a	1.10	n/a	
S11V005658		A	7440-65-5	Yttrium	ug/g	84.5	<2.00E-03	8.00	n/a	n/a	n/a	n/a	0.441	n/a	
S11V005658		A	7440-66-6	Zinc	ug/g	85.9	<5.00E-03	43.6	n/a	n/a	n/a	n/a	1.10	n/a	
S11V005658		A	7440-67-7	Zirconium	ug/g	84.5	<5.00E-03	2.42	n/a	n/a	n/a	n/a	1.10	n/a	BN
S11V005658		A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-06	<3.09E-05	n/a	n/a	n/a	n/a	3.09E-05	n/a	U
S11V005658		A	TH-232	Thorium-232	ug/g	94.2	<2.50E-04	5.56	n/a	n/a	n/a	n/a	2.21E-03	n/a	
S11V005658		A	13968-55-3	Uranium-233	ug/g	99.4	<1.00E-04	<8.82E-04	n/a	n/a	n/a	n/a	8.82E-04	n/a	U
S11V005658		A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-06	6.80E-05	n/a	n/a	n/a	n/a	2.21E-05	n/a	
S11V005658		A	15117-96-1	Uranium-235	ug/g	94.6	<5.00E-06	5.72E-03	n/a	n/a	n/a	n/a	4.41E-05	n/a	
S11V005658		A	13982-70-2	Uranium-236	ug/g	n/a	3.08E-06	<1.76E-05	n/a	n/a	n/a	n/a	1.76E-05	n/a	U
S11V005658		A	13994-20-2	Neptunium-237	ug/g	101	<5.00E-05	<4.41E-04	n/a	n/a	n/a	n/a	4.41E-04	n/a	U
S11V005658		A	U-238	Uranium-238	ug/g	95.4	<2.50E-04	0.801	n/a	n/a	n/a	n/a	2.21E-03	n/a	
S11V005658		A	7440-22-4	Silver	ug/g	92.7	<4.00E-03	<0.0353	n/a	n/a	n/a	n/a	0.0353	n/a	U
S11V005658		A	7440-38-2	Arsenic	ug/g	77.0	<0.0210	9.11	n/a	n/a	n/a	n/a	0.185	n/a	
S11V005658		A	7440-43-9	Cadmium	ug/g	97.4	<1.50E-03	0.107	n/a	n/a	n/a	n/a	0.0132	n/a	B
S11V005658		A	7439-92-1	Lead	ug/g	109	<0.0155	11.1	n/a	n/a	n/a	n/a	0.137	n/a	
S11V005658		A	7782-49-2	Selenium	ug/g	100	<0.0305	0.308	n/a	n/a	n/a	n/a	0.269	n/a	B
S11V005658		A	7440-28-0	Thallium	ug/g	114	0.0128	0.226	n/a	n/a	n/a	n/a	0.0176	n/a	CN
S11V005659		S	14798-03-9	Ammonium	ug/g	105	<0.0120	<0.495	n/a	n/a	n/a	n/a	0.495	n/a	U
S11V005660		A	14133-76-7	Technetium-99	ug/g	102	<6.00E-05	<5.49E-04	n/a	n/a	n/a	n/a	5.49E-04	n/a	U
S11V005661		W	14762-75-5	Carbon-14	uCi/g	93.6	3.77E-06	<1.74E-06	n/a	n/a	n/a	n/a	1.74E-06	n/a	U
S11V005661		W	10028-17-8	Tritium	uCi/g	101	<1.32E-06	1.62E-06	n/a	n/a	n/a	n/a	1.33E-06	89.233	
S11V005662		E	CM-243/244	Curium-243/244	uCi/g	n/a	<3.31E-08	<3.09E-08	n/a	n/a	n/a	n/a	3.09E-08	n/a	U
S11V005662		E	14596-10-2	Americium-241	uCi/g	95.6	<2.98E-08	2.92E-08	n/a	n/a	n/a	n/a	2.70E-08	41.93	

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X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111290
Core Number: C8400
Customer Sample ID: B2FYY1
Sample Depth: 93'-95'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005662		E	15510-73-3	Curium-242	uCi/g	n/a	<3.17E-08	<1.46E-08	n/a	n/a	n/a	n/a	1.46E-08	n/a	U
S11V005662		E	PU-239/240	Plutonium-239/240	uCi/g	104	<3.41E-08	<2.97E-08	n/a	n/a	n/a	n/a	2.97E-08	n/a	U
S11V005662		E	13981-16-3	Plutonium-238	uCi/g	n/a	<3.39E-08	<3.19E-08	n/a	n/a	n/a	n/a	3.19E-08	n/a	U
S11V005663		E	SR-89/90	Strontium-89/90	uCi/g	89.8	<7.10E-07	<6.64E-07	n/a	n/a	n/a	n/a	6.64E-07	n/a	U
S11V005664		E	7440-02-0	Nickel	ug/mL	n/a	n/a	185	n/a	n/a	n/a	n/a	0.200	n/a	
S11V005664		E	13981-37-8	Nickel-63	uCi/g	89.7	<4.31E-06	<4.16E-06	n/a	n/a	n/a	n/a	4.16E-06	n/a	U
S11V005665		E	15758-45-9	Selenium-79	uCi/g	n/a	<1.34E-06	<2.33E-06	n/a	n/a	n/a	n/a	2.33E-06	n/a	U

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111290
Core Number: C8400
Customer Sample ID: B2FYY2
Sample Depth: 126'-128'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005688			%WATERA	%WATER-APD	%	n/a	n/a	12.00	n/a	n/a	n/a	n/a	0.01000	n/a	
S11V005688			WT%SOLID	Weight percent solids	%	n/a	n/a	88.0	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005689			57-12-5	Cyanide	ug/g	96.0	<0.0370	<0.480	n/a	n/a	n/a	n/a	0.480	n/a	U
S11V005689			7439-97-6	Mercury	ug/g	98.9	<1.10E-05	0.0109	n/a	n/a	n/a	n/a	1.10E-03	n/a	U
S11V005689			PH	pH	unitless	n/a	n/a	8.61	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005690			13966-00-2	Potassium-40	uCi/g	n/a	n/a	1.53E-05	n/a	n/a	n/a	n/a	3.27E-06	5.83	
S11V005690			10198-40-0	Cobalt-60	uCi/g	107	<1.31E-07	<1.20E-07	n/a	n/a	n/a	n/a	1.20E-07	n/a	U
S11V005690			14234-35-6	Antimony-125	uCi/g	n/a	<3.12E-07	<3.01E-07	n/a	n/a	n/a	n/a	3.01E-07	n/a	U
S11V005690			10045-97-3	Cesium-137	uCi/g	112	<1.23E-07	<1.06E-07	n/a	n/a	n/a	n/a	1.06E-07	n/a	U
S11V005690			14683-23-9	Europium-152	uCi/g	n/a	<3.07E-07	<3.08E-07	n/a	n/a	n/a	n/a	3.08E-07	n/a	U
S11V005690			15585-10-1	Europium-154	uCi/g	n/a	<3.58E-07	<3.10E-07	n/a	n/a	n/a	n/a	3.10E-07	n/a	U
S11V005690			14391-16-3	Europium-155	uCi/g	n/a	<2.71E-07	<2.94E-07	n/a	n/a	n/a	n/a	2.94E-07	n/a	U
S11V005690			14913-50-9	Thallium-208	uCi/g	n/a	n/a	1.01E-06	n/a	n/a	n/a	n/a	1.14E-07	5.47	
S11V005690			15092-94-1	Lead-212	uCi/g	n/a	<1.42E-07	1.31E-06	n/a	n/a	n/a	n/a	1.83E-07	4.52	
S11V005690			14733-03-0	Bismuth-214	uCi/g	n/a	<2.48E-07	9.56E-07	n/a	n/a	n/a	n/a	2.46E-07	8.34	
S11V005690			15067-28-4	Lead-214	uCi/g	n/a	n/a	2.06E-06	n/a	n/a	n/a	n/a	1.85E-07	3.44	
S11V005690			14331-83-0	Actinium-228	uCi/g	n/a	6.16E-07	1.13E-06	n/a	n/a	n/a	n/a	4.42E-07	12.58	B
S11V005690			14274-82-9	Thorium-228	uCi/g	n/a	<3.98E-05	<5.06E-05	n/a	n/a	n/a	n/a	5.06E-05	n/a	U
S11V005690			15065-10-8	Thorium-234	uCi/g	n/a	<2.22E-06	<1.41E-05	n/a	n/a	n/a	n/a	1.41E-05	n/a	U
S11V005690			15046-84-1	Iodine-129	uCi/g	100	<9.56E-07	<8.16E-07	n/a	n/a	n/a	n/a	8.16E-07	n/a	U
S11V005691			CONDUCT	Conductivity	uMHO/cm	98.8	1.47	218	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005692		A	7440-36-0	Antimony	ug/g	100	<2.00E-04	0.481	n/a	n/a	n/a	n/a	6.44E-03	n/a	
S11V005692		A	SN-117	Tin-117	ug/g	106	<1.00E-03	<0.0322	n/a	n/a	n/a	n/a	0.0322	n/a	U
S11V005692		A	15832-50-5	Tin-126	ug/g	n/a	<2.00E-05	3.03E-03	n/a	n/a	n/a	n/a	6.44E-04	n/a	E
S11V005693		W	16984-48-8	Fluoride	ug/g	102	<1.61E-03	1.48	n/a	n/a	n/a	n/a	0.0148	n/a	
S11V005693		W	GLYCOLAT	Glycolate	ug/g	98.7	<9.37E-03	<0.0858	n/a	n/a	n/a	n/a	0.0858	n/a	U
S11V005693		W	71-50-1	Acetate	ug/g	101	0.0331	0.411	n/a	n/a	n/a	n/a	0.0553	n/a	CB
S11V005693		W	FORMATE	Formate	ug/g	101	0.0306	0.502	n/a	n/a	n/a	n/a	0.0428	n/a	CB

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X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111290
Core Number: C8400
Customer Sample ID: B2FYY2
Sample Depth: 126'-128'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005693		W	16887-00-6	Chloride	ug/g	100	<9.98E-03	7.27	n/a	n/a	n/a	n/a	0.0914	n/a	M
S11V005693		W	14797-65-0	Nitrite	ug/g	99.9	<0.0192	0.879	n/a	n/a	n/a	n/a	0.176	n/a	B
S11V005693		W	14808-79-8	Sulfate	ug/g	101	<0.0187	23.5	n/a	n/a	n/a	n/a	0.171	n/a	M
S11V005693		W	338-70-5	Oxalate	ug/g	101	<0.0231	0.374	n/a	n/a	n/a	n/a	0.212	n/a	B
S11V005693		W	24959-67-9	Bromide	ug/g	99.6	<0.0580	<0.531	n/a	n/a	n/a	n/a	0.531	n/a	U
S11V005693		W	14797-55-8	Nitrate	ug/g	100	<0.0208	9.36	n/a	n/a	n/a	n/a	0.191	n/a	M
S11V005693		W	14265-44-2	Phosphate	ug/g	99.8	<0.0167	1.34	n/a	n/a	n/a	n/a	0.153	n/a	BN
S11V005694		A	7429-90-5	Aluminum	ug/g	87.7	<0.0300	1.24E+04	n/a	n/a	n/a	n/a	6.67	n/a	
S11V005694		A	7440-39-3	Barium	ug/g	88.7	<3.00E-03	82.3	n/a	n/a	n/a	n/a	0.667	n/a	N
S11V005694		A	7440-41-7	Beryllium	ug/g	92.7	<1.00E-03	0.380	n/a	n/a	n/a	n/a	0.222	n/a	B
S11V005694		A	7440-70-2	Calcium	ug/g	75.9	<0.0500	1.26E+04	n/a	n/a	n/a	n/a	11.1	n/a	
S11V005694		A	7440-45-1	Cerium	ug/g	91.7	<0.0300	33.6	n/a	n/a	n/a	n/a	6.67	n/a	B
S11V005694		A	7440-48-4	Cobalt	ug/g	84.2	<0.0100	7.33	n/a	n/a	n/a	n/a	2.22	n/a	B
S11V005694		A	7440-47-3	Chromium	ug/g	83.2	<5.00E-03	22.8	n/a	n/a	n/a	n/a	1.11	n/a	
S11V005694		A	7440-50-8	Copper	ug/g	94.7	<5.00E-03	15.2	n/a	n/a	n/a	n/a	1.11	n/a	
S11V005694		A	7439-89-6	Iron	ug/g	85.7	0.0201	1.89E+04	n/a	n/a	n/a	n/a	1.11	n/a	
S11V005694		A	7440-09-7	Potassium	ug/g	81.0	<0.500	1.63E+03	n/a	n/a	n/a	n/a	111	n/a	
S11V005694		A	7439-91-0	Lanthanum	ug/g	89.7	<3.00E-03	15.5	n/a	n/a	n/a	n/a	0.667	n/a	
S11V005694		A	7439-93-2	Lithium	ug/g	96.2	<3.00E-03	14.3	n/a	n/a	n/a	n/a	0.667	n/a	
S11V005694		A	7439-95-4	Magnesium	ug/g	84.2	<0.0500	6.25E+03	n/a	n/a	n/a	n/a	11.1	n/a	
S11V005694		A	7439-96-5	Manganese	ug/g	82.9	<3.00E-03	277	n/a	n/a	n/a	n/a	0.667	n/a	
S11V005694		A	7439-98-7	Molybdenum	ug/g	85.5	<0.0200	<4.45	n/a	n/a	n/a	n/a	4.45	n/a	U
S11V005694		A	7440-23-5	Sodium	ug/g	97.1	<0.100	242	n/a	n/a	n/a	n/a	22.2	n/a	
S11V005694		A	7440-00-8	Neodymium	ug/g	92.6	<0.0100	15.1	n/a	n/a	n/a	n/a	2.22	n/a	B
S11V005694		A	7440-02-0	Nickel	ug/g	83.3	<0.0200	20.8	n/a	n/a	n/a	n/a	4.45	n/a	B
S11V005694		A	7723-14-0	Phosphorus	ug/g	85.9	<0.0500	539	n/a	n/a	n/a	n/a	11.1	n/a	
S11V005694		A	7440-21-3	Silicon	ug/g	74.7	<0.0300	32.5	n/a	n/a	n/a	n/a	6.67	n/a	BN
S11V005694		A	7440-24-6	Strontium	ug/g	88.9	<3.00E-03	37.3	n/a	n/a	n/a	n/a	0.667	n/a	

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111290
Core Number: C8400
Customer Sample ID: B2FYY2
Sample Depth: 126'-128'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005694		A	7440-32-6	Titanium	ug/g	84.5	<5.00E-03	682	n/a	n/a	n/a	n/a	1.11	n/a	
S11V005694		A	7440-62-2	Vanadium	ug/g	86.5	<5.00E-03	34.1	n/a	n/a	n/a	n/a	1.11	n/a	
S11V005694		A	7440-65-5	Yttrium	ug/g	84.5	<2.00E-03	7.75	n/a	n/a	n/a	n/a	0.445	n/a	
S11V005694		A	7440-66-6	Zinc	ug/g	85.9	<5.00E-03	46.5	n/a	n/a	n/a	n/a	1.11	n/a	
S11V005694		A	7440-67-7	Zirconium	ug/g	84.5	<5.00E-03	1.97	n/a	n/a	n/a	n/a	1.11	n/a	BN
S11V005694		A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-06	<3.11E-05	n/a	n/a	n/a	n/a	3.11E-05	n/a	U
S11V005694		A	TH-232	Thorium-232	ug/g	94.2	<2.50E-04	5.24	n/a	n/a	n/a	n/a	2.22E-03	n/a	
S11V005694		A	13968-55-3	Uranium-233	ug/g	99.4	<1.00E-04	<8.89E-04	n/a	n/a	n/a	n/a	8.89E-04	n/a	U
S11V005694		A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-06	4.31E-05	n/a	n/a	n/a	n/a	2.22E-05	n/a	
S11V005694		A	15117-96-1	Uranium-235	ug/g	94.6	<5.00E-06	6.46E-03	n/a	n/a	n/a	n/a	4.45E-05	n/a	
S11V005694		A	13982-70-2	Uranium-236	ug/g	n/a	3.08E-06	<1.78E-05	n/a	n/a	n/a	n/a	1.78E-05	n/a	U
S11V005694		A	13994-20-2	Neptunium-237	ug/g	101	<5.00E-05	<4.45E-04	n/a	n/a	n/a	n/a	4.45E-04	n/a	U
S11V005694		A	U-238	Uranium-238	ug/g	95.4	<2.50E-04	0.904	n/a	n/a	n/a	n/a	2.22E-03	n/a	
S11V005694		A	7440-22-4	Silver	ug/g	92.7	<4.00E-03	<0.0356	n/a	n/a	n/a	n/a	0.0356	n/a	U
S11V005694		A	7440-38-2	Arsenic	ug/g	77.0	<0.0210	4.73	n/a	n/a	n/a	n/a	0.187	n/a	
S11V005694		A	7440-43-9	Cadmium	ug/g	97.4	<1.50E-03	0.137	n/a	n/a	n/a	n/a	0.0133	n/a	
S11V005694		A	7439-92-1	Lead	ug/g	109	<0.0155	10.0	n/a	n/a	n/a	n/a	0.138	n/a	
S11V005694		A	7782-49-2	Selenium	ug/g	100	<0.0305	0.453	n/a	n/a	n/a	n/a	0.271	n/a	B
S11V005694		A	7440-28-0	Thallium	ug/g	114	0.0128	0.210	n/a	n/a	n/a	n/a	0.0178	n/a	CN
S11V005695		S	14798-03-9	Ammonium	ug/g	105	<0.0120	<0.559	n/a	n/a	n/a	n/a	0.559	n/a	U
S11V005696		A	14133-76-7	Technetium-99	ug/g	102	<6.00E-05	<5.25E-04	n/a	n/a	n/a	n/a	5.25E-04	n/a	U
S11V005697		W	14762-75-5	Carbon-14	uCi/g	93.6	3.77E-06	<1.30E-06	n/a	n/a	n/a	93.0	1.30E-06	n/a	U
S11V005697		W	10028-17-8	Tritium	uCi/g	101	<1.32E-06	<2.59E-06	n/a	n/a	n/a	n/a	2.59E-06	n/a	U
S11V005698		E	CM-243/244	Curium-243/244	uCi/g	n/a	<3.31E-08	<2.37E-08	n/a	n/a	n/a	n/a	2.37E-08	n/a	U
S11V005698		E	14596-10-2	Americium-241	uCi/g	95.6	<2.98E-08	<3.23E-08	n/a	n/a	n/a	n/a	3.23E-08	n/a	U
S11V005698		E	15510-73-3	Curium-242	uCi/g	n/a	<3.17E-08	<1.10E-08	n/a	n/a	n/a	n/a	1.10E-08	66.67	U
S11V005698		E	PU-239/240	Plutonium-239/240	uCi/g	104	<3.41E-08	<2.51E-08	n/a	n/a	n/a	n/a	2.51E-08	n/a	U
S11V005698		E	13981-16-3	Plutonium-238	uCi/g	n/a	<3.39E-08	<2.12E-08	n/a	n/a	n/a	n/a	2.12E-08	n/a	U

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111290
Core Number: C8400
Customer Sample ID: B2FYY2
Sample Depth: 126'-128'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005699		E	SR-89/90	Strontium-89/90	uCi/g	89.8	<7.10E-07	<7.55E-07	n/a	n/a	n/a	n/a	7.55E-07	n/a	U
S11V005700		E	7440-02-0	Nickel	ug/mL	n/a	n/a	145	n/a	n/a	n/a	n/a	0.200	n/a	
S11V005700		E	13981-37-8	Nickel-63	uCi/g	89.7	<4.31E-06	<6.53E-06	n/a	n/a	n/a	n/a	6.53E-06	n/a	U
S11V005701		E	15758-45-9	Selenium-79	uCi/g	n/a	<1.34E-06	3.91E-06	n/a	n/a	n/a	n/a	1.32E-06	6535.946	X

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111300
Core Number: C8408
Customer Sample ID: B2H106
Sample Depth: 47'-49'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005712			%WATERA	%WATER-APD	%	n/a	n/a	16.32	n/a	n/a	n/a	n/a	0.01000	n/a	
S11V005712			WT%SOLID	Weight percent solids	%	n/a	n/a	83.7	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005714			57-12-5	Cyanide	ug/g	102	<0.0370	<0.480	<0.480	n/a	n/a	92.9	0.480	n/a	U
S11V005714			7439-97-6	Mercury	ug/g	98.9	3.10E-05	5.59E-03	n/a	n/a	n/a	95.2	1.10E-03	n/a	CB
S11V005714			PH	pH	unitless	n/a	n/a	8.37	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005715			13966-00-2	Potassium-40	uCi/g	n/a	<2.86E-06	9.72E-06	n/a	n/a	n/a	n/a	3.14E-06	8.54	
S11V005715			10198-40-0	Cobalt-60	uCi/g	99.4	<9.83E-08	<8.55E-08	n/a	n/a	n/a	n/a	8.55E-08	n/a	U
S11V005715			14234-35-6	Antimony-125	uCi/g	n/a	<2.75E-07	<2.55E-07	n/a	n/a	n/a	n/a	2.55E-07	n/a	U
S11V005715			10045-97-3	Cesium-137	uCi/g	102	<8.56E-08	<9.71E-08	n/a	n/a	n/a	n/a	9.71E-08	n/a	U
S11V005715			14683-23-9	Europium-152	uCi/g	n/a	<2.96E-07	<2.99E-07	n/a	n/a	n/a	n/a	2.99E-07	n/a	U
S11V005715			15585-10-1	Europium-154	uCi/g	n/a	<2.78E-07	5.47E-07	n/a	n/a	n/a	n/a	2.47E-07	14.80	
S11V005715			14391-16-3	Europium-155	uCi/g	n/a	<2.82E-07	<2.67E-07	n/a	n/a	n/a	n/a	2.67E-07	n/a	U
S11V005715			14913-50-9	Thallium-208	uCi/g	n/a	<1.04E-07	7.24E-07	n/a	n/a	n/a	n/a	1.04E-07	6.85	
S11V005715			15092-94-1	Lead-212	uCi/g	n/a	<1.80E-07	6.75E-07	n/a	n/a	n/a	n/a	1.67E-07	7.50	
S11V005715			14733-03-0	Bismuth-214	uCi/g	n/a	<2.51E-07	4.79E-07	n/a	n/a	n/a	n/a	2.41E-07	15.88	
S11V005715			15067-28-4	Lead-214	uCi/g	n/a	<2.18E-07	1.35E-06	n/a	n/a	n/a	n/a	1.79E-07	4.74	
S11V005715			14331-83-0	Actinium-228	uCi/g	n/a	<3.97E-07	1.15E-06	n/a	n/a	n/a	n/a	4.61E-07	15.31	
S11V005715			14274-82-9	Thorium-228	uCi/g	n/a	<4.92E-05	<4.61E-05	n/a	n/a	n/a	n/a	4.61E-05	n/a	U
S11V005715			15065-10-8	Thorium-234	uCi/g	n/a	<1.55E-06	<4.50E-06	n/a	n/a	n/a	n/a	4.50E-06	n/a	U
S11V005715			15046-84-1	Iodine-129	uCi/g	103	<1.20E-06	<1.14E-06	n/a	n/a	n/a	n/a	1.14E-06	n/a	U
S11V005716			CONDUCT	Conductivity	uMHO/cm	92.9	0.310	115	119	117	3.94	n/a	0.0100	n/a	
S11V005717		A	7440-36-0	Antimony	ug/g	102	<2.00E-04	0.172	n/a	n/a	n/a	n/a	9.73E-03	n/a	
S11V005717		A	SN-117	Tin-117	ug/g	105	<1.00E-03	0.0516	n/a	n/a	n/a	n/a	0.0486	n/a	
S11V005717		A	15832-50-5	Tin-126	ug/g	n/a	<2.00E-05	1.22E-03	n/a	n/a	n/a	n/a	9.73E-04	n/a	E
S11V005718		W	16984-48-8	Fluoride	ug/g	94.5	<1.61E-03	1.33	n/a	n/a	n/a	n/a	0.0152	n/a	N
S11V005718		W	GLYCOLAT	Glycolate	ug/g	93.2	<9.37E-03	<0.0886	n/a	n/a	n/a	n/a	0.0886	n/a	U
S11V005718		W	71-50-1	Acetate	ug/g	97.3	<6.04E-03	<0.0571	n/a	n/a	n/a	n/a	0.0571	n/a	U
S11V005718		W	FORMATE	Formate	ug/g	94.2	<4.67E-03	<0.0442	n/a	n/a	n/a	n/a	0.0442	n/a	U

NA = Not Analyzed, ND = Not Detected

B - Estimated
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U - Less Than Detection Limit
B - Blank Contamination
M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111300
Core Number: C8408
Customer Sample ID: B2H106
Sample Depth: 47'-49'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005718		W	16887-00-6	Chloride	ug/g	100	<9.98E-03	0.709	n/a	n/a	n/a	n/a	0.0944	n/a	B
S11V005718		W	14797-65-0	Nitrite	ug/g	98.3	<0.0192	<0.182	n/a	n/a	n/a	n/a	0.182	n/a	U
S11V005718		W	14808-79-8	Sulfate	ug/g	101	<0.0187	4.12	n/a	n/a	n/a	n/a	0.177	n/a	
S11V005718		W	338-70-5	Oxalate	ug/g	101	<0.0231	<0.218	n/a	n/a	n/a	n/a	0.218	n/a	UN
S11V005718		W	24959-67-9	Bromide	ug/g	93.4	<0.0580	<0.549	n/a	n/a	n/a	n/a	0.549	n/a	U
S11V005718		W	14797-55-8	Nitrate	ug/g	102	<0.0208	4.12	n/a	n/a	n/a	n/a	0.197	n/a	
S11V005718		W	14265-44-2	Phosphate	ug/g	101	<0.0167	0.708	n/a	n/a	n/a	n/a	0.158	n/a	BN
S11V005719		A	7429-90-5	Aluminum	ug/g	86.0	<0.0300	1.64E+04	n/a	n/a	n/a	n/a	5.74	n/a	
S11V005719		A	7440-39-3	Barium	ug/g	89.3	<3.00E-03	158	n/a	n/a	n/a	n/a	0.574	n/a	
S11V005719		A	7440-41-7	Beryllium	ug/g	91.7	<1.00E-03	0.361	n/a	n/a	n/a	n/a	0.191	n/a	B
S11V005719		A	7440-70-2	Calcium	ug/g	79.0	<0.0500	9.93E+03	n/a	n/a	n/a	n/a	9.56	n/a	
S11V005719		A	7440-45-1	Cerium	ug/g	92.7	<0.0300	29.1	n/a	n/a	n/a	n/a	5.74	n/a	B
S11V005719		A	7440-48-4	Cobalt	ug/g	83.7	0.0142	19.0	n/a	n/a	n/a	n/a	1.91	n/a	B
S11V005719		A	7440-47-3	Chromium	ug/g	84.1	<5.00E-03	14.4	n/a	n/a	n/a	n/a	0.956	n/a	
S11V005719		A	7440-50-8	Copper	ug/g	92.5	<5.00E-03	16.5	n/a	n/a	n/a	n/a	0.956	n/a	
S11V005719		A	7439-89-6	Iron	ug/g	84.8	<5.00E-03	3.93E+04	n/a	n/a	n/a	n/a	0.956	n/a	
S11V005719		A	7440-09-7	Potassium	ug/g	78.6	<0.500	1.44E+03	n/a	n/a	n/a	n/a	95.6	n/a	
S11V005719		A	7439-91-0	Lanthanum	ug/g	89.2	<3.00E-03	11.9	n/a	n/a	n/a	n/a	0.574	n/a	
S11V005719		A	7439-93-2	Lithium	ug/g	92.4	<3.00E-03	10.7	n/a	n/a	n/a	n/a	0.574	n/a	
S11V005719		A	7439-95-4	Magnesium	ug/g	82.5	<0.0500	6.75E+03	n/a	n/a	n/a	n/a	9.56	n/a	
S11V005719		A	7439-96-5	Manganese	ug/g	83.3	<3.00E-03	685	n/a	n/a	n/a	n/a	0.574	n/a	
S11V005719		A	7439-98-7	Molybdenum	ug/g	88.6	<0.0200	<3.82	n/a	n/a	n/a	n/a	3.82	n/a	U
S11V005719		A	7440-23-5	Sodium	ug/g	91.6	<0.100	572	n/a	n/a	n/a	n/a	19.1	n/a	
S11V005719		A	7440-02-0	Nickel	ug/g	83.1	<0.0200	12.9	n/a	n/a	n/a	n/a	3.82	n/a	B
S11V005719		A	7723-14-0	Phosphorus	ug/g	89.0	<0.0500	679	n/a	n/a	n/a	n/a	9.56	n/a	
S11V005719		A	7440-10-0	Praseodymium	ug/g	95.7	<0.0100	2.54	n/a	n/a	n/a	n/a	1.91	n/a	B
S11V005719		A	7704-34-9	Sulfur	ug/g	87.6	<0.100	42.4	n/a	n/a	n/a	n/a	19.1	n/a	B
S11V005719		A	7440-21-3	Silicon	ug/g	64.6	<0.0300	96.6	n/a	n/a	n/a	n/a	5.74	n/a	N

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M - RPD Outside Range
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E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111300
Core Number: C8408
Customer Sample ID: B2H106
Sample Depth: 47'-49'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005719		A	7440-24-6	Strontium	ug/g	89.0	<3.00E-03	46.3	n/a	n/a	n/a	n/a	0.574	n/a	
S11V005719		A	7440-32-6	Titanium	ug/g	88.4	<5.00E-03	2.33E+03	n/a	n/a	n/a	n/a	0.956	n/a	
S11V005719		A	7440-62-2	Vanadium	ug/g	86.3	5.56E-03	95.3	n/a	n/a	n/a	n/a	0.956	n/a	
S11V005719		A	7440-65-5	Yttrium	ug/g	87.9	<2.00E-03	12.4	n/a	n/a	n/a	n/a	0.382	n/a	
S11V005719		A	7440-66-6	Zinc	ug/g	84.7	<5.00E-03	55.1	n/a	n/a	n/a	n/a	0.956	n/a	
S11V005719		A	7440-67-7	Zirconium	ug/g	85.9	<5.00E-03	5.71	n/a	n/a	n/a	n/a	0.956	n/a	BN
S11V005719		A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-06	<3.35E-05	n/a	n/a	n/a	n/a	3.35E-05	n/a	U
S11V005719		A	TH-232	Thorium-232	ug/g	93.6	<2.50E-04	3.40	n/a	n/a	n/a	n/a	2.39E-03	n/a	
S11V005719		A	13968-55-3	Uranium-233	ug/g	99.5	<1.00E-04	<9.56E-04	n/a	n/a	n/a	n/a	9.56E-04	n/a	U
S11V005719		A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-06	2.75E-05	n/a	n/a	n/a	n/a	2.39E-05	n/a	
S11V005719		A	15117-96-1	Uranium-235	ug/g	92.6	<5.00E-06	5.31E-03	n/a	n/a	n/a	n/a	4.78E-05	n/a	
S11V005719		A	13982-70-2	Uranium-236	ug/g	n/a	<2.00E-06	<1.91E-05	n/a	n/a	n/a	n/a	1.91E-05	n/a	U
S11V005719		A	13994-20-2	Neptunium-237	ug/g	100	<5.00E-05	<4.78E-04	n/a	n/a	n/a	n/a	4.78E-04	n/a	U
S11V005719		A	U-238	Uranium-238	ug/g	97.9	<2.50E-04	0.740	n/a	n/a	n/a	n/a	2.39E-03	n/a	
S11V005719		A	7440-22-4	Silver	ug/g	98.6	<2.00E-03	0.0325	n/a	n/a	n/a	n/a	0.0191	n/a	B
S11V005719		A	7440-38-2	Arsenic	ug/g	93.0	<0.0168	1.26	n/a	n/a	n/a	n/a	0.161	n/a	CB
S11V005719		A	7440-43-9	Cadmium	ug/g	99.2	<6.00E-03	0.111	n/a	n/a	n/a	n/a	0.0574	n/a	B
S11V005719		A	7439-92-1	Lead	ug/g	99.9	<0.0150	5.22	n/a	n/a	n/a	n/a	0.143	n/a	
S11V005719		A	7782-49-2	Selenium	ug/g	92.0	<0.0244	<0.233	n/a	n/a	n/a	n/a	0.233	n/a	U
S11V005719		A	7440-28-0	Thallium	ug/g	108	<4.00E-03	0.181	n/a	n/a	n/a	n/a	0.0382	n/a	B
S11V005720		S	14798-03-9	Ammonium	ug/g	99.0	1.18	<0.475	n/a	n/a	n/a	n/a	0.475	n/a	U
S11V005721		A	14133-76-7	Technetium-99	ug/g	103	<6.00E-05	<5.99E-04	n/a	n/a	n/a	n/a	5.99E-04	n/a	UN
S11V005722		W	14762-75-5	Carbon-14	uCi/g	95.6	<1.24E-06	<1.25E-06	<1.24E-06	n/a	n/a	n/a	1.25E-06	n/a	U
S11V005722		W	10028-17-8	Tritium	uCi/g	102	<1.48E-06	2.01E-06	5.82E-06	3.92E-06	97.3	103	1.68E-06	58.523	
S11V005723		E	CM-243/244	Curium-243/244	uCi/g	n/a	<3.13E-08	<2.63E-08	<2.32E-08	n/a	n/a	n/a	2.63E-08	n/a	U
S11V005723		E	14596-10-2	Americium-241	uCi/g	94.9	<3.00E-08	<3.62E-08	<2.49E-08	n/a	n/a	n/a	3.62E-08	n/a	U
S11V005723		E	15510-73-3	Curium-242	uCi/g	n/a	<1.97E-08	<1.31E-08	<1.18E-08	n/a	n/a	n/a	1.31E-08	n/a	U
S11V005723		E	PU-239/240	Plutonium-239/240	uCi/g	105	5.88E-08	<3.88E-08	<6.77E-08	n/a	n/a	n/a	3.88E-08	n/a	U

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U - Less Than Detection Limit
B - Blank Contamination
M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111300
Core Number: C8408
Customer Sample ID: B2H106
Sample Depth: 47'-49'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005723		E	13981-16-3	Plutonium-238	uCi/g	n/a	<3.23E-08	<3.89E-08	<3.05E-08	n/a	n/a	n/a	3.89E-08	n/a	U
S11V005724		E	SR-89/90	Strontium-89/90	uCi/g	98.6	<5.66E-07	<2.94E-07	<2.05E-07	n/a	n/a	n/a	2.94E-07	n/a	U
S11V005725		E	7440-02-0	Nickel	ug/mL	n/a	n/a	179	n/a	n/a	n/a	n/a	0.200	n/a	
S11V005725		E	13981-37-8	Nickel-63	uCi/g	99.7	<4.47E-06	<4.40E-06	<7.30E-06	n/a	n/a	n/a	4.40E-06	n/a	U
S11V005726		E	15758-45-9	Selenium-79	uCi/g	n/a	2.85E-06	2.94E-06	2.58E-06	2.76E-06	13.0	n/a	1.30E-06	214.526	B X

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B - Blank Contamination
M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111300
Core Number: C8408
Customer Sample ID: B2H107
Sample Depth: 94'-96'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005751			%WATERA	%WATER-APD	%	n/a	n/a	12.86	n/a	n/a	n/a	n/a	0.01000	n/a	
S11V005751			WT%SOLID	Weight percent solids	%	n/a	n/a	87.1	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005752			57-12-5	Cyanide	ug/g	102	<0.0370	<0.480	n/a	n/a	n/a	n/a	0.480	n/a	U
S11V005752			7439-97-6	Mercury	ug/g	98.9	3.10E-05	8.27E-03	n/a	n/a	n/a	n/a	1.00E-03	n/a	CB
S11V005752			PH	pH	unitless	n/a	n/a	8.40	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005753			13966-00-2	Potassium-40	uCi/g	n/a	<2.86E-06	1.80E-05	n/a	n/a	n/a	n/a	2.92E-06	4.50	
S11V005753			10198-40-0	Cobalt-60	uCi/g	99.4	<9.83E-08	<9.85E-08	n/a	n/a	n/a	n/a	9.85E-08	n/a	U
S11V005753			14234-35-6	Antimony-125	uCi/g	n/a	<2.75E-07	<2.43E-07	n/a	n/a	n/a	n/a	2.43E-07	n/a	U
S11V005753			10045-97-3	Cesium-137	uCi/g	102	<8.56E-08	<1.05E-07	n/a	n/a	n/a	n/a	1.05E-07	n/a	U
S11V005753			14683-23-9	Europium-152	uCi/g	n/a	<2.96E-07	<2.86E-07	n/a	n/a	n/a	n/a	2.86E-07	n/a	U
S11V005753			15585-10-1	Europium-154	uCi/g	n/a	<2.78E-07	<1.81E-07	n/a	n/a	n/a	n/a	1.81E-07	n/a	U
S11V005753			14391-16-3	Europium-155	uCi/g	n/a	<2.82E-07	<2.62E-07	n/a	n/a	n/a	n/a	2.62E-07	n/a	U
S11V005753			14913-50-9	Thallium-208	uCi/g	n/a	<1.04E-07	8.60E-07	n/a	n/a	n/a	n/a	8.56E-08	4.62	
S11V005753			14913-49-6	Bismuth-212	uCi/g	n/a	<1.15E-06	1.18E-06	n/a	n/a	n/a	n/a	1.13E-06	28.02	
S11V005753			15092-94-1	Lead-212	uCi/g	n/a	<1.80E-07	1.11E-06	n/a	n/a	n/a	n/a	1.58E-07	4.55	
S11V005753			14733-03-0	Bismuth-214	uCi/g	n/a	<2.51E-07	6.34E-07	n/a	n/a	n/a	n/a	2.20E-07	9.47	
S11V005753			15067-28-4	Lead-214	uCi/g	n/a	<2.18E-07	1.73E-06	n/a	n/a	n/a	n/a	1.87E-07	4.65	
S11V005753			13982-63-3	Radium-226	uCi/g	n/a	<1.91E-06	1.71E-06	n/a	n/a	n/a	n/a	1.58E-06	28.43	
S11V005753			14331-83-0	Actinium-228	uCi/g	n/a	<3.97E-07	1.17E-06	n/a	n/a	n/a	n/a	4.40E-07	14.20	
S11V005753			14274-82-9	Thorium-228	uCi/g	n/a	<4.92E-05	<4.55E-05	n/a	n/a	n/a	n/a	4.55E-05	n/a	U
S11V005753			15065-10-8	Thorium-234	uCi/g	n/a	<1.55E-06	<3.92E-06	n/a	n/a	n/a	n/a	3.92E-06	n/a	U
S11V005753			15046-84-1	Iodine-129	uCi/g	103	<1.20E-06	<2.61E-06	n/a	n/a	n/a	n/a	2.61E-06	n/a	U
S11V005754			CONDUCT	Conductivity	uMHO/cm	92.9	0.310	133	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005755		A	7440-36-0	Antimony	ug/g	102	<2.00E-04	0.529	n/a	n/a	n/a	n/a	9.96E-03	n/a	
S11V005755		A	SN-117	Tin-117	ug/g	105	<1.00E-03	<0.0498	n/a	n/a	n/a	n/a	0.0498	n/a	U
S11V005755		A	15832-50-5	Tin-126	ug/g	n/a	<2.00E-05	4.49E-03	n/a	n/a	n/a	n/a	9.96E-04	n/a	E
S11V005756		W	16984-48-8	Fluoride	ug/g	94.5	<1.61E-03	0.691	n/a	n/a	n/a	n/a	0.0156	n/a	N
S11V005756		W	GLYCOLAT	Glycolate	ug/g	93.2	<9.37E-03	<0.0908	n/a	n/a	n/a	n/a	0.0908	n/a	U

NA = Not Analyzed, ND = Not Detected

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M - RPD Outside Range
N - MS/MSD Outside Range
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X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111300
Core Number: C8408
Customer Sample ID: B2H107
Sample Depth: 94'-96'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005756		W	71-50-1	Acetate	ug/g	97.3	<6.04E-03	<0.0585	n/a	n/a	n/a	n/a	0.0585	n/a	U
S11V005756		W	FORMATE	Formate	ug/g	94.2	<4.67E-03	0.271	n/a	n/a	n/a	n/a	0.0452	n/a	B
S11V005756		W	16887-00-6	Chloride	ug/g	100	<9.98E-03	4.87	n/a	n/a	n/a	n/a	0.0967	n/a	
S11V005756		W	14797-65-0	Nitrite	ug/g	98.3	<0.0192	<0.186	n/a	n/a	n/a	n/a	0.186	n/a	U
S11V005756		W	14808-79-8	Sulfate	ug/g	101	<0.0187	21.0	n/a	n/a	n/a	n/a	0.181	n/a	
S11V005756		W	338-70-5	Oxalate	ug/g	101	<0.0231	<0.224	n/a	n/a	n/a	n/a	0.224	n/a	UN
S11V005756		W	24959-67-9	Bromide	ug/g	93.4	<0.0580	<0.562	n/a	n/a	n/a	n/a	0.562	n/a	U
S11V005756		W	14797-55-8	Nitrate	ug/g	102	<0.0208	11.0	n/a	n/a	n/a	n/a	0.202	n/a	
S11V005756		W	14265-44-2	Phosphate	ug/g	101	<0.0167	0.351	n/a	n/a	n/a	n/a	0.162	n/a	BN
S11V005757		A	7429-90-5	Aluminum	ug/g	86.0	<0.0300	1.09E+04	n/a	n/a	n/a	n/a	5.72	n/a	
S11V005757		A	7440-39-3	Barium	ug/g	89.3	<3.00E-03	91.9	n/a	n/a	n/a	n/a	0.572	n/a	
S11V005757		A	7440-41-7	Beryllium	ug/g	91.7	<1.00E-03	0.376	n/a	n/a	n/a	n/a	0.191	n/a	B
S11V005757		A	7440-70-2	Calcium	ug/g	79.0	<0.0500	1.16E+04	n/a	n/a	n/a	n/a	9.54	n/a	
S11V005757		A	7440-45-1	Cerium	ug/g	92.7	<0.0300	37.5	n/a	n/a	n/a	n/a	5.72	n/a	B
S11V005757		A	7440-48-4	Cobalt	ug/g	83.7	0.0142	10.0	n/a	n/a	n/a	n/a	1.91	n/a	CB
S11V005757		A	7440-47-3	Chromium	ug/g	84.1	<5.00E-03	23.2	n/a	n/a	n/a	n/a	0.954	n/a	
S11V005757		A	7440-50-8	Copper	ug/g	92.5	<5.00E-03	15.1	n/a	n/a	n/a	n/a	0.954	n/a	
S11V005757		A	7439-89-6	Iron	ug/g	84.8	<5.00E-03	1.79E+04	n/a	n/a	n/a	n/a	0.954	n/a	
S11V005757		A	7440-09-7	Potassium	ug/g	78.6	<0.500	1.65E+03	n/a	n/a	n/a	n/a	95.4	n/a	
S11V005757		A	7439-91-0	Lanthanum	ug/g	89.2	<3.00E-03	16.3	n/a	n/a	n/a	n/a	0.572	n/a	
S11V005757		A	7439-93-2	Lithium	ug/g	92.4	<3.00E-03	13.2	n/a	n/a	n/a	n/a	0.572	n/a	
S11V005757		A	7439-95-4	Magnesium	ug/g	82.5	<0.0500	5.80E+03	n/a	n/a	n/a	n/a	9.54	n/a	
S11V005757		A	7439-96-5	Manganese	ug/g	83.3	<3.00E-03	366	n/a	n/a	n/a	n/a	0.572	n/a	
S11V005757		A	7439-98-7	Molybdenum	ug/g	88.6	<0.0200	<3.81	n/a	n/a	n/a	n/a	3.81	n/a	U
S11V005757		A	7440-23-5	Sodium	ug/g	91.6	<0.100	190	n/a	n/a	n/a	n/a	19.1	n/a	B
S11V005757		A	7440-02-0	Nickel	ug/g	83.1	<0.0200	16.9	n/a	n/a	n/a	n/a	3.81	n/a	B
S11V005757		A	7723-14-0	Phosphorus	ug/g	89.0	<0.0500	520	n/a	n/a	n/a	n/a	9.54	n/a	
S11V005757		A	7440-10-0	Praseodymium	ug/g	95.7	<0.0100	2.78	n/a	n/a	n/a	n/a	1.91	n/a	B

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111300
Core Number: C8408
Customer Sample ID: B2H107
Sample Depth: 94'-96'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005757		A	7704-34-9	Sulfur	ug/g	87.6	<0.100	30.0	n/a	n/a	n/a	n/a	19.1	n/a	B
S11V005757		A	7440-21-3	Silicon	ug/g	64.6	<0.0300	85.9	n/a	n/a	n/a	n/a	5.72	n/a	N
S11V005757		A	7440-24-6	Strontium	ug/g	89.0	<3.00E-03	32.5	n/a	n/a	n/a	n/a	0.572	n/a	
S11V005757		A	7440-32-6	Titanium	ug/g	88.4	<5.00E-03	646	n/a	n/a	n/a	n/a	0.954	n/a	
S11V005757		A	7440-62-2	Vanadium	ug/g	86.3	5.56E-03	31.0	n/a	n/a	n/a	n/a	0.954	n/a	
S11V005757		A	7440-65-5	Yttrium	ug/g	87.9	<2.00E-03	7.92	n/a	n/a	n/a	n/a	0.381	n/a	
S11V005757		A	7440-66-6	Zinc	ug/g	84.7	<5.00E-03	43.3	n/a	n/a	n/a	n/a	0.954	n/a	
S11V005757		A	7440-67-7	Zirconium	ug/g	85.9	<5.00E-03	5.98	n/a	n/a	n/a	n/a	0.954	n/a	BN
S11V005757		A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-06	<3.34E-05	n/a	n/a	n/a	n/a	3.34E-05	n/a	U
S11V005757		A	TH-232	Thorium-232	ug/g	93.6	<2.50E-04	5.71	n/a	n/a	n/a	n/a	2.38E-03	n/a	
S11V005757		A	13968-55-3	Uranium-233	ug/g	99.5	<1.00E-04	<9.54E-04	n/a	n/a	n/a	n/a	9.54E-04	n/a	U
S11V005757		A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-06	3.98E-05	n/a	n/a	n/a	n/a	2.38E-05	n/a	
S11V005757		A	15117-96-1	Uranium-235	ug/g	92.6	<5.00E-06	5.61E-03	n/a	n/a	n/a	n/a	4.77E-05	n/a	
S11V005757		A	13982-70-2	Uranium-236	ug/g	n/a	<2.00E-06	<1.91E-05	n/a	n/a	n/a	n/a	1.91E-05	n/a	U
S11V005757		A	13994-20-2	Neptunium-237	ug/g	100	<5.00E-05	<4.77E-04	n/a	n/a	n/a	n/a	4.77E-04	n/a	U
S11V005757		A	U-238	Uranium-238	ug/g	97.9	<2.50E-04	0.799	n/a	n/a	n/a	n/a	2.38E-03	n/a	
S11V005757		A	7440-22-4	Silver	ug/g	98.6	<2.00E-03	0.0536	n/a	n/a	n/a	n/a	0.0191	n/a	B
S11V005757		A	7440-38-2	Arsenic	ug/g	93.0	<0.0168	3.31	n/a	n/a	n/a	n/a	0.160	n/a	C
S11V005757		A	7440-43-9	Cadmium	ug/g	99.2	<6.00E-03	0.112	n/a	n/a	n/a	n/a	0.0572	n/a	B
S11V005757		A	7439-92-1	Lead	ug/g	99.9	<0.0150	9.22	n/a	n/a	n/a	n/a	0.143	n/a	
S11V005757		A	7782-49-2	Selenium	ug/g	92.0	<0.0244	<0.233	n/a	n/a	n/a	n/a	0.233	n/a	U
S11V005757		A	7440-28-0	Thallium	ug/g	108	<4.00E-03	0.144	n/a	n/a	n/a	n/a	0.0381	n/a	B
S11V005758		S	14798-03-9	Ammonium	ug/g	99.0	1.18	1.26	n/a	n/a	n/a	n/a	0.475	n/a	CB
S11V005759		A	14133-76-7	Technetium-99	ug/g	103	<6.00E-05	<5.99E-04	n/a	n/a	n/a	n/a	5.99E-04	n/a	UN
S11V005760		W	14762-75-5	Carbon-14	uCi/g	95.6	<1.24E-06	<1.22E-06	n/a	n/a	n/a	96.9	1.22E-06	n/a	U
S11V005760		W	10028-17-8	Tritium	uCi/g	102	<1.48E-06	1.53E-06	n/a	n/a	n/a	n/a	1.48E-06	147	
S11V005761		E	CM-243/244	Curium-243/244	uCi/g	n/a	<3.13E-08	<2.50E-08	n/a	n/a	n/a	n/a	2.50E-08	n/a	U
S11V005761		E	14596-10-2	Americium-241	uCi/g	94.9	<3.00E-08	<3.64E-08	n/a	n/a	n/a	n/a	3.64E-08	n/a	U

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E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111300
Core Number: C8408
Customer Sample ID: B2H107
Sample Depth: 94'-96'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005761		E	15510-73-3	Curium-242	uCi/g	n/a	<1.97E-08	<2.69E-08	n/a	n/a	n/a	n/a	2.69E-08	n/a	U
S11V005761		E	PU-239/240	Plutonium-239/240	uCi/g	105	5.88E-08	<4.09E-08	n/a	n/a	n/a	n/a	4.09E-08	n/a	U
S11V005761		E	13981-16-3	Plutonium-238	uCi/g	n/a	<3.23E-08	<3.31E-08	n/a	n/a	n/a	n/a	3.31E-08	n/a	U
S11V005762		E	SR-89/90	Strontium-89/90	uCi/g	98.6	<5.66E-07	<7.76E-07	n/a	n/a	n/a	n/a	7.76E-07	n/a	U
S11V005763		E	7440-02-0	Nickel	ug/mL	n/a	n/a	168	n/a	n/a	n/a	n/a	0.200	n/a	
S11V005763		E	13981-37-8	Nickel-63	uCi/g	99.7	<4.47E-06	<5.28E-06	n/a	n/a	n/a	n/a	5.28E-06	n/a	U
S11V005764		E	15758-45-9	Selenium-79	uCi/g	n/a	2.85E-06	1.31E-06	n/a	n/a	n/a	n/a	8.69E-07	222.243	B X

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111300
Core Number: C8408
Customer Sample ID: B2H108
Sample Depth: 129'-131'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005769			%WATERA	%WATER-APD	%	n/a	n/a	13.11	n/a	n/a	n/a	n/a	0.01000	n/a	
S11V005769			WT%SOLID	Weight percent solids	%	n/a	n/a	86.9	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005770			57-12-5	Cyanide	ug/g	102	<0.0370	<0.480	n/a	n/a	n/a	n/a	0.480	n/a	U
S11V005770			7439-97-6	Mercury	ug/g	98.9	3.10E-05	0.0112	n/a	n/a	n/a	n/a	1.06E-03	n/a	CB
S11V005770			PH	pH	unitless	n/a	n/a	8.16	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005771			13966-00-2	Potassium-40	uCi/g	n/a	<2.86E-06	1.65E-05	n/a	n/a	n/a	n/a	3.03E-06	4.88	
S11V005771			10198-40-0	Cobalt-60	uCi/g	99.4	<9.83E-08	<1.07E-07	n/a	n/a	n/a	n/a	1.07E-07	n/a	U
S11V005771			14234-35-6	Antimony-125	uCi/g	n/a	<2.75E-07	<2.79E-07	n/a	n/a	n/a	n/a	2.79E-07	n/a	U
S11V005771			10045-97-3	Cesium-137	uCi/g	102	<8.56E-08	<9.76E-08	n/a	n/a	n/a	n/a	9.76E-08	n/a	U
S11V005771			14683-23-9	Europium-152	uCi/g	n/a	<2.96E-07	<2.84E-07	n/a	n/a	n/a	n/a	2.84E-07	n/a	U
S11V005771			15585-10-1	Europium-154	uCi/g	n/a	<2.78E-07	<3.00E-07	n/a	n/a	n/a	n/a	3.00E-07	n/a	U
S11V005771			14391-16-3	Europium-155	uCi/g	n/a	<2.82E-07	<2.61E-07	n/a	n/a	n/a	n/a	2.61E-07	n/a	U
S11V005771			14913-50-9	Thallium-208	uCi/g	n/a	<1.04E-07	8.49E-07	n/a	n/a	n/a	n/a	8.12E-08	3.79	
S11V005771			14913-49-6	Bismuth-212	uCi/g	n/a	<1.15E-06	1.58E-06	n/a	n/a	n/a	n/a	1.16E-06	21.73	
S11V005771			15092-94-1	Lead-212	uCi/g	n/a	<1.80E-07	1.23E-06	n/a	n/a	n/a	n/a	1.63E-07	4.28	
S11V005771			14733-03-0	Bismuth-214	uCi/g	n/a	<2.51E-07	6.12E-07	n/a	n/a	n/a	n/a	2.32E-07	10.31	
S11V005771			15067-28-4	Lead-214	uCi/g	n/a	<2.18E-07	1.66E-06	n/a	n/a	n/a	n/a	1.99E-07	5.09	
S11V005771			14331-83-0	Actinium-228	uCi/g	n/a	<3.97E-07	9.31E-07	n/a	n/a	n/a	n/a	4.11E-07	14.16	
S11V005771			14274-82-9	Thorium-228	uCi/g	n/a	<4.92E-05	<4.87E-05	n/a	n/a	n/a	n/a	4.87E-05	n/a	U
S11V005771			15065-10-8	Thorium-234	uCi/g	n/a	<1.55E-06	<3.80E-06	n/a	n/a	n/a	n/a	3.80E-06	n/a	U
S11V005771			15046-84-1	Iodine-129	uCi/g	103	<1.20E-06	<1.85E-06	n/a	n/a	n/a	n/a	1.85E-06	n/a	U
S11V005772			CONDUCT	Conductivity	uMHO/cm	92.9	0.310	102	n/a	n/a	n/a	n/a	0.0100	n/a	
S11V005773		A	7440-36-0	Antimony	ug/g	102	<2.00E-04	0.417	n/a	n/a	n/a	n/a	9.95E-03	n/a	
S11V005773		A	SN-117	Tin-117	ug/g	105	<1.00E-03	<0.0497	n/a	n/a	n/a	n/a	0.0497	n/a	U
S11V005773		A	15832-50-5	Tin-126	ug/g	n/a	<2.00E-05	3.00E-03	n/a	n/a	n/a	n/a	9.95E-04	n/a	E
S11V005774		W	16984-48-8	Fluoride	ug/g	94.5	<1.61E-03	0.926	n/a	n/a	n/a	n/a	0.0150	n/a	N
S11V005774		W	GLYCOLAT	Glycolate	ug/g	93.2	<9.37E-03	<0.0874	n/a	n/a	n/a	n/a	0.0874	n/a	U
S11V005774		W	71-50-1	Acetate	ug/g	97.3	<6.04E-03	<0.0564	n/a	n/a	n/a	n/a	0.0564	n/a	U

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S Farm Barrier 2011
Data Summary Report

Sample Group: 20111300
Core Number: C8408
Customer Sample ID: B2H108
Sample Depth: 129'-131'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005774		W	FORMATE	Formate	ug/g	94.2	<4.67E-03	0.311	n/a	n/a	n/a	n/a	0.0436	n/a	B
S11V005774		W	16887-00-6	Chloride	ug/g	100	<9.98E-03	6.45	n/a	n/a	n/a	n/a	0.0931	n/a	
S11V005774		W	14797-65-0	Nitrite	ug/g	98.3	<0.0192	<0.179	n/a	n/a	n/a	n/a	0.179	n/a	U
S11V005774		W	14808-79-8	Sulfate	ug/g	101	<0.0187	22.5	n/a	n/a	n/a	n/a	0.175	n/a	
S11V005774		W	338-70-5	Oxalate	ug/g	101	<0.0231	0.529	n/a	n/a	n/a	n/a	0.216	n/a	BN
S11V005774		W	24959-67-9	Bromide	ug/g	93.4	<0.0580	<0.541	n/a	n/a	n/a	n/a	0.541	n/a	U
S11V005774		W	14797-55-8	Nitrate	ug/g	102	<0.0208	15.0	n/a	n/a	n/a	n/a	0.194	n/a	
S11V005774		W	14265-44-2	Phosphate	ug/g	101	<0.0167	0.413	n/a	n/a	n/a	n/a	0.156	n/a	BN
S11V005775		A	7429-90-5	Aluminum	ug/g	86.0	<0.0300	1.12E+04	n/a	n/a	n/a	n/a	5.98	n/a	
S11V005775		A	7440-39-3	Barium	ug/g	89.3	<3.00E-03	88.4	n/a	n/a	n/a	n/a	0.598	n/a	
S11V005775		A	7440-41-7	Beryllium	ug/g	91.7	<1.00E-03	0.331	n/a	n/a	n/a	n/a	0.199	n/a	B
S11V005775		A	7440-70-2	Calcium	ug/g	79.0	<0.0500	1.15E+04	n/a	n/a	n/a	n/a	9.96	n/a	
S11V005775		A	7440-45-1	Cerium	ug/g	92.7	<0.0300	28.3	n/a	n/a	n/a	n/a	5.98	n/a	B
S11V005775		A	7440-48-4	Cobalt	ug/g	83.7	0.0142	9.16	n/a	n/a	n/a	n/a	1.99	n/a	CB
S11V005775		A	7440-47-3	Chromium	ug/g	84.1	<5.00E-03	21.3	n/a	n/a	n/a	n/a	0.996	n/a	
S11V005775		A	7440-50-8	Copper	ug/g	92.5	<5.00E-03	16.4	n/a	n/a	n/a	n/a	0.996	n/a	
S11V005775		A	7439-89-6	Iron	ug/g	84.8	<5.00E-03	1.81E+04	n/a	n/a	n/a	n/a	0.996	n/a	
S11V005775		A	7440-09-7	Potassium	ug/g	78.6	<0.500	1.56E+03	n/a	n/a	n/a	n/a	99.6	n/a	
S11V005775		A	7439-91-0	Lanthanum	ug/g	89.2	<3.00E-03	13.5	n/a	n/a	n/a	n/a	0.598	n/a	
S11V005775		A	7439-93-2	Lithium	ug/g	92.4	<3.00E-03	14.2	n/a	n/a	n/a	n/a	0.598	n/a	
S11V005775		A	7439-95-4	Magnesium	ug/g	82.5	<0.0500	6.31E+03	n/a	n/a	n/a	n/a	9.96	n/a	
S11V005775		A	7439-96-5	Manganese	ug/g	83.3	<3.00E-03	266	n/a	n/a	n/a	n/a	0.598	n/a	
S11V005775		A	7439-98-7	Molybdenum	ug/g	88.6	<0.0200	<3.98	n/a	n/a	n/a	n/a	3.98	n/a	U
S11V005775		A	7440-23-5	Sodium	ug/g	91.6	<0.100	219	n/a	n/a	n/a	n/a	19.9	n/a	
S11V005775		A	7440-02-0	Nickel	ug/g	83.1	<0.0200	19.9	n/a	n/a	n/a	n/a	3.98	n/a	B
S11V005775		A	7723-14-0	Phosphorus	ug/g	89.0	<0.0500	592	n/a	n/a	n/a	n/a	9.96	n/a	
S11V005775		A	7704-34-9	Sulfur	ug/g	87.6	<0.100	23.6	n/a	n/a	n/a	n/a	19.9	n/a	B
S11V005775		A	7440-21-3	Silicon	ug/g	64.6	<0.0300	82.0	n/a	n/a	n/a	n/a	5.98	n/a	N

NA = Not Analyzed, ND = Not Detected

B - Estimated
C - Blank Contamination
U - Less Than Detection Limit
B - Blank Contamination
M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111300
Core Number: C8408
Customer Sample ID: B2H108
Sample Depth: 129'-131'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005775		A	7440-24-6	Strontium	ug/g	89.0	<3.00E-03	38.0	n/a	n/a	n/a	n/a	0.598	n/a	
S11V005775		A	7440-32-6	Titanium	ug/g	88.4	<5.00E-03	696	n/a	n/a	n/a	n/a	0.996	n/a	
S11V005775		A	7440-62-2	Vanadium	ug/g	86.3	5.56E-03	33.3	n/a	n/a	n/a	n/a	0.996	n/a	
S11V005775		A	7440-65-5	Yttrium	ug/g	87.9	<2.00E-03	7.25	n/a	n/a	n/a	n/a	0.398	n/a	
S11V005775		A	7440-66-6	Zinc	ug/g	84.7	<5.00E-03	46.5	n/a	n/a	n/a	n/a	0.996	n/a	
S11V005775		A	7440-67-7	Zirconium	ug/g	85.9	<5.00E-03	5.90	n/a	n/a	n/a	n/a	0.996	n/a	BN
S11V005775		A	14269-63-7	Thorium-230	ug/g	n/a	<3.50E-06	5.59E-05	n/a	n/a	n/a	n/a	3.49E-05	n/a	
S11V005775		A	TH-232	Thorium-232	ug/g	93.6	<2.50E-04	4.93	n/a	n/a	n/a	n/a	2.49E-03	n/a	
S11V005775		A	13968-55-3	Uranium-233	ug/g	99.5	<1.00E-04	<9.96E-04	n/a	n/a	n/a	n/a	9.96E-04	n/a	U
S11V005775		A	13966-29-5	Uranium-234	ug/g	n/a	<2.50E-06	6.18E-05	n/a	n/a	n/a	n/a	2.49E-05	n/a	
S11V005775		A	15117-96-1	Uranium-235	ug/g	92.6	<5.00E-06	6.43E-03	n/a	n/a	n/a	n/a	4.98E-05	n/a	
S11V005775		A	13982-70-2	Uranium-236	ug/g	n/a	<2.00E-06	<1.99E-05	n/a	n/a	n/a	n/a	1.99E-05	n/a	U
S11V005775		A	13994-20-2	Neptunium-237	ug/g	100	<5.00E-05	<4.98E-04	n/a	n/a	n/a	n/a	4.98E-04	n/a	U
S11V005775		A	U-238	Uranium-238	ug/g	97.9	<2.50E-04	0.894	n/a	n/a	n/a	n/a	2.49E-03	n/a	
S11V005775		A	7440-22-4	Silver	ug/g	98.6	<2.00E-03	0.0568	n/a	n/a	n/a	n/a	0.0199	n/a	B
S11V005775		A	7440-38-2	Arsenic	ug/g	93.0	<0.0168	1.38	n/a	n/a	n/a	n/a	0.167	n/a	CB
S11V005775		A	7440-43-9	Cadmium	ug/g	99.2	<6.00E-03	0.142	n/a	n/a	n/a	n/a	0.0598	n/a	B
S11V005775		A	7439-92-1	Lead	ug/g	99.9	<0.0150	8.04	n/a	n/a	n/a	n/a	0.149	n/a	
S11V005775		A	7782-49-2	Selenium	ug/g	92.0	<0.0244	<0.243	n/a	n/a	n/a	n/a	0.243	n/a	U
S11V005775		A	7440-28-0	Thallium	ug/g	108	<4.00E-03	0.143	n/a	n/a	n/a	n/a	0.0398	n/a	B
S11V005776		S	14798-03-9	Ammonium	ug/g	99.0	1.18	2.43	n/a	n/a	n/a	n/a	0.478	n/a	CB
S11V005777		A	14133-76-7	Technetium-99	ug/g	103	<6.00E-05	<6.00E-04	n/a	n/a	n/a	n/a	6.00E-04	n/a	UN
S11V005778		W	14762-75-5	Carbon-14	uCi/g	95.6	<1.24E-06	<1.24E-06	n/a	n/a	n/a	n/a	1.24E-06	n/a	U
S11V005778		W	10028-17-8	Tritium	uCi/g	102	<1.48E-06	2.47E-06	n/a	n/a	n/a	n/a	1.51E-06	98.678	
S11V005779		E	CM-243/244	Curium-243/244	uCi/g	n/a	<3.13E-08	<1.80E-08	n/a	n/a	n/a	n/a	1.80E-08	n/a	U
S11V005779		E	14596-10-2	Americium-241	uCi/g	94.9	<3.00E-08	2.94E-08	n/a	n/a	n/a	n/a	1.74E-08	32.78	
S11V005779		E	15510-73-3	Curium-242	uCi/g	n/a	<1.97E-08	<8.76E-09	n/a	n/a	n/a	n/a	8.76E-09	n/a	U
S11V005779		E	PU-239/240	Plutonium-239/240	uCi/g	105	5.88E-08	<2.87E-08	n/a	n/a	n/a	n/a	2.87E-08	n/a	U

NA = Not Analyzed, ND = Not Detected

B - Estimated
C - Blank Contamination
U - Less Than Detection Limit
B - Blank Contamination
M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

S Farm Barrier 2011
Data Summary Report

Sample Group: 20111300
Core Number: C8408
Customer Sample ID: B2H108
Sample Depth: 129'-131'

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11V005779		E	13981-16-3	Plutonium-238	uCi/g	n/a	<3.23E-08	<2.59E-08	n/a	n/a	n/a	n/a	2.59E-08	n/a	U
S11V005780		E	SR-89/90	Strontium-89/90	uCi/g	98.6	<5.66E-07	<2.70E-07	n/a	n/a	n/a	n/a	2.70E-07	n/a	U
S11V005781		E	7440-02-0	Nickel	ug/mL	n/a	n/a	167	n/a	n/a	n/a	n/a	0.200	n/a	
S11V005781		E	13981-37-8	Nickel-63	uCi/g	99.7	<4.47E-06	<6.99E-06	n/a	n/a	n/a	n/a	6.99E-06	n/a	U
S11V005782		E	15758-45-9	Selenium-79	uCi/g	n/a	2.85E-06	1.73E-06	n/a	n/a	n/a	n/a	1.41E-06	136.17	B X

NA = Not Analyzed, ND = Not Detected

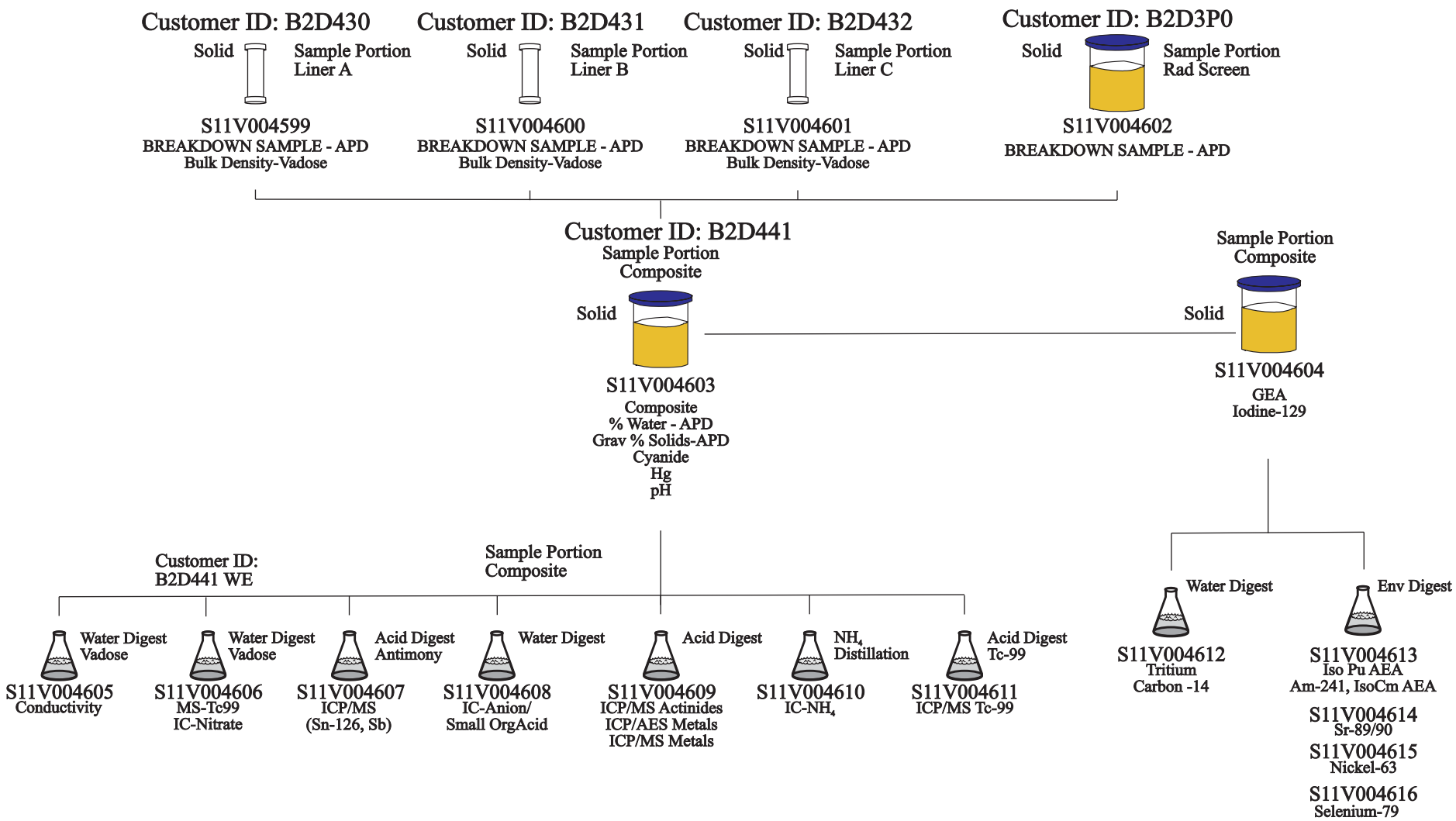
B - Estimated
C - Blank Contamination
U - Less Than Detection Limit
B - Blank Contamination
M - RPD Outside Range
N - MS/MSD Outside Range
E - Estimated by Interference
X - Comment

Attachment 2

SAMPLE BREAKDOWN DIAGRAM

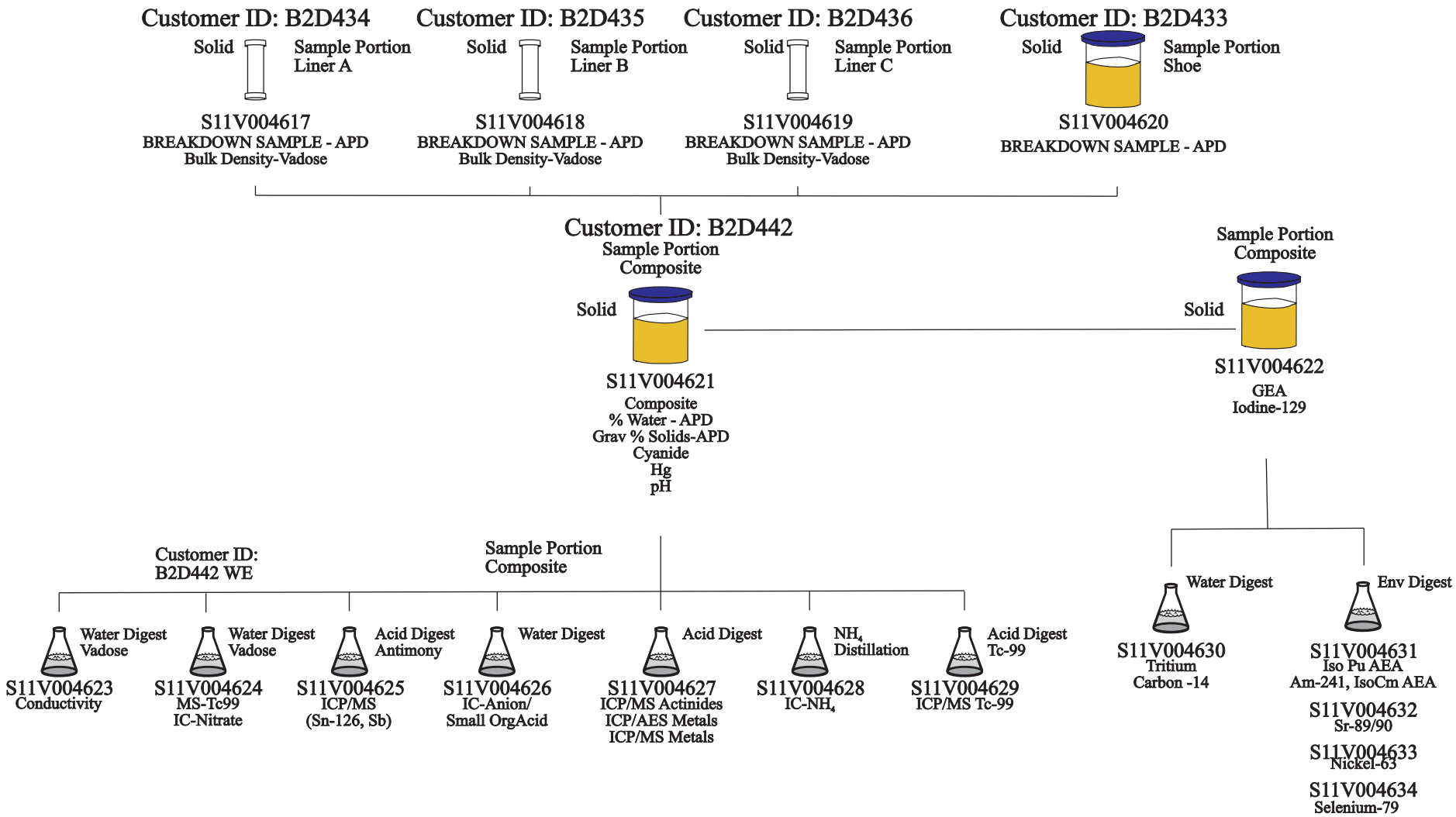
Vadose Zone: S Farm Barrier 2011
Core No.: C8394
Group 20110713 (Solid)

Sample Depth:43-45 ft.
Segment No: I001



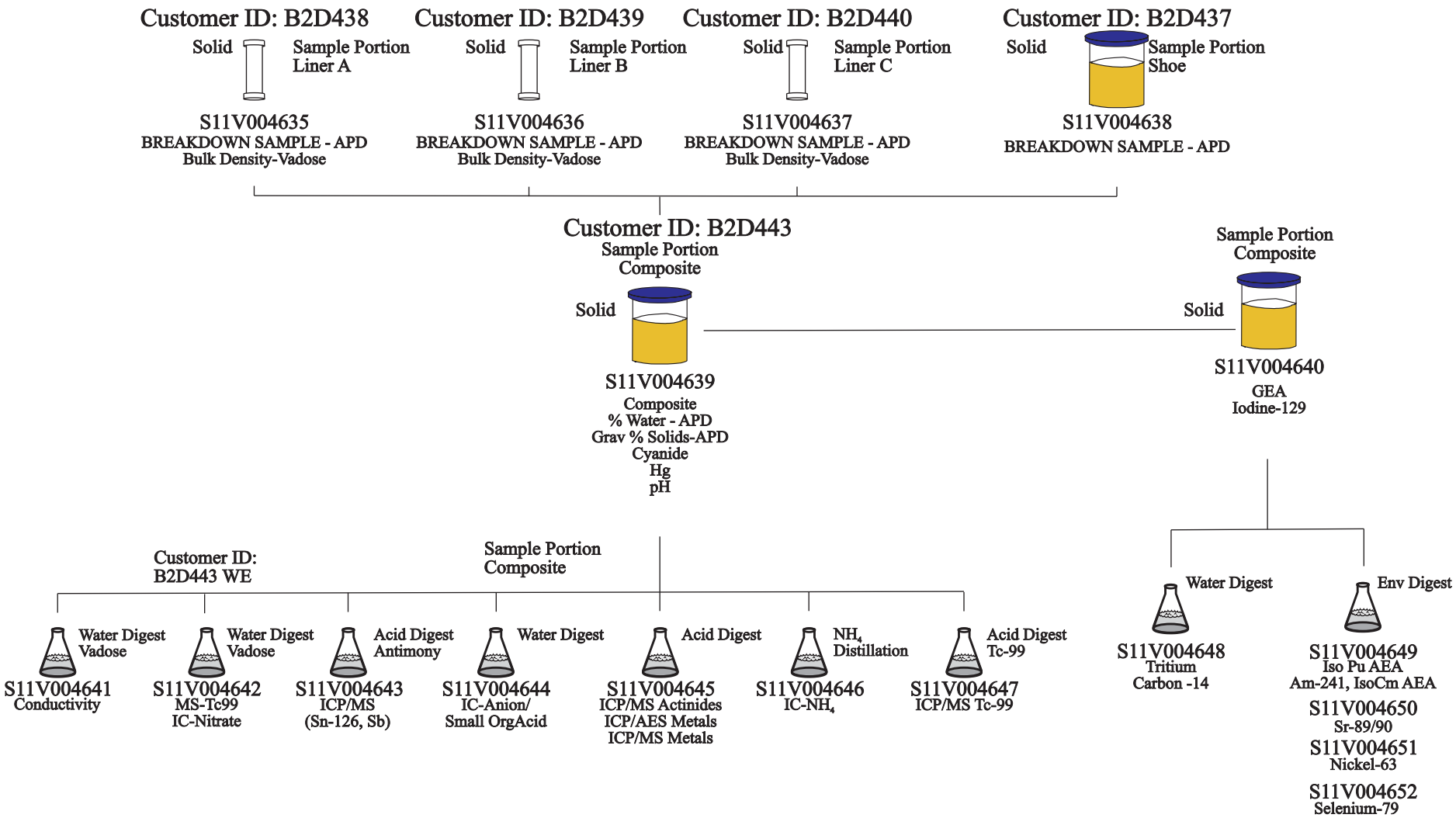
Vadose Zone: S Farm Barrier 2011
Core No.: C8394
Group 20110713 (Solid)

Sample Depth:88-90 ft.
Segment No: I002



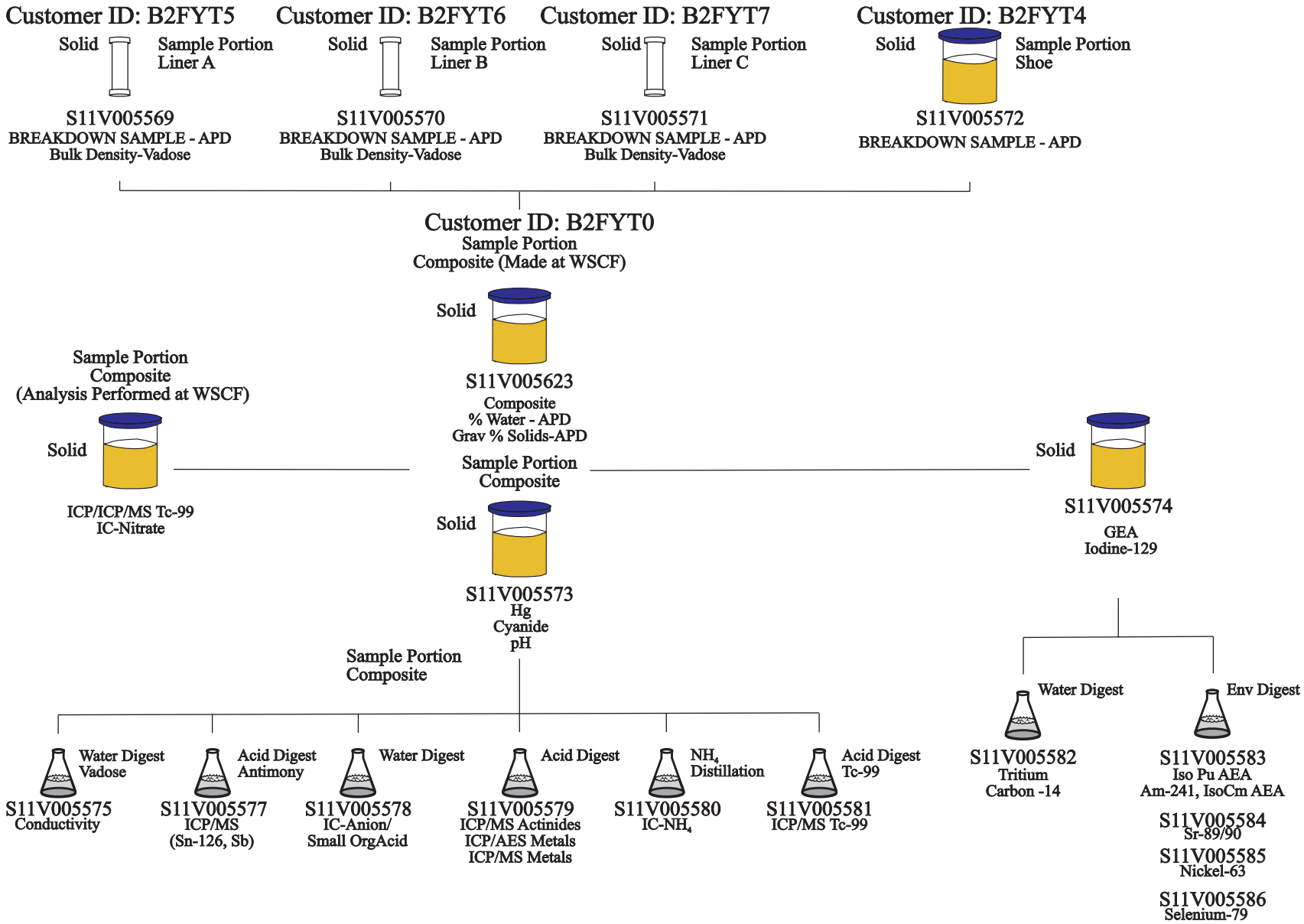
Vadose Zone: S Farm Barrier 2011
Core No.: C8394
Group 20110713 (Solid)

Sample Depth: 126'-128'
Segment No: I003



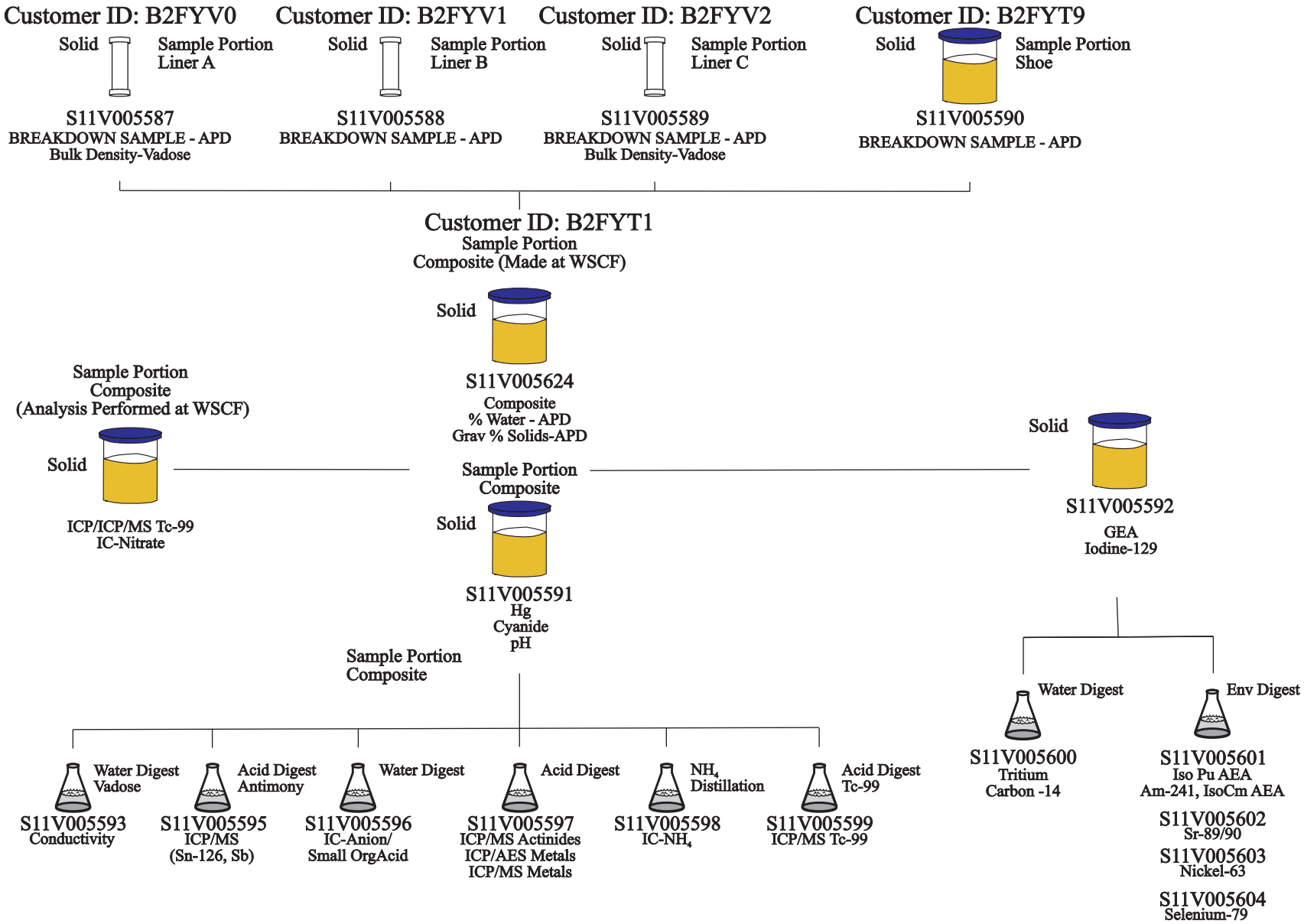
Vadose Zone: S Farm Barrier 2011
Core No.: C8396
Group 20111272 (Solid)

Sample Depth: 55-57 ft.
Segment No: I001



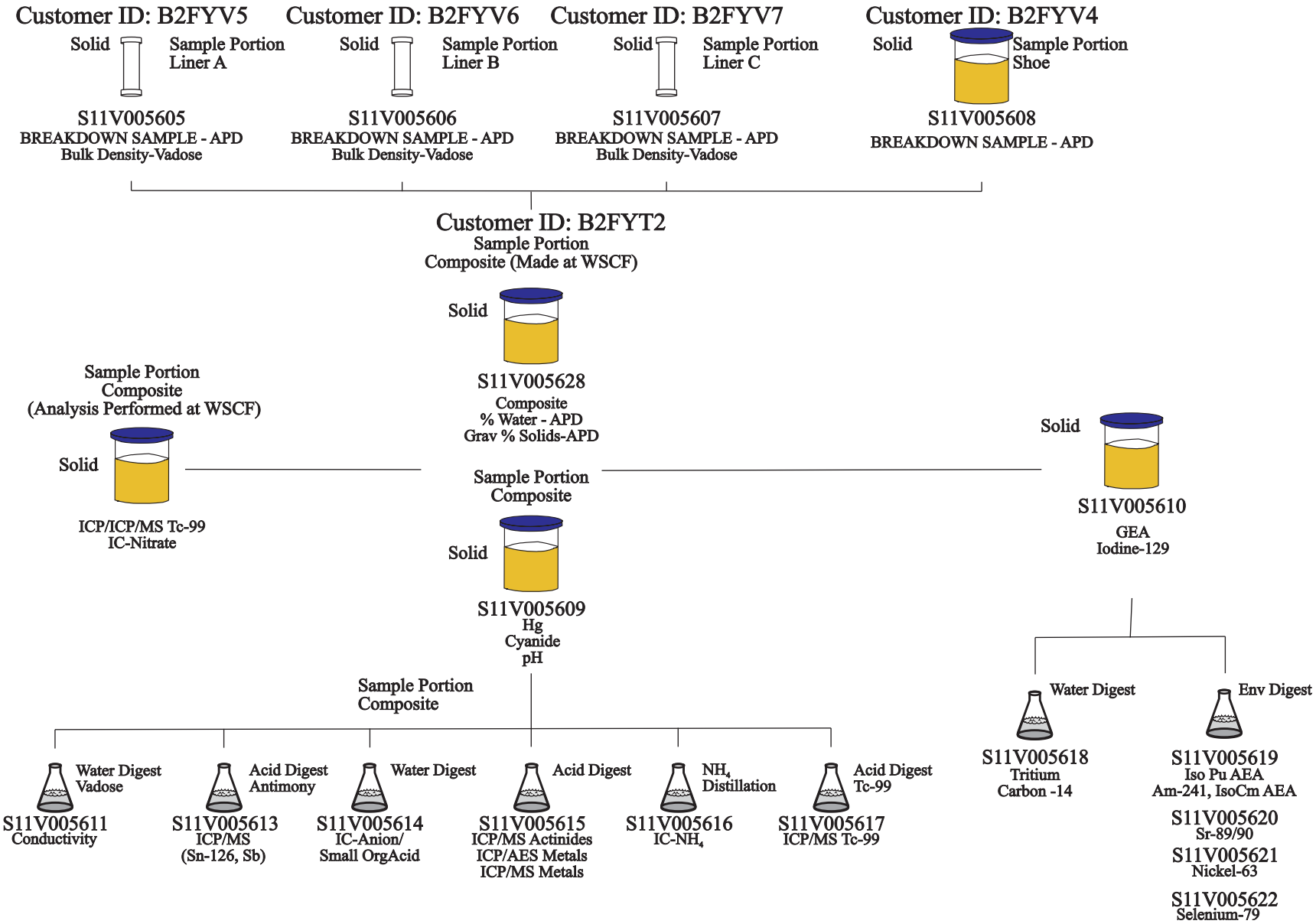
Vadose Zone: S Farm Barrier 2011
Core No.: C8396
Group 20111272 (Solid)

Sample Depth:103-105 ft.
Segment No: I002



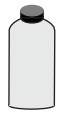
Vadose Zone: S Farm Barrier 2011
Core No.: C8396
Group 20111272 (Solid)

Sample Depth: 117-119 ft.
Segment No: I003

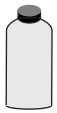


Vadose Zone: S Farm Barrier 2011
Core No.: C8398
Group 20111140
Matrix: Liquid

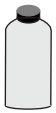
Segment No:. Field Blank
Sample Depth: Field Blank
Customer ID: B2FDM2



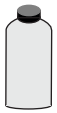
S11V005311
IC - Anions/Org Acids



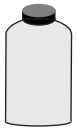
S11V005312
Cyanide



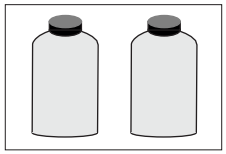
S11V005313
Ammonium



S11V005314
MS Fission
ICP/MS Actinides
ICP/AES-Metals
Mercury



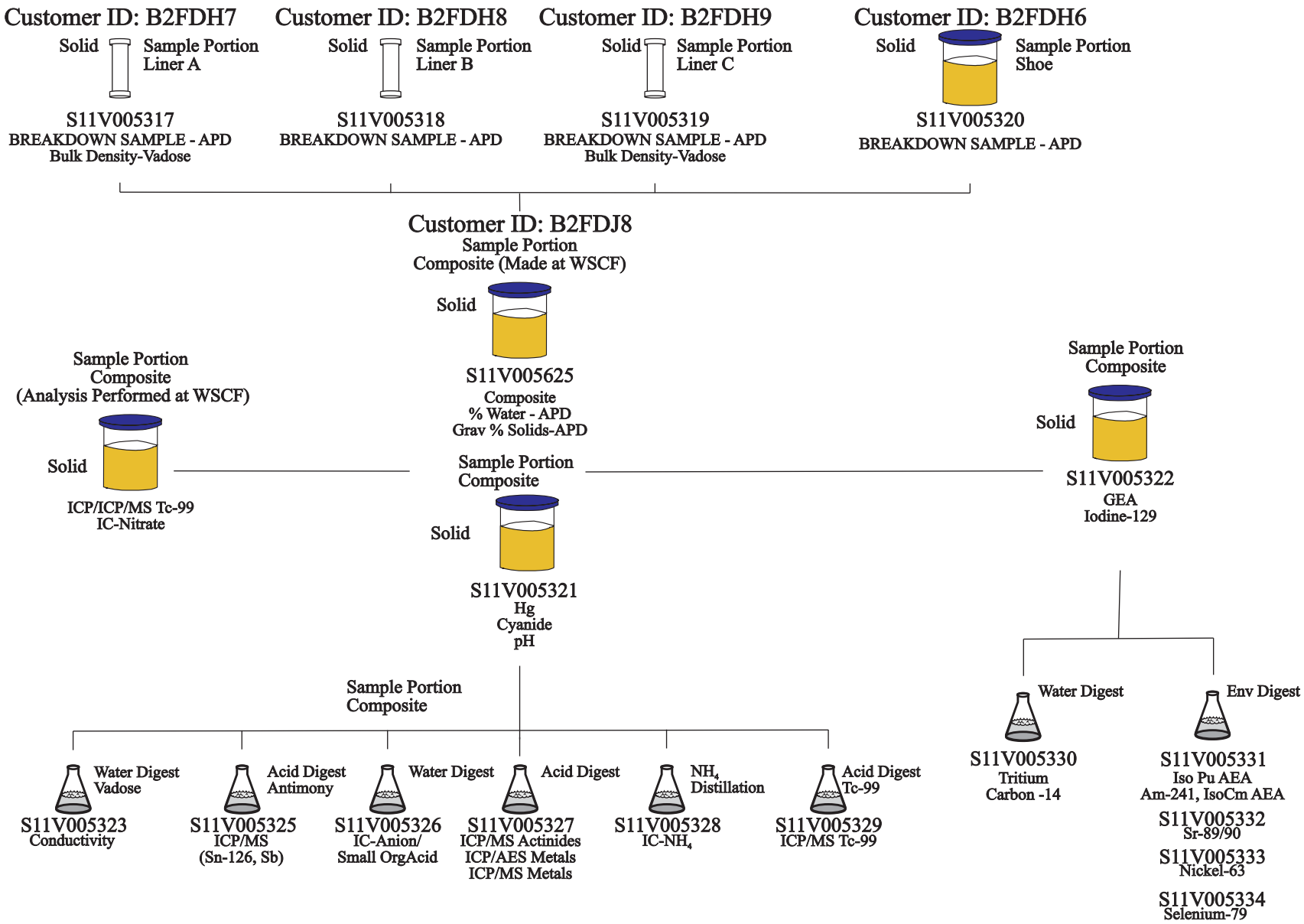
S11V005315
Iodine-129
Tritium
Carbon-14



S11V005316
GEA
Am-241 Iso Cm AEA
Sr-89/90
IsoPu AEA
Nickel-63
Selenium-79

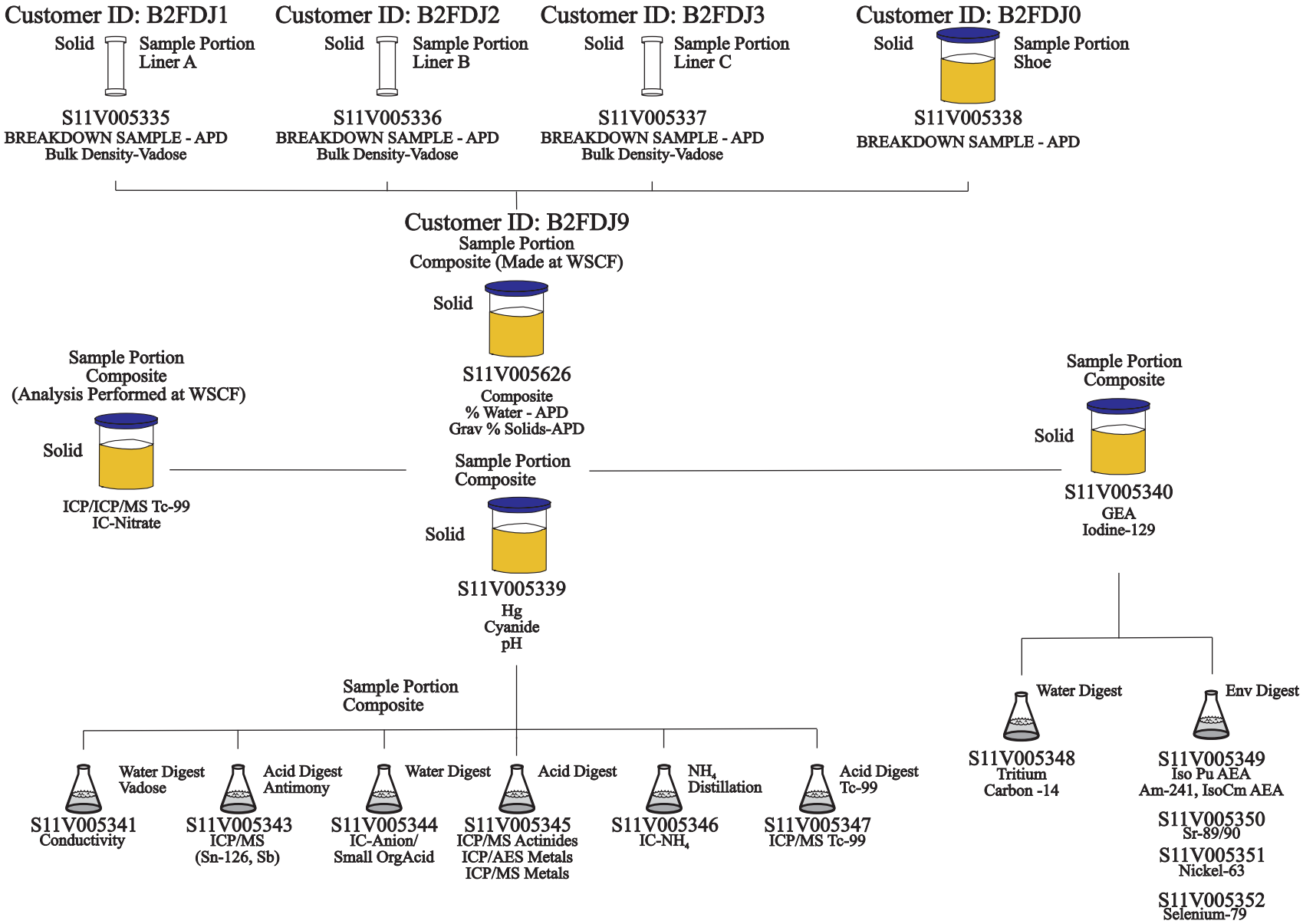
Vadose Zone: S Farm Barrier 2011
Core No.: C8398
Group 20111143 (Solid)

Sample Depth: 46-48 ft.
Segment No: I001



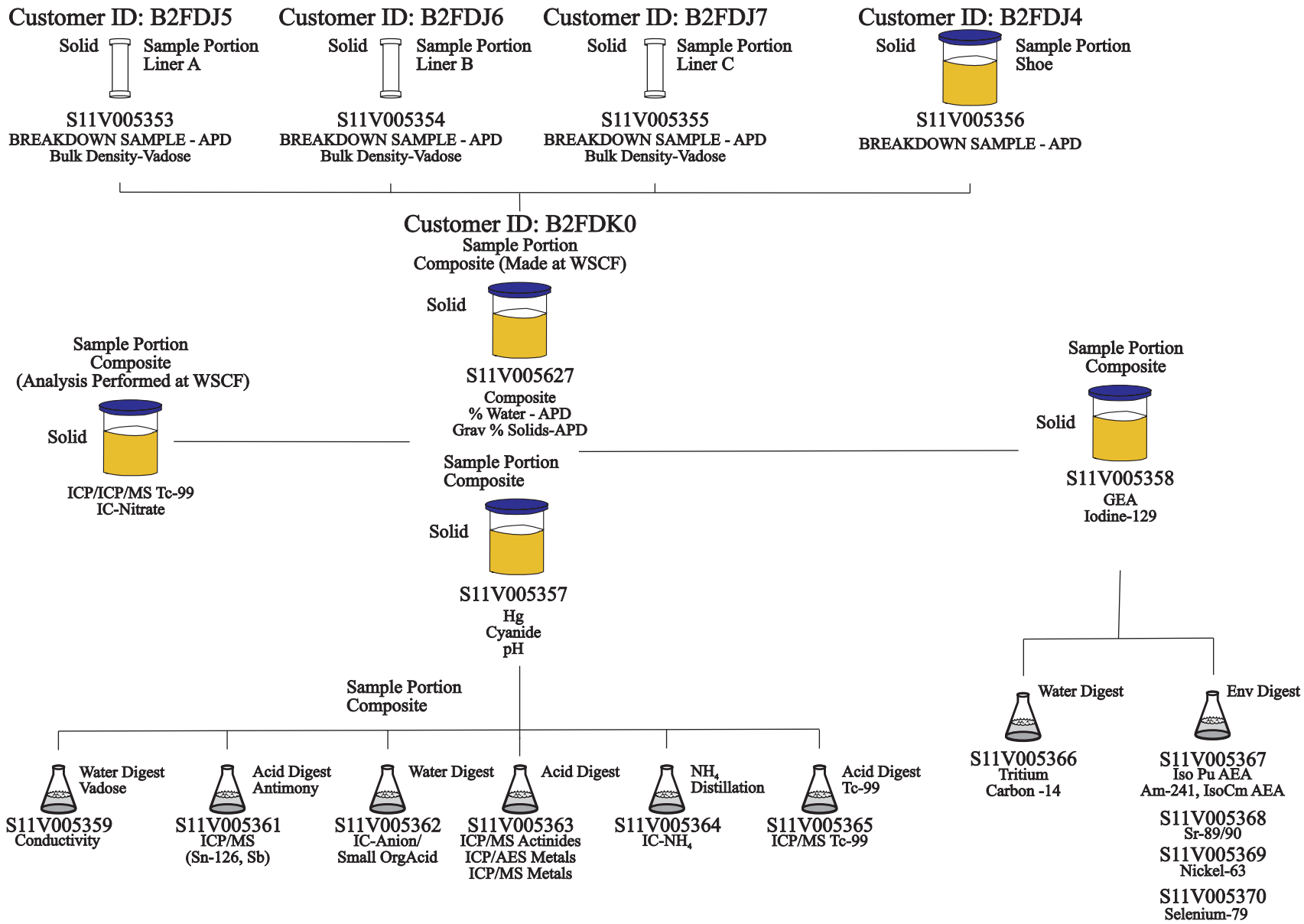
Vadose Zone: S Farm Barrier 2011
Core No.: C8398
Group 20111143 (Solid)

Sample Depth: 86-88 ft.
Segment No: I002



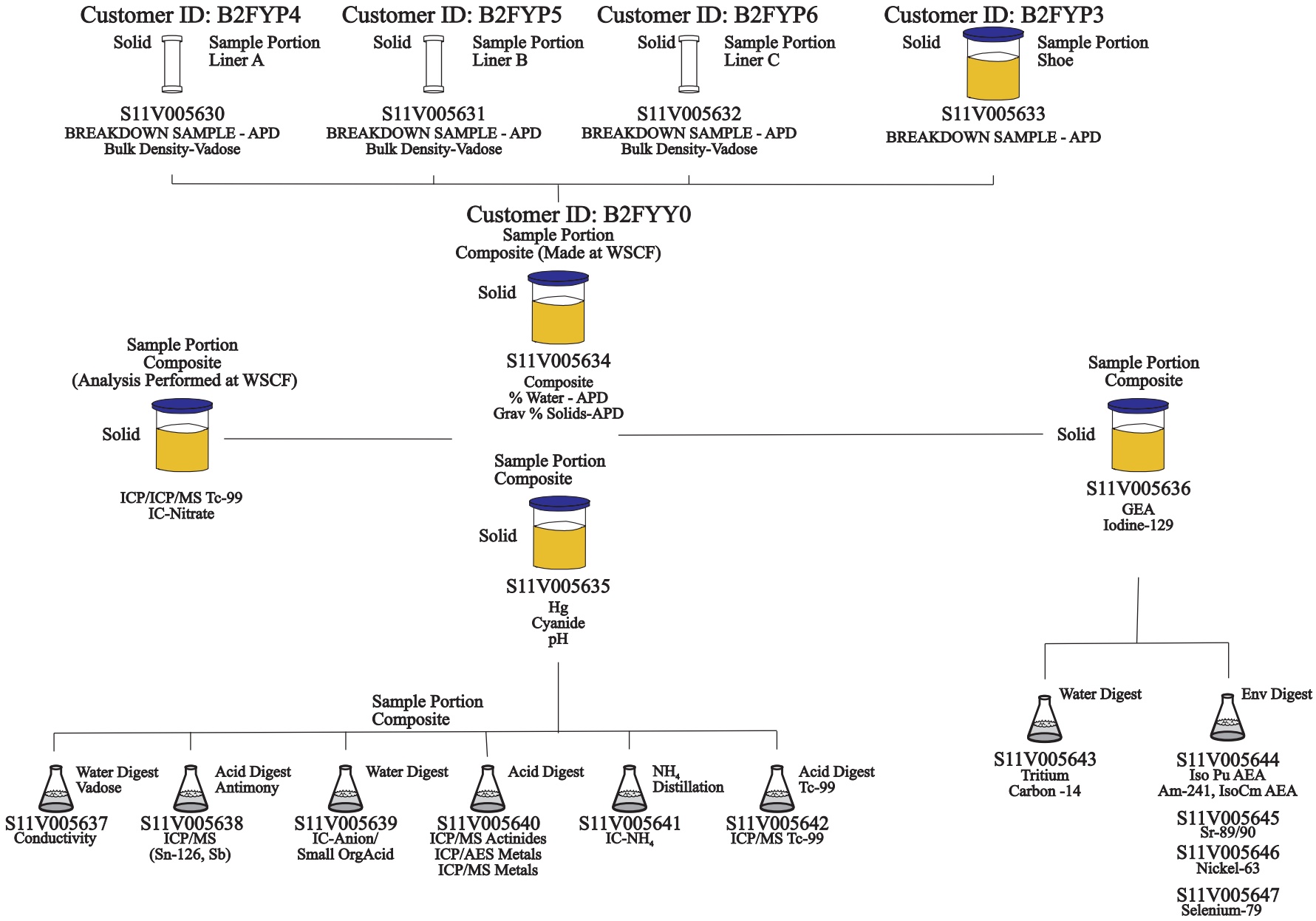
Vadose Zone: S Farm Barrier 2011
Core No.: C8398
Group 20111143 (Solid)

Sample Depth: 131-137 ft.
Segment No: I003



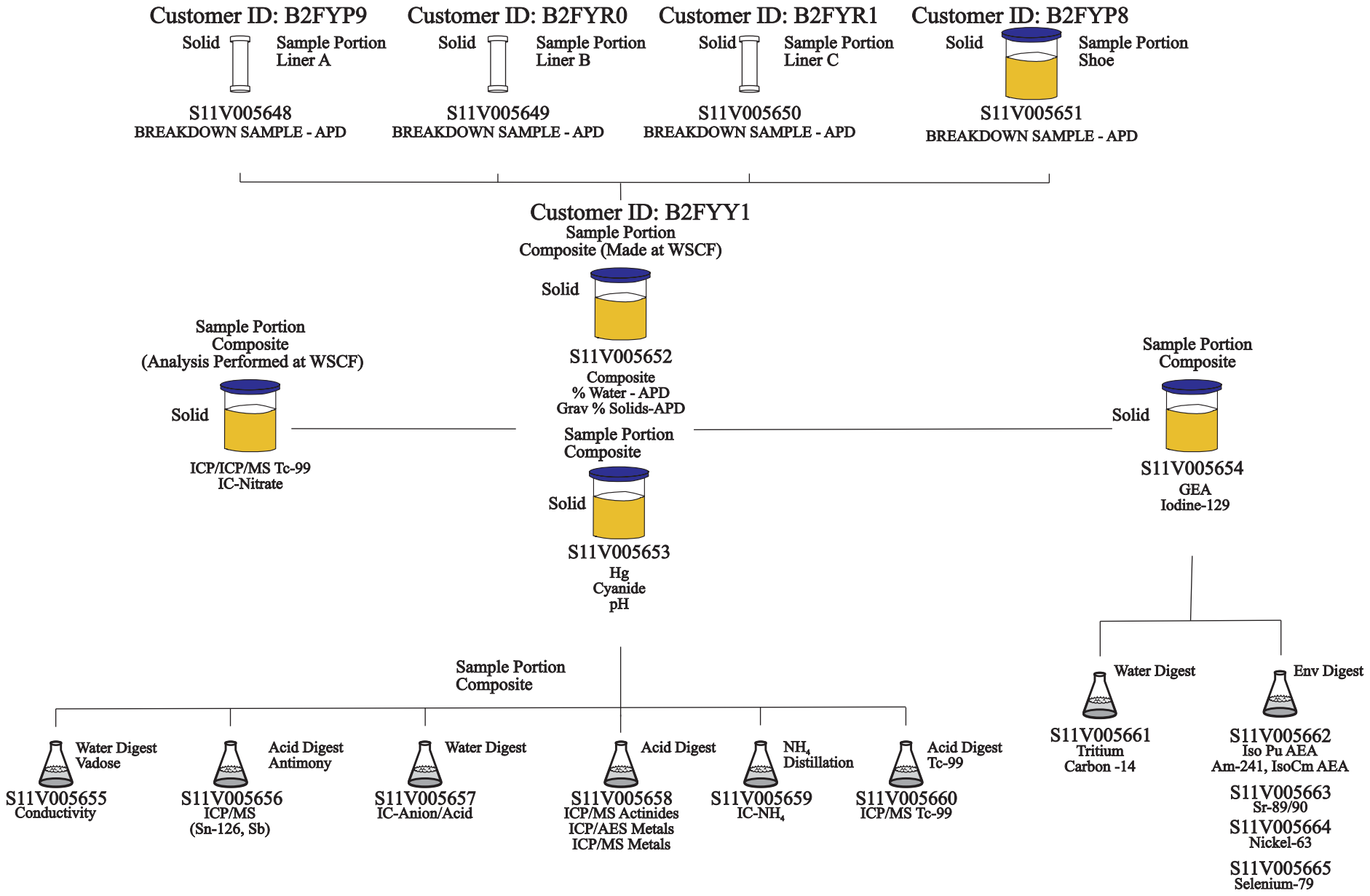
Vadose Zone: S Farm Barrier 2011
Core No.: C8400
Group 20111290 (Solid)

Sample Depth: 54 -56 ft.
Segment No: I001



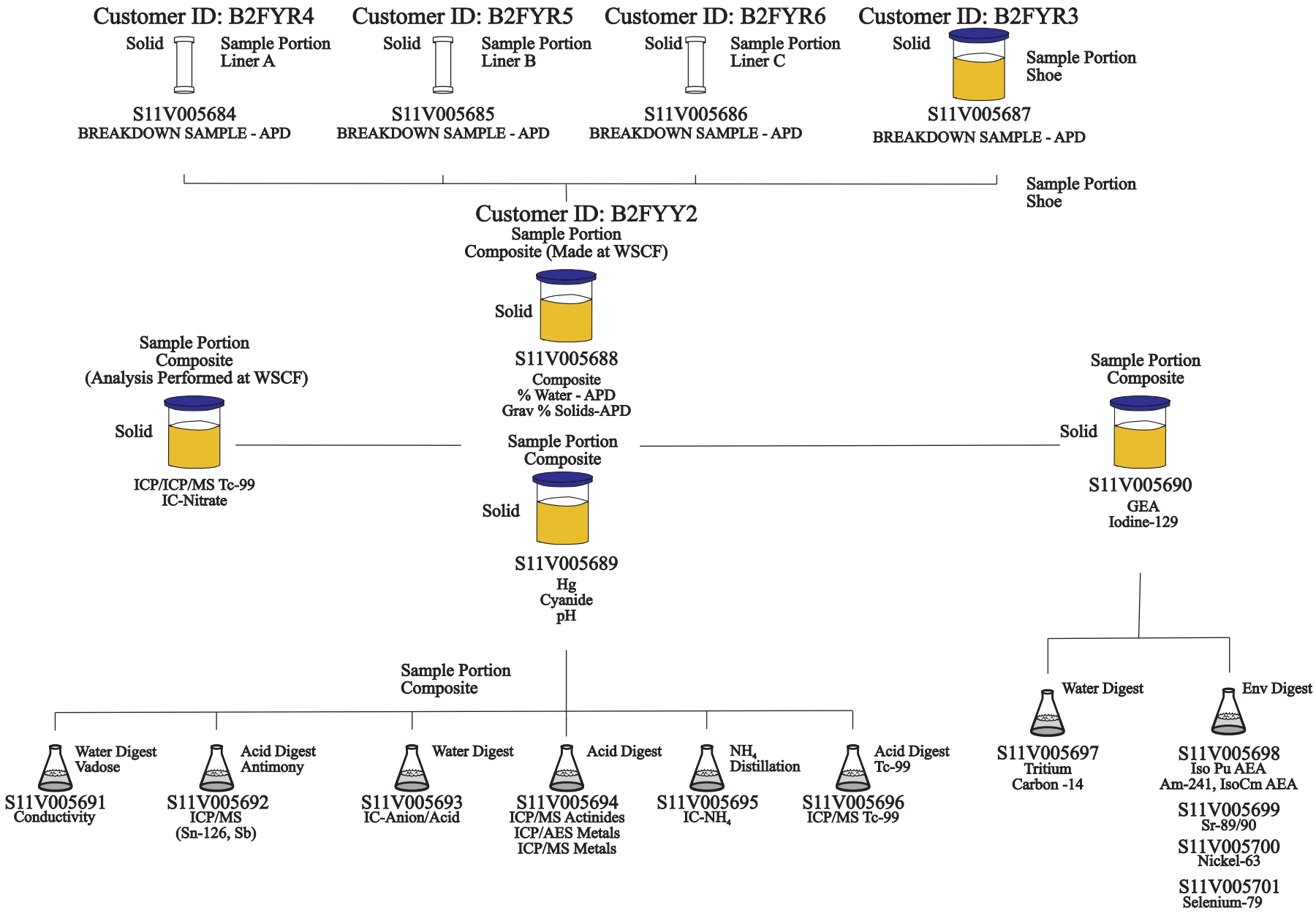
Vadose Zone: S Farm Barrier 2011
Core No.: C8400
Group 20111290 (Solid)

Sample Depth: 93-95 ft.
Segment No: I002



Vadose Zone: S Farm Barrier 2011
Core No.: C8400
Group 20111290 (Solid)

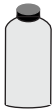
Sample Depth: 126-128 ft.
Segment No: I003



Vadose Zone: S Farm Barrier 2011
Core No.: C8402
Group 20111159 (Liquid)

Matrix: Liquid

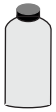
Segment No:. Equipment Blank
Sample Depth: Equipment Blank
Customer ID: B2FDM0



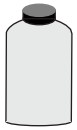
S11V005375
IC - Anions/Org Acids

S11V005376
Cyanide

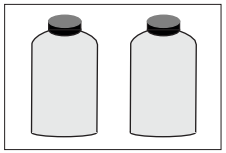
S11V005377
Ammonium



S11V005378
MS Fission
ICP/MS Actinides
ICP/AES-Metals
Mercury



S11V005379
Iodine-129
Tritium
Carbon-14

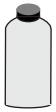


S11V005380
GEA
Am-241 Iso Cm AEA
Sr-89/90
IsoPu AEA
Nickel-63
Selenium-79

Vadose Zone: S Farm Barrier 2011
Core No.: C8402
Group 20111160 (Liquid)

Matrix: Liquid

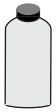
Segment No:. Field Blank
Sample Depth: Field Blank
Customer ID: B2FDM1



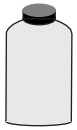
S11V005381
IC - Anions/Org Acids

S11V005382
Cyanide

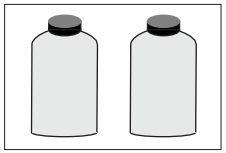
S11V005383
Ammonium



S11V005384
MS Fission
ICP/MS Actinides
ICP/AES-Metals
Mercury



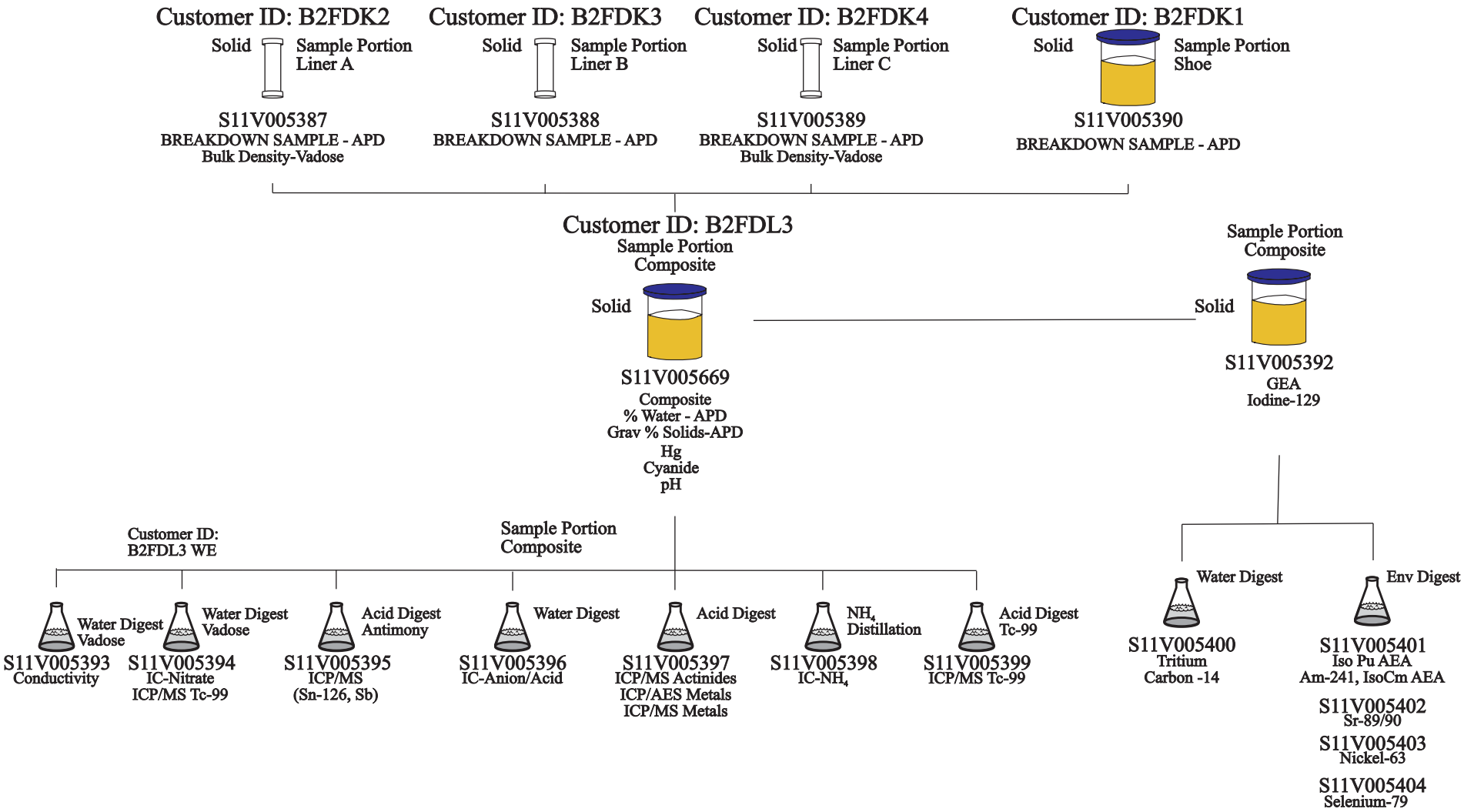
S11V005385
Iodine-129
Tritium
Carbon-14

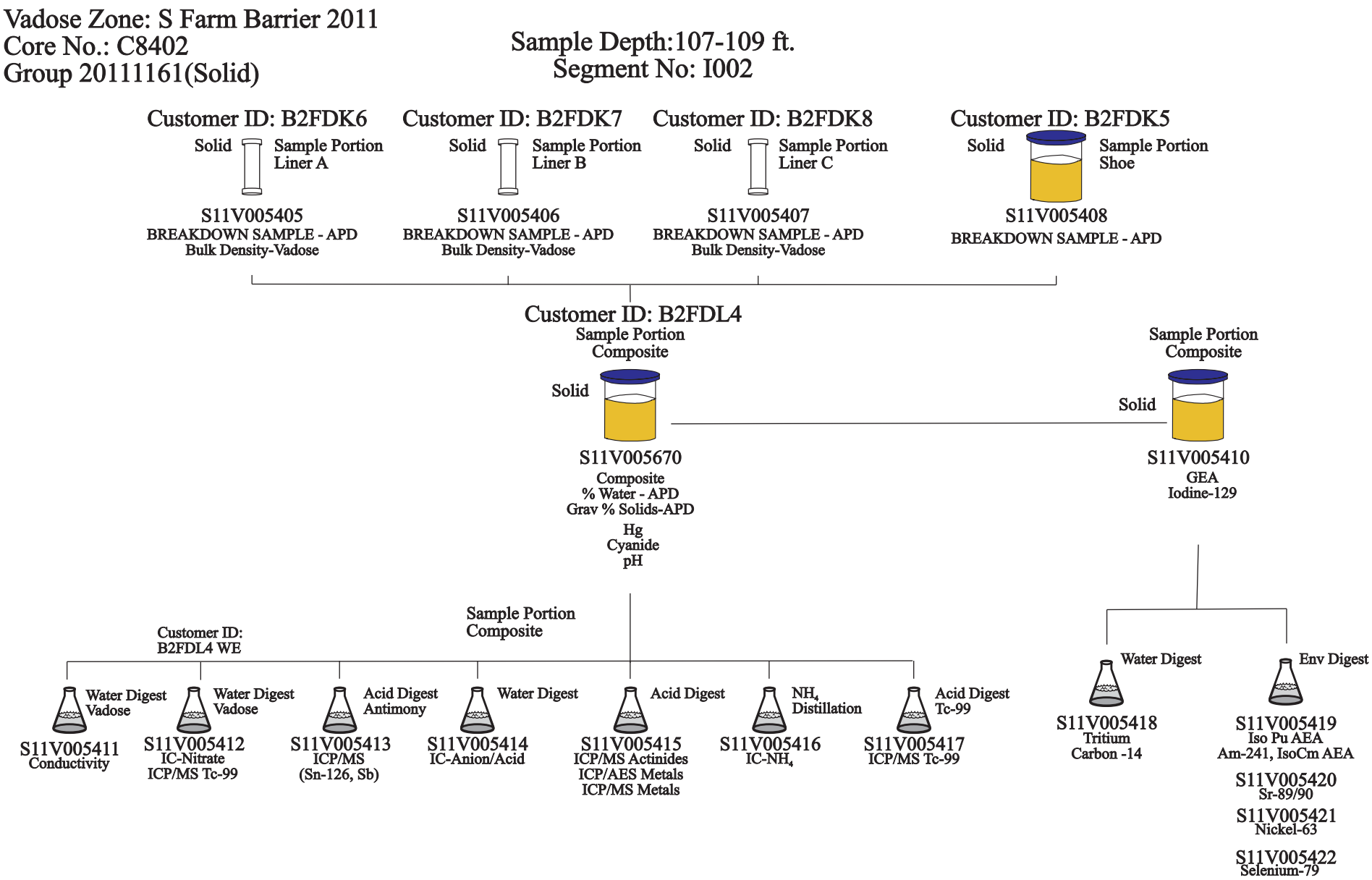


S11V005386
GEA
Am-241 Iso Cm AEA
Sr-89/90
IsoPu AEA
Nickel-63
Selenium-79

Vadose Zone: S Farm Barrier 2011
Core No.: C8402
Group 20111161 (Solid)

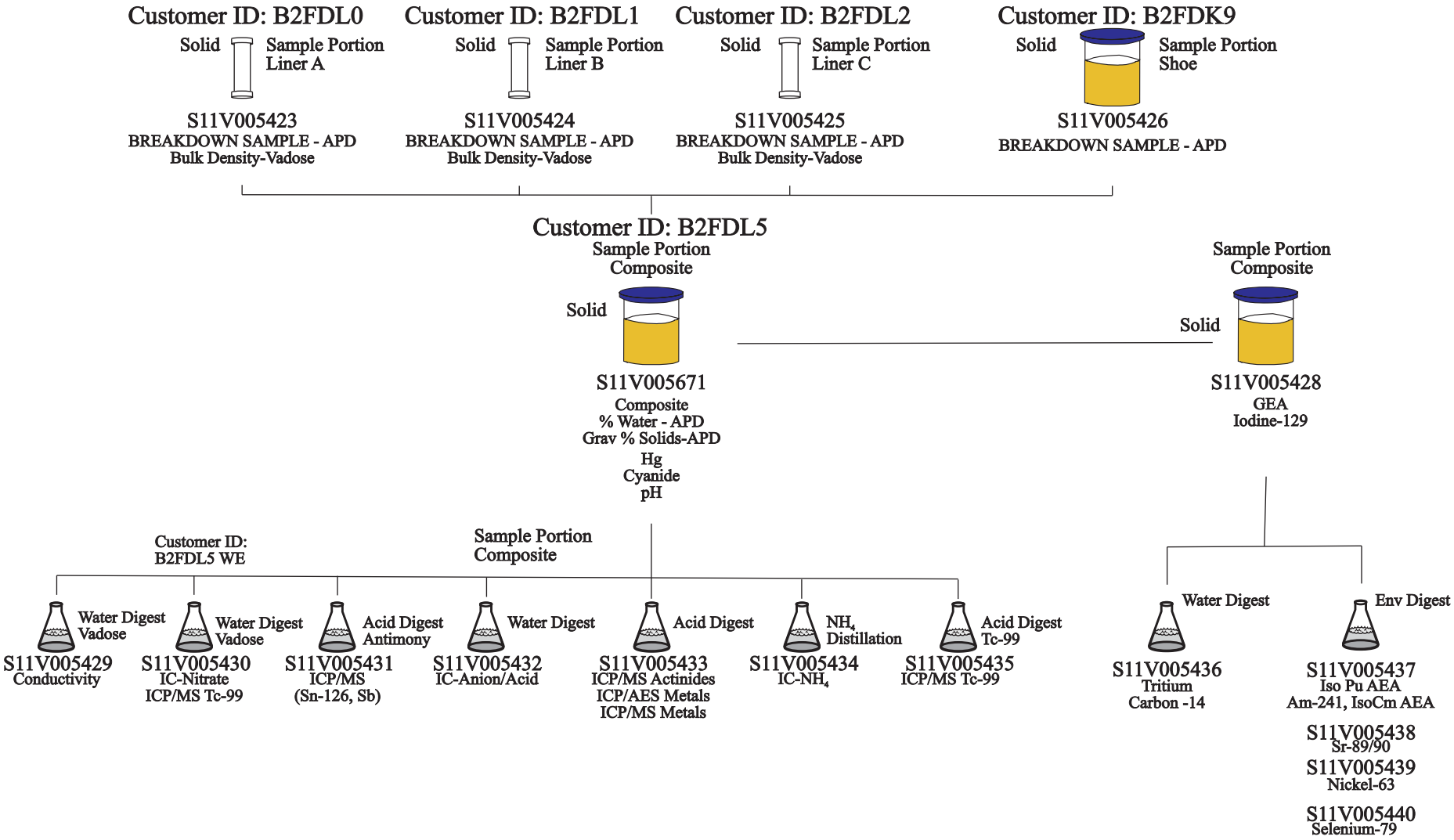
Sample Depth: 47-49 ft.
Segment No: I001




Vadose Zone: S Farm Barrier 2011
Core No.: C8402
Group 20111161(Solid)
Sample Depth:107-109 ft.
Segment No: I002
Customer ID: B2FDK6
Solid
Sample Portion
Liner A
S11V005405
BREAKDOWN SAMPLE - APD
Bulk Density-Vadose
Customer ID: B2FDK7
Solid
Sample Portion
Liner B
S11V005406
BREAKDOWN SAMPLE - APD
Bulk Density-Vadose
Customer ID: B2FDK8
Solid
Sample Portion
Liner C
S11V005407
BREAKDOWN SAMPLE - APD
Bulk Density-Vadose
Customer ID: B2FDK5
Solid
Sample Portion
Shoe
S11V005408
BREAKDOWN SAMPLE - APD
Customer ID: B2FDL4
Sample Portion
Composite
Solid
S11V005670
Composite
% Water - APD
Grav % Solids-APD
Hg
Cyanide
pH
Sample Portion
Composite
Solid
S11V005410
GEA
Iodine-129
Customer ID:
B2FDL4 WE
Sample Portion
Composite
Water Digest
Vadose
S11V005411
Conductivity
Water Digest
Vadose
S11V005412
IC-Nitrate
ICP/MS Tc-99
Acid Digest
Antimony
S11V005413
ICP/MS
(Sn-126, Sb)
Water Digest
S11V005414
IC-Anion/Acid
Acid Digest
S11V005415
ICP/MS Actinides
ICP/AES Metals
ICP/MS Metals
NH4
Distillation
S11V005416
IC-NH4
Acid Digest
Tc-99
S11V005417
ICP/MS Tc-99
Water Digest
S11V005418
Tritium
Carbon -14
Env Digest
S11V005419
Iso Pu AEA
Am-241, IsoCm AEA
S11V005420
Sr-89/90
S11V005421
Nickel-63
S11V005422
Selenium-79

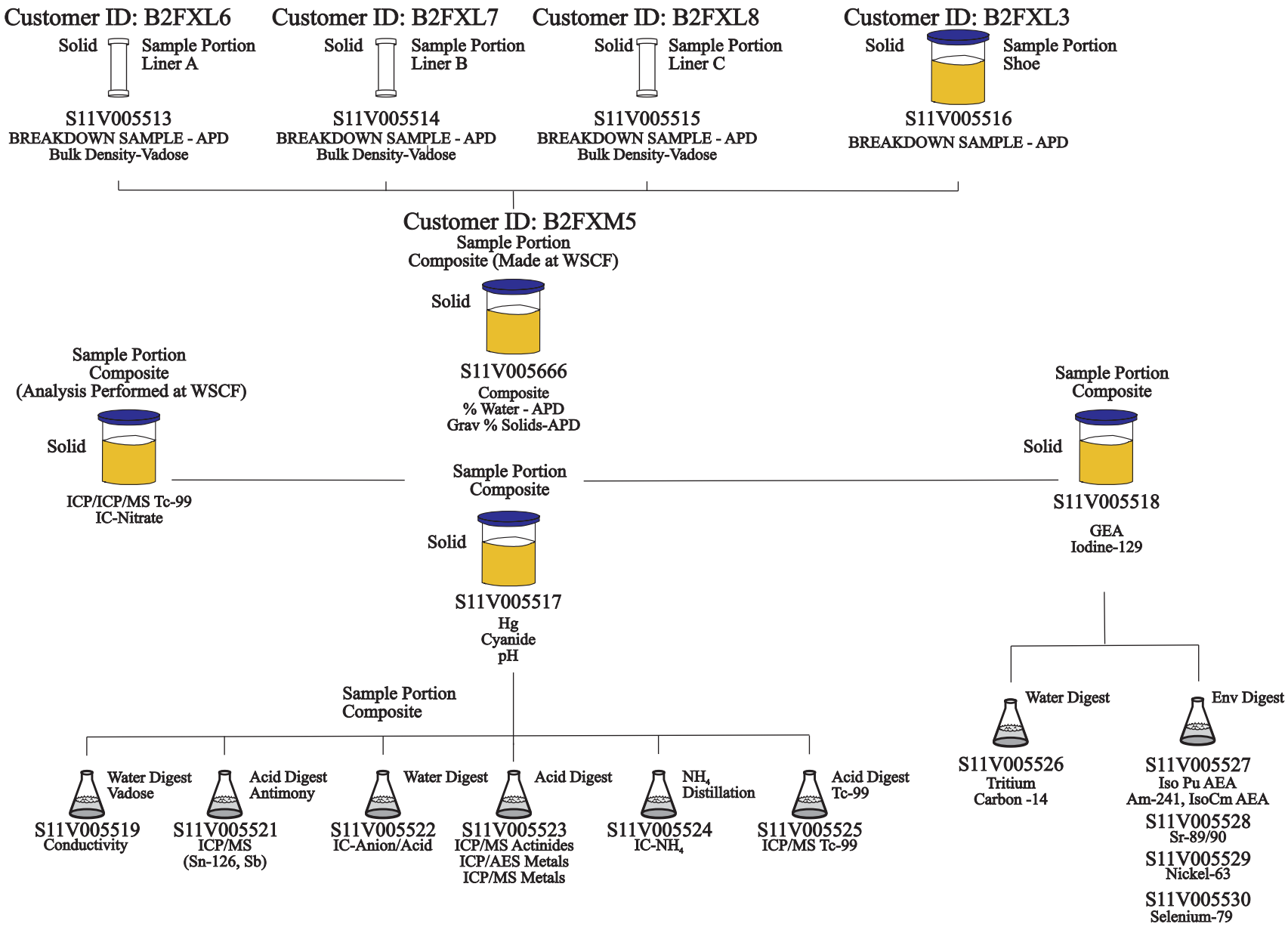
Vadose Zone: S Farm Barrier 2011
Core No.: C8402
Group 20111161 (Solid)

Sample Depth: 126-128 ft.
Segment No: I003



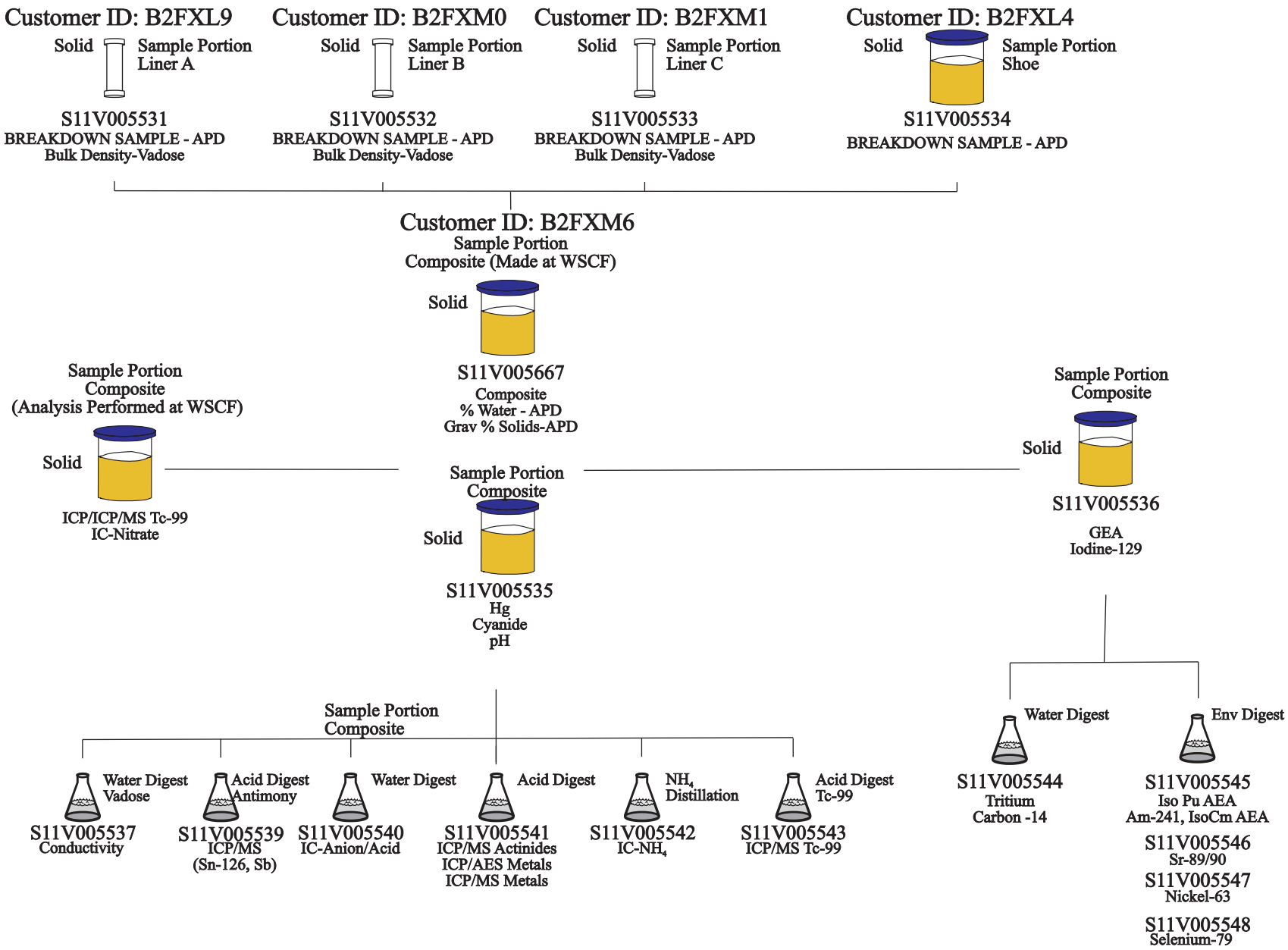
Vadose Zone: S Farm Barrier 2011
Core No.: C8406
Group 20111250 (Solid)

Sample Depth: 52-54 ft.
Segment No: I001



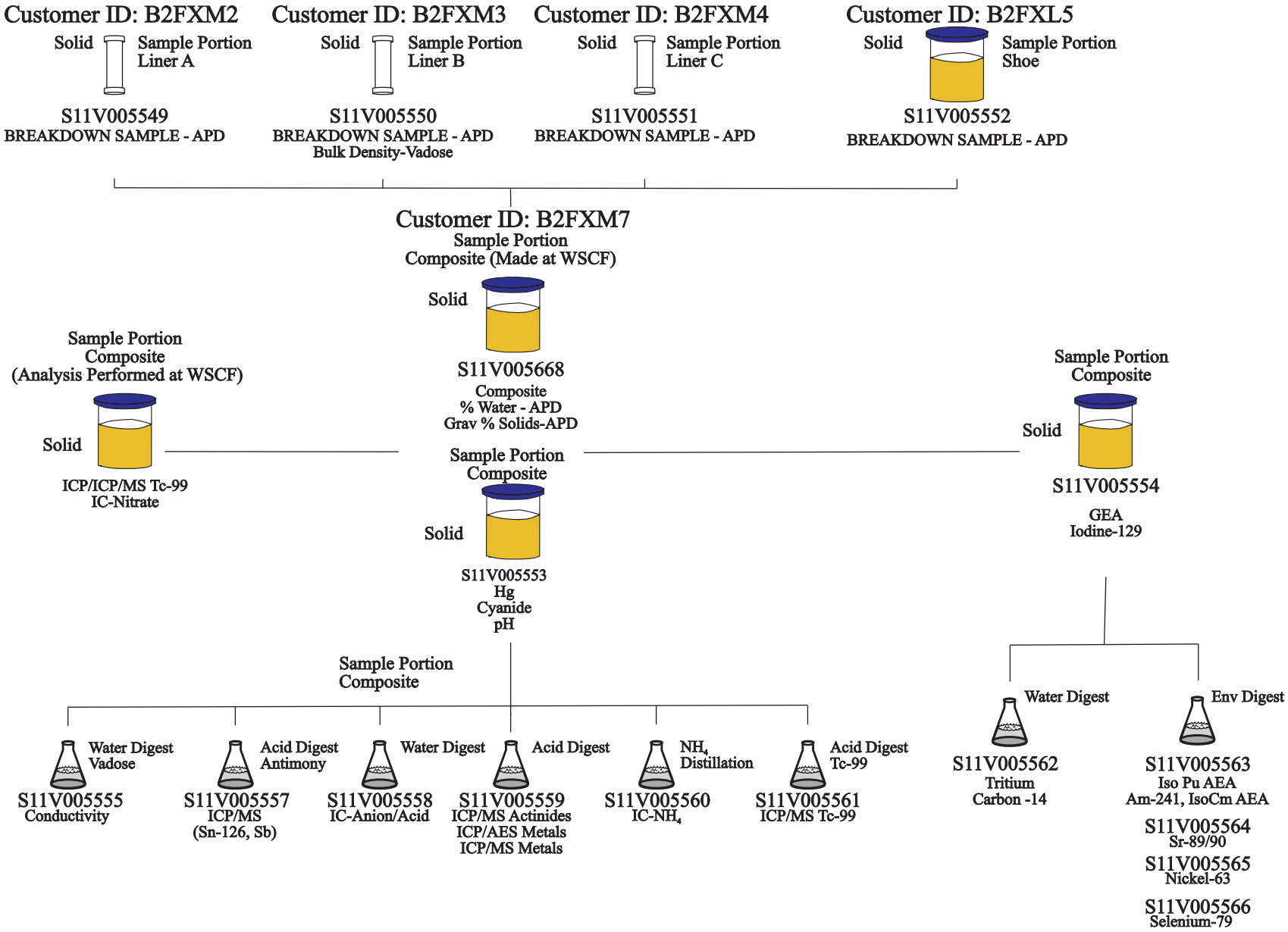
Vadose Zone: S Farm Barrier 2011
Core No.: C8406
Group 20111250 (Solid)

Sample Depth: 98-100 ft.
Segment No: I002



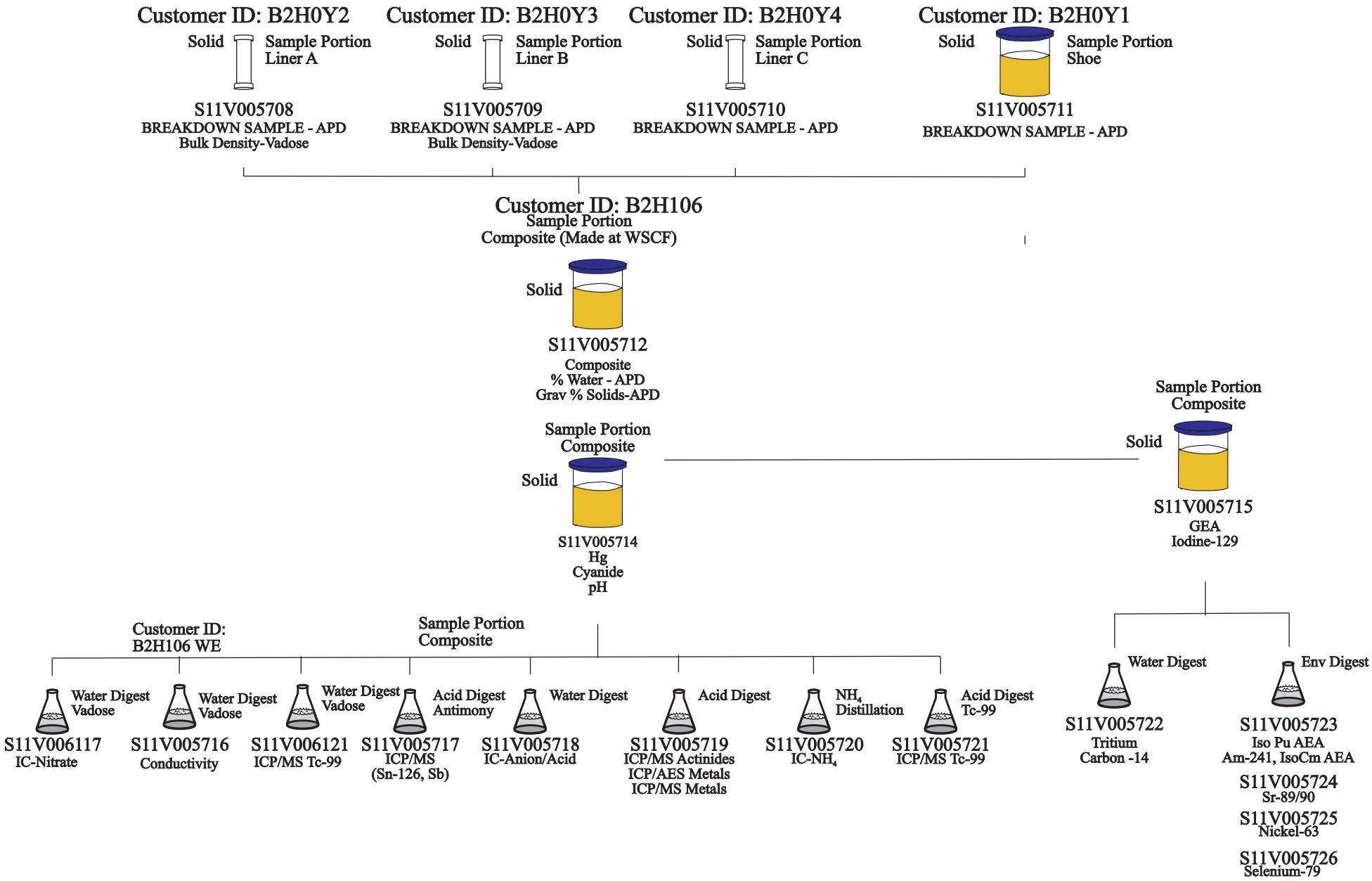
Vadose Zone: S Farm Barrier 2011
Core No.: C8406
Group 20111250 (Solid)

Sample Depth: 130-132 ft.
Segment No: I003



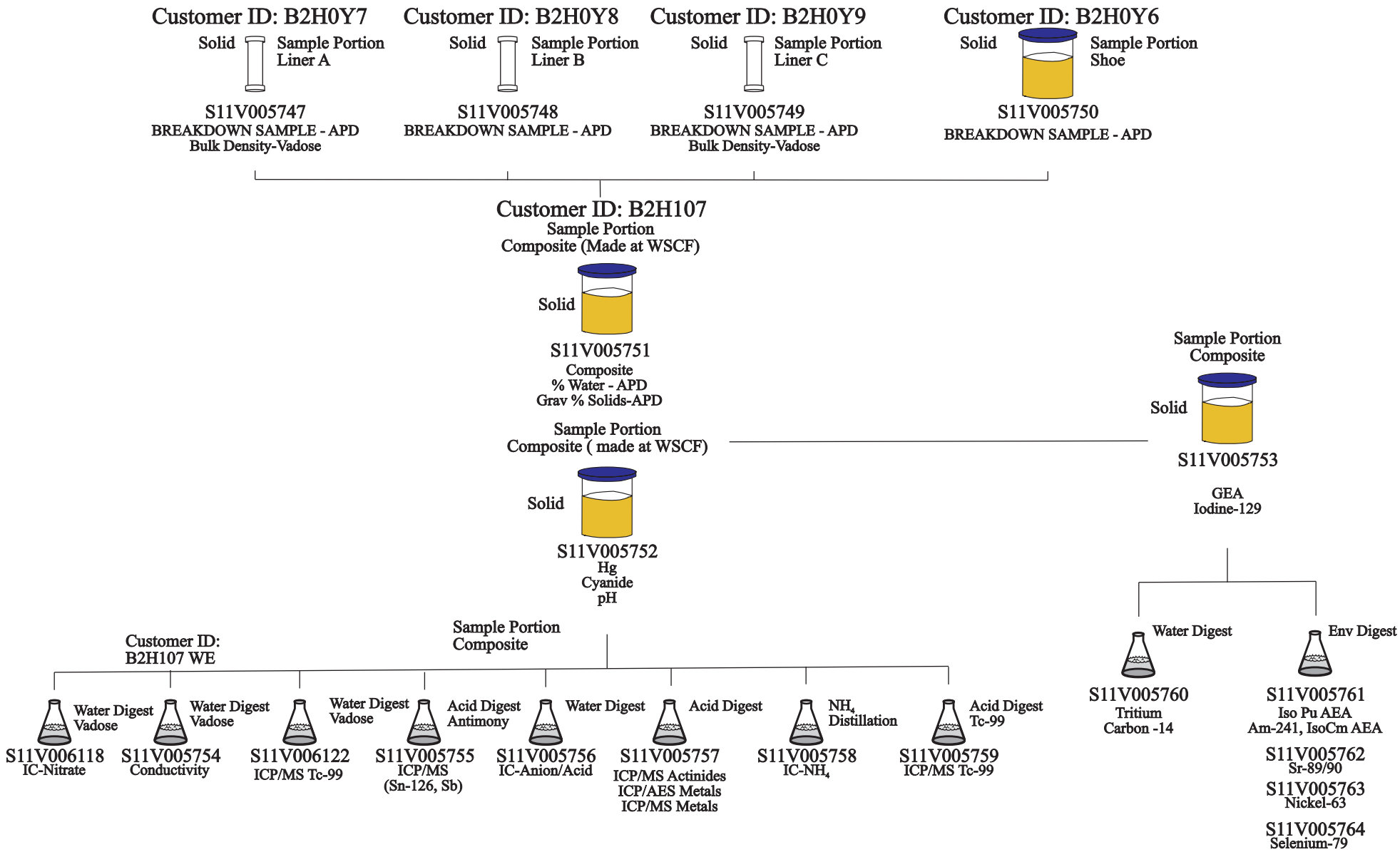
Vadose Zone: S Farm Barrier 2011
Core No.: C8408
Group 20111300 (Solid)

Sample Depth: 47- 49 ft.
Segment No: I001



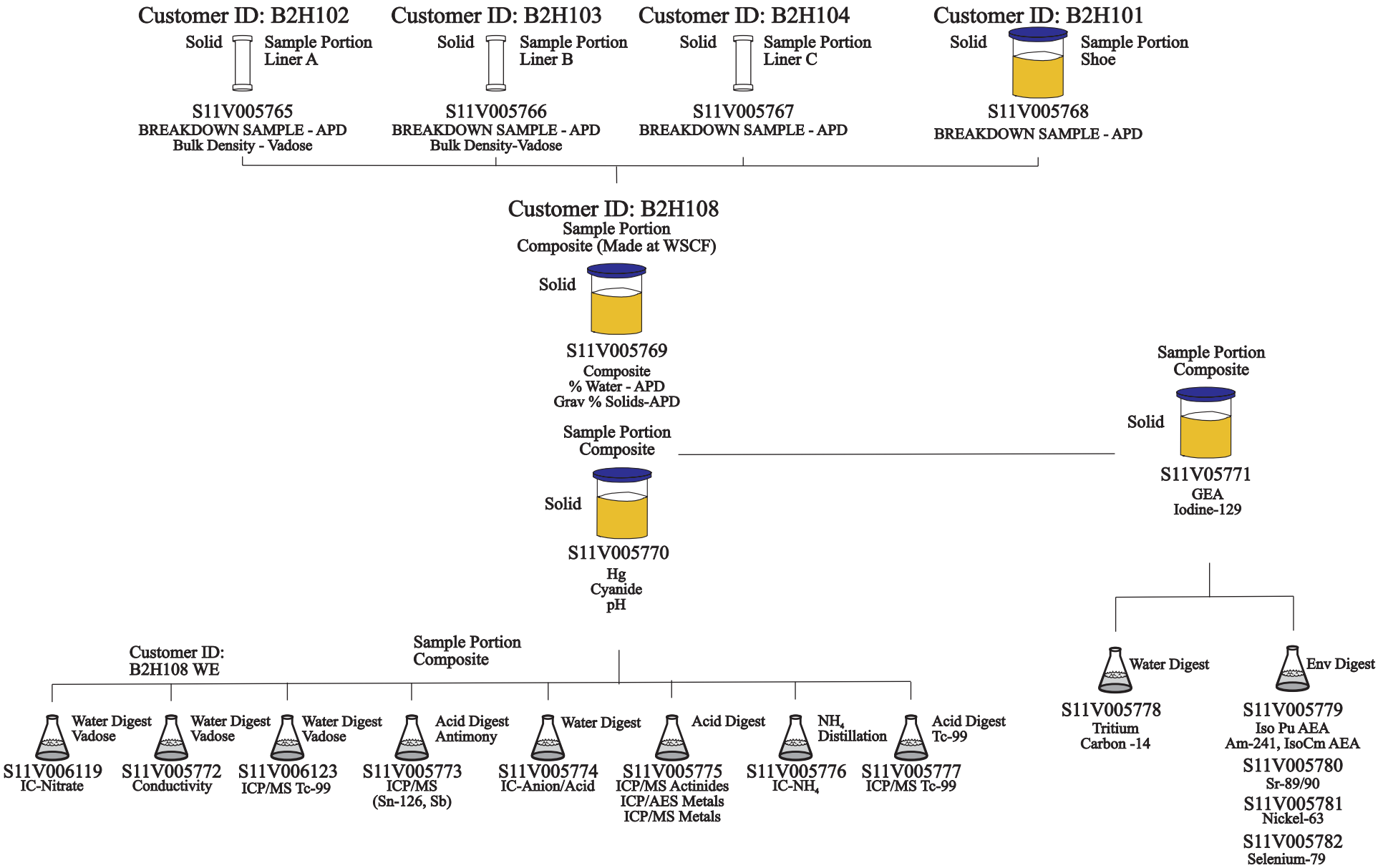
Vadose Zone: S Farm Barrier 2011
Core No.: C8408
Group 20111300 (Solid)

Sample Depth: 94 - 96 ft.
Segment No: I002



Vadose Zone: S Farm Barrier 2011
Core No.: C8408
Group 20111300 (Solid)

Sample Depth: 129 - 131 ft.
Segment No: I003



Attachment 3

HOLDING TIME REPORT

Holding Time Report : Am-241, Cm-242, 243, 244

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date Time	Receipt Date Time	Preparation Date	Analysis Date	Missed Holding Time
S11V004613	B2D441	AEA Am-241, Iso-Cm	Acid Digest, Separation	07/13/2011 10:15	07/20/2011 10:04	10/14/2011 09:20	10/19/2011 23:11	N
S11V004631	B2D442	AEA Am-241, Iso-Cm	Acid Digest, Separation	07/19/2011 09:25	07/20/2011 10:10	10/14/2011 09:20	10/19/2011 23:11	N
S11V004649	B2D443	AEA Am-241, Iso-Cm	Acid Digest, Separation	07/20/2011 10:30	07/20/2011 11:00	10/14/2011 09:20	10/19/2011 23:11	N
S11V005316	B2FDM2	AEA Am-241, Iso-Cm	Separation	08/10/2011 07:55	08/10/2011 13:55	N/A	09/21/2011 14:28	N
S11V005331	B2FDJ8	AEA Am-241, Iso-Cm	Acid Digest, Separation	08/08/2011 09:25	10/13/2011 10:45	11/10/2011 09:17	11/10/2011 22:20	N
S11V005349	B2FDJ9	AEA Am-241, Iso-Cm	Acid Digest, Separation	08/09/2011 09:10	10/13/2011 10:45	11/01/2011 09:49	11/01/2011 23:45	N
S11V005367	B2FDK0	AEA Am-241, Iso-Cm	Acid Digest, Separation	08/10/2011 08:15	08/09/2011 09:40	11/01/2011 09:49	11/01/2011 23:45	N
S11V005380	B2FDM0	AEA Am-241, Iso-Cm	Separation	09/13/2011 08:20	09/13/2011 09:30	N/A	09/21/2011 14:28	N
S11V005386	B2FDM1	AEA Am-241, Iso-Cm	Separation	09/13/2011 09:10	09/13/2011 10:05	N/A	09/21/2011 14:28	N
S11V005401	B2FDL3	AEA Am-241, Iso-Cm	Acid Digest, Separation	09/08/2011 10:10	09/18/2011 11:00	10/14/2011 09:20	10/19/2011 23:11	N
S11V005419	B2FDL4	AEA Am-241, Iso-Cm	Acid Digest, Separation	09/12/2011 12:15	09/18/2011 11:00	10/14/2011 09:20	10/19/2011 23:11	N
S11V005437	B2FDL5	AEA Am-241, Iso-Cm	Acid Digest, Separation	09/15/2011 10:40	09/18/2011 11:00	10/14/2011 09:20	10/19/2011 23:11	N
S11V005527	B2FXM5	AEA Am-241, Iso-Cm	Acid Digest, Separation	07/29/2011 09:45	10/13/2011 10:45	11/01/2011 09:49	11/01/2011 23:46	N
S11V005545	B2FXM6	AEA Am-241, Iso-Cm	Acid Digest, Separation	08/01/2011 13:05	10/13/2011 10:45	11/01/2011 09:49	11/01/2011 23:46	N
S11V005563	B2FXM7	AEA Am-241, Iso-Cm	Acid Digest, Separation	08/02/2011 10:30	10/13/2011 10:45	11/01/2011 09:49	11/01/2011 23:46	N
S11V005583	B2FYT0	AEA Am-241, Iso-Cm	Acid Digest, Separation	08/04/2011 09:25	10/13/2011 10:45	11/01/2011 20:52	11/09/2011 21:09	N
S11V005601	B2FYT1	AEA Am-241, Iso-Cm	Acid Digest, Separation	08/08/2011 13:05	10/13/2011 10:45	11/01/2011 20:52	11/09/2011 21:10	N
S11V005619	B2FYT2	AEA Am-241, Iso-Cm	Acid Digest, Separation	08/09/2011 11:45	10/13/2011 10:45	11/01/2011 20:52	11/09/2011 21:10	N
S11V005644	B2FYY0	AEA Am-241, Iso-Cm	Acid Digest, Separation	08/12/2011 09:30	10/13/2011 10:45	11/01/2011 20:52	11/09/2011 21:10	N
S11V005662	B2FYY1	AEA Am-241, Iso-Cm	Acid Digest, Separation	08/15/2011 13:55	10/13/2011 10:45	11/01/2011 20:52	11/09/2011 21:10	N
S11V005698	B2FYY2	AEA Am-241, Iso-Cm	Acid Digest, Separation	08/18/2011 08:25	10/13/2011 10:45	11/01/2011 20:52	11/09/2011 21:10	N
S11V005723	B2H106	AEA Am-241, Iso-Cm	Acid Digest, Separation	09/01/2011 08:50	09/15/2011 14:00	10/26/2011 15:45	10/27/2011 09:52	N
S11V005761	B2H107	AEA Am-241, Iso-Cm	Acid Digest, Separation	09/06/2011 09:30	09/15/2011 14:00	10/26/2011 15:45	10/27/2011 09:52	N
S11V005779	B2H108	AEA Am-241, Iso-Cm	Acid Digest, Separation	09/07/2011 08:25	09/15/2011 14:00	10/26/2011 15:46	10/27/2011 09:52	N

Holding Time Report : Carbon-14

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date Time	Receipt Date Time	Preparation Date	Analysis Date	Missed Holding Time
S11V004612	B2D441	Carbon-14 by LSC	Water Digest, Separation	07/13/2011 10:15	07/20/2011 10:04	11/28/2011 14:19	12/01/2011 16:20	N
S11V004630	B2D442	Carbon-14 by LSC	Water Digest, Separation	07/19/2011 09:25	07/20/2011 10:10	11/28/2011 14:19	12/01/2011 16:20	N
S11V004648	B2D443	Carbon-14 by LSC	Water Digest, Separation	07/20/2011 10:30	07/20/2011 11:00	11/28/2011 14:19	12/01/2011 16:20	N
S11V005315	B2FDM2	Carbon-14 by LSC	Separation	08/10/2011 07:55	08/10/2011 13:55	N/A	10/19/2011 14:30	N
S11V005330	B2FDJ8	Carbon-14 by LSC	Water Digest, Separation	08/08/2011 09:25	10/13/2011 10:45	11/22/2011 09:34	12/05/2011 15:05	N
S11V005348	B2FDJ9	Carbon-14 by LSC	Water Digest, Separation	08/09/2011 09:10	10/13/2011 10:45	11/22/2011 09:34	11/28/2011 15:00	N
S11V005366	B2FDK0	Carbon-14 by LSC	Water Digest, Separation	08/10/2011 08:15	08/09/2011 09:40	11/22/2011 09:34	11/28/2011 15:00	N
S11V005379	B2FDM0	Carbon-14 by LSC	Separation	09/13/2011 08:20	09/13/2011 09:30	N/A	10/19/2011 14:30	N
S11V005385	B2FDM1	Carbon-14 by LSC	Separation	09/13/2011 09:10	09/13/2011 10:05	N/A	10/19/2011 14:30	N
S11V005400	B2FDL3	Carbon-14 by LSC	Water Digest, Separation	09/08/2011 10:10	09/18/2011 11:00	11/28/2011 14:19	12/01/2011 16:20	N
S11V005418	B2FDL4	Carbon-14 by LSC	Water Digest, Separation	09/12/2011 12:15	09/18/2011 11:00	11/28/2011 14:19	12/01/2011 16:20	N
S11V005436	B2FDL5	Carbon-14 by LSC	Water Digest, Separation	09/15/2011 10:40	09/18/2011 11:00	11/28/2011 14:19	12/01/2011 16:20	N
S11V005526	B2FXM5	Carbon-14 by LSC	Water Digest, Separation	07/29/2011 09:45	10/13/2011 10:45	11/22/2011 09:34	11/28/2011 15:00	N
S11V005544	B2FXM6	Carbon-14 by LSC	Water Digest, Separation	08/01/2011 13:05	10/13/2011 10:45	11/22/2011 09:34	12/05/2011 15:05	N
S11V005562	B2FXM7	Carbon-14 by LSC	Water Digest, Separation	08/02/2011 10:30	10/13/2011 10:45	11/22/2011 09:34	11/28/2011 15:00	N
S11V005582	B2FYT0	Carbon-14 by LSC	Water Digest, Separation	08/04/2011 09:25	10/13/2011 10:45	11/01/2011 10:18	12/05/2011 15:05	N
S11V005600	B2FYT1	Carbon-14 by LSC	Water Digest, Separation	08/08/2011 13:05	10/13/2011 10:45	11/01/2011 10:18	12/05/2011 15:05	N
S11V005618	B2FYT2	Carbon-14 by LSC	Water Digest, Separation	08/09/2011 11:45	10/13/2011 10:45	11/01/2011 10:18	11/23/2011 15:30	N
S11V005643	B2FYY0	Carbon-14 by LSC	Water Digest, Separation	08/12/2011 09:30	10/13/2011 10:45	11/01/2011 10:18	11/23/2011 15:30	N
S11V005661	B2FYY1	Carbon-14 by LSC	Water Digest, Separation	08/15/2011 13:55	10/13/2011 10:45	11/01/2011 10:18	11/23/2011 15:30	N
S11V005697	B2FYY2	Carbon-14 by LSC	Water Digest, Separation	08/18/2011 08:25	10/13/2011 10:45	11/01/2011 10:18	11/23/2011 15:30	N
S11V005722	B2H106	Carbon-14 by LSC	Water Digest, Separation	09/01/2011 08:50	09/15/2011 14:00	11/01/2011 10:03	11/10/2011 17:45	N
S11V005760	B2H107	Carbon-14 by LSC	Water Digest, Separation	09/06/2011 09:30	09/15/2011 14:00	11/01/2011 10:03	11/10/2011 17:45	N
S11V005778	B2H108	Carbon-14 by LSC	Water Digest, Separation	09/07/2011 08:25	09/15/2011 14:00	11/01/2011 10:03	11/10/2011 17:45	N

Holding Time Report : Cyanide

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date Time	Receipt Date Time	Analysis Date	Missed Holding Time
S11V004603	B2D441	SW846-9014/SM4500-CN	SW846-9010C	07/13/2011 10:15	07/20/2011 10:04	09/15/2011 14:42	Y
S11V004621	B2D442	SW846-9014/SM4500-CN	SW846-9010C	07/19/2011 09:25	07/20/2011 10:10	09/15/2011 14:42	Y
S11V004639	B2D443	SW846-9014/SM4500-CN	SW846-9010C	07/20/2011 10:30	07/20/2011 11:00	09/15/2011 14:42	Y
S11V005321	B2FDJ8	SW846-9014/SM4500-CN	SW846-9010C	08/08/2011 09:25	10/13/2011 10:45	10/31/2011 14:55	Y
S11V005339	B2FDJ9	SW846-9014/SM4500-CN	SW846-9010C	08/09/2011 09:10	10/13/2011 10:45	10/31/2011 14:55	Y
S11V005357	B2FDK0	SW846-9014/SM4500-CN	SW846-9010C	08/10/2011 08:15	10/13/2011 10:45	10/31/2011 14:55	Y
S11V005517	B2FXM5	SW846-9014/SM4500-CN	SW846-9010C	07/29/2011 09:45	10/13/2011 10:45	10/27/2011 15:00	Y
S11V005535	B2FXM6	SW846-9014/SM4500-CN	SW846-9010C	08/01/2011 13:05	10/13/2011 10:45	10/27/2011 15:00	Y
S11V005553	B2FXM7	SW846-9014/SM4500-CN	SW846-9010C	08/02/2011 10:30	10/13/2011 10:45	10/27/2011 15:00	Y
S11V005573	B2FYT0	SW846-9014/SM4500-CN	SW846-9010C	08/04/2011 09:25	10/13/2011 10:45	10/27/2011 15:00	Y
S11V005591	B2FYT1	SW846-9014/SM4500-CN	SW846-9010C	08/08/2011 13:05	10/13/2011 10:45	10/31/2011 14:55	Y
S11V005609	B2FYT2	SW846-9014/SM4500-CN	SW846-9010C	08/09/2011 11:45	10/13/2011 10:45	10/31/2011 14:55	Y
S11V005635	B2FYY0	SW846-9014/SM4500-CN	SW846-9010C	08/12/2011 09:30	10/13/2011 10:45	10/31/2011 14:55	Y
S11V005653	B2FYY1	SW846-9014/SM4500-CN	SW846-9010C	08/15/2011 13:55	10/13/2011 10:45	10/31/2011 14:55	Y
S11V005669	B2FDL3	SW846-9014/SM4500-CN	SW846-9010C	09/08/2011 10:10	09/18/2011 11:00	09/20/2011 15:00	N
S11V005670	B2FDL4	SW846-9014/SM4500-CN	SW846-9010C	09/12/2011 12:15	09/18/2011 11:00	09/20/2011 15:00	N
S11V005671	B2FDL5	SW846-9014/SM4500-CN	SW846-9010C	09/15/2011 10:40	09/18/2011 11:00	09/20/2011 15:00	N
S11V005689	B2FYY2	SW846-9014/SM4500-CN	SW846-9010C	08/18/2011 08:25	10/13/2011 10:45	10/31/2011 14:55	Y
S11V005714	B2H106	SW846-9014/SM4500-CN	SW846-9010C	09/01/2011 08:50	09/15/2011 14:00	09/20/2011 15:00	Y
S11V005752	B2H107	SW846-9014/SM4500-CN	SW846-9010C	09/06/2011 09:30	09/15/2011 14:00	09/20/2011 15:00	N
S11V005770	B2H108	SW846-9014/SM4500-CN	SW846-9010C	09/07/2011 08:25	09/15/2011 14:00	09/20/2011 15:00	N
S11V005312	B2FDM2	SW846-9014	SW846-9010C	08/10/2011 07:55	08/10/2011 13:55	09/14/2011 15:30	Y
S11V005376	B2FDM0	SW846-9014	SW846-9010C	09/13/2011 08:20	09/13/2011 09:30	09/14/2011 15:30	N
S11V005382	B2FDM1	SW846-9014	SW846-9010C	09/13/2011 09:10	09/13/2011 10:05	09/14/2011 15:30	N

Holding Time Report : Conductivity

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date Time	Receipt Date Time	Analysis Date	Missed Holding Time
S11V004605	B2D441	SW-846 9050A	Vadose Water Digest	07/13/2011 10:15	07/20/2011 10:04	07/21/2011 15:50	N
S11V004623	B2D442	SW-846 9050A	Vadose Water Digest	07/19/2011 09:25	07/20/2011 10:10	07/21/2011 15:50	N
S11V004641	B2D443	SW-846 9050A	Vadose Water Digest	07/20/2011 10:30	07/20/2011 11:00	07/21/2011 15:50	N
S11V005323	B2FDJ8	SW-846 9050A	Vadose Water Digest	08/08/2011 09:25	10/13/2011 10:45	10/21/2011 14:30	Y
S11V005341	B2FDJ9	SW-846 9050A	Vadose Water Digest	08/09/2011 09:10	10/13/2011 10:45	10/21/2011 14:30	Y
S11V005359	B2FDK0	SW-846 9050A	Vadose Water Digest	08/10/2011 08:15	10/13/2011 10:45	10/21/2011 14:30	Y
S11V005393	B2FDL3	SW-846 9050A	Vadose Water Digest	09/08/2011 10:10	09/18/2011 11:00	09/19/2011 14:55	N
S11V005411	B2FDL4	SW-846 9050A	Vadose Water Digest	09/12/2011 12:15	09/18/2011 11:00	09/19/2011 14:55	N
S11V005429	B2FDL5	SW-846 9050A	Vadose Water Digest	09/15/2011 10:40	09/18/2011 11:00	09/19/2011 14:55	N
S11V005519	B2FXM5	SW-846 9050A	Vadose Water Digest	07/29/2011 09:45	10/13/2011 10:45	10/21/2011 14:30	Y
S11V005537	B2FXM6	SW-846 9050A	Vadose Water Digest	08/01/2011 13:05	10/13/2011 10:45	10/21/2011 14:30	Y
S11V005555	B2FXM7	SW-846 9050A	Vadose Water Digest	08/02/2011 10:30	10/13/2011 10:45	10/21/2011 15:10	Y
S11V005575	B2FYT0	SW-846 9050A	Vadose Water Digest	08/04/2011 09:25	10/13/2011 10:45	10/21/2011 14:30	Y
S11V005593	B2FYT1	SW-846 9050A	Vadose Water Digest	08/08/2011 13:05	10/13/2011 10:45	10/21/2011 14:30	Y
S11V005611	B2FYT2	SW-846 9050A	Vadose Water Digest	08/09/2011 11:45	10/13/2011 10:45	10/21/2011 14:30	Y
S11V005637	B2FYY0	SW-846 9050A	Vadose Water Digest	08/12/2011 09:30	10/13/2011 10:45	10/21/2011 14:30	Y
S11V005655	B2FYY1	SW-846 9050A	Vadose Water Digest	08/15/2011 13:55	10/13/2011 10:45	10/21/2011 14:30	Y
S11V005691	B2FYY2	SW-846 9050A	Vadose Water Digest	08/18/2011 08:25	10/13/2011 10:45	10/21/2011 14:30	Y
S11V005716	B2H106	SW-846 9050A	Vadose Water Digest	09/01/2011 08:50	09/15/2011 14:00	09/20/2011 13:45	N
S11V005754	B2H107	SW-846 9050A	Vadose Water Digest	09/06/2011 09:30	09/15/2011 14:00	09/20/2011 13:45	N
S11V005772	B2H108	SW-846 9050A	Vadose Water Digest	09/07/2011 08:25	09/15/2011 14:00	09/20/2011 13:45	N

Holding Time Report : Gamma Energy Analysis

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date Time	Receipt Date Time	Analysis Date	Missed Holding Time
S11V004604	B2D441	GEA	N/A	07/13/2011 10:15	07/20/2011 10:04	09/15/2011 06:42	N
S11V004622	B2D442	GEA	N/A	07/19/2011 09:25	07/20/2011 10:10	09/13/2011 08:00	N
S11V004640	B2D443	GEA	N/A	07/20/2011 10:30	07/20/2011 11:00	09/13/2011 14:14	N
S11V005316	B2FDM2	GEA	N/A	08/10/2011 07:55	08/10/2011 13:55	09/16/2011 19:51	N
S11V005322	B2FDJ8	GEA	N/A	08/08/2011 09:25	10/13/2011 10:45	10/28/2011 18:00	N
S11V005340	B2FDJ9	GEA	N/A	08/09/2011 09:10	10/13/2011 10:45	10/28/2011 19:49	N
S11V005358	B2FDK0	GEA	N/A	08/10/2011 08:15	08/09/2011 09:40	10/28/2011 22:45	N
S11V005380	B2FDM0	GEA	N/A	09/13/2011 08:20	09/13/2011 09:30	09/19/2011 08:07	N
S11V005386	B2FDM1	GEA	N/A	09/13/2011 09:10	09/13/2011 10:05	09/19/2011 15:27	N
S11V005392	B2FDL3	GEA	N/A	09/08/2011 10:10	09/18/2011 11:00	09/21/2011 21:37	N
S11V005410	B2FDL4	GEA	N/A	09/12/2011 12:15	09/18/2011 11:00	09/22/2011 13:49	N
S11V005428	B2FDL5	GEA	N/A	09/15/2011 10:40	09/18/2011 11:00	09/22/2011 22:07	N
S11V005518	B2FXM5	GEA	N/A	07/29/2011 09:45	10/13/2011 10:45	10/28/2011 22:57	N
S11V005536	B2FXM6	GEA	N/A	08/01/2011 13:05	10/13/2011 10:45	10/29/2011 09:39	N
S11V005554	B2FXM7	GEA	N/A	08/02/2011 10:30	10/13/2011 10:45	10/29/2011 09:50	N
S11V005574	B2FYT0	GEA	N/A	08/04/2011 09:25	10/13/2011 10:45	10/29/2011 07:20	N
S11V005592	B2FYT1	GEA	N/A	08/08/2011 13:05	10/13/2011 10:45	10/29/2011 10:00	N
S11V005610	B2FYT2	GEA	N/A	08/09/2011 11:45	10/13/2011 10:45	10/30/2011 01:05	N
S11V005636	B2FYY0	GEA	N/A	08/12/2011 09:30	10/13/2011 10:45	10/29/2011 12:38	N
S11V005654	B2FYY1	GEA	N/A	08/15/2011 13:55	10/13/2011 10:45	10/29/2011 15:16	N
S11V005690	B2FYY2	GEA	N/A	08/18/2011 08:25	10/13/2011 10:45	10/29/2011 18:00	N
S11V005715	B2H106	GEA	N/A	09/01/2011 08:50	09/15/2011 14:00	10/07/2011 08:14	N
S11V005753	B2H107	GEA	N/A	09/06/2011 09:30	09/15/2011 14:00	10/07/2011 11:09	N
S11V005771	B2H108	GEA	N/A	09/07/2011 08:25	09/15/2011 14:00	10/07/2011 15:50	N

Holding Time Report : CVAA Mercury

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date Time	Receipt Date Time	Analysis Date	Missed Holding Time
S11V004603	B2D441	SW-846 7471A	SW-846 7471A	07/13/2011 10:15	07/20/2011 10:04	09/20/2011 09:05	Y
S11V004621	B2D442	SW-846 7471A	SW-846 7471A	07/19/2011 09:25	07/20/2011 10:10	09/20/2011 09:05	Y
S11V004639	B2D443	SW-846 7471A	SW-846 7471A	07/20/2011 10:30	07/20/2011 11:00	09/20/2011 09:05	Y
S11V005314	B2FDM2	SW-846 7470A	SW-846 7470A	08/10/2011 07:55	08/10/2011 13:55	10/10/2011 09:45	Y
S11V005321	B2FDJ8	SW-846 7471A	SW-846 7471A	08/08/2011 09:25	10/13/2011 10:45	11/01/2011 01:46	Y
S11V005339	B2FDJ9	SW-846 7471A	SW-846 7471A	08/09/2011 09:10	10/13/2011 10:45	11/01/2011 01:46	Y
S11V005357	B2FDK0	SW-846 7471A	SW-846 7471A	08/10/2011 08:15	10/13/2011 10:45	11/01/2011 01:46	Y
S11V005378	B2FDM0	SW-846 7470A	SW-846 7470A	09/13/2011 08:20	09/13/2011 09:30	09/28/2011 08:35	N
S11V005384	B2FDM1	SW-846 7470A	SW-846 7470A	09/13/2011 09:10	09/13/2011 10:05	09/28/2011 08:35	N
S11V005517	B2FXM5	SW-846 7471A	SW-846 7471A	07/29/2011 09:45	10/13/2011 10:45	11/01/2011 01:46	Y
S11V005535	B2FXM6	SW-846 7471A	SW-846 7471A	08/01/2011 13:05	10/13/2011 10:45	11/01/2011 01:46	Y
S11V005553	B2FXM7	SW-846 7471A	SW-846 7471A	08/02/2011 10:30	10/13/2011 10:45	11/01/2011 01:46	Y
S11V005573	B2FYT0	SW-846 7471A	SW-846 7471A	08/04/2011 09:25	10/13/2011 10:45	11/01/2011 01:46	Y
S11V005591	B2FYT1	SW-846 7471A	SW-846 7471A	08/08/2011 13:05	10/13/2011 10:45	11/01/2011 01:46	Y
S11V005609	B2FYT2	SW-846 7471A	SW-846 7471A	08/09/2011 11:45	10/13/2011 10:45	11/01/2011 01:46	Y
S11V005635	B2FYY0	SW-846 7471A	SW-846 7471A	08/12/2011 09:30	10/13/2011 10:45	11/01/2011 01:46	Y
S11V005653	B2FYY1	SW-846 7471A	SW-846 7471A	08/15/2011 13:55	10/13/2011 10:45	11/01/2011 01:46	Y
S11V005669	B2FDL3	SW-846 7471A	SW-846 7471A	09/08/2011 10:10	09/18/2011 11:00	09/28/2011 08:35	N
S11V005670	B2FDL4	SW-846 7471A	SW-846 7471A	09/12/2011 12:15	09/18/2011 11:00	09/28/2011 08:35	N
S11V005671	B2FDL5	SW-846 7471A	SW-846 7471A	09/15/2011 10:40	09/18/2011 11:00	09/28/2011 08:35	N
S11V005689	B2FYY2	SW-846 7471A	SW-846 7471A	08/18/2011 08:25	10/13/2011 10:45	11/01/2011 01:46	Y
S11V005714	B2H106	SW-846 7471A	SW-846 7471A	09/01/2011 08:50	09/15/2011 14:00	09/28/2011 08:35	N
S11V005752	B2H107	SW-846 7471A	SW-846 7471A	09/06/2011 09:30	09/15/2011 14:00	09/28/2011 08:35	N
S11V005770	B2H108	SW-846 7471A	SW-846 7471A	09/07/2011 08:25	09/15/2011 14:00	09/28/2011 08:35	N

Holding Time Report : IC Anions & Organic Acids

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date Time	Receipt Date Time	Preparation Date	Analysis Date	Missed Holding Time
S11V005311	B2FDM2	SW-846 9056A	N/A	08/10/2011 07:55	08/10/2011 13:55	N/A	09/15/2011 19:14	Y
S11V005375	B2FDM0	SW-846 9056A	N/A	09/13/2011 08:20	09/13/2011 09:30	N/A	09/14/2011 02:03	N
S11V005381	B2FDM1	SW-846 9056A	N/A	09/13/2011 09:10	09/13/2011 10:05	N/A	09/14/2011 05:14	N
S11V004606	B2D441 WE	SW-846 9056A	Vadose Water Digest	07/20/2011 00:00	07/20/2011 10:04	07/21/2011 09:30	07/21/2011 21:23	N
S11V004624	B2D442 WE	SW-846 9056A	Vadose Water Digest	07/20/2011 00:00	07/20/2011 10:10	07/21/2011 09:30	07/21/2011 22:27	N
S11V004642	B2D443 WE	SW-846 9056A	Vadose Water Digest	07/20/2011 10:30	07/20/2011 11:00	07/21/2011 09:30	07/21/2011 21:55	N
S11V005394	B2FDL3 WE	SW-846 9056A	Vadose Water Digest	09/18/2011 00:00	09/18/2011 11:00	09/19/2011 10:28	09/19/2011 20:10	N
S11V005412	B2FDL4 WE	SW-846 9056A	Vadose Water Digest	09/18/2011 00:00	09/18/2011 11:00	09/19/2011 10:28	09/19/2011 21:46	N
S11V005430	B2FDL5 WE	SW-846 9056A	Vadose Water Digest	09/18/2011 00:00	09/18/2011 11:00	09/19/2011 10:28	09/19/2011 22:18	N
S11V006117	B2H106 WE	SW-846 9056A	Vadose Water Digest	09/01/2011 08:50	09/15/2011 14:00	09/20/2011 09:30	09/20/2011 19:39	N
S11V006118	B2H107 WE	SW-846 9056A	Vadose Water Digest	09/06/2011 09:30	09/15/2011 14:00	09/20/2011 09:30	09/20/2011 21:15	N
S11V006118	B2H107 WE	SW-846 9056A	Vadose Water Digest	09/06/2011 09:30	09/15/2011 14:00	09/20/2011 09:30	09/22/2011 04:40	N
S11V006119	B2H108 WE	SW-846 9056A	Vadose Water Digest	09/07/2011 08:25	09/15/2011 14:00	09/20/2011 09:30	09/20/2011 21:47	N
S11V006119	B2H108 WE	SW-846 9056A	Vadose Water Digest	09/07/2011 08:25	09/15/2011 14:00	09/20/2011 09:30	09/22/2011 05:12	N
S11V004608	B2D441	SW-846 9056A	Water Digest	07/13/2011 10:15	07/20/2011 10:04	09/21/2011 09:30	09/21/2011 20:09	N
S11V004626	B2D442	SW-846 9056A	Water Digest	07/19/2011 09:25	07/20/2011 10:10	09/21/2011 09:30	09/21/2011 22:17	N
S11V004644	B2D443	SW-846 9056A	Water Digest	07/20/2011 10:30	07/20/2011 11:00	09/21/2011 09:30	09/21/2011 22:49	N
S11V005326	B2FDJ8	SW-846 9056A	Water Digest	08/08/2011 09:25	10/13/2011 10:45	10/18/2011 08:40	10/19/2011 20:43	N
S11V005344	B2FDJ9	SW-846 9056A	Water Digest	08/09/2011 09:10	10/13/2011 10:45	10/18/2011 08:40	10/19/2011 21:15	N
S11V005362	B2FDK0	SW-846 9056A	Water Digest	08/10/2011 08:15	08/09/2011 09:40	10/18/2011 08:40	10/19/2011 21:47	N
S11V005396	B2FDL3	SW-846 9056A	Water Digest	09/08/2011 10:10	09/18/2011 11:00	09/21/2011 09:30	09/22/2011 02:01	N
S11V005414	B2FDL4	SW-846 9056A	Water Digest	09/12/2011 12:15	09/18/2011 11:00	09/21/2011 09:30	09/22/2011 02:32	N
S11V005432	B2FDL5	SW-846 9056A	Water Digest	09/15/2011 10:40	09/18/2011 11:00	09/21/2011 09:30	09/22/2011 03:04	N
S11V005522	B2FXM5	SW-846 9056A	Water Digest	07/29/2011 09:45	10/13/2011 10:45	10/18/2011 08:40	10/19/2011 14:52	N
S11V005540	B2FXM6	SW-846 9056A	Water Digest	08/01/2011 13:05	10/13/2011 10:45	10/18/2011 08:40	10/19/2011 16:59	N
S11V005558	B2FXM7	SW-846 9056A	Water Digest	08/02/2011 10:30	10/13/2011 10:45	11/22/2011 10:00	11/23/2011 12:29	N
S11V005578	B2FYT0	SW-846 9056A	Water Digest	08/04/2011 09:25	10/13/2011 10:45	10/18/2011 08:40	10/19/2011 18:03	N
S11V005596	B2FYT1	SW-846 9056A	Water Digest	08/08/2011 13:05	10/13/2011 10:45	10/18/2011 08:40	10/19/2011 18:35	N
S11V005614	B2FYT2	SW-846 9056A	Water Digest	08/09/2011 11:45	10/13/2011 10:45	10/18/2011 08:40	10/19/2011 20:11	N
S11V005639	B2FYY0	SW-846 9056A	Water Digest	08/12/2011 09:30	10/13/2011 10:45	10/18/2011 08:40	10/19/2011 23:55	N
S11V005657	B2FYY1	SW-846 9056A	Water Digest	08/15/2011 13:55	10/13/2011 10:45	10/18/2011 08:40	10/20/2011 00:27	N
S11V005693	B2FYY2	SW-846 9056A	Water Digest	08/18/2011 08:25	10/13/2011 10:45	10/18/2011 08:40	10/20/2011 00:59	N
S11V005718	B2H106	SW-846 9056A	Water Digest	09/01/2011 08:50	09/15/2011 14:00	09/21/2011 09:30	09/21/2011 23:21	N
S11V005756	B2H107	SW-846 9056A	Water Digest	09/06/2011 09:30	09/15/2011 14:00	09/21/2011 09:30	09/21/2011 23:53	N
S11V005774	B2H108	SW-846 9056A	Water Digest	09/07/2011 08:25	09/15/2011 14:00	09/21/2011 09:30	09/22/2011 01:29	N

Holding Time Report : IC Ammonium

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date Time	Receipt Date Time	Preparation Date	Analysis Date	Missed Holding Time
S11V004610	B2D441	EPA 200.7	Distillation	07/13/2011 10:15	07/20/2011 10:04	09/23/2011 08:00	09/23/2011 15:58	Y
S11V004628	B2D442	EPA 200.7	Distillation	07/19/2011 09:25	07/20/2011 10:10	09/23/2011 08:00	09/23/2011 17:06	Y
S11V004646	B2D443	EPA 200.7	Distillation	07/20/2011 10:30	07/20/2011 11:00	09/23/2011 08:00	09/23/2011 17:23	Y
S11V005313	B2FDM2	EPA 200.7	Distillation	08/10/2011 07:55	08/10/2011 13:55	09/27/2011 12:45	09/27/2011 17:11	Y
S11V005328	B2FDJ8	EPA 200.7	Distillation	08/08/2011 09:25	10/13/2011 10:45	10/18/2011 09:30	10/18/2011 17:05	Y
S11V005346	B2FDJ9	EPA 200.7	Distillation	08/09/2011 09:10	10/13/2011 10:45	10/17/2011 16:15	10/17/2011 20:47	Y
S11V005364	B2FDK0	EPA 200.7	Distillation	08/10/2011 08:15	10/13/2011 10:45	10/18/2011 09:30	10/18/2011 15:40	Y
S11V005377	B2FDM0	EPA 200.7	Distillation	09/13/2011 08:20	09/13/2011 09:30	10/07/2011 14:00	10/07/2011 17:17	Y
S11V005383	B2FDM1	EPA 200.7	Distillation	09/13/2011 09:10	09/13/2011 10:05	09/27/2011 12:45	09/27/2011 18:19	Y
S11V005398	B2FDL3	EPA 200.7	Distillation	09/08/2011 10:10	09/18/2011 11:00	09/23/2011 08:00	09/23/2011 17:40	N
S11V005416	B2FDL4	EPA 200.7	Distillation	09/12/2011 12:15	09/18/2011 11:00	09/23/2011 08:00	09/23/2011 17:57	N
S11V005434	B2FDL5	EPA 200.7	Distillation	09/15/2011 10:40	09/18/2011 11:00	09/23/2011 08:00	09/23/2011 18:48	N
S11V005524	B2FXM5	EPA 200.7	Distillation	07/29/2011 09:45	10/13/2011 10:45	10/17/2011 16:15	10/17/2011 17:56	Y
S11V005542	B2FXM6	EPA 200.7	Distillation	08/01/2011 13:05	10/13/2011 10:45	10/17/2011 16:15	10/17/2011 19:05	Y
S11V005560	B2FXM7	EPA 200.7	Distillation	08/02/2011 10:30	10/13/2011 10:45	10/17/2011 16:15	10/17/2011 19:22	Y
S11V005580	B2FYT0	EPA 200.7	Distillation	08/04/2011 09:25	10/13/2011 10:45	10/17/2011 16:15	10/17/2011 19:39	Y
S11V005598	B2FYT1	EPA 200.7	Distillation	08/08/2011 13:05	10/13/2011 10:45	10/17/2011 16:15	10/17/2011 20:30	Y
S11V005616	B2FYT2	EPA 200.7	Distillation	08/09/2011 11:45	10/13/2011 10:45	10/18/2011 09:30	10/18/2011 16:48	Y
S11V005641	B2FYY0	EPA 200.7	Distillation	08/12/2011 09:30	10/13/2011 10:45	10/18/2011 09:30	10/18/2011 17:22	Y
S11V005659	B2FYY1	EPA 200.7	Distillation	08/15/2011 13:55	10/13/2011 10:45	10/18/2011 09:30	10/18/2011 18:13	Y
S11V005695	B2FYY2	EPA 200.7	Distillation	08/18/2011 08:25	10/13/2011 10:45	10/18/2011 09:30	10/18/2011 18:30	Y
S11V005720	B2H106	EPA 200.7	Distillation	09/01/2011 08:50	09/15/2011 14:00	09/23/2011 08:00	09/23/2011 19:05	Y
S11V005758	B2H107	EPA 200.7	Distillation	09/06/2011 09:30	09/15/2011 14:00	09/23/2011 08:00	09/23/2011 19:22	Y
S11V005776	B2H108	EPA 200.7	Distillation	09/07/2011 08:25	09/15/2011 14:00	09/23/2011 08:00	09/23/2011 19:39	Y

Holding Time Report : ICP/AES Metals

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date Time	Receipt Date Time	Preparation Date	Analysis Date	Missed Holding Time
S11V004609	B2D441	SW-846 6010C	SW-846 3050B	07/13/2011 10:15	07/20/2011 10:04	09/22/2011 10:00	10/03/2011 11:45	N
S11V004627	B2D442	SW-846 6010C	SW-846 3050B	07/19/2011 09:25	07/20/2011 10:10	09/22/2011 10:00	10/03/2011 11:47	N
S11V004645	B2D443	SW-846 6010C	SW-846 3050B	07/20/2011 10:30	07/20/2011 11:00	09/22/2011 10:00	10/03/2011 11:12	N
S11V005314	B2FDM2	SW-846 6010C	N/A	08/10/2011 07:55	08/10/2011 13:55	N/A	10/04/2011 10:47	N
S11V005327	B2FDJ8	SW-846 6010C	SW-846 3050B	08/08/2011 09:25	10/13/2011 10:45	10/19/2011 16:00	11/10/2011 14:15	N
S11V005345	B2FDJ9	SW-846 6010C	SW-846 3050B	08/09/2011 09:10	10/13/2011 10:45	10/19/2011 16:00	11/10/2011 14:22	N
S11V005363	B2FDK0	SW-846 6010C	SW-846 3050B	08/10/2011 08:15	08/09/2011 09:40	10/19/2011 16:00	11/10/2011 14:25	N
S11V005378	B2FDM0	SW-846 6010C	N/A	09/13/2011 08:20	09/13/2011 09:30	N/A	10/04/2011 10:49	N
S11V005384	B2FDM1	SW-846 6010C	N/A	09/13/2011 09:10	09/13/2011 10:05	N/A	10/04/2011 10:54	N
S11V005397	B2FDL3	SW-846 6010C	SW-846 3050B	09/08/2011 10:10	09/18/2011 11:00	09/22/2011 10:00	10/03/2011 11:48	N
S11V005415	B2FDL4	SW-846 6010C	SW-846 3050B	09/12/2011 12:15	09/18/2011 11:00	09/22/2011 10:00	10/03/2011 11:50	N
S11V005433	B2FDL5	SW-846 6010C	SW-846 3050B	09/15/2011 10:40	09/18/2011 11:00	09/22/2011 10:00	10/03/2011 11:52	N
S11V005523	B2FXM5	SW-846 6010C	SW-846 3050B	07/29/2011 09:45	10/13/2011 10:45	10/19/2011 16:00	11/10/2011 14:26	N
S11V005541	B2FXM6	SW-846 6010C	SW-846 3050B	08/01/2011 13:05	10/13/2011 10:45	10/19/2011 16:00	11/10/2011 14:41	N
S11V005559	B2FXM7	SW-846 6010C	SW-846 3050B	08/02/2011 10:30	10/13/2011 10:45	10/19/2011 16:00	11/10/2011 14:29	N
S11V005579	B2FYT0	SW-846 6010C	SW-846 3050B	08/04/2011 09:25	10/13/2011 10:45	10/19/2011 16:00	11/10/2011 14:44	N
S11V005597	B2FYT1	SW-846 6010C	SW-846 3050B	08/08/2011 13:05	10/13/2011 10:45	10/19/2011 16:00	11/10/2011 14:46	N
S11V005615	B2FYT2	SW-846 6010C	SW-846 3050B	08/09/2011 11:45	10/13/2011 10:45	10/19/2011 16:00	11/10/2011 14:48	N
S11V005640	B2FYY0	SW-846 6010C	SW-846 3050B	08/12/2011 09:30	10/13/2011 10:45	10/19/2011 16:00	11/10/2011 14:49	N
S11V005658	B2FYY1	SW-846 6010C	SW-846 3050B	08/15/2011 13:55	10/13/2011 10:45	10/19/2011 16:00	11/10/2011 14:51	N
S11V005694	B2FYY2	SW-846 6010C	SW-846 3050B	08/18/2011 08:25	10/13/2011 10:45	10/19/2011 16:00	11/10/2011 14:53	N
S11V005719	B2H106	SW-846 6010C	SW-846 3050B	09/01/2011 08:50	09/15/2011 14:00	09/22/2011 10:00	10/03/2011 11:54	N
S11V005757	B2H107	SW-846 6010C	SW-846 3050B	09/06/2011 09:30	09/15/2011 14:00	09/22/2011 10:00	10/03/2011 11:56	N
S11V005775	B2H108	SW-846 6010C	SW-846 3050B	09/07/2011 08:25	09/15/2011 14:00	09/22/2011 10:00	10/03/2011 11:57	N

Holding Time Report : Iodine - 129

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date Time	Receipt Date Time	Analysis Date	Missed Holding Time
S11V004604	B2D441	Iodine-129/GEA	Fusion Digest/Separation	07/13/2011 10:15	07/20/2011 10:04	10/21/2011 14:30	N
S11V004622	B2D442	Iodine-129/GEA	Fusion Digest/Separation	07/19/2011 09:25	07/20/2011 10:10	10/21/2011 14:30	N
S11V004640	B2D443	Iodine-129/GEA	Fusion Digest/Separation	07/20/2011 10:30	07/20/2011 11:00	10/21/2011 14:30	N
S11V005315	B2FDM2	Iodine-129/GEA	Separation	08/10/2011 07:55	08/10/2011 13:55	09/19/2011 16:00	N
S11V005322	B2FDJ8	Iodine-129/GEA	Fusion Digest/Separation	08/08/2011 09:25	10/13/2011 10:45	11/03/2011 14:45	N
S11V005340	B2FDJ9	Iodine-129/GEA	Fusion Digest/Separation	08/09/2011 09:10	10/13/2011 10:45	11/03/2011 14:45	N
S11V005358	B2FDK0	Iodine-129/GEA	Fusion Digest/Separation	08/10/2011 08:15	08/09/2011 09:40	11/03/2011 14:45	N
S11V005379	B2FDM0	Iodine-129/GEA	Separation	09/13/2011 08:20	09/13/2011 09:30	09/19/2011 16:00	N
S11V005385	B2FDM1	Iodine-129/GEA	Separation	09/13/2011 09:10	09/13/2011 10:05	09/19/2011 16:00	N
S11V005392	B2FDL3	Iodine-129/GEA	Fusion Digest/Separation	09/08/2011 10:10	09/18/2011 11:00	10/21/2011 14:30	N
S11V005410	B2FDL4	Iodine-129/GEA	Fusion Digest/Separation	09/12/2011 12:15	09/18/2011 11:00	10/21/2011 14:30	N
S11V005428	B2FDL5	Iodine-129/GEA	Fusion Digest/Separation	09/15/2011 10:40	09/18/2011 11:00	10/21/2011 14:30	N
S11V005518	B2FXM5	Iodine-129/GEA	Fusion Digest/Separation	07/29/2011 09:45	10/13/2011 10:45	11/03/2011 14:45	N
S11V005536	B2FXM6	Iodine-129/GEA	Fusion Digest/Separation	08/01/2011 13:05	10/13/2011 10:45	11/03/2011 14:45	N
S11V005554	B2FXM7	Iodine-129/GEA	Fusion Digest/Separation	08/02/2011 10:30	10/13/2011 10:45	11/03/2011 14:45	N
S11V005574	B2FYT0	Iodine-129/GEA	Fusion Digest/Separation	08/04/2011 09:25	10/13/2011 10:45	11/02/2011 10:30	N
S11V005592	B2FYT1	Iodine-129/GEA	Fusion Digest/Separation	08/08/2011 13:05	10/13/2011 10:45	11/02/2011 10:30	N
S11V005610	B2FYT2	Iodine-129/GEA	Fusion Digest/Separation	08/09/2011 11:45	10/13/2011 10:45	11/02/2011 10:30	N
S11V005636	B2FYY0	Iodine-129/GEA	Fusion Digest/Separation	08/12/2011 09:30	10/13/2011 10:45	11/02/2011 10:30	N
S11V005654	B2FYY1	Iodine-129/GEA	Fusion Digest/Separation	08/15/2011 13:55	10/13/2011 10:45	11/02/2011 10:30	N
S11V005690	B2FYY2	Iodine-129/GEA	Fusion Digest/Separation	08/18/2011 08:25	10/13/2011 10:45	11/02/2011 10:30	N
S11V005715	B2H106	Iodine-129/GEA	Fusion Digest/Separation	09/01/2011 08:50	09/15/2011 14:00	10/26/2011 20:45	N
S11V005753	B2H107	Iodine-129/GEA	Fusion Digest/Separation	09/06/2011 09:30	09/15/2011 14:00	10/26/2011 20:45	N
S11V005771	B2H108	Iodine-129/GEA	Fusion Digest/Separation	09/07/2011 08:25	09/15/2011 14:00	10/26/2011 20:45	N

Holding Time Report : ICP/MS Actinides

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date Time	Receipt Date Time	Preparation Date	Analysis Date	Missed Holding Time
S11V004609	B2D441	ICP/MS Actinides	SW-846 3050B	07/13/2011 10:15	07/20/2011 10:04	09/22/2011 10:00	11/28/2011 12:06	N
S11V004627	B2D442	ICP/MS Actinides	SW-846 3050B	07/19/2011 09:25	07/20/2011 10:10	09/22/2011 10:00	11/28/2011 12:12	N
S11V004645	B2D443	ICP/MS Actinides	SW-846 3050B	07/20/2011 10:30	07/20/2011 11:00	09/22/2011 10:00	11/28/2011 11:53	N
S11V005314	B2FDM2	ICP/MS Actinides	N/A	08/10/2011 07:55	08/10/2011 13:55	N/A	09/23/2011 18:08	N
S11V005327	B2FDJ8	ICP/MS Actinides	SW-846 3050B	08/08/2011 09:25	10/13/2011 10:45	10/19/2011 16:00	11/29/2011 10:58	N
S11V005345	B2FDJ9	ICP/MS Actinides	SW-846 3050B	08/09/2011 09:10	10/13/2011 10:45	10/19/2011 16:00	11/29/2011 11:11	N
S11V005363	B2FDK0	ICP/MS Actinides	SW-846 3050B	08/10/2011 08:15	08/09/2011 09:40	10/19/2011 16:00	11/29/2011 11:17	N
S11V005378	B2FDM0	ICP/MS Actinides	N/A	09/13/2011 08:20	09/13/2011 09:30	N/A	09/23/2011 18:21	N
S11V005384	B2FDM1	ICP/MS Actinides	N/A	09/13/2011 09:10	09/13/2011 10:05	N/A	09/23/2011 18:27	N
S11V005397	B2FDL3	ICP/MS Actinides	SW-846 3050B	09/08/2011 10:10	09/18/2011 11:00	09/22/2011 10:00	11/28/2011 12:18	N
S11V005415	B2FDL4	ICP/MS Actinides	SW-846 3050B	09/12/2011 12:15	09/18/2011 11:00	09/22/2011 10:00	11/28/2011 12:25	N
S11V005433	B2FDL5	ICP/MS Actinides	SW-846 3050B	09/15/2011 10:40	09/18/2011 11:00	09/22/2011 10:00	11/28/2011 12:31	N
S11V005523	B2FXM5	ICP/MS Actinides	SW-846 3050B	07/29/2011 09:45	10/13/2011 10:45	10/19/2011 16:00	11/29/2011 11:23	N
S11V005541	B2FXM6	ICP/MS Actinides	SW-846 3050B	08/01/2011 13:05	10/13/2011 10:45	10/19/2011 16:00	11/29/2011 11:30	N
S11V005559	B2FXM7	ICP/MS Actinides	SW-846 3050B	08/02/2011 10:30	10/13/2011 10:45	10/19/2011 16:00	11/29/2011 11:36	N
S11V005579	B2FYT0	ICP/MS Actinides	SW-846 3050B	08/04/2011 09:25	10/13/2011 10:45	10/19/2011 16:00	01/10/2012 13:43	N
S11V005597	B2FYT1	ICP/MS Actinides	SW-846 3050B	08/08/2011 13:05	10/13/2011 10:45	10/19/2011 16:00	11/29/2011 12:06	N
S11V005615	B2FYT2	ICP/MS Actinides	SW-846 3050B	08/09/2011 11:45	10/13/2011 10:45	10/19/2011 16:00	11/29/2011 12:13	N
S11V005640	B2FYY0	ICP/MS Actinides	SW-846 3050B	08/12/2011 09:30	10/13/2011 10:45	10/19/2011 16:00	11/29/2011 12:19	N
S11V005658	B2FYY1	ICP/MS Actinides	SW-846 3050B	08/15/2011 13:55	10/13/2011 10:45	10/19/2011 16:00	11/29/2011 12:25	N
S11V005694	B2FYY2	ICP/MS Actinides	SW-846 3050B	08/18/2011 08:25	10/13/2011 10:45	10/19/2011 16:00	11/29/2011 12:32	N
S11V005719	B2H106	ICP/MS Actinides	SW-846 3050B	09/01/2011 08:50	09/15/2011 14:00	09/22/2011 10:00	11/28/2011 13:01	N
S11V005757	B2H107	ICP/MS Actinides	SW-846 3050B	09/06/2011 09:30	09/15/2011 14:00	09/22/2011 10:00	11/28/2011 13:08	N
S11V005775	B2H108	ICP/MS Actinides	SW-846 3050B	09/07/2011 08:25	09/15/2011 14:00	09/22/2011 10:00	11/28/2011 13:14	N

Holding Time Report : ICP/MS Antimony

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date Time	Receipt Date Time	Preparation Date	Analysis Date	Missed Holding Time
S11V004607	B2D441	SW-846 6020A	SW-846 3050B	07/13/2011 10:15	07/20/2011 10:04	09/19/2011 15:30	09/28/2011 12:10	N
S11V004625	B2D442	SW-846 6020A	SW-846 3050B	07/19/2011 09:25	07/20/2011 10:10	09/19/2011 15:30	09/28/2011 12:22	N
S11V004643	B2D443	SW-846 6020A	SW-846 3050B	07/20/2011 10:30	07/20/2011 11:00	09/19/2011 15:30	09/28/2011 12:28	N
S11V005314	B2FDM2	SW-846 6020A	N/A	08/10/2011 07:55	08/10/2011 13:55	N/A	02/06/2012 10:08	N
S11V005325	B2FDJ8	SW-846 6020A	SW-846 3050B	08/08/2011 09:25	10/13/2011 10:45	10/18/2011 17:00	11/30/2011 13:07	N
S11V005343	B2FDJ9	SW-846 6020A	SW-846 3050B	08/09/2011 09:10	10/13/2011 10:45	10/18/2011 17:00	11/30/2011 13:19	N
S11V005361	B2FDK0	SW-846 6020A	SW-846 3050B	08/10/2011 08:15	08/09/2011 09:40	10/18/2011 17:00	11/30/2011 13:25	N
S11V005378	B2FDM0	SW-846 6020A	N/A	09/13/2011 08:20	09/13/2011 09:30	N/A	02/06/2012 10:19	N
S11V005384	B2FDM1	SW-846 6020A	N/A	09/13/2011 09:10	09/13/2011 10:05	N/A	02/06/2012 10:24	N
S11V005395	B2FDL3	SW-846 6020A	SW-846 3050B	09/08/2011 10:10	09/18/2011 11:00	10/04/2011 09:00	12/02/2011 13:31	N
S11V005413	B2FDL4	SW-846 6020A	SW-846 3050B	09/12/2011 12:15	09/18/2011 11:00	10/04/2011 09:00	12/02/2011 13:43	N
S11V005431	B2FDL5	SW-846 6020A	SW-846 3050B	09/15/2011 10:40	09/18/2011 11:00	10/04/2011 09:00	12/02/2011 13:49	N
S11V005521	B2FXM5	SW-846 6020A	SW-846 3050B	07/29/2011 09:45	10/13/2011 10:45	10/18/2011 17:00	11/30/2011 13:31	N
S11V005539	B2FXM6	SW-846 6020A	SW-846 3050B	08/01/2011 13:05	10/13/2011 10:45	10/18/2011 17:00	11/30/2011 14:00	N
S11V005557	B2FXM7	SW-846 6020A	SW-846 3050B	08/02/2011 10:30	10/13/2011 10:45	10/18/2011 17:00	11/30/2011 14:06	N
S11V005577	B2FYT0	SW-846 6020A	SW-846 3050B	08/04/2011 09:25	10/13/2011 10:45	10/18/2011 17:00	11/30/2011 14:12	N
S11V005595	B2FYT1	SW-846 6020A	SW-846 3050B	08/08/2011 13:05	10/13/2011 10:45	10/18/2011 17:00	11/30/2011 14:18	N
S11V005613	B2FYT2	SW-846 6020A	SW-846 3050B	08/09/2011 11:45	10/13/2011 10:45	10/18/2011 17:00	11/30/2011 14:24	N
S11V005638	B2FYY0	SW-846 6020A	SW-846 3050B	08/12/2011 09:30	10/13/2011 10:45	10/18/2011 17:00	11/30/2011 14:30	N
S11V005656	B2FYY1	SW-846 6020A	SW-846 3050B	08/15/2011 13:55	10/13/2011 10:45	10/18/2011 17:00	11/30/2011 14:36	N
S11V005692	B2FYY2	SW-846 6020A	SW-846 3050B	08/18/2011 08:25	10/13/2011 10:45	10/18/2011 17:00	11/30/2011 14:42	N
S11V005717	B2H106	SW-846 6020A	SW-846 3050B	09/01/2011 08:50	09/15/2011 14:00	10/04/2011 09:00	12/02/2011 14:18	N
S11V005755	B2H107	SW-846 6020A	SW-846 3050B	09/06/2011 09:30	09/15/2011 14:00	10/04/2011 09:00	12/02/2011 14:24	N
S11V005773	B2H108	SW-846 6020A	SW-846 3050B	09/07/2011 08:25	09/15/2011 14:00	10/04/2011 09:00	12/02/2011 14:30	N

Holding Time Report : ICP/MS Tc-99

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date Time	Receipt Date Time	Preparation Date	Analysis Date	Missed Holding Time
S11V005314	B2FDM2	ICP/MS Tc-99, Sn-126	N/A	08/10/2011 07:55	8/10/2011 13:55	N/A	09/26/2011 12:49	N
S11V005378	B2FDM0	ICP/MS Tc-99, Sn-126	N/A	09/13/2011 08:20	09/13/2011 09:30	N/A	09/26/2011 12:58	N
S11V005384	B2FDM1	ICP/MS Tc-99, Sn-126	N/A	09/13/2011 09:10	09/13/2011 10:05	N/A	09/26/2011 13:02	N

Holding Time Report : ICP/MS Metals

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date Time	Receipt Date Time	Preparation Date	Analysis Date	Missed Holding Time
S11V004609	B2D441	SW-846 6020A	SW-846 3050B	07/13/2011 10:15	07/20/2011 10:04	09/22/2011 10:00	10/03/2011 12:59	N
S11V004627	B2D442	SW-846 6020A	SW-846 3050B	07/19/2011 09:25	07/20/2011 10:10	09/22/2011 10:00	10/03/2011 13:05	N
S11V004645	B2D443	SW-846 6020A	SW-846 3050B	07/20/2011 10:30	07/20/2011 11:00	09/22/2011 10:00	10/03/2011 12:47	N
S11V005327	B2FDJ8	SW-846 6020A	SW-846 3050B	08/08/2011 09:25	10/13/2011 10:45	10/19/2011 16:00	11/28/2011 12:38	N
S11V005345	B2FDJ9	SW-846 6020A	SW-846 3050B	08/09/2011 09:10	10/13/2011 10:45	10/19/2011 16:00	11/28/2011 12:51	N
S11V005363	B2FDK0	SW-846 6020A	SW-846 3050B	08/10/2011 08:15	08/09/2011 09:40	10/19/2011 16:00	11/28/2011 12:57	N
S11V005397	B2FDL3	SW-846 6020A	SW-846 3050B	09/08/2011 10:10	09/18/2011 11:00	09/22/2011 10:00	10/03/2011 13:11	N
S11V005415	B2FDL4	SW-846 6020A	SW-846 3050B	09/12/2011 12:15	09/18/2011 11:00	09/22/2011 10:00	10/03/2011 13:17	N
S11V005433	B2FDL5	SW-846 6020A	SW-846 3050B	09/15/2011 10:40	09/18/2011 11:00	09/22/2011 10:00	10/03/2011 13:23	N
S11V005523	B2FXM5	SW-846 6020A	SW-846 3050B	07/29/2011 09:45	10/13/2011 10:45	10/19/2011 16:00	11/28/2011 13:03	N
S11V005541	B2FXM6	SW-846 6020A	SW-846 3050B	08/01/2011 13:05	10/13/2011 10:45	10/19/2011 16:00	11/28/2011 13:09	N
S11V005559	B2FXM7	SW-846 6020A	SW-846 3050B	08/02/2011 10:30	10/13/2011 10:45	10/19/2011 16:00	11/28/2011 13:15	N
S11V005579	B2FYT0	SW-846 6020A	SW-846 3050B	08/04/2011 09:25	10/13/2011 10:45	10/19/2011 16:00	01/11/2012 13:38	N
S11V005597	B2FYT1	SW-846 6020A	SW-846 3050B	08/08/2011 13:05	10/13/2011 10:45	10/19/2011 16:00	11/28/2011 13:52	N
S11V005615	B2FYT2	SW-846 6020A	SW-846 3050B	08/09/2011 11:45	10/13/2011 10:45	10/19/2011 16:00	11/28/2011 13:58	N
S11V005640	B2FYY0	SW-846 6020A	SW-846 3050B	08/12/2011 09:30	10/13/2011 10:45	10/19/2011 16:00	11/28/2011 14:04	N
S11V005658	B2FYY1	SW-846 6020A	SW-846 3050B	08/15/2011 13:55	10/13/2011 10:45	10/19/2011 16:00	11/28/2011 14:10	N
S11V005694	B2FYY2	SW-846 6020A	SW-846 3050B	08/18/2011 08:25	10/13/2011 10:45	10/19/2011 16:00	11/28/2011 14:16	N
S11V005719	B2H106	SW-846 6020A	SW-846 3050B	09/01/2011 08:50	09/15/2011 14:00	09/22/2011 10:00	10/03/2011 13:52	N
S11V005757	B2H107	SW-846 6020A	SW-846 3050B	09/06/2011 09:30	09/15/2011 14:00	09/22/2011 10:00	10/03/2011 13:58	N
S11V005775	B2H108	SW-846 6020A	SW-846 3050B	09/07/2011 08:25	09/15/2011 14:00	09/22/2011 10:00	10/03/2011 14:04	N

Holding Time Report : ICP/MS Tc-99

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date Time	Receipt Date Time	Preparation Date	Analysis Date	Missed Holding Time
S11V004611	B2D441	ICP/MS Tc-99	SW-846 3050B	07/13/2011 10:15	07/20/2011 10:04	09/29/2011 08:30	10/06/2011 13:51	N
S11V004629	B2D442	ICP/MS Tc-99	SW-846 3050B	07/19/2011 09:25	07/20/2011 10:10	09/29/2011 08:30	10/06/2011 14:00	N
S11V004647	B2D443	ICP/MS Tc-99	SW-846 3050B	07/20/2011 10:30	07/20/2011 11:00	09/29/2011 08:30	10/06/2011 14:05	N
S11V005329	B2FDJ8	ICP/MS Tc-99	SW-846 3050B	08/08/2011 09:25	10/13/2011 10:45	10/18/2011 13:30	11/15/2011 12:50	N
S11V005347	B2FDJ9	ICP/MS Tc-99	SW-846 3050B	08/09/2011 09:10	10/13/2011 10:45	10/18/2011 13:30	11/15/2011 12:59	N
S11V005365	B2FDK0	ICP/MS Tc-99	SW-846 3050B	08/10/2011 08:15	08/09/2011 09:40	10/18/2011 13:30	11/15/2011 13:03	N
S11V005399	B2FDL3	ICP/MS Tc-99	SW-846 3050B	09/08/2011 10:10	09/18/2011 11:00	09/29/2011 08:30	10/06/2011 14:09	N
S11V005417	B2FDL4	ICP/MS Tc-99	SW-846 3050B	09/12/2011 12:15	09/18/2011 11:00	09/29/2011 08:30	10/06/2011 14:14	N
S11V005435	B2FDL5	ICP/MS Tc-99	SW-846 3050B	09/15/2011 10:40	09/18/2011 11:00	09/29/2011 08:30	10/06/2011 14:36	N
S11V005525	B2FXM5	ICP/MS Tc-99	SW-846 3050B	07/29/2011 09:45	10/13/2011 10:45	10/18/2011 13:30	11/15/2011 13:08	N
S11V005543	B2FXM6	ICP/MS Tc-99	SW-846 3050B	08/01/2011 13:05	10/13/2011 10:45	10/18/2011 13:30	11/15/2011 13:12	N
S11V005561	B2FXM7	ICP/MS Tc-99	SW-846 3050B	08/02/2011 10:30	10/13/2011 10:45	10/18/2011 13:30	11/15/2011 13:17	N
S11V005581	B2FYT0	ICP/MS Tc-99	SW-846 3050B	08/04/2011 09:25	10/13/2011 10:45	10/18/2011 13:30	11/15/2011 13:21	N
S11V005599	B2FYT1	ICP/MS Tc-99	SW-846 3050B	08/08/2011 13:05	10/13/2011 10:45	10/18/2011 13:30	11/15/2011 13:44	N
S11V005617	B2FYT2	ICP/MS Tc-99	SW-846 3050B	08/09/2011 11:45	10/13/2011 10:45	10/18/2011 13:30	11/15/2011 13:49	N
S11V005642	B2FYY0	ICP/MS Tc-99	SW-846 3050B	08/12/2011 09:30	10/13/2011 10:45	10/18/2011 13:30	11/15/2011 13:56	N
S11V005660	B2FYY1	ICP/MS Tc-99	SW-846 3050B	08/15/2011 13:55	10/13/2011 10:45	10/18/2011 13:30	11/15/2011 14:00	N
S11V005696	B2FYY2	ICP/MS Tc-99	SW-846 3050B	08/18/2011 08:25	10/13/2011 10:45	10/18/2011 13:30	11/15/2011 14:05	N
S11V005721	B2H106	ICP/MS Tc-99	SW-846 3050B	09/01/2011 08:50	09/15/2011 14:00	09/29/2011 08:30	10/06/2011 14:41	N
S11V005759	B2H107	ICP/MS Tc-99	SW-846 3050B	09/06/2011 09:30	09/15/2011 14:00	09/29/2011 08:30	10/06/2011 14:45	N
S11V005777	B2H108	ICP/MS Tc-99	SW-846 3050B	09/07/2011 08:25	09/15/2011 14:00	09/29/2011 08:30	10/06/2011 14:50	N
S11V004606	B2D441 WE	ICP/MS Tc-99	Vadose Water Digest	07/20/2011 00:00	07/20/2011 10:04	07/21/2011 09:30	07/21/2011 19:29	N
S11V004624	B2D442 WE	ICP/MS Tc-99	Vadose Water Digest	07/20/2011 00:00	07/20/2011 10:10	07/21/2011 09:30	07/21/2011 19:20	N
S11V004642	B2D443 WE	ICP/MS Tc-99	Vadose Water Digest	07/20/2011 10:30	07/20/2011 11:00	07/21/2011 09:30	07/21/2011 19:34	N
S11V005394	B2FDL3 WE	ICP/MS Tc-99	Vadose Water Digest	09/18/2011 00:00	09/18/2011 11:00	09/19/2011 10:28	09/19/2011 16:50	N
S11V005412	B2FDL4 WE	ICP/MS Tc-99	Vadose Water Digest	09/18/2011 00:00	09/18/2011 11:00	09/19/2011 10:28	09/19/2011 17:00	N
S11V005430	B2FDL5 WE	ICP/MS Tc-99	Vadose Water Digest	09/18/2011 00:00	09/18/2011 11:00	09/19/2011 10:28	09/19/2011 17:06	N
S11V006121	B2H106 WE	ICP/MS Tc-99	Vadose Water Digest	09/01/2011 08:50	09/15/2011 14:00	09/21/2011 16:00	09/22/2011 16:46	N
S11V006122	B2H107 WE	ICP/MS Tc-99	Vadose Water Digest	09/06/2011 09:30	09/15/2011 14:00	09/21/2011 16:00	09/22/2011 16:51	N
S11V006123	B2H108 WE	ICP/MS Tc-99	Vadose Water Digest	09/07/2011 08:25	09/15/2011 14:00	09/21/2011 16:00	09/22/2011 16:37	N

Holding Time Report : Ni -63

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date Time	Receipt Date Time	Preparation Date	Analysis Date	Missed Holding Time
S11V004615	B2D441	Nickel-63 by LSC	Acid Digest/Separation	07/13/2011 10:15	7/20/2011 10:04	10/18/2011 10:15	10/20/2011 15:20	N
S11V004633	B2D442	Nickel-63 by LSC	Acid Digest/Separation	07/19/2011 09:25	07/20/2011 10:10	10/18/2011 10:15	10/20/2011 15:20	N
S11V004651	B2D443	Nickel-63 by LSC	Acid Digest/Separation	07/20/2011 10:30	07/20/2011 11:00	10/18/2011 10:15	10/20/2011 15:20	N
S11V005316	B2FDM2	Nickel-63 by LSC	Separation	08/10/2011 07:55	08/10/2011 13:55	N/A	09/22/2011 15:10	N
S11V005333	B2FDJ8	Nickel-63 by LSC	Acid Digest/Separation	08/08/2011 09:25	10/13/2011 10:45	10/28/2011 10:38	11/02/2011 16:10	N
S11V005351	B2FDJ9	Nickel-63 by LSC	Acid Digest/Separation	08/09/2011 09:10	10/13/2011 10:45	10/28/2011 10:38	11/02/2011 16:10	N
S11V005369	B2FDK0	Nickel-63 by LSC	Acid Digest/Separation	08/10/2011 08:15	08/09/2011 09:40	10/28/2011 10:38	11/02/2011 16:10	N
S11V005380	B2FDM0	Nickel-63 by LSC	Separation	09/13/2011 08:20	09/13/2011 09:30	N/A	09/22/2011 15:10	N
S11V005386	B2FDM1	Nickel-63 by LSC	Separation	09/13/2011 09:10	09/13/2011 10:05	N/A	09/22/2011 15:10	N
S11V005403	B2FDL3	Nickel-63 by LSC	Acid Digest/Separation	09/08/2011 10:10	09/18/2011 11:00	10/18/2011 10:15	10/20/2011 15:20	N
S11V005421	B2FDL4	Nickel-63 by LSC	Acid Digest/Separation	09/12/2011 12:15	09/18/2011 11:00	10/18/2011 10:15	10/20/2011 15:20	N
S11V005439	B2FDL5	Nickel-63 by LSC	Acid Digest/Separation	09/15/2011 10:40	09/18/2011 11:00	10/18/2011 10:15	10/20/2011 15:20	N
S11V005529	B2FXM5	Nickel-63 by LSC	Acid Digest/Separation	07/29/2011 09:45	10/13/2011 10:45	10/28/2011 10:38	11/02/2011 16:10	N
S11V005547	B2FXM6	Nickel-63 by LSC	Acid Digest/Separation	08/01/2011 13:05	10/13/2011 10:45	10/28/2011 10:38	11/02/2011 16:10	N
S11V005565	B2FXM7	Nickel-63 by LSC	Acid Digest/Separation	08/02/2011 10:30	10/13/2011 10:45	10/28/2011 10:38	11/02/2011 16:10	N
S11V005585	B2FYT0	Nickel-63 by LSC	Acid Digest/Separation	08/04/2011 09:25	10/13/2011 10:45	11/01/2011 14:43	11/09/2011 21:40	N
S11V005603	B2FYT1	Nickel-63 by LSC	Acid Digest/Separation	08/08/2011 13:05	10/13/2011 10:45	11/01/2011 14:43	11/09/2011 21:40	N
S11V005621	B2FYT2	Nickel-63 by LSC	Acid Digest/Separation	08/09/2011 11:45	10/13/2011 10:45	11/01/2011 14:43	11/09/2011 21:40	N
S11V005646	B2FYY0	Nickel-63 by LSC	Acid Digest/Separation	08/12/2011 09:30	10/13/2011 10:45	11/01/2011 14:43	11/09/2011 21:40	N
S11V005664	B2FYY1	Nickel-63 by LSC	Acid Digest/Separation	08/15/2011 13:55	10/13/2011 10:45	11/01/2011 14:43	11/09/2011 21:40	N
S11V005700	B2FYY2	Nickel-63 by LSC	Acid Digest/Separation	08/18/2011 08:25	10/13/2011 10:45	11/01/2011 14:43	11/09/2011 21:40	N
S11V005725	B2H106	Nickel-63 by LSC	Acid Digest/Separation	09/01/2011 08:50	09/15/2011 14:00	10/24/2011 14:05	11/01/2011 16:35	N
S11V005763	B2H107	Nickel-63 by LSC	Acid Digest/Separation	09/06/2011 09:30	09/15/2011 14:00	10/24/2011 14:05	11/01/2011 16:35	N
S11V005781	B2H108	Nickel-63 by LSC	Acid Digest/Separation	09/07/2011 08:25	09/15/2011 14:00	10/24/2011 14:05	11/01/2011 16:35	N

Holding Time Report : pH

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date Time	Receipt Date Time	Analysis Date	Missed Holding Time
S11V004603	B2D441	SW-846 9045D	SW-846 9045D	07/13/2011 10:15	07/20/2011 10:04	07/20/2011 19:30	Y
S11V004621	B2D442	SW-846 9045D	SW-846 9045D	07/19/2011 09:25	07/20/2011 10:10	07/20/2011 19:30	Y
S11V004639	B2D443	SW-846 9045D	SW-846 9045D	07/20/2011 10:30	07/20/2011 11:00	07/20/2011 19:30	Y
S11V005321	B2FDJ8	SW-846 9045D	SW-846 9045D	08/08/2011 09:25	10/13/2011 10:45	10/14/2011 09:30	Y
S11V005339	B2FDJ9	SW-846 9045D	SW-846 9045D	08/09/2011 09:10	10/13/2011 10:45	10/14/2011 09:30	Y
S11V005357	B2FDK0	SW-846 9045D	SW-846 9045D	08/10/2011 08:15	10/13/2011 10:45	10/14/2011 09:30	Y
S11V005517	B2FXM5	SW-846 9045D	SW-846 9045D	07/29/2011 09:45	10/13/2011 10:45	10/14/2011 09:30	Y
S11V005535	B2FXM6	SW-846 9045D	SW-846 9045D	08/01/2011 13:05	10/13/2011 10:45	10/14/2011 09:30	Y
S11V005553	B2FXM7	SW-846 9045D	SW-846 9045D	08/02/2011 10:30	10/13/2011 10:45	10/14/2011 09:30	Y
S11V005573	B2FYT0	SW-846 9045D	SW-846 9045D	08/04/2011 09:25	10/13/2011 10:45	10/14/2011 09:30	Y
S11V005591	B2FYT1	SW-846 9045D	SW-846 9045D	08/08/2011 13:05	10/13/2011 10:45	10/14/2011 09:30	Y
S11V005609	B2FYT2	SW-846 9045D	SW-846 9045D	08/09/2011 11:45	10/13/2011 10:45	10/14/2011 09:30	Y
S11V005635	B2FYY0	SW-846 9045D	SW-846 9045D	08/12/2011 09:30	10/13/2011 10:45	10/14/2011 09:30	Y
S11V005653	B2FYY1	SW-846 9045D	SW-846 9045D	08/15/2011 13:55	10/13/2011 10:45	10/14/2011 09:30	Y
S11V005669	B2FDL3	SW-846 9045D	SW-846 9045D	09/08/2011 10:10	09/18/2011 11:00	09/20/2011 15:22	Y
S11V005670	B2FDL4	SW-846 9045D	SW-846 9045D	09/12/2011 12:15	09/18/2011 11:00	09/20/2011 15:22	Y
S11V005671	B2FDL5	SW-846 9045D	SW-846 9045D	09/15/2011 10:40	09/18/2011 11:00	09/20/2011 15:22	Y
S11V005689	B2FYY2	SW-846 9045D	SW-846 9045D	08/18/2011 08:25	10/13/2011 10:45	10/14/2011 09:30	Y
S11V005714	B2H106	SW-846 9045D	SW-846 9045D	09/01/2011 08:50	09/15/2011 14:00	09/20/2011 15:22	Y
S11V005752	B2H107	SW-846 9045D	SW-846 9045D	09/06/2011 09:30	09/15/2011 14:00	09/20/2011 15:22	Y
S11V005770	B2H108	SW-846 9045D	SW-846 9045D	09/07/2011 08:25	09/15/2011 14:00	09/20/2011 15:22	Y

Holding Time Report : Pu-238, 239/240

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date Time	Receipt Date Time	Preparation Date	Analysis Date	Missed Holding Time
S11V004613	B2D441	AEA, Iso Plutonium	Acid Digest/Separation	07/13/2011 10:15	07/20/2011 10:04	10/14/2011 09:20	10/19/2011 23:12	N
S11V004631	B2D442	AEA, Iso Plutonium	Acid Digest/Separation	07/19/2011 09:25	07/20/2011 10:10	10/14/2011 09:20	10/19/2011 23:12	N
S11V004649	B2D443	AEA, Iso Plutonium	Acid Digest/Separation	07/20/2011 10:30	07/20/2011 11:00	10/14/2011 09:20	10/19/2011 23:12	N
S11V005316	B2FDM2	AEA, Iso Plutonium	Separation	08/10/2011 07:55	08/10/2011 13:55	N/A	09/21/2011 13:57	N
S11V005331	B2FDJ8	AEA, Iso Plutonium	Acid Digest/Separation	08/08/2011 09:25	10/13/2011 10:45	11/01/2011 09:49	11/10/2011 09:20	N
S11V005349	B2FDJ9	AEA, Iso Plutonium	Acid Digest/Separation	08/09/2011 09:10	10/13/2011 10:45	11/01/2011 09:49	11/10/2011 09:20	N
S11V005367	B2FDK0	AEA, Iso Plutonium	Acid Digest/Separation	08/10/2011 08:15	08/09/2011 09:40	11/01/2011 09:49	11/10/2011 09:20	N
S11V005380	B2FDM0	AEA, Iso Plutonium	Separation	09/13/2011 08:20	09/13/2011 09:30	N/A	09/21/2011 13:57	N
S11V005386	B2FDM1	AEA, Iso Plutonium	Separation	09/13/2011 09:10	09/13/2011 10:05	N/A	09/21/2011 13:57	N
S11V005401	B2FDL3	AEA, Iso Plutonium	Acid Digest/Separation	09/08/2011 10:10	09/18/2011 11:00	10/14/2011 09:20	10/19/2011 23:12	N
S11V005419	B2FDL4	AEA, Iso Plutonium	Acid Digest/Separation	09/12/2011 12:15	09/18/2011 11:00	10/14/2011 09:20	10/19/2011 23:12	N
S11V005437	B2FDL5	AEA, Iso Plutonium	Acid Digest/Separation	09/15/2011 10:40	09/18/2011 11:00	10/14/2011 09:20	10/19/2011 23:12	N
S11V005527	B2FXM5	AEA, Iso Plutonium	Acid Digest/Separation	07/29/2011 09:45	10/13/2011 10:45	11/01/2011 09:49	11/10/2011 09:20	N
S11V005545	B2FXM6	AEA, Iso Plutonium	Acid Digest/Separation	08/01/2011 13:05	10/13/2011 10:45	11/01/2011 09:49	11/10/2011 09:20	N
S11V005563	B2FXM7	AEA, Iso Plutonium	Acid Digest/Separation	08/02/2011 10:30	10/13/2011 10:45	11/01/2011 09:49	11/10/2011 09:20	N
S11V005583	B2FYT0	AEA, Iso Plutonium	Acid Digest/Separation	08/04/2011 09:25	10/13/2011 10:45	11/01/2011 20:52	11/09/2011 21:08	N
S11V005601	B2FYT1	AEA, Iso Plutonium	Acid Digest/Separation	08/08/2011 13:05	10/13/2011 10:45	11/01/2011 20:52	11/09/2011 21:09	N
S11V005619	B2FYT2	AEA, Iso Plutonium	Acid Digest/Separation	08/09/2011 11:45	10/13/2011 10:45	11/01/2011 20:52	11/09/2011 21:09	N
S11V005644	B2FYY0	AEA, Iso Plutonium	Acid Digest/Separation	08/12/2011 09:30	10/13/2011 10:45	11/01/2011 20:52	11/09/2011 21:09	N
S11V005662	B2FYY1	AEA, Iso Plutonium	Acid Digest/Separation	08/15/2011 13:55	10/13/2011 10:45	11/01/2011 20:52	11/09/2011 21:09	N
S11V005698	B2FYY2	AEA, Iso Plutonium	Acid Digest/Separation	08/18/2011 08:25	10/13/2011 10:45	11/01/2011 20:52	11/09/2011 21:09	N
S11V005723	B2H106	AEA, Iso Plutonium	Acid Digest/Separation	09/01/2011 08:50	09/15/2011 14:00	10/26/2011 15:45	10/27/2011 10:04	N
S11V005761	B2H107	AEA, Iso Plutonium	Acid Digest/Separation	09/06/2011 09:30	09/15/2011 14:00	10/26/2011 15:45	10/27/2011 10:04	N
S11V005779	B2H108	AEA, Iso Plutonium	Acid Digest/Separation	09/07/2011 08:25	09/15/2011 14:00	10/26/2011 15:46	10/27/2011 10:04	N

Holding Time Report : Se-79

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date Time	Receipt Date Time	Preparation Date	Analysis Date	Missed Holding Time
S11V004616	B2D441	Se-79 by LSC	Acid Digest/Separation	07/13/2011 10:15	7/20/2011 10:04	10/14/2011 13:32	10/21/2011 14:45	N
S11V004634	B2D442	Se-79 by LSC	Acid Digest/Separation	07/19/2011 09:25	07/20/2011 10:10	10/14/2011 13:32	10/21/2011 14:45	N
S11V004652	B2D443	Se-79 by LSC	Acid Digest/Separation	07/20/2011 10:30	07/20/2011 11:00	10/14/2011 13:32	10/21/2011 14:45	N
S11V005316	B2FDM2	Se-79 by LSC	Separation	08/10/2011 07:55	08/10/2011 13:55	N/A	09/29/2011 15:30	N
S11V005334	B2FDJ8	Se-79 by LSC	Acid Digest/Separation	08/08/2011 09:25	10/13/2011 10:45	10/28/2011 12:43	11/03/2011 16:45	N
S11V005352	B2FDJ9	Se-79 by LSC	Acid Digest/Separation	08/09/2011 09:10	10/13/2011 10:45	10/28/2011 12:43	11/03/2011 16:45	N
S11V005370	B2FDK0	Se-79 by LSC	Acid Digest/Separation	08/10/2011 08:15	08/09/2011 09:40	10/28/2011 12:43	11/03/2011 16:45	N
S11V005380	B2FDM0	Se-79 by LSC	Separation	09/13/2011 08:20	09/13/2011 09:30	N/A	09/29/2011 15:30	N
S11V005386	B2FDM1	Se-79 by LSC	Separation	09/13/2011 09:10	09/13/2011 10:05	N/A	09/29/2011 15:30	N
S11V005404	B2FDL3	Se-79 by LSC	Acid Digest/Separation	09/08/2011 10:10	09/18/2011 11:00	10/14/2011 13:32	10/21/2011 14:45	N
S11V005422	B2FDL4	Se-79 by LSC	Acid Digest/Separation	09/12/2011 12:15	09/18/2011 11:00	10/14/2011 13:32	10/21/2011 14:45	N
S11V005440	B2FDL5	Se-79 by LSC	Acid Digest/Separation	09/15/2011 10:40	09/18/2011 11:00	10/14/2011 13:32	10/21/2011 14:45	N
S11V005530	B2FXM5	Se-79 by LSC	Acid Digest/Separation	07/29/2011 09:45	10/13/2011 10:45	10/28/2011 12:43	11/03/2011 16:45	N
S11V005548	B2FXM6	Se-79 by LSC	Acid Digest/Separation	08/01/2011 13:05	10/13/2011 10:45	10/28/2011 12:43	11/03/2011 16:45	N
S11V005566	B2FXM7	Se-79 by LSC	Acid Digest/Separation	08/02/2011 10:30	10/13/2011 10:45	10/28/2011 12:43	11/03/2011 16:45	N
S11V005586	B2FYT0	Se-79 by LSC	Acid Digest/Separation	08/04/2011 09:25	10/13/2011 10:45	11/01/2011 15:31	11/09/2011 18:20	N
S11V005604	B2FYT1	Se-79 by LSC	Acid Digest/Separation	08/08/2011 13:05	10/13/2011 10:45	11/01/2011 15:31	11/09/2011 18:20	N
S11V005622	B2FYT2	Se-79 by LSC	Acid Digest/Separation	08/09/2011 11:45	10/13/2011 10:45	11/01/2011 15:31	11/09/2011 18:20	N
S11V005647	B2FYY0	Se-79 by LSC	Acid Digest/Separation	08/12/2011 09:30	10/13/2011 10:45	11/01/2011 15:31	11/09/2011 18:20	N
S11V005665	B2FYY1	Se-79 by LSC	Acid Digest/Separation	08/15/2011 13:55	10/13/2011 10:45	11/01/2011 15:31	11/09/2011 18:20	N
S11V005701	B2FYY2	Se-79 by LSC	Acid Digest/Separation	08/18/2011 08:25	10/13/2011 10:45	11/01/2011 15:31	11/09/2011 18:20	N
S11V005726	B2H106	Se-79 by LSC	Acid Digest/Separation	09/01/2011 08:50	09/15/2011 14:00	10/27/2011 10:57	10/27/2011 21:20	N
S11V005764	B2H107	Se-79 by LSC	Acid Digest/Separation	09/06/2011 09:30	09/15/2011 14:00	10/27/2011 10:57	10/27/2011 21:20	N
S11V005782	B2H108	Se-79 by LSC	Acid Digest/Separation	09/07/2011 08:25	09/15/2011 14:00	10/27/2011 10:57	10/27/2011 21:20	N

Holding Time Report : Sr-89/90

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date Time	Receipt Date Time	Preparation Date	Analysis Date	Missed Holding Time
S11V005316	B2FDM2	Sr-89/90 by GPC	Separation	07/13/2011 10:15	08/10/2011 13:55	N/A	09/20/2011 10:00	N
S11V005380	B2FDM0	Sr-89/90 by GPC	Separation	07/19/2011 09:25	09/13/2011 09:30	N/A	09/20/2011 10:00	N
S11V005386	B2FDM1	Sr-89/90 by GPC	Separation	07/20/2011 10:30	09/13/2011 10:05	N/A	09/20/2011 10:00	N
S11V004614	B2D441	Sr-89/90 by GPC	Acid Digest/Separation	08/10/2011 07:55	07/20/2011 10:04	10/12/2011 16:06	10/13/2011 16:55	N
S11V004632	B2D442	Sr-89/90 by GPC	Acid Digest/Separation	08/08/2011 09:25	07/20/2011 10:10	10/12/2011 16:06	10/13/2011 16:55	N
S11V004650	B2D443	Sr-89/90 by GPC	Acid Digest/Separation	08/09/2011 09:10	07/20/2011 11:00	10/12/2011 16:06	10/13/2011 16:55	N
S11V005332	B2FDJ8	Sr-89/90 by GPC	Acid Digest/Separation	08/10/2011 08:15	10/13/2011 10:45	10/28/2011 09:20	11/01/2011 16:35	N
S11V005350	B2FDJ9	Sr-89/90 by GPC	Acid Digest/Separation	09/13/2011 08:20	10/13/2011 10:45	10/28/2011 09:20	11/01/2011 16:35	N
S11V005368	B2FDK0	Sr-89/90 by GPC	Acid Digest/Separation	09/13/2011 09:10	08/09/2011 09:40	10/28/2011 09:20	11/01/2011 16:35	N
S11V005402	B2FDL3	Sr-89/90 by GPC	Acid Digest/Separation	09/08/2011 10:10	09/18/2011 11:00	10/12/2011 16:06	10/13/2011 16:55	N
S11V005420	B2FDL4	Sr-89/90 by GPC	Acid Digest/Separation	09/12/2011 12:15	09/18/2011 11:00	10/12/2011 16:06	10/13/2011 16:55	N
S11V005438	B2FDL5	Sr-89/90 by GPC	Acid Digest/Separation	09/15/2011 10:40	09/18/2011 11:00	10/12/2011 16:06	10/13/2011 16:55	N
S11V005528	B2FXM5	Sr-89/90 by GPC	Acid Digest/Separation	07/29/2011 09:45	10/13/2011 10:45	10/28/2011 09:20	11/01/2011 16:35	N
S11V005546	B2FXM6	Sr-89/90 by GPC	Acid Digest/Separation	08/01/2011 13:05	10/13/2011 10:45	10/28/2011 09:20	11/01/2011 16:35	N
S11V005564	B2FXM7	Sr-89/90 by GPC	Acid Digest/Separation	08/02/2011 10:30	10/13/2011 10:45	11/03/2011 14:20	11/09/2011 23:30	N
S11V005584	B2FYT0	Sr-89/90 by GPC	Acid Digest/Separation	08/04/2011 09:25	10/13/2011 10:45	11/01/2011 22:40	11/09/2011 18:05	N
S11V005602	B2FYT1	Sr-89/90 by GPC	Acid Digest/Separation	08/08/2011 13:05	10/13/2011 10:45	11/01/2011 22:40	11/09/2011 18:05	N
S11V005620	B2FYT2	Sr-89/90 by GPC	Acid Digest/Separation	08/09/2011 11:45	10/13/2011 10:45	11/01/2011 22:40	11/09/2011 18:05	N
S11V005645	B2FYY0	Sr-89/90 by GPC	Acid Digest/Separation	08/12/2011 09:30	10/13/2011 10:45	11/01/2011 22:40	11/09/2011 18:05	N
S11V005663	B2FYY1	Sr-89/90 by GPC	Acid Digest/Separation	08/15/2011 13:55	10/13/2011 10:45	11/01/2011 22:40	11/09/2011 18:05	N
S11V005699	B2FYY2	Sr-89/90 by GPC	Acid Digest/Separation	08/18/2011 08:25	10/13/2011 10:45	11/01/2011 22:40	11/09/2011 18:05	N
S11V005724	B2H106	Sr-89/90 by GPC	Acid Digest/Separation	09/01/2011 08:50	09/15/2011 14:00	10/24/2011 15:33	10/26/2011 15:05	N
S11V005762	B2H107	Sr-89/90 by GPC	Acid Digest/Separation	09/06/2011 09:30	09/15/2011 14:00	10/24/2011 15:33	10/26/2011 15:05	N
S11V005780	B2H108	Sr-89/90 by GPC	Acid Digest/Separation	09/07/2011 08:25	09/15/2011 14:00	10/24/2011 15:33	10/26/2011 15:05	N

Holding Time Report : Tritium

Laboratory Sample ID	Customer Sample ID	Method	Prep Method	Sample Date Time	Receipt Date Time	Preparation Date	Analysis Date	Missed Holding Time
S11V004612	B2D441	Tritium by LSC	Water Digest/Separation	07/13/2011 10:15	07/20/2011 10:04	10/05/2011 13:41	10/10/2011 14:00	N
S11V004630	B2D442	Tritium by LSC	Water Digest/Separation	07/19/2011 09:25	07/20/2011 10:10	10/05/2011 13:41	10/10/2011 14:00	N
S11V004648	B2D443	Tritium by LSC	Water Digest/Separation	07/20/2011 10:30	07/20/2011 11:00	10/05/2011 13:41	10/10/2011 14:00	N
S11V005315	B2FDM2	Tritium by LSC	Separation	08/10/2011 07:55	08/10/2011 13:55	N/A	09/14/2011 16:45	N
S11V005330	B2FDJ8	Tritium by LSC	Water Digest/Separation	08/08/2011 09:25	10/13/2011 10:45	11/01/2011 10:12	11/03/2011 12:00	N
S11V005348	B2FDJ9	Tritium by LSC	Water Digest/Separation	08/09/2011 09:10	10/13/2011 10:45	11/01/2011 10:12	11/03/2011 12:00	N
S11V005366	B2FDK0	Tritium by LSC	Water Digest/Separation	08/10/2011 08:15	08/09/2011 09:40	11/01/2011 10:12	11/03/2011 12:00	N
S11V005379	B2FDM0	Tritium by LSC	Separation	09/13/2011 08:20	09/13/2011 09:30	N/A	09/14/2011 16:45	N
S11V005385	B2FDM1	Tritium by LSC	Separation	09/13/2011 09:10	09/13/2011 10:05	N/A	09/14/2011 16:45	N
S11V005400	B2FDL3	Tritium by LSC	Water Digest/Separation	09/08/2011 10:10	09/18/2011 11:00	10/05/2011 13:41	10/10/2011 14:00	N
S11V005418	B2FDL4	Tritium by LSC	Water Digest/Separation	09/12/2011 12:15	09/18/2011 11:00	10/05/2011 13:41	10/10/2011 14:00	N
S11V005436	B2FDL5	Tritium by LSC	Water Digest/Separation	09/15/2011 10:40	09/18/2011 11:00	10/05/2011 13:41	10/10/2011 14:00	N
S11V005526	B2FXM5	Tritium by LSC	Water Digest/Separation	07/29/2011 09:45	10/13/2011 10:45	11/01/2011 10:12	11/03/2011 12:00	N
S11V005544	B2FXM6	Tritium by LSC	Water Digest/Separation	08/01/2011 13:05	10/13/2011 10:45	11/01/2011 10:12	11/03/2011 12:00	N
S11V005562	B2FXM7	Tritium by LSC	Water Digest/Separation	08/02/2011 10:30	10/13/2011 10:45	11/01/2011 10:12	11/03/2011 12:00	N
S11V005582	B2FYT0	Tritium by LSC	Water Digest/Separation	08/04/2011 09:25	10/13/2011 10:45	11/01/2011 10:18	11/03/2011 12:00	N
S11V005600	B2FYT1	Tritium by LSC	Water Digest/Separation	08/08/2011 13:05	10/13/2011 10:45	11/01/2011 10:18	11/03/2011 12:00	N
S11V005618	B2FYT2	Tritium by LSC	Water Digest/Separation	08/09/2011 11:45	10/13/2011 10:45	11/01/2011 10:18	11/03/2011 12:00	N
S11V005643	B2FYY0	Tritium by LSC	Water Digest/Separation	08/12/2011 09:30	10/13/2011 10:45	11/01/2011 10:18	11/03/2011 12:00	N
S11V005661	B2FYY1	Tritium by LSC	Water Digest/Separation	08/15/2011 13:55	10/13/2011 10:45	11/01/2011 10:18	11/03/2011 12:00	N
S11V005697	B2FYY2	Tritium by LSC	Water Digest/Separation	08/18/2011 08:25	10/13/2011 10:45	11/01/2011 10:18	11/03/2011 12:00	N
S11V005722	B2H106	Tritium by LSC	Water Digest/Separation	09/01/2011 08:50	09/15/2011 14:00	11/01/2011 10:03	11/03/2011 12:00	N
S11V005760	B2H107	Tritium by LSC	Water Digest/Separation	09/06/2011 09:30	09/15/2011 14:00	11/01/2011 10:03	11/03/2011 12:00	N
S11V005778	B2H108	Tritium by LSC	Water Digest/Separation	09/07/2011 08:25	09/15/2011 14:00	11/01/2011 10:03	11/03/2011 12:00	N

Attachment 4

VADOSE WATER DIGEST RESULTS

S Farm Barrier: Vadose Water Digestion Results

Core Number	Customer Sample ID	Sample Depth	Lab Sample ID	Analyte	Units	LCS % Recovery	Blank	Result	Duplicate	RPD	MS % Recovery	MDL	QUALIFIER
C8394	B2D441 WE	43'-45'	S11V004606	Nitrate	ug/g	99.0	0.0558	3.10	n/a	n/a	n/a	0.0204	
C8394	B2D441 WE	43'-45'	S11V004606	Technetium-99	pCi/g	116	<0.102	<0.0952	n/a	n/a	n/a	0.0952	
C8394	B2D442 WE	88'-90'	S11V004624	Nitrate	ug/g	99.0	0.0558	19.7	19.7	0.294	99.1	0.0205	
C8394	B2D442 WE	88'-90'	S11V004624	Technetium-99	pCi/g	116	<0.102	0.658	0.645	1.96	98.0	0.0986	
C8394	B2D443 WE	126'-128'	S11V004642	Nitrate	ug/g	99.0	0.0558	16.6	n/a	n/a	n/a	0.0206	
C8394	B2D443 WE	126'-128'	S11V004642	Technetium-99	pCi/g	116	<0.102	<0.105	n/a	n/a	n/a	0.105	
C8402	B2FDL3 WE	47'-49'	S11V005394	Nitrate	ug/g	104	0.0377	6.45	6.46	0.253	107	0.0257	
C8402	B2FDL3 WE	47'-49'	S11V005394	Technetium-99	pCi/g	105	<0.0510	0.0864	<0.0629	n/a	98.6	0.0629	
C8402	B2FDL4 WE	107'-109'	S11V005412	Nitrate	ug/g	104	0.0377	12.4	n/a	n/a	n/a	0.0439	
C8402	B2FDL4 WE	107'-109'	S11V005412	Technetium-99	pCi/g	105	<0.0510	0.156	n/a	n/a	n/a	0.0544	
C8402	B2FDL5 WE	126'-128'	S11V005430	Nitrate	ug/g	104	0.0377	40.2	n/a	n/a	n/a	0.0515	
C8402	B2FDL5 WE	126'-128'	S11V005430	Technetium-99	pCi/g	105	<0.0510	1.20	n/a	n/a	n/a	0.0629	
C8408	B2H106 WE	47'-49'	S11V006117	Nitrate	ug/g	103	0.0388	6.11	5.87	3.97	107	0.0263	
C8408	B2H106 WE	47'-49'	S11V006121	Technetium-99	pCi/g	108	<0.102	<0.131	n/a	n/a	n/a	0.131	
C8408	B2H107 WE	94'-96'	S11V006118	Nitrate	ug/g	110	0.0388	12.7	n/a	n/a	n/a	0.0245	
C8408	B2H107 WE	94'-96'	S11V006122	Technetium-99	pCi/g	108	<0.102	<0.122	n/a	n/a	n/a	0.122	
C8408	B2H108 WE	129'-131'	S11V006119	Nitrate	ug/g	110	0.0388	17.9	n/a	n/a	n/a	0.0487	
C8408	B2H108 WE	129'-131'	S11V006123	Technetium-99	pCi/g	108	<0.102	<0.122	<0.123	n/a	96.1	0.122	

Attachment 5

ADDITIONAL MERCURY ANALYSIS QC RESULTS

HG Analysis Matrix Spike/Matrix Spike Duplicate Summary for S Farm Barrier 2011

Client Sample Id	Sample Id	Analyte	MS Recovery %	MSD Recovery %	Lower Limit	Upper Limit	RPD %	RPD Limit
B2D441	S11V004603	Mercury	84.2	87.0	75	125	3.35	20
B2FDJ9	S11V005339	Mercury	94.4	97.1	75	125	2.80	20
B2FDM0	S11V005378	Mercury	99.8	99.4	75	125	0.341	20
B2FDM2	S11V005314	Mercury	98.0		75	125		
B2H106	S11V005714	Mercury	95.2	97.8	75	125	2.65	20

Attachment 6

ANALYTICAL BATCH AND LABORATORY SAMPLE ID INDEX

ANALYTICAL BATCH AND LABORATORY SAMPLE ID INDEX

METHOD	BATCH	SAMPLE	MATRIX	GROUP
AMERICIUM	00029857	S11V005316	LIQUID	20111140
AMERICIUM	00029857	S11V005380	LIQUID	20111159
AMERICIUM	00029857	S11V005386	LIQUID	20111160
AMERICIUM	00030678	S11V004613	SOLID	20110713
AMERICIUM	00030678	S11V004631	SOLID	20110713
AMERICIUM	00030678	S11V004649	SOLID	20110713
AMERICIUM	00030678	S11V005401	SOLID	20111161
AMERICIUM	00030678	S11V005419	SOLID	20111161
AMERICIUM	00030678	S11V005437	SOLID	20111161
AMERICIUM	00030922	S11V005723	SOLID	20111300
AMERICIUM	00030922	S11V005761	SOLID	20111300
AMERICIUM	00030922	S11V005779	SOLID	20111300
AMERICIUM	00031144	S11V005349	SOLID	20111143
AMERICIUM	00031144	S11V005367	SOLID	20111143
AMERICIUM	00031144	S11V005527	SOLID	20111161
AMERICIUM	00031144	S11V005545	SOLID	20111161
AMERICIUM	00031144	S11V005563	SOLID	20111161
AMERICIUM	00031345	S11V005583	SOLID	20111272
AMERICIUM	00031345	S11V005601	SOLID	20111272
AMERICIUM	00031345	S11V005619	SOLID	20111272
AMERICIUM	00031345	S11V005644	SOLID	20111290
AMERICIUM	00031345	S11V005662	SOLID	20111290
AMERICIUM	00031345	S11V005698	SOLID	20111290
AMERICIUM	00031418	S11V005331	SOLID	20111143
CARBON-14	00030672	S11V005315	LIQUID	20111140
CARBON-14	00030672	S11V005379	LIQUID	20111159
CARBON-14	00030672	S11V005385	LIQUID	20111160
CARBON-14	00031417	S11V005722	SOLID	20111300
CARBON-14	00031417	S11V005760	SOLID	20111300
CARBON-14	00031417	S11V005778	SOLID	20111300
CARBON-14	00031726	S11V005618	SOLID	20111272
CARBON-14	00031726	S11V005643	SOLID	20111290
CARBON-14	00031726	S11V005661	SOLID	20111290
CARBON-14	00031726	S11V005697	SOLID	20111290
CARBON-14	00031761	S11V005348	SOLID	20111143
CARBON-14	00031761	S11V005366	SOLID	20111143
CARBON-14	00031761	S11V005526	SOLID	20111161
CARBON-14	00031761	S11V005562	SOLID	20111161
CARBON-14	00031869	S11V004612	SOLID	20110713
CARBON-14	00031869	S11V004630	SOLID	20110713
CARBON-14	00031869	S11V004648	SOLID	20110713
CARBON-14	00031869	S11V005400	SOLID	20111161
CARBON-14	00031869	S11V005418	SOLID	20111161
CARBON-14	00031869	S11V005436	SOLID	20111161
CARBON-14	00031905	S11V005330	SOLID	20111143
CARBON-14	00031905	S11V005544	SOLID	20111161
CARBON-14	00031905	S11V005582	SOLID	20111272
CARBON-14	00031905	S11V005600	SOLID	20111272
CN - EDTA	00029721	S11V004603	SOLID	20110713
CN - EDTA	00029721	S11V004621	SOLID	20110713
CN - EDTA	00029721	S11V004639	SOLID	20110713
CN - EDTA	00029947	S11V005669	SOLID	20111161
CN - EDTA	00029947	S11V005670	SOLID	20111161
CN - EDTA	00029947	S11V005671	SOLID	20111161
CN - EDTA	00029947	S11V005714	SOLID	20111300
CN - EDTA	00029947	S11V005752	SOLID	20111300
CN - EDTA	00029947	S11V005770	SOLID	20111300

ANALYTICAL BATCH AND LABORATORY SAMPLE ID INDEX

METHOD	BATCH	SAMPLE	MATRIX	GROUP
CN - EDTA	00031129	S11V005517	SOLID	20111161
CN - EDTA	00031129	S11V005535	SOLID	20111161
CN - EDTA	00031129	S11V005553	SOLID	20111161
CN - EDTA	00031129	S11V005573	SOLID	20111272
CN - EDTA	00031177	S11V005321	SOLID	20111143
CN - EDTA	00031177	S11V005339	SOLID	20111143
CN - EDTA	00031177	S11V005357	SOLID	20111143
CN - EDTA	00031177	S11V005591	SOLID	20111272
CN - EDTA	00031177	S11V005609	SOLID	20111272
CN - EDTA	00031177	S11V005635	SOLID	20111290
CN - EDTA	00031177	S11V005653	SOLID	20111290
CN - EDTA	00031177	S11V005689	SOLID	20111290
CN - WATER DISTILLATION	00029712	S11V005312	LIQUID	20111140
CN - WATER DISTILLATION	00029712	S11V005376	LIQUID	20111159
CN - WATER DISTILLATION	00029712	S11V005382	LIQUID	20111160
CONDUCTIVITY	00029120	S11V004605	SOLID	20110713
CONDUCTIVITY	00029120	S11V004623	SOLID	20110713
CONDUCTIVITY	00029120	S11V004641	SOLID	20110713
CONDUCTIVITY	00029758	S11V005393	SOLID	20111161
CONDUCTIVITY	00029758	S11V005411	SOLID	20111161
CONDUCTIVITY	00029758	S11V005429	SOLID	20111161
CONDUCTIVITY	00029848	S11V005716	SOLID	20111300
CONDUCTIVITY	00029848	S11V005754	SOLID	20111300
CONDUCTIVITY	00029848	S11V005772	SOLID	20111300
CONDUCTIVITY	00030838	S11V005323	SOLID	20111143
CONDUCTIVITY	00030838	S11V005341	SOLID	20111143
CONDUCTIVITY	00030838	S11V005359	SOLID	20111143
CONDUCTIVITY	00030838	S11V005519	SOLID	20111161
CONDUCTIVITY	00030838	S11V005537	SOLID	20111161
CONDUCTIVITY	00030838	S11V005575	SOLID	20111272
CONDUCTIVITY	00030838	S11V005593	SOLID	20111272
CONDUCTIVITY	00030838	S11V005611	SOLID	20111272
CONDUCTIVITY	00030838	S11V005637	SOLID	20111290
CONDUCTIVITY	00030838	S11V005655	SOLID	20111290
CONDUCTIVITY	00030838	S11V005691	SOLID	20111290
CONDUCTIVITY	00030839	S11V005555	SOLID	20111161
GEA	00029130	S11V004604	SOLID	20110713
GEA	00029130	S11V004622	SOLID	20110713
GEA	00029130	S11V004640	SOLID	20110713
GEA	00029684	S11V005316	LIQUID	20111140
GEA	00029684	S11V005380	LIQUID	20111159
GEA	00029684	S11V005386	LIQUID	20111160
GEA	00029874	S11V005392	SOLID	20111161
GEA	00029874	S11V005410	SOLID	20111161
GEA	00029874	S11V005428	SOLID	20111161
GEA	00030368	S11V005715	SOLID	20111300
GEA	00030368	S11V005753	SOLID	20111300
GEA	00030368	S11V005771	SOLID	20111300
GEA	00030872	S11V005322	SOLID	20111143
GEA	00030872	S11V005340	SOLID	20111143
GEA	00030872	S11V005358	SOLID	20111143
GEA	00030872	S11V005518	SOLID	20111161
GEA	00030872	S11V005536	SOLID	20111161
GEA	00030872	S11V005554	SOLID	20111161
GEA	00030872	S11V005574	SOLID	20111272
GEA	00030872	S11V005592	SOLID	20111272
GEA	00030872	S11V005610	SOLID	20111272
GEA	00030872	S11V005636	SOLID	20111290
GEA	00030872	S11V005654	SOLID	20111290
GEA	00030872	S11V005690	SOLID	20111290

ANALYTICAL BATCH AND LABORATORY SAMPLE ID INDEX

METHOD	BATCH	SAMPLE	MATRIX	GROUP
HG	00029870	S11V004603	SOLID	20110713
HG	00029870	S11V004621	SOLID	20110713
HG	00029870	S11V004639	SOLID	20110713
HG	00030135	S11V005669	SOLID	20111161
HG	00030135	S11V005670	SOLID	20111161
HG	00030135	S11V005671	SOLID	20111161
HG	00030135	S11V005714	SOLID	20111300
HG	00030135	S11V005752	SOLID	20111300
HG	00030135	S11V005770	SOLID	20111300
HG	00030137	S11V005378	LIQUID	20111159
HG	00030137	S11V005384	LIQUID	20111160
HG	00030413	S11V005314	LIQUID	20111140
HG	00031119	S11V005321	SOLID	20111143
HG	00031119	S11V005339	SOLID	20111143
HG	00031119	S11V005357	SOLID	20111143
HG	00031119	S11V005517	SOLID	20111161
HG	00031119	S11V005535	SOLID	20111161
HG	00031119	S11V005553	SOLID	20111161
HG	00031119	S11V005573	SOLID	20111272
HG	00031119	S11V005591	SOLID	20111272
HG	00031119	S11V005609	SOLID	20111272
HG	00031119	S11V005635	SOLID	20111290
HG	00031119	S11V005653	SOLID	20111290
HG	00031119	S11V005689	SOLID	20111290
IC - ANIONS/SMALL ORG. ACIDS	00029161	S11V004606	SOLID	20110713
IC - ANIONS/SMALL ORG. ACIDS	00029161	S11V004624	SOLID	20110713
IC - ANIONS/SMALL ORG. ACIDS	00029161	S11V004642	SOLID	20110713
IC - ANIONS/SMALL ORG. ACIDS	00029670	S11V005375	LIQUID	20111159
IC - ANIONS/SMALL ORG. ACIDS	00029670	S11V005381	LIQUID	20111160
IC - ANIONS/SMALL ORG. ACIDS	00029709	S11V005311	LIQUID	20111140
IC - ANIONS/SMALL ORG. ACIDS	00029827	S11V005394	SOLID	20111161
IC - ANIONS/SMALL ORG. ACIDS	00029827	S11V005412	SOLID	20111161
IC - ANIONS/SMALL ORG. ACIDS	00029827	S11V005430	SOLID	20111161
IC - ANIONS/SMALL ORG. ACIDS	00029863	S11V006117	SOLID	20111300
IC - ANIONS/SMALL ORG. ACIDS	00029863	S11V006118	SOLID	20111300
IC - ANIONS/SMALL ORG. ACIDS	00029863	S11V006119	SOLID	20111300
IC - ANIONS/SMALL ORG. ACIDS	00029918	S11V004608	SOLID	20110713
IC - ANIONS/SMALL ORG. ACIDS	00029918	S11V004626	SOLID	20110713
IC - ANIONS/SMALL ORG. ACIDS	00029918	S11V004644	SOLID	20110713
IC - ANIONS/SMALL ORG. ACIDS	00029918	S11V005396	SOLID	20111161
IC - ANIONS/SMALL ORG. ACIDS	00029918	S11V005414	SOLID	20111161
IC - ANIONS/SMALL ORG. ACIDS	00029918	S11V005432	SOLID	20111161
IC - ANIONS/SMALL ORG. ACIDS	00029918	S11V005718	SOLID	20111300
IC - ANIONS/SMALL ORG. ACIDS	00029918	S11V005756	SOLID	20111300
IC - ANIONS/SMALL ORG. ACIDS	00029918	S11V005774	SOLID	20111300
IC - ANIONS/SMALL ORG. ACIDS	00030679	S11V005326	SOLID	20111143
IC - ANIONS/SMALL ORG. ACIDS	00030679	S11V005344	SOLID	20111143
IC - ANIONS/SMALL ORG. ACIDS	00030679	S11V005362	SOLID	20111143
IC - ANIONS/SMALL ORG. ACIDS	00030679	S11V005522	SOLID	20111161
IC - ANIONS/SMALL ORG. ACIDS	00030679	S11V005540	SOLID	20111161
IC - ANIONS/SMALL ORG. ACIDS	00030679	S11V005558	SOLID	20111161
IC - ANIONS/SMALL ORG. ACIDS	00030679	S11V005578	SOLID	20111272
IC - ANIONS/SMALL ORG. ACIDS	00030679	S11V005596	SOLID	20111272
IC - ANIONS/SMALL ORG. ACIDS	00030679	S11V005614	SOLID	20111272
IC - ANIONS/SMALL ORG. ACIDS	00030679	S11V005639	SOLID	20111290
IC - ANIONS/SMALL ORG. ACIDS	00030679	S11V005657	SOLID	20111290
IC - ANIONS/SMALL ORG. ACIDS	00030679	S11V005693	SOLID	20111290
IC - ANIONS/SMALL ORG. ACIDS	00031872	S11V005558	SOLID	20111161

ANALYTICAL BATCH AND LABORATORY SAMPLE ID INDEX

METHOD	BATCH	SAMPLE	MATRIX	GROUP
IC - NH4	00029968	S11V004610	SOLID	20110713
IC - NH4	00029968	S11V004628	SOLID	20110713
IC - NH4	00029968	S11V004646	SOLID	20110713
IC - NH4	00029968	S11V005398	SOLID	20111161
IC - NH4	00029968	S11V005416	SOLID	20111161
IC - NH4	00029968	S11V005434	SOLID	20111161
IC - NH4	00029968	S11V005720	SOLID	20111300
IC - NH4	00029968	S11V005758	SOLID	20111300
IC - NH4	00029968	S11V005776	SOLID	20111300
IC - NH4	00030048	S11V005313	LIQUID	20111140
IC - NH4	00030048	S11V005383	LIQUID	20111160
IC - NH4	00030551	S11V005377	LIQUID	20111159
IC - NH4	00030674	S11V005346	SOLID	20111143
IC - NH4	00030674	S11V005524	SOLID	20111161
IC - NH4	00030674	S11V005542	SOLID	20111161
IC - NH4	00030674	S11V005560	SOLID	20111161
IC - NH4	00030674	S11V005580	SOLID	20111272
IC - NH4	00030674	S11V005598	SOLID	20111272
IC - NH4	00030676	S11V005328	SOLID	20111143
IC - NH4	00030676	S11V005364	SOLID	20111143
IC - NH4	00030676	S11V005616	SOLID	20111272
IC - NH4	00030676	S11V005641	SOLID	20111290
IC - NH4	00030676	S11V005659	SOLID	20111290
IC - NH4	00030676	S11V005695	SOLID	20111290
ICP-TOTAL METALS	00030205	S11V004609	SOLID	20110713
ICP-TOTAL METALS	00030205	S11V004627	SOLID	20110713
ICP-TOTAL METALS	00030205	S11V004645	SOLID	20110713
ICP-TOTAL METALS	00030205	S11V005397	SOLID	20111161
ICP-TOTAL METALS	00030205	S11V005415	SOLID	20111161
ICP-TOTAL METALS	00030205	S11V005433	SOLID	20111161
ICP-TOTAL METALS	00030205	S11V005719	SOLID	20111300
ICP-TOTAL METALS	00030205	S11V005757	SOLID	20111300
ICP-TOTAL METALS	00030205	S11V005775	SOLID	20111300
ICP-TOTAL METALS	00030224	S11V005314	LIQUID	20111140
ICP-TOTAL METALS	00030224	S11V005378	LIQUID	20111159
ICP-TOTAL METALS	00030224	S11V005384	LIQUID	20111160
ICP-TOTAL METALS	00031407	S11V005327	SOLID	20111143
ICP-TOTAL METALS	00031407	S11V005345	SOLID	20111143
ICP-TOTAL METALS	00031407	S11V005363	SOLID	20111143
ICP-TOTAL METALS	00031407	S11V005523	SOLID	20111161
ICP-TOTAL METALS	00031407	S11V005541	SOLID	20111161
ICP-TOTAL METALS	00031407	S11V005559	SOLID	20111161
ICP-TOTAL METALS	00031407	S11V005579	SOLID	20111272
ICP-TOTAL METALS	00031407	S11V005597	SOLID	20111272
ICP-TOTAL METALS	00031407	S11V005615	SOLID	20111272
ICP-TOTAL METALS	00031407	S11V005640	SOLID	20111290
ICP-TOTAL METALS	00031407	S11V005658	SOLID	20111290
ICP-TOTAL METALS	00031407	S11V005694	SOLID	20111290
IODINE-129 in SOIL	00029760	S11V005315	LIQUID	20111140
IODINE-129 in SOIL	00029760	S11V005379	LIQUID	20111159
IODINE-129 in SOIL	00029760	S11V005385	LIQUID	20111160
IODINE-129 in SOIL	00030759	S11V004604	SOLID	20110713
IODINE-129 in SOIL	00030759	S11V004622	SOLID	20110713
IODINE-129 in SOIL	00030759	S11V004640	SOLID	20110713
IODINE-129 in SOIL	00030759	S11V005392	SOLID	20111161
IODINE-129 in SOIL	00030759	S11V005410	SOLID	20111161
IODINE-129 in SOIL	00030759	S11V005428	SOLID	20111161
IODINE-129 in SOIL	00030936	S11V005715	SOLID	20111300
IODINE-129 in SOIL	00030936	S11V005753	SOLID	20111300
IODINE-129 in SOIL	00030936	S11V005771	SOLID	20111300

ANALYTICAL BATCH AND LABORATORY SAMPLE ID INDEX

METHOD	BATCH	SAMPLE	MATRIX	GROUP
IODINE-129 in SOIL	00031149	S11V005574	SOLID	20111272
IODINE-129 in SOIL	00031149	S11V005592	SOLID	20111272
IODINE-129 in SOIL	00031149	S11V005610	SOLID	20111272
IODINE-129 in SOIL	00031149	S11V005636	SOLID	20111290
IODINE-129 in SOIL	00031149	S11V005654	SOLID	20111290
IODINE-129 in SOIL	00031149	S11V005690	SOLID	20111290
IODINE-129 in SOIL	00031222	S11V005322	SOLID	20111143
IODINE-129 in SOIL	00031222	S11V005340	SOLID	20111143
IODINE-129 in SOIL	00031222	S11V005358	SOLID	20111143
IODINE-129 in SOIL	00031222	S11V005518	SOLID	20111161
IODINE-129 in SOIL	00031222	S11V005536	SOLID	20111161
IODINE-129 in SOIL	00031222	S11V005554	SOLID	20111161
MS ACTINIDES	00030006	S11V005314	LIQUID	20111140
MS ACTINIDES	00030006	S11V005378	LIQUID	20111159
MS ACTINIDES	00030006	S11V005384	LIQUID	20111160
MS ACTINIDES	00032195	S11V004609	SOLID	20110713
MS ACTINIDES	00032195	S11V004627	SOLID	20110713
MS ACTINIDES	00032195	S11V004645	SOLID	20110713
MS ACTINIDES	00032195	S11V005397	SOLID	20111161
MS ACTINIDES	00032195	S11V005415	SOLID	20111161
MS ACTINIDES	00032195	S11V005433	SOLID	20111161
MS ACTINIDES	00032195	S11V005719	SOLID	20111300
MS ACTINIDES	00032195	S11V005757	SOLID	20111300
MS ACTINIDES	00032195	S11V005775	SOLID	20111300
MS ACTINIDES	00032196	S11V005327	SOLID	20111143
MS ACTINIDES	00032196	S11V005345	SOLID	20111143
MS ACTINIDES	00032196	S11V005363	SOLID	20111143
MS ACTINIDES	00032196	S11V005523	SOLID	20111161
MS ACTINIDES	00032196	S11V005541	SOLID	20111161
MS ACTINIDES	00032196	S11V005559	SOLID	20111161
MS ACTINIDES	00032196	S11V005597	SOLID	20111272
MS ACTINIDES	00032196	S11V005615	SOLID	20111272
MS ACTINIDES	00032196	S11V005640	SOLID	20111290
MS ACTINIDES	00032196	S11V005658	SOLID	20111290
MS ACTINIDES	00032196	S11V005694	SOLID	20111290
MS ACTINIDES	00032709	S11V005579	SOLID	20111272
MS ANTIMONY	00030082	S11V004607	SOLID	20110713
MS ANTIMONY	00030082	S11V004625	SOLID	20110713
MS ANTIMONY	00030082	S11V004643	SOLID	20110713
MS ANTIMONY	00032167	S11V005395	SOLID	20111161
MS ANTIMONY	00032167	S11V005413	SOLID	20111161
MS ANTIMONY	00032167	S11V005431	SOLID	20111161
MS ANTIMONY	00032167	S11V005717	SOLID	20111300
MS ANTIMONY	00032167	S11V005755	SOLID	20111300
MS ANTIMONY	00032167	S11V005773	SOLID	20111300
MS ANTIMONY	00032198	S11V005325	SOLID	20111143
MS ANTIMONY	00032198	S11V005343	SOLID	20111143
MS ANTIMONY	00032198	S11V005361	SOLID	20111143
MS ANTIMONY	00032198	S11V005521	SOLID	20111161
MS ANTIMONY	00032198	S11V005539	SOLID	20111161
MS ANTIMONY	00032198	S11V005557	SOLID	20111161
MS ANTIMONY	00032198	S11V005577	SOLID	20111272
MS ANTIMONY	00032198	S11V005595	SOLID	20111272
MS ANTIMONY	00032198	S11V005613	SOLID	20111272
MS ANTIMONY	00032198	S11V005638	SOLID	20111290
MS ANTIMONY	00032198	S11V005656	SOLID	20111290
MS ANTIMONY	00032198	S11V005692	SOLID	20111290

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METHOD	BATCH	SAMPLE	MATRIX	GROUP
MS ANTIMONY	00032852	S11V004607	SOLID	20110713
MS ANTIMONY	00032852	S11V004625	SOLID	20110713
MS ANTIMONY	00032852	S11V004643	SOLID	20110713
MS ANTIMONY	00032945	S11V005314	LIQUID	20111140
MS ANTIMONY	00032945	S11V005378	LIQUID	20111159
MS ANTIMONY	00032945	S11V005384	LIQUID	20111160
MS PERIODIC TABLE	00032126	S11V005327	SOLID	20111143
MS PERIODIC TABLE	00032126	S11V005345	SOLID	20111143
MS PERIODIC TABLE	00032126	S11V005363	SOLID	20111143
MS PERIODIC TABLE	00032126	S11V005523	SOLID	20111161
MS PERIODIC TABLE	00032126	S11V005541	SOLID	20111161
MS PERIODIC TABLE	00032126	S11V005559	SOLID	20111161
MS PERIODIC TABLE	00032126	S11V005597	SOLID	20111272
MS PERIODIC TABLE	00032126	S11V005615	SOLID	20111272
MS PERIODIC TABLE	00032126	S11V005640	SOLID	20111290
MS PERIODIC TABLE	00032126	S11V005658	SOLID	20111290
MS PERIODIC TABLE	00032126	S11V005694	SOLID	20111290
MS PERIODIC TABLE	00032233	S11V004609	SOLID	20110713
MS PERIODIC TABLE	00032233	S11V004627	SOLID	20110713
MS PERIODIC TABLE	00032233	S11V004645	SOLID	20110713
MS PERIODIC TABLE	00032233	S11V005397	SOLID	20111161
MS PERIODIC TABLE	00032233	S11V005415	SOLID	20111161
MS PERIODIC TABLE	00032233	S11V005433	SOLID	20111161
MS PERIODIC TABLE	00032233	S11V005719	SOLID	20111300
MS PERIODIC TABLE	00032233	S11V005757	SOLID	20111300
MS PERIODIC TABLE	00032233	S11V005775	SOLID	20111300
MS PERIODIC TABLE	00032697	S11V005579	SOLID	20111272
MS PERIODIC TABLE	00032947	S11V005327	SOLID	20111143
MS PERIODIC TABLE	00032947	S11V005345	SOLID	20111143
MS PERIODIC TABLE	00032947	S11V005363	SOLID	20111143
MS PERIODIC TABLE	00032947	S11V005523	SOLID	20111161
MS PERIODIC TABLE	00032947	S11V005541	SOLID	20111161
MS PERIODIC TABLE	00032947	S11V005559	SOLID	20111161
MS PERIODIC TABLE	00032947	S11V005597	SOLID	20111272
MS PERIODIC TABLE	00032947	S11V005615	SOLID	20111272
MS PERIODIC TABLE	00032947	S11V005640	SOLID	20111290
MS PERIODIC TABLE	00032947	S11V005658	SOLID	20111290
MS PERIODIC TABLE	00032947	S11V005694	SOLID	20111290
MS PERIODIC TABLE	00033419	S11V004609	SOLID	20110713
MS PERIODIC TABLE	00033419	S11V004627	SOLID	20110713
MS PERIODIC TABLE	00033419	S11V004645	SOLID	20110713
MS PERIODIC TABLE	00033419	S11V005397	SOLID	20111161
MS PERIODIC TABLE	00033419	S11V005415	SOLID	20111161
MS PERIODIC TABLE	00033419	S11V005433	SOLID	20111161
MS PERIODIC TABLE	00033419	S11V005719	SOLID	20111300
MS PERIODIC TABLE	00033419	S11V005757	SOLID	20111300
MS PERIODIC TABLE	00033419	S11V005775	SOLID	20111300
MS PERIODIC TABLE	00033436	S11V005579	SOLID	20111272

ANALYTICAL BATCH AND LABORATORY SAMPLE ID INDEX

METHOD	BATCH	SAMPLE	MATRIX	GROUP
MS TC-99	00030509	S11V005314	LIQUID	20111140
MS TC-99	00030509	S11V005378	LIQUID	20111159
MS TC-99	00030509	S11V005384	LIQUID	20111160
MS TC-99	00029748	S11V004606	SOLID	20110713
MS TC-99	00029748	S11V004624	SOLID	20110713
MS TC-99	00029748	S11V004642	SOLID	20110713
MS TC-99	00029970	S11V005394	SOLID	20111161
MS TC-99	00029970	S11V005412	SOLID	20111161
MS TC-99	00029970	S11V005430	SOLID	20111161
MS TC-99	00029977	S11V006121	SOLID	20111300
MS TC-99	00029977	S11V006122	SOLID	20111300
MS TC-99	00029977	S11V006123	SOLID	20111300
MS TC-99	00030550	S11V004611	SOLID	20110713
MS TC-99	00030550	S11V004629	SOLID	20110713
MS TC-99	00030550	S11V004647	SOLID	20110713
MS TC-99	00030550	S11V005399	SOLID	20111161
MS TC-99	00030550	S11V005417	SOLID	20111161
MS TC-99	00030550	S11V005435	SOLID	20111161
MS TC-99	00030550	S11V005721	SOLID	20111300
MS TC-99	00030550	S11V005759	SOLID	20111300
MS TC-99	00030550	S11V005777	SOLID	20111300
MS TC-99	00031715	S11V005329	SOLID	20111143
MS TC-99	00031715	S11V005347	SOLID	20111143
MS TC-99	00031715	S11V005365	SOLID	20111143
MS TC-99	00031715	S11V005525	SOLID	20111161
MS TC-99	00031715	S11V005543	SOLID	20111161
MS TC-99	00031715	S11V005561	SOLID	20111161
MS TC-99	00031715	S11V005581	SOLID	20111272
MS TC-99	00031715	S11V005599	SOLID	20111272
MS TC-99	00031715	S11V005617	SOLID	20111272
MS TC-99	00031715	S11V005642	SOLID	20111290
MS TC-99	00031715	S11V005660	SOLID	20111290
MS TC-99	00031715	S11V005696	SOLID	20111290
NICKEL-63	00029937	S11V005316	LIQUID	20111140
NICKEL-63	00029937	S11V005380	LIQUID	20111159
NICKEL-63	00029937	S11V005386	LIQUID	20111160
NICKEL-63	00030731	S11V004615	SOLID	20110713
NICKEL-63	00030731	S11V004633	SOLID	20110713
NICKEL-63	00030731	S11V004651	SOLID	20110713
NICKEL-63	00030731	S11V005403	SOLID	20111161
NICKEL-63	00030731	S11V005421	SOLID	20111161
NICKEL-63	00030731	S11V005439	SOLID	20111161
NICKEL-63	00031136	S11V005725	SOLID	20111300
NICKEL-63	00031136	S11V005763	SOLID	20111300
NICKEL-63	00031136	S11V005781	SOLID	20111300
NICKEL-63	00031168	S11V005333	SOLID	20111143
NICKEL-63	00031168	S11V005351	SOLID	20111143
NICKEL-63	00031168	S11V005369	SOLID	20111143
NICKEL-63	00031168	S11V005529	SOLID	20111161
NICKEL-63	00031168	S11V005547	SOLID	20111161
NICKEL-63	00031168	S11V005565	SOLID	20111161
NICKEL-63	00031348	S11V005585	SOLID	20111272
NICKEL-63	00031348	S11V005603	SOLID	20111272
NICKEL-63	00031348	S11V005621	SOLID	20111272
NICKEL-63	00031348	S11V005646	SOLID	20111290
NICKEL-63	00031348	S11V005664	SOLID	20111290
NICKEL-63	00031348	S11V005700	SOLID	20111290

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METHOD	BATCH	SAMPLE	MATRIX	GROUP
PH LIQUID	00029636	S11V005375	LIQUID	20111159
PH LIQUID	00029636	S11V005381	LIQUID	20111160
PH LIQUID	00029686	S11V005311	LIQUID	20111140
PH SOLID	00029086	S11V004603	SOLID	20110713
PH SOLID	00029086	S11V004621	SOLID	20110713
PH SOLID	00029086	S11V004639	SOLID	20110713
PH SOLID	00029777	S11V005669	SOLID	20111161
PH SOLID	00029777	S11V005670	SOLID	20111161
PH SOLID	00029777	S11V005671	SOLID	20111161
PH SOLID	00029777	S11V005714	SOLID	20111300
PH SOLID	00029777	S11V005752	SOLID	20111300
PH SOLID	00029777	S11V005770	SOLID	20111300
PH SOLID	00030594	S11V005321	SOLID	20111143
PH SOLID	00030594	S11V005339	SOLID	20111143
PH SOLID	00030594	S11V005357	SOLID	20111143
PH SOLID	00030594	S11V005517	SOLID	20111161
PH SOLID	00030594	S11V005535	SOLID	20111161
PH SOLID	00030594	S11V005553	SOLID	20111161
PH SOLID	00030594	S11V005573	SOLID	20111272
PH SOLID	00030594	S11V005591	SOLID	20111272
PH SOLID	00030594	S11V005609	SOLID	20111272
PH SOLID	00030594	S11V005635	SOLID	20111290
PH SOLID	00030594	S11V005653	SOLID	20111290
PH SOLID	00030594	S11V005689	SOLID	20111290
PLUTONIUM	00029845	S11V005316	LIQUID	20111140
PLUTONIUM	00029845	S11V005380	LIQUID	20111159
PLUTONIUM	00029845	S11V005386	LIQUID	20111160
PLUTONIUM	00030680	S11V004613	SOLID	20110713
PLUTONIUM	00030680	S11V004631	SOLID	20110713
PLUTONIUM	00030680	S11V004649	SOLID	20110713
PLUTONIUM	00030680	S11V005401	SOLID	20111161
PLUTONIUM	00030680	S11V005419	SOLID	20111161
PLUTONIUM	00030680	S11V005437	SOLID	20111161
PLUTONIUM	00030923	S11V005723	SOLID	20111300
PLUTONIUM	00030923	S11V005761	SOLID	20111300
PLUTONIUM	00030923	S11V005779	SOLID	20111300
PLUTONIUM	00031339	S11V005331	SOLID	20111143
PLUTONIUM	00031339	S11V005349	SOLID	20111143
PLUTONIUM	00031339	S11V005367	SOLID	20111143
PLUTONIUM	00031339	S11V005527	SOLID	20111161
PLUTONIUM	00031339	S11V005545	SOLID	20111161
PLUTONIUM	00031339	S11V005563	SOLID	20111161
PLUTONIUM	00031340	S11V005583	SOLID	20111272
PLUTONIUM	00031340	S11V005601	SOLID	20111272
PLUTONIUM	00031340	S11V005619	SOLID	20111272
PLUTONIUM	00031340	S11V005644	SOLID	20111290
PLUTONIUM	00031340	S11V005662	SOLID	20111290
PLUTONIUM	00031340	S11V005698	SOLID	20111290

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METHOD	BATCH	SAMPLE	MATRIX	GROUP
SELENIUM-79	00030193	S11V005316	LIQUID	20111140
SELENIUM-79	00030193	S11V005380	LIQUID	20111159
SELENIUM-79	00030193	S11V005386	LIQUID	20111160
SELENIUM-79	00030761	S11V004616	SOLID	20110713
SELENIUM-79	00030761	S11V004634	SOLID	20110713
SELENIUM-79	00030761	S11V004652	SOLID	20110713
SELENIUM-79	00030761	S11V005404	SOLID	20111161
SELENIUM-79	00030761	S11V005422	SOLID	20111161
SELENIUM-79	00030761	S11V005440	SOLID	20111161
SELENIUM-79	00031007	S11V005726	SOLID	20111300
SELENIUM-79	00031007	S11V005764	SOLID	20111300
SELENIUM-79	00031007	S11V005782	SOLID	20111300
SELENIUM-79	00031230	S11V005334	SOLID	20111143
SELENIUM-79	00031230	S11V005352	SOLID	20111143
SELENIUM-79	00031230	S11V005370	SOLID	20111143
SELENIUM-79	00031230	S11V005530	SOLID	20111161
SELENIUM-79	00031230	S11V005548	SOLID	20111161
SELENIUM-79	00031230	S11V005566	SOLID	20111161
SELENIUM-79	00031347	S11V005586	SOLID	20111272
SELENIUM-79	00031347	S11V005604	SOLID	20111272
SELENIUM-79	00031347	S11V005622	SOLID	20111272
SELENIUM-79	00031347	S11V005647	SOLID	20111290
SELENIUM-79	00031347	S11V005665	SOLID	20111290
SELENIUM-79	00031347	S11V005701	SOLID	20111290
SR-90 ENV LIQUID	00029776	S11V005316	LIQUID	20111140
SR-90 ENV LIQUID	00029776	S11V005380	LIQUID	20111159
SR-90 ENV LIQUID	00029776	S11V005386	LIQUID	20111160
SR-90 ENV SOLID	00030586	S11V004614	SOLID	20110713
SR-90 ENV SOLID	00030586	S11V004632	SOLID	20110713
SR-90 ENV SOLID	00030586	S11V004650	SOLID	20110713
SR-90 ENV SOLID	00030586	S11V005402	SOLID	20111161
SR-90 ENV SOLID	00030586	S11V005420	SOLID	20111161
SR-90 ENV SOLID	00030586	S11V005438	SOLID	20111161
SR-90 ENV SOLID	00030903	S11V005724	SOLID	20111300
SR-90 ENV SOLID	00030903	S11V005762	SOLID	20111300
SR-90 ENV SOLID	00030903	S11V005780	SOLID	20111300
SR-90 ENV SOLID	00031135	S11V005332	SOLID	20111143
SR-90 ENV SOLID	00031135	S11V005350	SOLID	20111143
SR-90 ENV SOLID	00031135	S11V005368	SOLID	20111143
SR-90 ENV SOLID	00031135	S11V005528	SOLID	20111161
SR-90 ENV SOLID	00031135	S11V005546	SOLID	20111161
SR-90 ENV SOLID	00031346	S11V005584	SOLID	20111272
SR-90 ENV SOLID	00031346	S11V005602	SOLID	20111272
SR-90 ENV SOLID	00031346	S11V005620	SOLID	20111272
SR-90 ENV SOLID	00031346	S11V005645	SOLID	20111290
SR-90 ENV SOLID	00031346	S11V005663	SOLID	20111290
SR-90 ENV SOLID	00031346	S11V005699	SOLID	20111290
SR-90 ENV SOLID	00031432	S11V005564	SOLID	20111161

ANALYTICAL BATCH AND LABORATORY SAMPLE ID INDEX

METHOD	BATCH	SAMPLE	MATRIX	GROUP
TC-99 by MS	00030052	S11V004606	SOLID	20110713
TC-99 by MS	00030052	S11V004624	SOLID	20110713
TC-99 by MS	00030052	S11V004642	SOLID	20110713
TC-99 by MS	00030053	S11V005394	SOLID	20111161
TC-99 by MS	00030053	S11V005412	SOLID	20111161
TC-99 by MS	00030053	S11V005430	SOLID	20111161
TC-99 by MS	00030054	S11V006121	SOLID	20111300
TC-99 by MS	00030054	S11V006122	SOLID	20111300
TC-99 by MS	00030054	S11V006123	SOLID	20111300
TRITIUM	00029683	S11V005315	LIQUID	20111140
TRITIUM	00029683	S11V005379	LIQUID	20111159
TRITIUM	00029683	S11V005385	LIQUID	20111160
TRITIUM	00030477	S11V004612	SOLID	20110713
TRITIUM	00030477	S11V004630	SOLID	20110713
TRITIUM	00030477	S11V004648	SOLID	20110713
TRITIUM	00030477	S11V005400	SOLID	20111161
TRITIUM	00030477	S11V005418	SOLID	20111161
TRITIUM	00030477	S11V005436	SOLID	20111161
TRITIUM	00031202	S11V005330	SOLID	20111143
TRITIUM	00031202	S11V005348	SOLID	20111143
TRITIUM	00031202	S11V005366	SOLID	20111143
TRITIUM	00031202	S11V005526	SOLID	20111161
TRITIUM	00031202	S11V005544	SOLID	20111161
TRITIUM	00031202	S11V005562	SOLID	20111161
TRITIUM	00031203	S11V005582	SOLID	20111272
TRITIUM	00031203	S11V005600	SOLID	20111272
TRITIUM	00031203	S11V005618	SOLID	20111272
TRITIUM	00031203	S11V005643	SOLID	20111290
TRITIUM	00031203	S11V005661	SOLID	20111290
TRITIUM	00031203	S11V005697	SOLID	20111290
TRITIUM	00031204	S11V005722	SOLID	20111300
TRITIUM	00031204	S11V005760	SOLID	20111300
TRITIUM	00031204	S11V005778	SOLID	20111300

Attachment 7

GEOLOGICAL REPORT

Bulk Density Report

Core Number	Customer Sample ID	Sample Depth	Lab Sample ID	Analyte	Unit	Result
C8394	B2D430	43'-45'	S11V004599	Bulk Density	g/mL	2.23
C8394	B2D431	43'-45'	S11V004600	Bulk Density	g/mL	2.29
C8394	B2D432	43'-45'	S11V004601	Bulk Density	g/mL	2.34
C8394	B2D434	88'-90'	S11V004617	Bulk Density	g/mL	2.13
C8394	B2D435	88'-90'	S11V004618	Bulk Density	g/mL	2.17
C8394	B2D436	88'-90'	S11V004619	Bulk Density	g/mL	2.15
C8394	B2D438	126'-128'	S11V004635	Bulk Density	g/mL	1.86
C8394	B2D439	126'-128'	S11V004636	Bulk Density	g/mL	1.80
C8394	B2D440	126'-128'	S11V004637	Bulk Density	g/mL	1.80
C8396	B2FYT5	55'-57'	S11V005569	Bulk Density	g/mL	2.19
C8396	B2FYT6	55'-57'	S11V005570	Bulk Density	g/mL	2.11
C8396	B2FYT7	55'-57'	S11V005571	Bulk Density	g/mL	2.16
C8396	B2FYV0	103'-105'	S11V005587	Bulk Density	g/mL	2.20
C8396	B2FYV2	103'-105'	S11V005589	Bulk Density	g/mL	2.09
C8396	B2FYV5	117'-119'	S11V005605	Bulk Density	g/mL	1.83
C8396	B2FYV6	117'-119'	S11V005606	Bulk Density	g/mL	1.82
C8396	B2FYV7	117'-119'	S11V005607	Bulk Density	g/mL	1.72
C8398	B2FDH7	46'-48'	S11V005317	Bulk Density	g/mL	2.27
C8398	B2FDH9	46'-48'	S11V005319	Bulk Density	g/mL	2.06
C8398	B2FDJ1	86'-88'	S11V005335	Bulk Density	g/mL	2.11
C8398	B2FDJ2	86'-88'	S11V005336	Bulk Density	g/mL	2.13
C8398	B2FDJ3	86'-88'	S11V005337	Bulk Density	g/mL	1.92
C8398	B2FDJ5	131'-137'	S11V005353	Bulk Density	g/mL	2.02
C8398	B2FDJ6	131'-137'	S11V005354	Bulk Density	g/mL	2.10
C8398	B2FDJ7	131'-137'	S11V005355	Bulk Density	g/mL	2.12
C8400	B2FYP4	54'-56'	S11V005630	Bulk Density	g/mL	2.04
C8400	B2FYP5	54'-56'	S11V005631	Bulk Density	g/mL	1.98
C8400	B2FYP6	54'-56'	S11V005632	Bulk Density	g/mL	2.00
C8402	B2FDK2	47'-49'	S11V005387	Bulk Density	g/mL	2.08
C8402	B2FDK4	47'-49'	S11V005389	Bulk Density	g/mL	2.00
C8402	B2FDK6	107'-109'	S11V005405	Bulk Density	g/mL	2.25
C8402	B2FDK7	107'-109'	S11V005406	Bulk Density	g/mL	2.08
C8402	B2FDK8	107'-109'	S11V005407	Bulk Density	g/mL	1.96
C8402	B2FDL0	126'-128'	S11V005423	Bulk Density	g/mL	2.03
C8402	B2FDL1	126'-128'	S11V005424	Bulk Density	g/mL	2.15
C8402	B2FDL2	126'-128'	S11V005425	Bulk Density	g/mL	1.97
C8406	B2FXL6	52'-54'	S11V005513	Bulk Density	g/mL	2.18
C8406	B2FXL7	52'-54'	S11V005514	Bulk Density	g/mL	2.20
C8406	B2FXL8	52'-54'	S11V005515	Bulk Density	g/mL	2.09
C8406	B2FXL9	98'-100'	S11V005531	Bulk Density	g/mL	2.13
C8406	B2FXM0	98'-100'	S11V005532	Bulk Density	g/mL	2.13
C8406	B2FXM1	98'-100'	S11V005533	Bulk Density	g/mL	1.96
C8406	B2FXM3	130'-132'	S11V005550	Bulk Density	g/mL	2.17
C8408	B2H0Y2	47'-49'	S11V005708	Bulk Density	g/mL	1.88
C8408	B2H0Y3	47'-49'	S11V005709	Bulk Density	g/mL	1.93
C8408	B2H0Y7	94'-96'	S11V005747	Bulk Density	g/mL	2.08
C8408	B2H0Y9	94'-96'	S11V005749	Bulk Density	g/mL	2.15
C8408	B2H102	129'-131'	S11V005765	Bulk Density	g/mL	2.09
C8408	B2H103	129'-131'	S11V005766	Bulk Density	g/mL	2.08

Sample Group	Sample ID	Laboratory ID	Date Examined	Description
20110713	C8394 B2D430 43'-45'	S11V004599	7/20/2011	Tube is full, dry, msG muddy sandy gravel, poorly sorted, very fine to very coarse grain sand that is sub angluar to sub round, little or no clay, largest particles are 25mm, 25mm, 20mm, 17mm, 17mm, 15mm, excluded and were sub rounded, gravel grades from very fine to coarse grain gravel, sample color
20110713	C8394 B2D431 43'-45'	S11V004600	7/20/2011	Tube is full, dry msG muddy sandy gravel, poorly sorted, very fine grain sand to coarse gravel, little or no clay, largest particles 26mm, 23mm, 23mm, 21mm, 16mm, 14mm, 18mm, 17mm all excluded they were sub round to sub angular,
20110713	C8394 B2D432 43'-45'	S11V004601	7/20/2011	Tube is full, very slightly moist, msG muddy sandy gravel, poorly sorted, very fine grain sand to coarse grain gravel, largest particles 20mm, 18mm, 21mm, 19mm, 17mm, 14mm, all excluded, were sub angular to sub round, little or no
20110713	C8394 B2D3P0 43'-45'	S11V004602	7/20/2011	This was the rad screen, dry, mgS muddy gravely sand, from very fine grain sand to medium grain gravel, poorly sorted, little or no clay, largest particle 10mm, sub angular to sub round, sample color is 2.5Y6/1, acid reactivity is slight.
20110713	C8394 B2D434 88'-90'	S11V004617	7/20/2011	Tube is full, skins from liner walls, slight moist, (m)S slightly muddy sand, very fine gain sand to medium grain sand, well sorted, little or no clay, abundant mica, sample color 2.5Y5/2, acid reactivity slight to moderate.
20110713	C8394 B2D435 88'-90'	S11V004618	7/20/2011	Tube is full, skins from liner wall, slightly moist, mS muddy sand, well sorted, very fine grain to medium grain sand, little or no clay, non cohesive, abundant mica, sample color 2.5Y5/2, acid reactivity slight.
20110713	C8394 B2D436 88'-90'	S11V004619	7/20/2011	Tube is full, slightly moist, mS muddy sand, well sorted, very fine grain to medium grain sand, trace of very coarse grain sand, little or no clay, non cohesive, abundant mica, sample color 2.5Y5/3, acid reactivity slight.
20110713	C8394 B2D433 88'-90'	S11V004620	7/20/2011	slightly moist, mS muddy sand, well sorted, very fine grain to medium grain sand, little or no clay, non cohesive, abundant mica, sample color 2.5Y5/3, acid reactivity slight to moderate.
20110713	C8394 B2D438 126'-128'	S11V004635	7/20/2011	Tube is full, slightly moist, (m)S slightly muddy sand, well sorted, slightly cohesive, very fine grain to fine grain sand, abundant mica, sample color 2.5Y5/3, acid reactivity slight to moderate.
20110713	C8394 B2D439 126'-128'	S11V004636	7/20/2011	Tube is full, slightly moist, (m)S slightly muddy sand, slightly cohesive, abundant clasts break easily, well sorted, very fine to fine grain sand, abundant mica, sample color 2.5Y5/3, acid slight to moderate.
20110713	C8394 B2D440 126'-128'	S11V004637	7/20/2011	Tube is full, black ring around top of liner (organic?) appears to have a very low density it floats in water, took picture, slightly moist, (m)S slight muddy sand, well sorted, clasts that break easily, slightly cohesive, very fine to fine grain

Sample Group	Sample ID	Laboratory ID	Date Examined	Description
20110713	C8394 B2D437 126'-128'	S11V004638	7/20/2011	Slightly moist, mS muddy sand, well sorted, few clasts that break easily, very fine grain sand to coarse silt, little or no clay, abundant mica, sample color 2.5Y5/3, acid reactivity slight.
20111143	C8398 B2FDH7 46'-48'	S11V005317	8/9/2011	Tube is full, moist (g)mS slightly gravelly muddy sand, bottom 20mm is gS gravelly sand, top is mS muddy sand, cohesive plastic, center is S sand, interbeded gravel, sand and mud, predominately very fine to fine grain sand, larges particle is 30mm, was sub angular to sub round and excluded, trace mica, abundant silt, little or no clay, sample color 2.5Y5/2, acid reactivity moderate.
20111143	C8398 B2FDH8 46'-48'	S11V005318	8/9/2011	Sample B came in a jar, moist, mS muddy sand, well sorted, slightly cohesive, occasional clasts that are plastic, very fine to fine grain sand, abundant mica, trace of clay, sample color 2.5Y4/2, acid reactivity slight.
20111143	C8398 B2FDH9 46'-48'	S11V005319	8/9/2011	Tue is full, moist, mS muddy sand, well sorted, cohesive, abundant clasts that break easily, slightly plastic, very fine to fine grain sand, abundant mica, trace of clay, sample color 2.5Y5/2, acid reactivity slight to moderate. Breakdown done at WSCF. Used 1.M HCL for acid.
20111143	C8398 B2FDH6 46'-48'	S11V005320	8/9/2011	slightly moist, gS gravelly sand, well sorted, abundant clasts, slightly plastic, very fine grain sand to medium gravel, sub round to sub angular, largest particle 10mm is sub angular to sub round, abudant mica, minor amounts of silt, little or no clay, sample color 2.5Y5/2, acid reactivity slight to moderate.
20111143	C8398 B2FDJ1 86'-88'	S11V005335	8/9/2011	Tube is full, moist, sM sandy mud, black skins from liner wall, well sorted, cohesive, abundant clasts break easily, slightly plastic, very fine to fine grain sand, abundant mica, little or no clay, sample color 2.5Y5/3, acid reactivity slight to moderate.
20111143	C8398 B2FDJ2 86'-88'	S11V005336	8/9/2011	Tube is full, moist, sM sandy mud, black skins from liner walls, well sorted, slightly cohesive to cohesive, abundant clasts break easily, silt to fine grain sand, first 70mm from bottom then more sandy, abundant mica, little or no clay, sample color 2.5Y5/2, acid reactivity slight.
20111143	C8398 B2FDJ3 86'-88'	S11V005337	8/9/2011	Tube is full, slightly moist, S sand, well sorted, very fine to fine grain sand, abundant silt, abutndant mica, little or no clay, sample color 2.5Y6/2, acid reactivity very slight.
20111143	C8398 B2FDJ0 86'-88'	S11V005338	8/9/2011	Slightly moist, (m)S slightly muddy sand, Black skins, well sorted, slightly cohesive, trace of clasts break easily, very fine to fine grain sand, abundant mica, sample color 2.5Y6/3, acid reactivity slight to moderate.

Sample Group	Sample ID	Laboratory ID	Date Examined	Description
20111143	C8398 B2FDJ5 131'-137'	S11V005353	8/10/2011	Tube is full, slightly moist, mS muddy sand, black skins from liner walls, well sorted, abundant clasts break easily, non cohesive, very fine to fine grain sand, abundant mica, little or no clay, sample color 2.5Y5/2, acid reactivity slight to moderate.
20111143	C8398 B2FDJ6 131'-137'	S11V005354	8/10/2011	Tube is full, slightly moist to moist, top 30mm is sM sandy mud, remainder is mS muddy sand, sample adheres to liner wall, black skins from liner walls, well sorted, abundant clasts break easily, very fine to fine grain sand, abundant mica, little or no clay, sample color 2.5Y5/2, acid reactivity moderate.
20111143	C8398 B2FDJ7 131'-137'	S11V005355	8/10/2011	Tube is full, moist, (s)M slightly sandy mud, well sorted, cohesive, abundant clasts break easily, slightly plastic, very fine grain sand, predominately silt, little or no clay, sample color 2.5Y4/2, acid reactivity slight to moderate. Sample broke down at WSCF, 1M HCL acid was used.
20111143	C8398 B2FDJ4 131'-137'	S11V005356	8/10/2011	Slightly moist, (m)S slightly muddy sand, well sorted, very fine to fine grain sand, abundant mica, sample color 2.5Y6/2, acid reactivity slight. Sample broke down at WSCF, 1M HCL acid was used.
20111161	C8402 B2FDK2 47'-49'	S11V005387	9/18/2011	Tube is full, the first 105 mm from bottom is slightly moist, (m)S slightly muddy sand, well sorted, cohesive, abundant clasts, break easily, very fine to fine grain, little or no clay, abundant mica, sample color 2.5Y5/3, acid reactivity slight. the top 45mm is moist, mS muddy sand, well sorted, cohesive, slightly plastic, very
20111161	C8402 B2FDK3 47'-49'	S11V005388	9/18/2011	Top is full, bottom has a 4mm depression about 3/4 across the bottom, moist, mS muddy sand, well sorted, cohesive, abundant clasts, break easily, slightly plastic, very fine grain sand grading to silt, little or no clay, abundant mica,
20111161	C8402 B2FDK4 47'-49'	S11V005389	9/18/2011	Tube is full, slightly moist to moist, S sand, moderately well sorted, non cohesive, trace to minor clasts that are small and break easily, non plastic, medium to very fine grain sand, minor amounts of silt, abundant mica, sample
20111161	C8402 B2FDK1 47'-49'	S11V005390	9/18/2011	Slightly moist, (m)S slightly muddy sand, well sorted, very fine grain sand grading to silt, abundant mica, sample color 2.5Y5/3, acid reactivity slight.
20111161	C8402 B2FDK6 107'-109'	S11V005405	9/18/2011	Tube is full, black skins from liner walls, abundant clasts, break easily, slightly moist, Top 100mm (m)S slightly muddy sand, slightly cohesive, clasts break easily, very fine to fine grain sand grading to silt, little or no clay, abundant mica, acid reactivity slight. 50mm from bottom lithology change, sM sandy mud, clasts break easily, silt

Sample Group	Sample ID	Laboratory ID	Date Examined	Description
20111161	C8402 B2FDK7 107'-109'	S11V005406	9/18/2011	Tube is full, slightly moist, 40mm in from bottom there is a lithology change, first 40 mm is mS, muddy sand, black skins from liner walls, sand is fine to very fine, little or no clay, abundant clasts, break easily, abundant mica, Soil color 2.5Y5/3, slight reactivity to acid, above 40 mm, (m)S,slightly muddy sand, sand is fine to very fine grading to silt, little or no clay, slightly cohesive, abundant
20111161	C8402 B2FDK8 107'-109'	S11V005407	9/18/2011	Tube is full, slightly moist, (m)S slightly muddy sand, well sorted, fine to very fine grain sand grading to silt, little or no clay, abundant mica, sample color 2.5Y5/3, acid reactivity slight.
20111161	C8402 B2FDK5 107'-109'	S11V005408	9/18/2011	Slightly moist, sM sandy mud, well sorted, cohesive, minor amounts of clasts, break easily, non plastsic,silt grading to very fine to fine grain sand, little or no clay, trace mica, sample color 2.5Y5/3, acid reactivity slight.
20111161	C8402 B2FDL0 126'-128'	S11V005423	9/18/2011	Tube is full, abundant black skins from liner wall, moist to wet, (s)M slightly sandy mud, slightly cohesive, abundant clasts, break easily, slighlty plastic, silt with minor amounts of very fine sand, trace mica, sample color 2.5Y5/3, acid
20111161	C8402 B2FDL1 126'-128'	S11V005424	9/18/2011	Tube is full, trace of black skins, slightly moist to moist, (s)M slightly sandy mud, well sorted, slightly cohesive, minor clasts, break easily, non plastic, silt with minor amounts of very fine grain sand, little or no clay, trace mica, sample color
20111161	C8402 B2FDL2 126'-128'	S11V005425	9/18/2011	Tube is full, slightly moist to moist, mS muddy sand, well sorted, slightly cohesive, minor clasts, break easily, very fine grain sand, little or no clay, abundant mica, sample color 2.5Y5/3, acid reactivity slight to moderate.
20111161	C8402 B2FDK9 126'-128'	S11V005426	9/18/2011	Slightly moist, mS muddy sand, slightly cohesive, abundant clasts, break easily, non plastic, very fine sand grading to silt, little or no clay, trace mica, sample color 2.5Y5/3, acid reactivity slight to moderate.
20111250	C8406 B2FXL6 52'-54'	S11V005513	8/3/2011	Tube is full, slightly moist, (m)S slightly muddy sand, black skins form liner walls, well sorted, slightly cohesive, abundant clasts easily broken, non plastic, sample adheres to liner walls, very sticky, predominately very fine to fine grain sand, trace of medium grain sand, abundant mica, little or no clay, sample color 2.5Y5/3, acid reactivity slight.
20111250	C8406 B2FXL7 52'-54'	S11V005514	8/3/2011	Tube is full, slightly moist, (m)S slightly muddy sand, black skins form liner walls, well sorted, slightly cohesive, abundant clasts break easily, non plastic, sample adheres to liner walls, very sticky, predominately very fine to fine grain sand, abundant mica, little or no clay, sample color 2.5Y5/3, acid reactivity is slight to moderate.

Sample Group	Sample ID	Laboratory ID	Date Examined	Description
20111250	C8406 B2FXL8 52'-54'	S11V005515	8/3/2011	Tube is full, slightly moist (m)S slightly muddy sand, black skins from liner walls, well sorted, very slightly cohesive, minor clasts that break easily, predominately very fine to fine grain sand, abundant mica, little or no clay, sample color 2.5Y5/3, acid reactivity moderate.
20111250	C8406 B2FXL3 52'-54'	S11V005516	8/3/2011	Slightly moist, (m)S slightly muddy sand, well sorted, slightly cohesive, 2 clasts that broke easily, slightly plastic, abundant mica, little or no clay, sample color 2.5Y5/3, acid reactivity slight to moderate.
20111250	C8406 B2FXL9 98'-100'	S11V005531	8/3/2011	Tube is full, slightly moist to moist, mS muddy sand, black skins from liner walls, well sorted, cohesive, some clasts that break easily, very fine to fine grain sand, abundant mica, little or no clay, sample color 2.5Y5/3, acid reactivity slight to moderate.
20111250	C8406 B2FXM0 98'-100'	S11V005532	8/3/2011	Tube is full, slightly moist, mS muddy sand, black skins from liner walls, well sorted, slightly cohesive, abundant clasts easily broken, hackley fracture, non plastic, very fine to fine grain sand, abundant mica, little or no clay, sample color 2.5Y5/3, acid reactivity slight.
20111250	C8406 B2FXM1 98'-100'	S11V005533	8/3/2011	Tube is full, slightly moist, mS muddy sand, black skins from liner walls, well sorted, cohesive, abundant clasts easily broken, non plastic, very fine to fine grain sand, abundant mica, little or no clay, sample color 2.5Y5/3, acid reactivity slight to moderate.
20111250	C8406 B2FXL4 98'-100'	S11V005534	8/3/2011	Very slightly moist, (m)S slightly muddy sand, well sorted, very fine to fine grain sand, abundant mica, little or no clay, sample color 2.5Y6/2, acid reactivity very slight.
20111250	C8406 B2FXM2 130'-132'	S11V005549	8/3/2011	Bottom of liner is full, Top has a 4mm depression, slightly moist to moist, M mud, sample is very sticky, cohesive, abundant clasts break easily, hackley fracture, moderately plastic, minor amounts of very fine grain sand, trace mica, little or no clay, sample color 2.5Y4/2, acid reactivity moderate.
20111250	C8406 B2FXM3 130'-132'	S11V005550	8/3/2011	Tube is full, slightly moist, M mud, few black skins from liner walls, sample sticky, well sorted, cohesive, abundant clasts break easily, slightly plastic, hackley fracture, minor amounts of very fine grain sand, trace mica, little or no clay, sample color 2.5Y5/2, acid reactivity slight.
20111250	C8406 B2FXM4 130'-132'	S11V005551	8/3/2011	Top of liner was full, bottom had a 4mm depression, slightly moist, (m)S slightly muddy sand, well sorted, cohesive abundant clasts break easily, non plastic, very fine to fine grain sand, trace mica, little or no clay, sample color 2.5Y5/2, acid reactivity slight.

Sample Group	Sample ID	Laboratory ID	Date Examined	Description
20111250	C8406 B2FXL5 130'-132'	S11V005552	8/3/2011	Slightly moist, sM sandy mud, well sorted, very fine grain sand and silt, trace mica, little or no clay, sample color 2.5Y5/2, acid reactivity moderate to vigorous.
20111272	C8396 B2FYT5 55'-57'	S11V005569	8/9/2011	Tube is full, free liquid on both end caps, wet, (m)S slightly muddy sand, black skins from liner wall, well sorted, about 4mm from bottom there was mud, interbedded silt lens, very fine to fine grain sand, trace of medium grain sand, 4mm of top liner was M mud, 20mm of interbedded silt lenses, slightly cohesive, abundant mica, little or no clay, sample color 2.5Y5/2, acid reactivity
20111272	C8396 B2FYT6 55'-57'	S11V005570	8/9/2011	Tube is full, slightly moist to moist, (m)S slightly muddy sand, well sorted, slightly cohesive, very fine to fine grain sand, trace of medium grain sand, abundant mica, little or no clay, sample color 2.5Y5/2, acid reactivity slight to moderate.
20111272	C8396 B2FYT7 55'-57'	S11V005571	8/9/2011	Tube is full, free liquid on top end cap, moist, (m)S slightly muddy sand, trace black skins from liner wall, well sorted, slightly cohesive, very fine to fine grain sand, abundant mica, little or no clay, 2.5Y5/2, acid reactivity slight to moderate.
20111272	C8396 B2FYT4 55'-57'	S11V005572	8/9/2011	Slightly moist, (m)S slightly muddy sand, well sorted, very fine grain sand, abundant mica, little or no clay, sample color 2.5Y5/2, acid reactivity slight. Breakdown done at WSCF. Used 1.M HCL for acid.
20111272	C8396 B2FYV0 103'-105'	S11V005587	8/9/2011	Tube is full, slightly moist, (m)S slightly muddy sand, well sorted, very fine to medium grain sand, non cohesive, trace mica, little or no clay, sample color 2.5Y5/2, acid reactivity slight.
20111272	C8396 B2FYV1 103'-105'	S11V005588	8/9/2011	Top is full, bottom end of liner has a 3mm depression in the middle, moist, S sand, 80mm from bottom turned to fine grain, cohesive (s)M slightly muddy sand, bottom 70mm moderately well sorted, very fine to medium grain sand, little or no clay, sample color 2.5Y5/2, acid reactivity slight.
20111272	C8396 B2FYV2 103'-105'	S11V005589	8/9/2011	Tube is full, moist, (m)S slightly muddy sand, black skins from liner wall, well sorted, cohesive, abundant clasts break easily, non plastic, very fine grain sand, abundant mica, sample color 2.5Y5/2, acid reactivity slight. Breakdown done at WSCF. Used 1.M HCL for acid.
20111272	C8396 B2FYT9 103'-105'	S11V005590	8/9/2011	Slightly moist, S sand, well sorted, slightly salt and pepper texture, very fine to fine grain sand, abundant mica, little or no clay, sample color 2.5Y6/2, acid reactivity slight.

Sample Group	Sample ID	Laboratory ID	Date Examined	Description
20111272	C8396 B2FYV5 117'-119'	S11V005605	8/10/2011	Tube is full, very slightly moist, (m)S slightly muddy sand, one black skin near top of liner, well sorted, very fine to fine grain sand, abundant silt, trace mica, little or no clay, sample color 2.5Y6/2, acid reactivity slight.
20111272	C8396 B2FYV6 117'-119'	S11V005606	8/10/2011	Tube is full, slightly moist, S sand, grey skins at top of liner, well sorted, top 20mm has abundant clasts break easily, slightly cohesive, non plastic, very fine to fine grain sand, salt and pepper texture, minor amounts of silt, trace mica, sample color 2.5Y6/2, acid reactivity slight.
20111272	C8396 B2FYV7 117'-119'	S11V005607	8/10/2011	Tube is full, slightly moist to moist, (m)S slightly muddy sand, top 25mm is dryer than the rest of liner, well sorted, slight salt and pepper texture, very fine to fine grain sand, trace mica, littl or no clay, sample color 2.5Y6/2, acid reactivity slight.
20111272	C8396 B2FYV4 117'-119'	S11V005608	8/10/2011	Dry, mS muddy sand, well sorted, very fine to fine grain sand, trace mica, little or no clay, sample color 2.5Y7/1, acid reactivity slight. Sample broke down at WSCF, 1M HCL acid was used.
20111290	C8400 B2FYP4 54'-56'	S11V005630	8/17/2011	Tube is full, slightly moist, S sand, Black skins from liner wall, well sorted, slighly cohesive, very fine to fine grain sand, abundant mica, minor amounts of silt, sample color 2.5Y5/2, acid reactivity slight.
20111290	C8400 B2FYP5 54'-56'	S11V005631	8/17/2011	Tube is full, slightly moist to moist, S sand, black skins from liner wall, well sorted, slightly cohesive, very fine to fine grain sand, abundant mica, minor amounts of silt, sample color 2.5Y5/2, acid reactivity slight.
20111290	C8400 B2FYP6 54'-56'	S11V005632	8/17/2011	Tube is full, slightly moist to moist, S sand, black skins from liner wall, well sorted, slightly cohesive, very fine to fine grain sand, trace mica, abundant silt, sample color 2.5Y5/2, acid reactivity slight. Top 40mm of liner was (m)S muddy sand, had abundant clasts, break easily, acid reactivity was slight to moderate.
20111290	C8400 B2FYP3 54'-56'	S11V005633	8/17/2011	Very slightly moist, (m)S slightly muddy sand, well sorted, clasts break easily, very fine to fine grain sand, trace mica, little or no clay, sample color 2.5Y6/2, acid reactivity slight to moderate.

Sample Group	Sample ID	Laboratory ID	Date Examined	Description
20111290	C8400 B2FYP9 93'-95'	S11V005648	8/17/2011	Top of liner had a 22mm depression, bottom of liner full. Top description: moist, sM sandy mud, trace of black skins from liner walls, sticky, well sorted, cohesive, abundant clasts, slightly plastic, hackley fractures, very fine to fine grain sand, abundant mica, sample color 2.5Y4/2, acid reactivity moderate. Bottom description: 30mm into bottom of liner there was a gap (air pocket) of 15mm back to the top material, black skins from liner walls, slightly moist, (m)S slightly muddy sand, well sorted, slightly cohesive, very fine to fine grain sand,
20111290	C8400 B2FYR0 93'-95'	S11V005649	8/17/2011	Sample in Jar, moist, sM sandy mud, discoloration darker layer on outer skin walls, well sorted, cohesive, clasts break easily, slightly plastic, (found one 2mm grain that broke and is white (caliche?) it didn't react to acid) abundant mica, sample color 2.5Y5/3, acid reactivity moderate.
20111290	C8400 B2FYR1 93'-95'	S11V005650	8/17/2011	Sample in jar, moist, sM sandy mud, well sorted, cohesive, abundant clasts break easily, very slightly plastic, very fine to fine grain sand, abundant mica, sample color 2.5Y5/3, acid reactivity moderate.
20111290	C8400 B2FYP8 93'-95'	S11V005651	8/17/2011	Slightly moist, mS muddy sand, well sorted, very fine to fine grain sand, abundant mica, little or no clay, sample color 2.5Y5/2, acid reactivity moderate. Sample was broken down at WSCF, 1M HCL acid was used.
20111290	C8400 B2FYR4 126'-128'	S11V005684	8/18/2011	Tube is full, slight discoloration of the liner walls, SM/M slightly moist to moist, (s)M slightly sandy mud, slightly cohesive, abundant clasts, breaks easily, slightly plastic,very fine to fine grain sand. 2.5y-4/2, . Acid Reactivity: moderate
20111290	C8400 B2FYR5 126'-128'	S11V005685	8/18/2011	Sample received in a jar, SM slightly moist, mS muddy sand, very fine to fine grain sand, slightly cohesive, minor amounts of clasts, break easily, non plastic.well sorted, little or no clay. Abundant mica, 2.5y-5/3, Acid Reactivity:
20111290	C8400 B2FYR6 126'-128'	S11V005686	8/18/2011	Tube has 23mm gap from top of tube, bottom is full. SM slightly moist, mS muddy sand, very fine to fine grain sand. slightly cohesive, minor amounts of clasts, break easily, non plastic. well sorted, little or no clay. Abundant mica,
20111290	C8400 B2FYR3 126'-128'	S11V005687	8/18/2011	SM slightly moist, mS muddy sand, very fine to fine grain sand, well sorted, little or no clay. slightly cohesive, minor amounts of clasts, break easily, non plastic. Abundant mica, 2.5y-5/3. Acid Reactivity: moderate
20111300	C8408 B2H0Y2 47'-49'	S11V005708	9/8/2011	Tube is full, slight depression on bottom, slight overfill on top, slightly moist, mS muddy sand, well sorted, uniform color and texture, cohesive, clasts break easily, very fine sand with coarse silt, little or no clay, <5% medium to coarse sand, largest particle <1mm, trace mica, sample color 2.5Y4/3, acid reactivity

Sample Group	Sample ID	Laboratory ID	Date Examined	Description
20111300	C8408 B2H0Y3 47'-49'	S11V005709	9/8/2011	Tube is full, slight depression on bottom, slight overfill on top, slightly moist, sM sandy mud, well sorted, uniform color texture, cohesive, clasts break easily, slightly plastic, mostly very fine sand with coarse silt, trace clay, largest particle <1mm, trace mica, sample color 2.5Y3/3, acid reactivity very slight.
20111300	C8408 B2H0Y4 47'-49'	S11V005710	9/8/2011	Top is full, Bottom has 2mm depression, slightly moist, sM sandy mud, slightly muddier at the bottom of liner, well sorted, uniform color texture, slighty cohesive, clasts break easily, very fine grain sand with coarse silt, trace clay, largest particle <1mm, trace mica, sample color 2.5Y4/2, acid reactivity very
20111300	C8408 B2H0Y1 47'-49'	S11V005711	9/8/2011	Very slightly moist, mS muddy sand, well sorted, uniform color and texture, very slightly cohesive, clasts break easily, very fine sand with coarse silt, largest particle <1mm, trace mica, sample color 2.5Y5/3, acid reactivity very slight. Sample broke down at WSCF, acid used was 1 M HCL.
20111300	C8408 B2H0Y7 94'-96'	S11V005747	9/8/2011	Tube is full, sample slightly dark along liner walls, slightly moist, (s)M slightly sandy mud, well sorted, uniform color texture, cohesive, clasts break easily, slightly plastic, mix of very fine sand, silt, clay, mud is approximately 1/2 clay and 1/2 silt, largest particle <1mm, trace mica, sample color 2.5Y5/3, acid reactivity is slight to moderate.
20111300	C8408 B2H0Y8 94'-96'	S11V005748	9/8/2011	Tube is over full, approximately a 2mm bulge at bottom, slightly moist, (s)M slightly sandy mud, well sorted, uniform color and texture, cohesive clasts that break easily, non-plastic, mix of very fine ssand, silt, clay, mud approximately 1/2 clay, 1/2 silt, larges particle <1mm, trace mica, sample color 2.5Y5/3, acid reactivity moderate.
20111300	C8408 B2H0Y9 94'-96'	S11V005749	9/8/2011	Tube is full, slight bulge at bottom that matches slight gap at top, dark skins from liner walls, slightly moist, (s)M slightly sandy mud, moderately well sorted, uniform color and texture, slightly cohesive clasts, break easily, some clasts appear cemented and break with some difficulty, hard clasts are cemented with cacite, non plastic, mix of very fine sand, silt, clay, mud approximately 1/2 clay and 1/2 silt, largest particle <1mm, trace mica, sample color 2.5Y5/3, acid
20111300	C8408 B2H0Y6 94'-96'	S11V005750	9/8/2011	Very slightly moist, sM sandy mud, well sorted, uniform color and texture, very slightly cohesive, clasts break easily some with moderate pressure, mix of very fine sand, silt, and trace of clay, irregular chert fragment, largest particle 3mm, trace mica, sample color 2.5Y6/3, acid reactivity slight to moderate.

Sample Group	Sample ID	Laboratory ID	Date Examined	Description
20111300	C8408 B2H102 129'-131'	S11V005765	9/8/2011	Tube is full, very slightly moist, (s)M slightly sandy mud, well sorted, uniform color and texture, slightly cohesive, clasts break easily, some clasts show slight plasticity, mix of very fine sand, silt and minor clay, largest particle <1mm, trace mica, sample color 2.5Y5/3, acid reactivity moderate.
20111300	C8408 B2H103 129'-131'	S11V005766	9/8/2011	Tube is full, very slightly moist, (s)M slightly sandy mud, well sorted, uniform color and texture, clasts are slightly cohesive, break easily, non plastic, predominately silt with minor very fine sand and minor clay, largest particle <1mm, trace mica, sample color 2.5Y5/3, acid reactivity slight to moderate.
20111300	C8408 B2H104 129'-131'	S11V005767	9/8/2011	Top is full, bottom hass 3mm deep irregular depression, very slightly moist, (s)M slightly sandy mud, well sorted, uniform color texture, clasts are cohesive, break easily, predominately silt with trace sand and trace clay, largest particle <1mm, trace mica, sample color 2.5Y5/3, acid reactivity moderate.
20111300	C8408 B2H101 129'-131'	S11V005768	9/8/2011	Very slightly moist, (s)M slightly sandy mud, well sorted, uniform color texture, cohesive clasts, break easily, very slightly plastic, mix of mostly silt, minor clay and very fine sand, largest particle <1mm, trace mica, sample color 2.5Y5/3, acid reactivity moderate.

Attachment 8

CORRESPONDENCE

VADOSE SAMPLING
CHANGE NOTICE

Document: RPP-PLAN-49132, Rev 0 **Change Number:** S-001 **ECN to FSAP Required?** Y / N

Requestor: Cindy Tabor **Date:** 8/29/11

Original Requirement: Sections 5.1.1 and 5.1.2 (Equipment Rinsate Blanks and Field Blanks) Frequency

a. It is anticipated that two equipment rinsate blanks will be collected and analyzed for this FSAP since at least 21 samples are expected to be collected (7 locations with 3 sample depths at each location).

b. It is anticipated that two field blanks will be collected and analyzed for this FSAP since at least 21 samples are expected to be collected (7 locations with 3 sample depths at each location).

Samples Impacted:
Quality control samples – 1 field blank and 1 equipment rinsate blank.

Proposed Change:
Reduce the number of field blanks (from 2 to 1) and reduce the number of equipment rinsate blanks (from 2 to 1).

Reason for Change:
Information from previous quality control samples does not indicate that additional samples are necessary (i.e., no more than 1 should be needed). It is not expected that the quality of this project will be impacted since quality control samples - 1 field blank and 1 equipment rinsate blank – have been collected.

Note that the laboratory has experienced electrical outages during this sampling campaign. This reduction is expected to assist the laboratory in focusing on the project's primary objective of soil sample analyses.

Date Change Effective: 8/16/11

Schedule Impact:
None

Authorization:

Vadose Zone Characterization Task Lead (Print/Sign): CL Tabor **Date:** 9/14/11

Vadose Zone Primary Laboratory Contact (Print/Sign): HL Anastos **Date:** 9/14/11

Vadose Zone Quality Assurance (Print/Sign): KJ Dunbar **Date:** 9-14-11

222-S Project Coordinator (Print/Sign): SG McKinney **Date:** 9-15-11

ATL Project Coordinator (Print/Sign): GP Ritenour **Date:** 9-14-11

Other (Optional, Print/Sign) [Sample Coordinator]: AM Templeton **Date:** 9/14/11

VADOSE SAMPLING
CHANGE NOTICE

Document: RPP-PLAN-49132, Rev 0 **Change Number:** WMA_S-002 **ECN to FSAP Required?** Y / N

Requestor: Cindy Tabor **Date:** 8/29/11

Original Requirement:

a. Table 1-1 and Figure 1-1 show three potential locations for C8401(A, B, or C)
b. Table 1-1 and Figure 1-1 identify location C8403 to be logged and its corresponding location (C8404) to be sampled

Samples Impacted:

a. No impact
b. No samples were collected from location C8404 – three attempts were made to push at this location and refusal was met each time at approximately 40 feet below ground surface

Proposed Change:
C8404 will not be sampled (due to refusal). C8401A and C8401C will be sampled for a total of 7 sample locations. C8401A = C8401 (sample hole C8402) and C8401C = C8407 (sample hole C8408). See attached Figure.

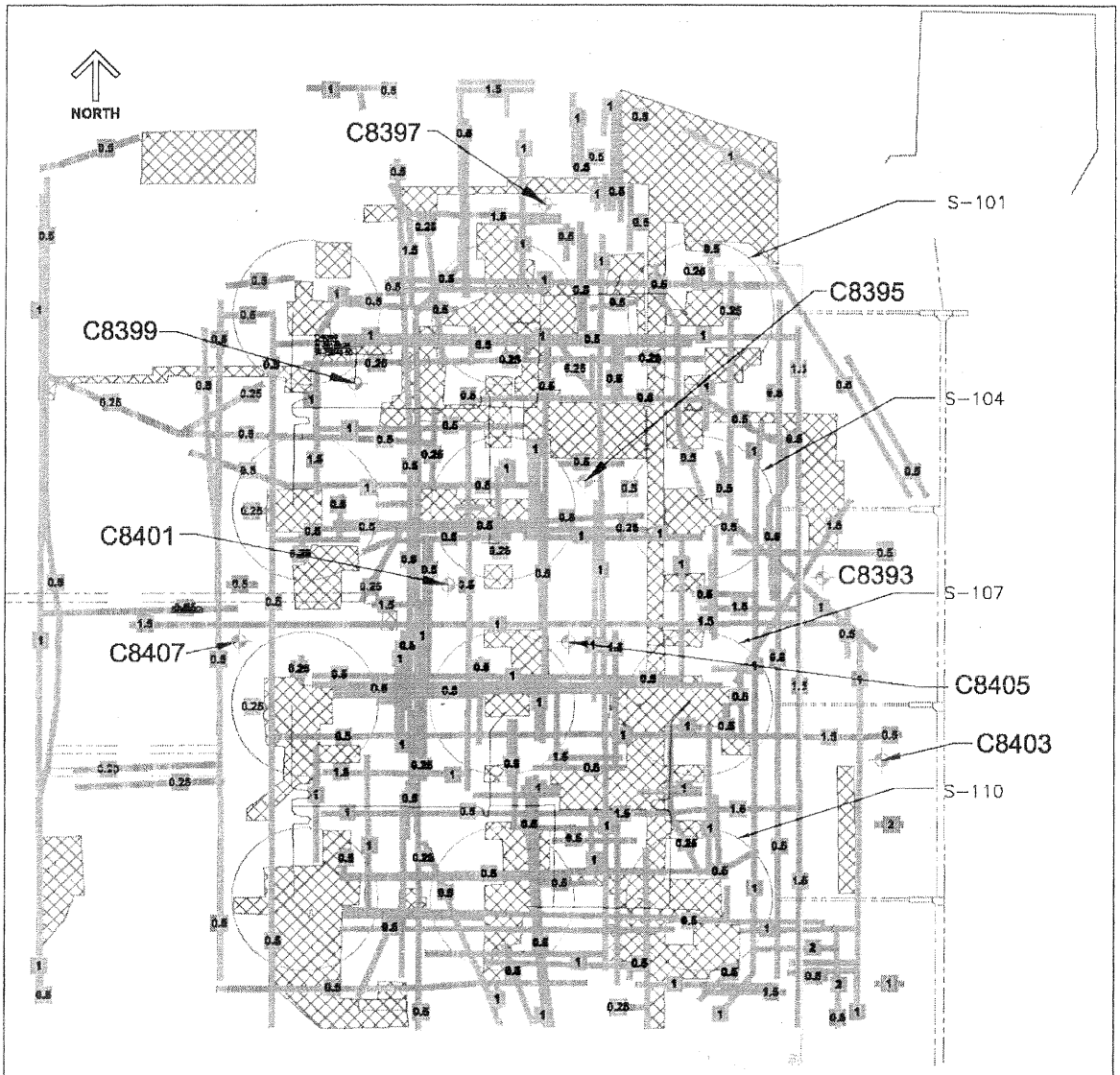
Note: A total of 8 locations will be logged (C8403 was pushed and logged – although it was not possible to sample C8404).

Reason for Change:
See attached Meeting Notes from 8/16/11.

Date Change Effective: 8/16/11
Schedule Impact:
None

Authorization:

Vadose Zone Characterization Task Lead (Print/Sign): CL Tabor	**Date:** 9/14/11
Vadose Zone Primary Laboratory Contact (Print/Sign): HL Anastos	**Date:** 9/14/11
Vadose Zone Quality Assurance (Print/Sign): KJ Dunbar	**Date:** 9-14-11
222-S Project Coordinator (Print/Sign): SG McKinney	**Date:** 9-15-11
ATL Project Coordinator (Print/Sign): GP Ritenour	**Date:** 9-14-11
Other (Optional, Print/Sign) [Sample Coordinator]: AM Templeton	**Date:** 9/14/11



241S GPR SURVEY

MAP LEGEND	
GPR PICK CONFIDENCE 1	AS BUILT CAD MAP
GPR PICK CONFIDENCE 2	AS BUILT UTILITIES
GPR PICK CONFIDENCE 3	AS BUILT TANKS
	GPR COVERAGE
GRID BOUNDARY	LIMITED OR NO COVERAGE AREA
	INTERPRETED LINEAR ANOMALY (DEPTH [METERS] POINTED IN SCH)

GENERAL NOTES:

1. SURVEY MONUMENT AND TANK GRID SHOWN IN NAD83 WASHINGTON STATE PLANE SOUTH COORDINATES. (METERS)

NORTH

S – FARM DRY WELLS DIRECT PUSH COORDINATE TABLE			
DP No.	WELL ID NUMBER	NORTHING	EASTING
1	C8393	N 134461.04	E 566854.48
2	C8395	N 134476.25	E 566817.09
3	C8397	N 134520.13	E 566810.53
4	C8399	N 134491.73	E 566780.68
5	C8401	N 134459.65	E 566795.56
6	C8403	N 134431.87	E 566864.06
7	C8405	N 134450.89	E 566814.85
8	C8407	N 134450.89	E 566762.80

GPR LEGEND

- Average depth to top of feature(s)
- Linear anomaly (Utility/pipeline?)
- Subsurface encasement
- Monitoring well
- Recommended probe hole location
- Surface structure

S-FARM
GPR DATA
PROBE HOLE LOCATION
(METERS)

Meeting Notes: S Farm Final Sample Location Selection Meeting for C8401 and C8407 (replacing C8403)

Date: August 16, 2011

Attendees: Harold Sydnor, Mike Barnes, Kent Reynolds, Cindy Tabor, Virginia Rohay, Dave Myers, Nigel Crook, Brian Cubbage, Dan Glaser, Jim Field
Note: Joe Caggiano did not attend the meeting; however, path forward was discussed with him verbally.

Objective:
To determine C8401 location (A, B, or C) and replacement location for C8403

Background:
1) Location C8403 was pushed to an approximate depth of 150 ft bgs. Location was logged for moisture and gamma. Three unsuccessful attempts were made to push sampling location C8404 (refusal met at an approximate depth of 40 ft bgs).
2) Sampling Plan RPP-PLAN-49132, Field Sampling and Analysis Plan for Soil Samples in Support of an Interim Barrier at S Farm indicated that C8401/C8402 (A, B, or C) will be selected based on quick turn results and field conditions.

Information provided:
- Location map
- Quick-turn analytical data (C8394, C8396, C8398, and C8406)
- Table from plan that identifies "Reason for Sampling with Respect to Barrier" for each location

Options Discussed:
1) Replace sample location C8403 – keep to the east side and go North or South of Location
2) Replace C8403 – pick one of the C8401 options (A, B, or C)

Decision, Unanimous:
- Do not continue direct push on east side of farm for the following reasons:
  - C8394 [other east side location] quick turnaround analytical results indicated very low Tc-99 concentrations (detectable Tc-99 results below 1 pCi/g) and Nitrate results (below 20 μg/g)
  - Logging results from C8403 showed high moisture contents at depth; however, high moisture results were also shown in other S Farm direct push locations (e.g., C8397 – north of S-102 Tank)
  - Concern of damaging direct push rigs. Several failed attempts had been made at this location with different rigs.
- Use 2 of the C8401 locations for S Farm investigation (for a Total of 7 sampling locations)
  - C8401A = C8401 (sample hole C8402)
  - C8401C = C8407 (sample hole C8408)

From: Anastos, Heather L
To: Ritenour, Gerald P
Cc: Johnson, Jo M; McKinney, Steve G; Hansen, Daniel R
Subject: RE: Sn-126 analysis for S-SX Barrier
Date: Tuesday, March 29, 2011 7:51:58 AM

Can the data be reported with an "E" flag? In the future, it would be preferable to reanalyze…but I think we can accept this with the flag (I'll also flag the data as "suspect"…)

Heather Anastos
Chemist, Closure & Corrective Measures
(509) 373-2616
1200 Jadwin/301

washington river protection solutions
contractor to the United States Department of Energy

From: Ritenour, Gerald P
Sent: Monday, March 28, 2011 2:30 PM
To: Anastos, Heather L
Cc: Johnson, Jo M; McKinney, Steve G; Hansen, Daniel R
Subject: Sn-126 analysis for S-SX Barrier

Heather,
In reviewing the Sn-126 analysis I have found, as expected that the Sn-117 spikes have failed low. In early 2011 we determined that using additional HCL improves the recovery. However the addition of HCl increases the Tn-126 result, which could be caused by an interference. The collision cell ICP/MS instrument is not yet ready for Sn-126/semi-quant analysis. So currently we can only mitigate the potential interference by diluting. Should these samples be reanalyzed now or just reported "as is" with narration.
Thanks, JR

Core Number	Customer Sample ID	Sample Depth	SAMPLE_R	A	ANALYTE	UNITS	LSC %R	BLANK	RESULT	DUP	RPD	MS %R	MDL	Q Flag
C7738	B24HH9	45-47	S10V000500	A	Tin-117	ug/g	105	<1.00E-03	0.0176	0.0166	5.86	**34.2**	9.96E-03	
C7738	B24HH9	45-47	S10V000500	A	Tin-126	ug/g	n/a	<2.00E-05	2.67E-04	2.37E-04	12.0	n/a	1.99E-04	
C7738	B24HJ0	62-64	S10V000528	A	Tin-117	ug/g	105	<1.00E-03	0.0157	n/a	n/a	n/a	9.97E-03	
C7738	B24HJ0	62-64	S10V000528	A	Tin-126	ug/g	n/a	<2.00E-05	<1.99E-04	n/a	n/a	n/a	1.99E-04	U
C7738	B24KV1	96-98	S10V000539	A	Tin-117	ug/g	105	<1.00E-03	0.0167	n/a	n/a	n/a	9.88E-03	
C7738	B24KV1	96-98	S10V000539	A	Tin-126	ug/g	n/a	<2.00E-05	2.93E-04	n/a	n/a	n/a	1.98E-04	
C7738	B24KV2	127-129	S10V000555	A	Tin-117	ug/g	105	<1.00E-03	0.0177	n/a	n/a	n/a	9.94E-03	
C7738	B24KV2	127-129	S10V000555	A	Tin-126	ug/g	n/a	<2.00E-05	4.37E-04	n/a	n/a	n/a	1.99E-04	
C7738	B24KV3	159-161	S10V000561	A	Tin-117	ug/g	105	<1.00E-03	0.0120	n/a	n/a	n/a	9.99E-03	
C7738	B24KV3	159-161	S10V000561	A	Tin-126	ug/g	n/a	<2.00E-05	3.00E-04	n/a	n/a	n/a	2.00E-04	
C7742	B24YW0	40-42	S10V000749	A	Tin-117	ug/g	105	<1.00E-03	0.0231	n/a	n/a	n/a	0.0100	
C7742	B24YW0	40-42	S10V000749	A	Tin-126	ug/g	n/a	<2.00E-05	2.43E-04	n/a	n/a	n/a	2.01E-04	
C7742	B24YW1	96-98	S10V000750	A	Tin-117	ug/g	105	<1.00E-03	0.0136	n/a	n/a	n/a	9.96E-03	
C7742	B24YW1	96-98	S10V000750	A	Tin-126	ug/g	n/a	<2.00E-05	2.65E-04	n/a	n/a	n/a	1.99E-04	
C7740	B24YW4	40-42	S10V000802	A	Tin-117	ug/g	100	<1.10E-03	0.0129	0.0125	3.20	**47.2**	0.0120	N
C7740	B24YW4	40-42	S10V000802	A	Tin-126	ug/g	n/a	<2.00E-05	3.24E-04	3.40E-04	4.92	n/a	2.19E-04	
C7740	B24YW5	94-96	S10V000803	A	Tin-117	ug/g	100	<1.10E-03	<0.0114	n/a	n/a	n/a	0.0114	UN
C7740	B24YW5	94-96	S10V000803	A	Tin-126	ug/g	n/a	<2.00E-05	7.36E-04	n/a	n/a	n/a	2.07E-04	
C7742	B24YW6	135-137	S10V000804	A	Tin-117	ug/g	100	<1.10E-03	0.0337	n/a	n/a	n/a	0.0116	N
C7742	B24YW6	135-137	S10V000804	A	Tin-126	ug/g	n/a	<2.00E-05	1.02E-03	n/a	n/a	n/a	2.10E-04	
C7746	B24YX2	44-46	S10V001027	A	Tin-117	ug/g	104	<5.00E-04	0.0132	0.0133	1.31	**35.4**	4.98E-03	
C7746	B24YX2	44-46	S10V001027	A	Tin-126	ug/g	n/a	<1.00E-05	3.66E-04	3.81E-04	4.02	n/a	9.96E-05	
C7746	B24YX3	94-96	S10V001042	A	Tin-117	ug/g	104	<5.00E-04	0.0126	n/a	n/a	n/a	4.94E-03	
C7746	B24YX3	94-96	S10V001042	A	Tin-126	ug/g	n/a	<1.00E-05	5.49E-04	n/a	n/a	n/a	9.88E-05	
C7746	B24YX4	144-146	S10V001057	A	Tin-117	ug/g	104	<5.00E-04	0.0102	n/a	n/a	n/a	4.98E-03	
C7746	B24YX4	144-146	S10V001057	A	Tin-126	ug/g	n/a	<1.00E-05	1.10E-03	n/a	n/a	n/a	9.97E-05	
C7744	B24YW8	37-39	S10V001083	A	Tin-117	ug/g	102	<5.00E-04	0.0174	0.0108	**46.9**	**22.9**	4.95E-03	
C7744	B24YW8	37-39	S10V001083	A	Tin-126	ug/g	n/a	<1.00E-05	2.33E-04	2.16E-04	7.67	n/a	9.89E-05	
C7744	B24YW9	96-98	S10V001098	A	Tin-117	ug/g	102	<5.00E-04	0.0164	n/a	n/a	n/a	5.01E-03	
C7744	B24YW9	96-98	S10V001098	A	Tin-126	ug/g	n/a	<1.00E-05	5.77E-04	n/a	n/a	n/a	1.00E-04	
C7744	B24YX0	127-129	S10V001113	A	Tin-117	ug/g	102	<5.00E-04	0.0166	n/a	n/a	n/a	4.99E-03	
C7744	B24YX0	127-129	S10V001113	A	Tin-126	ug/g	n/a	<1.00E-05	7.50E-04	n/a	n/a	n/a	9.98E-05	

From:	Ritenour, Gerald P
To:	McKinney, Steve G
Cc:	Prilucik, John R; Johnson, Jo M; Anastos, Heather L; Edwards, Cheryl L; Steele, Richard T; Menjivar, Carolina S
Subject:	RE: Vadose log in
Date:	Monday, June 27, 2011 7:22:34 AM

Steve,
That is fine. However, up until now most composites, subsample, and digestions have carried the sample receipt date of the earliest liner and we are not planning on going back changing them at this time.

Gerald "JR" Ritenour
Project Manager
ATL Analytical Operations
Advanced Technologies and Laboratories International, Inc.
Contractor to the Office of River Protection
U.S. Department of Energy
(509) 372-2742 office
(509) 438-8837 cell
gerald_p_ritenour@rl.gov

From: McKinney, Steve G
Sent: Thursday, June 23, 2011 4:37 PM
To: Ritenour, Gerald P
Cc: Prilucik, John R; Johnson, Jo M; Anastos, Heather L
Subject: Vadose log in

Spoke with John and Heather,

In order to be consistent with instruction worked out between APD and ATL we would log Vadose samples in the following way:

Liners and shoes would get the sampling date and sample receipt date off the chain of custody;
All subsamples of individual liners or shoes would carry the associated sample date/receipt date of the parent liner or shoe;
The composite sample would have the earliest sample date from any liner or shoe included as its sample date;
The composite sample receipt date would be the date the composite was made;
All composite subsamples would carry the sample date/receipt date of the composite.

Work?

Thanks.

From:	McKinney, Steve G
To:	Ritenour, Gerald P; Menjivar, Carolina S
Subject:	FW: S Farm Matrix - Full and Final (as of 8.9.11)
Date:	Thursday, August 11, 2011 8:51:12 AM
Attachments:	S Farm matrix Full 8.9.11.xlsx

..so we need to log C8408 and C8400…

From: Anastos, Heather L
Sent: Wednesday, August 10, 2011 4:04 PM
To: McKinney, Steve G; Johnson, Jo M
Cc: Tabor, Cynthia L
Subject: FW: S Farm Matrix - Full and Final (as of 8.9.11)

Attached matrix includes the new location for S Farm. We do not intend to sample C8404, that borehole will not be sampled – we hit refusal three times.

Heather Anastos
Chemist, Closure & Corrective Measures
(509) 373-2616
2440 Stevens/Rm 1516

washington river protection solutions

contractor to the United States Department of Energy

From: Berlin, Penelope C
Sent: Wednesday, August 10, 2011 3:57 PM
To: Anastos, Heather L
Subject: S Farm Matrix - Full and Final (as of 8.9.11)

From:	Menjivar, Carolina S
To:	McKinney, Steve G
Cc:	Garcia, Melissa M; Bushaw, Thomas H; Ritenour, Gerald P
Subject:	S Farm Barrier 2011 - C8402 - Quick Turn Results - Tc-99 & NO3 (Sample Group # 20111161)
Date:	Wednesday, September 21, 2011 8:37:00 AM
Attachments:	Vadose Quick Turn Data report -Tc-99-C8402.doc 110920 S Farm Barrier NO3 Quick Turn Data Report-C8402.xls

---

Steve,

The attached files contain analytical results for Tc-99 and nitrate for the vadose water digest from core C8402-sample group 20111161. Please let me know if you have any questions or need additional information.

Thanks,

Carolina S. Menjívar
Project Manager
Advanced Technologies and Laboratories International, Inc.
Contractor to the Office of River Protection
U.S. Department of Energy
2704S/31B/200W
509-372-2525

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From: Anastos, Heather L
To: Menjivar, Carolina S
Cc: Ritenour, Gerald P; McKinney, Steve G
Subject: RE: S Farm Barrier 2011- IC Anions -QC Failures
Date: Monday, September 26, 2011 3:42:20 PM

We will accept with explanation in narrative.

Heather Anastos
Chemist, Closure & Corrective Measures
(509) 373-2616
2440 Stevens/Rm 1516

washington river protection solutions
contractor to the United States Department of Energy

From: Menjivar, Carolina S
Sent: Monday, September 26, 2011 11:27 AM
To: Anastos, Heather L
Cc: Ritenour, Gerald P; McKinney, Steve G
Subject: S Farm Barrier 2011- IC Anions -QC Failures

Heather,
In analytical batch # 29918, the fluoride, oxalate, and phosphate % recoveries for the predigestion spikes (MS) were below the QC acceptance requirement. Please see table below.
Should we re-run? or would you accept these results with an explanation in the narrative? Please advise.

Customer Sample ID	Core Number	Sample Depth	Laboratory Sample ID	A	Analyte	Result Unit	LCS	Blank	Result	Duplicate	RPD	MS	MDL	Qual Flag
B2D441	C8394	43'-45'	S11V004608	W	Fluoride	ug/g	94.5	<1.61E-03	2.03	2.66	27.0	74.4	0.0154	
B2D441	C8394	43'-45'	S11V004608	W	Glycolate	ug/g	93.2	<9.37E-03	<0.0897	<0.0900	n/a	88.4	0.0897	U
B2D441	C8394	43'-45'	S11V004608	W	Acetate	ug/g	97.3	<6.04E-03	0.365	0.402	9.79	95.1	0.0578	B
B2D441	C8394	43'-45'	S11V004608	W	Formate	ug/g	94.2	<4.67E-03	0.259	0.300	14.7	92.4	0.0447	B
B2D441	C8394	43'-45'	S11V004608	W	Chloride	ug/g	100	<9.98E-03	3.04	3.77	21.6	104	0.0956	
B2D441	C8394	43'-45'	S11V004608	W	Nitrite	ug/g	98.3	<0.0192	<0.184	0.708	118	97.8	0.184	U
B2D441	C8394	43'-45'	S11V004608	W	Sulfate	ug/g	101	<0.0187	18.6	23.0	21.3	89.3	0.179	
B2D441	C8394	43'-45'	S11V004608	W	Oxalate	ug/g	101	<0.0231	<0.221	0.491	75.7	50.0	0.221	U
B2D441	C8394	43'-45'	S11V004608	W	Bromide	ug/g	93.4	<0.0580	<0.555	<0.557	n/a	95.2	0.555	U
B2D441	C8394	43'-45'	S11V004608	W	Nitrate	ug/g	102	<0.0208	3.36	3.77	11.4	102	0.199	
B2D441	C8394	43'-45'	S11V004608	W	Phosphate	ug/g	101	<0.0167	0.869	1.05	19.1	35.3	0.160	B

If you have any questions or need additional information, please let me know.

Thanks,

Carolina S. Menjívar
Project Manager
Advanced Technologies and Laboratories International, Inc.
Contractor to the Office of River Protection
U.S. Department of Energy
2704S/31B/200W
509-372-2525

From: McKinney, Steve G
To: Menjivar, Carolina S
Subject: FW: S Farm Barrier 2011 - Ammonium Results
Date: Tuesday, October 04, 2011 8:02:16 AM

From: Anastos, Heather L
Sent: Tuesday, October 04, 2011 8:00 AM
To: McKinney, Steve G
Subject: RE: S Farm Barrier 2011 - Ammonium Results

I agree – accept the data with appropriate flags.

Heather Anastos
Chemist, Closure & Corrective Measures
(509) 373-2616
2440 Stevens/Rm 1516

washington river protection solutions
contractor to the United States Department of Energy

From: McKinney, Steve G
Sent: Tuesday, October 04, 2011 7:50 AM
To: Anastos, Heather L
Subject: FW: S Farm Barrier 2011 - Ammonium Results

..I'm inclined to accept the data…

From: Menjivar, Carolina S
Sent: Monday, October 03, 2011 2:48 PM
To: McKinney, Steve G
Subject: S Farm Barrier 2011 - Ammonium Results

Steve,
Please take a look of the results for ammonium for the samples listed below. Two of the samples, S11V005758 and S11005776, have positive results . However, ammonia was also detected in the prep blank at a concentration level above the EQL. **I would like to know if we can report these results with a flag to indicate the blank contamination or should we repeat the prep and analyze the samples again? Please advise.**

Note: When the composites were received from WSCF (C8408), the hold time for NH4 (7 days to distillation) have already expired.

Customer Sample ID	Sample Portion	SAMPLE_R	A	CAS #	ANALYTE	RESULT_UNIT	STANDARD	BLANK	RESULT	Det Limit	QUALIFIER
B2H106	Composite	S11V005720	S	14798-03-9	Ammonium	ug/g	99.0	1.18	<0.475	0.475	U
B2H107	Composite	S11V005758	S	14798-03-9	Ammonium	ug/g	99.0	1.18	1.26	0.475	BC
B2H108	Composite	S11V005776	S	14798-03-9	Ammonium	ug/g	99.0	1.18	2.43	0.478	BC

B - Estimated
U - Less Than Detection Limit
C- Blank contamination

Should you need additional information, please let me know.

Thanks,

Carolina S. Menjivar
Project Manager
Advanced Technologies and Laboratories International, Inc.
Contractor to the Office of River Protection
U.S. Department of Energy
2704S/31B/200W
509-372-2525

From: McKinney, Steve G
To: Menjivar, Carolina S
Cc: Ritenour, Gerald P
Subject: FW: S Farm Barrier 2011 - Report Due date
Date: Tuesday, October 18, 2011 11:41:49 AM

..good to go.

From: Anastos, Heather L
Sent: Tuesday, October 18, 2011 10:02 AM
To: McKinney, Steve G
Subject: RE: S Farm Barrier 2011 - Report Due date

Yep

From: McKinney, Steve G
Sent: Tuesday, October 18, 2011 9:20 AM
To: Anastos, Heather L
Subject: FW: S Farm Barrier 2011 - Report Due date

..this is what we agreed too..?

From: Menjivar, Carolina S
Sent: Monday, October 17, 2011 12:19 PM
To: McKinney, Steve G
Cc: Ritenour, Gerald P
Subject: S Farm Barrier 2011 - Report Due date

Steve,

After discussing with JR the progress of the S Farm Barrier 2011 and based on the fact that the 222S Laboratory has received all the samples back from WSCF (correct me if I am wrong), I am proposing the following schedule:

- Last samples were received from WSCF on 10/13/2011. Then, 60 days from that date will be **12/12/2011**, which it will be the DUE DATE for the **preliminary report.**
- 120 days from receipt of last sample for the **final report**, which it will be **02/10/2011 .**

Please let me know if this is sounds OK or if you have any objections.

Thanks,

Carolina S. Menjivar
Project Manager
Advanced Technologies and Laboratories International, Inc.
Contractor to the Office of River Protection
U.S. Department of Energy
2704S/31B/200W

From: McKinney, Steve G
To: Menjivar, Carolina S
Cc: Anastos, Heather L; Ritenour, Gerald P
Subject: RE: S Farm Barrier - Analysis Clarification Request
Date: Thursday, October 20, 2011 11:06:20 AM
Attachments: image001.png

For the S Farm samples listed below, which were received and composited at WSCF, please perform all remaining analysis specified in the S Farm FSAP, minus the quick turn analyses performed at WSCF – Tc-99 and nitrate on a 1:1 water digest.

Thanks.

From: Menjivar, Carolina S
Sent: Thursday, October 20, 2011 10:44 AM
To: McKinney, Steve G
Subject: S Farm Barrier - Analysis Clarification Request

Just a reminder!
Steve, could you please send me an analysis clarification for S Farm 2011 – for the samples that came back from WSCF?. I need to know what analyses were already performed at WSCF, so we can proceed with the remaining tests.

We received:

- C8396 (sample group # 20111272)
- C8398 (sample group # 20111143)
- C8400 (sample group # 20111290)
- And C8406 (sample group # 20111250).

Thanks,

Carolina S. Menjivar
Project Manager
Advanced Tecnologies and Laboratories International, Inc.
Contractor to the Office of River Protection
U.S. Department of Energy
2704S/31B/200W
509-372-2525

From: Ritenour, Gerald P
Sent: Wednesday, October 19, 2011 4:05 PM

To: McKinney, Steve G
Cc: Menjivar, Carolina S
Subject: RE: Core 8104 analysis clarification

Steve,
Carolina needs one of these for S Farm

Gerald "JR" Ritenour
Project Manager
ATL Analytical Operations
Advanced Technologies and Laboratories International, Inc.
Contractor to the Office of River Protection
U.S. Department of Energy
(509) 372-2742 office
(509) 438-8837 cell
gerald_p_ritenour@rl.gov

From: McKinney, Steve G
Sent: Monday, October 17, 2011 2:07 PM
To: Ritenour, Gerald P
Cc: Anastos, Heather L
Subject: Core 8104 analysis clarification

For the C8104 core composite samples received at 222-S on 10-13-11, please perform all remaining analysis specified in the C Farm FSAP, minus those short hold time analyses performed at WSCF – CN, pH, Tc-99 on a 1:1 water digest, conductivity, SVOA, IC anions and ammonia.

Thanks.

From: Anastos, Heather L
To: Menjivar, Carolina S
Cc: McKinney, Steve G; Bolling, Stacey D; Ritenour, Gerald P
Subject: RE: S Farm Samples
Date: Thursday, December 01, 2011 10:37:04 AM

We can accept the results. Please note the deviation in the narrative.

From: Menjivar, Carolina S
Sent: Monday, November 28, 2011 12:33 PM
To: Anastos, Heather L
Cc: McKinney, Steve G; Bolling, Stacey D; Ritenour, Gerald P
Subject: FW: S Farm Samples

Heather,
Please see e-mail below. The technician had 11 samples bracketed between CCV/ CCB for the ICP – analytical run. Will this be acceptable? Please advise.

Thanks,

Carolina S. Menjivar
Project Manager
Advanced Technologies and Laboratories International, Inc.
Contractor to the Office of River Protection
U.S. Department of Energy
2704S/31B/200W
509-372-2525

From: Bolling, Stacey D
Sent: Monday, November 28, 2011 11:31 AM
To: Ritenour, Gerald P; Menjivar, Carolina S
Subject: FW: S Farm Samples

I'm going to ask for a re-run on these, but thought I would ask anyway. The technician had 11 samples between the CCV/CCB instead of 10. Can we report the data or does it need to be re-analyzed?

Thanks.

Stacey

From: Shaw, Levi R
Sent: Wednesday, November 23, 2011 10:57 AM
To: Bolling, Stacey D
Subject:

So I got the S Farm uploaded but I found out that I ran 11 samples in the middle QC set because I missed putting one down on my bench sheet and then counted only ten on my bench sheet but

there were 11 data files…I'm very very very very sorry. I finished the upload anyway at Kay's advisement in case the PM's/Client decide it's ok. I noted on the benchsheet where the sample should go and put a note in the comments section. Again, I'm very sorry.

The C farm will have to wait for Harold to clear the prep back so we can put the qc under the appropriate projects, as it is I can't even see the spikes or standards in QC Batching. Happy Monday!!!

Levi Shaw
Chemical Technologist
Advanced Technologies and Laboratories, International., Inc.
Contractor to the Office of River Protection, United States Department of Energy
(509)373-9559

From: Anastos, Heather L
To: Menjivar, Carolina S; McKinney, Steve G
Cc: Ritenour, Gerald P
Subject: RE: S Farm Barrier 2011 - Tc-99
Date: Tuesday, January 10, 2012 7:10:21 AM

We will accept the data. Please describe in the narrative.

From: Menjivar, Carolina S
Sent: Monday, January 09, 2012 11:39 AM
To: McKinney, Steve G
Cc: Anastos, Heather L; Ritenour, Gerald P
Subject: S Farm Barrier 2011 - Tc-99

Steve,
In analytical batch # 30550, the % recovery for the pre-digestion spike was slightly below the QC acceptance criteria at 74.3% . The spike % recovery requirement is 75-125%. However, the prep standard passed at 103 % and the post spike at 96.6%. The lab believes that there is a matrix effect issue and would like to report these results 'as is" with an explanation in the narrative.

Please let me know if this is acceptable.

Customer Sample ID	Sample Portion	SAMPLE_R	A	ANALYTE	Result Unit	LCS	Blank	Result	Duplicate	RPD	SPK_REC	Det Limit	Qual Flags
B2D441	Composite	S11V004611	A	Technetium-99	ug/g	103	<6.00E-05	<5.99E-04	<6.00E-04	n/a	74.3	5.99E-04	U
B2D442	Composite	S11V004629	A	Technetium-99	ug/g	103	<6.00E-05	<6.00E-04	n/a	n/a	n/a	6.00E-04	U
B2D443	Composite	S11V004647	A	Technetium-99	ug/g	103	<6.00E-05	<5.99E-04	n/a	n/a	n/a	5.99E-04	U

Thanks,

Carolina S. Menjívar
Project Manager
Advanced Technologies and Laboratories International, Inc.
Contractor to the Office of River Protection
U.S. Department of Energy
2704S/31B/200W
509-372-2525

From: McKinney, Steve G
To: Menjivar, Carolina S
Subject: FW: S Farm - Update
Date: Tuesday, January 31, 2012 2:56:06 PM

From: Anastos, Heather L
Sent: Tuesday, January 31, 2012 2:52 PM
To: McKinney, Steve G
Subject: RE: S Farm - Update

We agree to the proposed extension.

From: McKinney, Steve G
Sent: Friday, January 27, 2012 1:08 PM
To: Anastos, Heather L
Subject: FW: S Farm - Update

..?

From: Menjivar, Carolina S
Sent: Friday, January 27, 2012 11:39 AM
To: McKinney, Steve G
Cc: Ritenour, Gerald P
Subject: S Farm - Update

Steve,

Due to the limited resources, non functional instrumentation (ICP/MS), and other competing priorities, the progress of the S farm project has been impacted seriously. It has been a real challenge to try to produce good analytical results with an ICP/MS instrument that is not 100% functional. The ICP/MS (Agilent) instrument is currently out of service as of 12/14/11, but a vendor visit is scheduled for next Monday (1/30/12).

The final report due date is set for February 10, 2012, which is going to be difficult to meet.

Would you consider an extension for the final report due date? Proposed Final Due date: 03/09/2012 . Please let me know.

Thanks,

Carolina S. Menjivar
Project Manager
Advanced Technologies and Laboratories International, Inc.
Contractor to the Office of River Protection
U.S. Department of Energy
2704S/31B/200W

Ritenour, Gerald P

From: Anastos, Heather L
Sent: Monday, February 13, 2012 3:15 PM
To: Ritenour, Gerald P; McKinney, Steve G
Cc: Menjivar, Carolina S
Subject: RE: S Farm Barrier LCS recoveries Ca, K

Agreed. Report the data as is, but note the failure in the narrative.

From: Ritenour, Gerald P
Sent: Monday, February 13, 2012 3:09 PM
To: McKinney, Steve G; Anastos, Heather L
Cc: Menjivar, Carolina S
Subject: S Farm Barrier LCS recoveries Ca, K

Steve, Heather,
Batch 30205 ICP/AES experienced low LCS recoveries at 79% for calcium and potassium. Since the results for the cations fall within the expected range for vadose soil, we would like to report them with narration. All LLS, ICV, and CCV recoveries for these were within acceptance criteria.
Thanks, JR

Core Number	Customer Sample ID	Sample Depth	SAMPLE_R	A	ANALYTE	UNIT	LCS Rec	BLANK	RESULT	Dup	RPD	MS Rec	Det Limit	Qual Flag
C8394	B2D441	43'-45'	S11V004609	A	Calcium	ug/g	79.0	<0.0500	1.26E+04	n/a	n/a	n/a	9.72	
C8394	B2D442	88'-90'	S11V004627	A	Calcium	ug/g	79.0	<0.0500	9.69E+03	n/a	n/a	n/a	9.96	
C8394	B2D443	126'-128'	S11V004645	A	Calcium	ug/g	79.0	<0.0500	1.36E+04	1.29E+04	4.70	506	9.98	
C8402	B2FDL3	47'-49'	S11V005397	A	Calcium	ug/g	79.0	<0.0500	1.15E+04	n/a	n/a	n/a	9.95	
C8402	B2FDL4	107'-109'	S11V005415	A	Calcium	ug/g	79.0	<0.0500	9.69E+03	n/a	n/a	n/a	9.61	
C8402	B2FDL5	126'-128'	S11V005433	A	Calcium	ug/g	79.0	<0.0500	1.11E+04	n/a	n/a	n/a	9.86	
C8408	B2H106	47'-49'	S11V005719	A	Calcium	ug/g	79.0	<0.0500	9.93E+03	n/a	n/a	n/a	9.56	
C8408	B2H107	94'-96'	S11V005757	A	Calcium	ug/g	79.0	<0.0500	1.16E+04	n/a	n/a	n/a	9.54	
C8408	B2H108	129'-131'	S11V005775	A	Calcium	ug/g	79.0	<0.0500	1.15E+04	n/a	n/a	n/a	9.96	
C8394	B2D441	43'-45'	S11V004609	A	Potassium	ug/g	78.6	<0.500	892	n/a	n/a	n/a	97.2	B
C8394	B2D442	88'-90'	S11V004627	A	Potassium	ug/g	78.6	<0.500	1.63E+03	n/a	n/a	n/a	99.6	
C8394	B2D443	126'-128'	S11V004645	A	Potassium	ug/g	78.6	<0.500	1.73E+03	1.68E+03	2.96	367	99.8	
C8402	B2FDL3	47'-49'	S11V005397	A	Potassium	ug/g	78.6	<0.500	1.42E+03	n/a	n/a	n/a	99.5	
C8402	B2FDL4	107'-109'	S11V005415	A	Potassium	ug/g	78.6	<0.500	1.69E+03	n/a	n/a	n/a	96.1	

C8402	B2FDL5	126'-128'	S11V005433	A	Potassium	ug/g	78.6	<0.500	1.83E+03	n/a	n/a	n/a	98.6	
C8408	B2H106	47'-49'	S11V005719	A	Potassium	ug/g	78.6	<0.500	1.44E+03	n/a	n/a	n/a	95.6	
C8408	B2H107	94'-96'	S11V005757	A	Potassium	ug/g	78.6	<0.500	1.65E+03	n/a	n/a	n/a	95.4	
C8408	B2H108	129'-131'	S11V005775	A	Potassium	ug/g	78.6	<0.500	1.56E+03	n/a	n/a	n/a	99.6	

ATL Analytical Operations
Advanced Technologies and Laboratories International, Inc.
Contractor to the Office of River Protection
U.S. Department of Energy
Currently at 509-375-4200, Ext 247

Ritenour, Gerald P

From: Anastos, Heather L
Sent: Tuesday, February 14, 2012 9:14 AM
To: Ritenour, Gerald P; McKinney, Steve G
Cc: Menjivar, Carolina S
Subject: RE: Batch 31407 ICP/AES Ba Ms

Agreed. Report as is, with a notation in the narrative.

From: Ritenour, Gerald P
Sent: Monday, February 13, 2012 4:34 PM
To: Anastos, Heather L; McKinney, Steve G
Cc: Menjivar, Carolina S
Subject: Batch 31407 ICP/AES Ba Ms

Heather, Steve
Batch 31407 expericenced a low MS recovery of Ba (not unusual for Vadose soils). In this case it appears to be a result of sample inhomogeneity. Note the somewhat high result for this sample. If you calculate the MS recovery using the duplicate it is 101%. The lab would like to report this result with narration.
Thanks, JR

Core Number	Customer Sample ID	Sample Depth	SAMPLE_R	A	ANALYTE	UNIT	LCS Rec	BLANK	RESULT	Dup	RPD	MS Rec	Det Limit	Qual Flag
C8396	B2FYT0	55'-57'	S11V005579	A	Barium	ug/g	88.7	<3.00E-03	98.2	n/a	n/a	n/a	0.709	N
C8396	B2FYT1	103'105'	S11V005597	A	Barium	ug/g	88.7	<3.00E-03	82.0	n/a	n/a	n/a	0.653	N
C8396	B2FYT2	117'119'	S11V005615	A	Barium	ug/g	88.7	<3.00E-03	80.6	n/a	n/a	n/a	0.651	N
C8398	B2FDJ8	46'-48'	S11V005327	A	Barium	ug/g	88.7	<3.00E-03	119	96.3	21.3	53.4	0.711	N
C8398	B2FDJ9	86'-88'	S11V005345	A	Barium	ug/g	88.7	<3.00E-03	95.6	n/a	n/a	n/a	0.674	N
C8398	B2FDK0	131'-137'	S11V005363	A	Barium	ug/g	88.7	<3.00E-03	97.1	n/a	n/a	n/a	0.679	N
C8400	B2FYY0	54'-56'	S11V005640	A	Barium	ug/g	88.7	<3.00E-03	91.9	n/a	n/a	n/a	0.658	N
C8400	B2FYY1	93'-95'	S11V005658	A	Barium	ug/g	88.7	<3.00E-03	75.2	n/a	n/a	n/a	0.662	N
C8400	B2FYY2	126'-128'	S11V005694	A	Barium	ug/g	88.7	<3.00E-03	82.3	n/a	n/a	n/a	0.667	N
C8406	B2FXM5	52'-54'	S11V005523	A	Barium	ug/g	88.7	<3.00E-03	98.0	n/a	n/a	n/a	0.657	N
C8406	B2FXM6	98'-100'	S11V005541	A	Barium	ug/g	88.7	<3.00E-03	86.4	n/a	n/a	n/a	0.677	N
C8406	B2FXM7	130'-132'	S11V005559	A	Barium	ug/g	88.7	<3.00E-03	95.0	n/a	n/a	n/a	0.679	N

ATL Analytical Operations
Advanced Technologies and Laboratories International, Inc.
Contractor to the Office of River Protection
U.S. Department of Energy

From: Anastos, Heather L
To: Menjivar, Carolina S; McKinney, Steve G
Cc: Ritenour, Gerald P
Subject: RE: ICP-MS Per Tab - S Farm 2011- LCS and MS
Date: Wednesday, February 29, 2012 2:01:23 PM

It will be acceptable to report as is and note the failures in the narrative.

Heather

From: Menjivar, Carolina S
Sent: Wednesday, February 29, 2012 1:14 PM
To: Anastos, Heather L; McKinney, Steve G
Cc: Ritenour, Gerald P
Subject: FW: ICP-MS Per Tab - S Farm 2011- LCS and MS
Importance: High

Heather and Steve,

In analytical batch # 32126 for ICP/MS Per Tab , the % recovery for Thallium on the pre-digestion spike was above the QC acceptance criteria at 126.5 %. The SAP listed a QC acceptance requirement of 75-125 %. In addition, the LCS recovery for Arsenic was lower than the QC requirement of 80-120% (see table below). The laboratory would like to report these results "as is" with an explanation in the narrative. Please let me know if this is acceptable.

Core Number	Customer Sample ID	Sample Depth	SAMPLE_R	ANALYTE	RESULT_UNIT	LCS	BLANK	RESULT	DUPLICATE	RPD	SPK_REC	Det Limit
C8398	B2FDJ8	46'-48'	S11V005327	Arsenic	ug/g	77.0	<0.0210	3.62	3.12	14.7	80.7	0.199
C8398	B2FDJ8	46'-48'	S11V005327	Thallium	ug/g	114	0.0128	0.232	0.179	26.0	126.5	0.0190

Thanks,

Carolina S. Menjivar
Project Manager
Advanced Technologies and Laboratories International, Inc.
Contractor to the Office of River Protection
U.S. Department of Energy
2704S/31B/200W
509-372-2525

From: Keltner, Katherine A
Sent: Wednesday, February 29, 2012 12:04 PM
To: Menjivar, Carolina S
Cc: Ritenour, Gerald P
Subject: ICP-MS prep failures for PerTab analyses SfarmBarrier2011

Carolina,
Prep Batch 30683 for SfarmBarrier 2011 had the following failures:

- Standard Prep (LCS) produced <80% recovery for As (77%); sample results for As ranged from 3.2ug/g – 9.1ug/g; PreDig Spike was 80% recovery
- PreDig spike for Tl produced > 125% recovery; no post-dig spike performed due to tech error, LCS was 114% recovery, sample results ranged from 0.16 – 0.24ug/g (some were J-flagged in this range).

Affected samples:
Grp 20111143
S11V005327
S11V005345
S11V005363
Grp 20111250
S11V005523
S11V005541
S11V005559
Grp 20111272
S11V005597
S11V005615
Grp 20111272
S11V005640

S11V005658
S11V005694

Please advise of path forward. Thank you for your time.
-Kay

Kay Keltner
Deputy Manager, Organic & Inorganic Team, 222-S Labs
Advanced Technologies and Laboratories International, Inc.
Contractor to the Office of River Protection
U.S. Department of Energy
509.373.0409 Katherine_A_Keltner@rl.gov

From: Anastos, Heather L
To: Ritenour, Gerald P; Menjivar, Carolina S
Cc: McKinney, Steve G
Subject: RE: S Farm Barrier - ICP-MS -Per Tab- Analysis Issues - Batch 33419
Date: Monday, March 05, 2012 1:19:17 PM

With this additional information, I believe we can accept the batch as is, with notation in the narrative. Thank you for the clarifications.

--Heather

From: Ritenour, Gerald P
Sent: Monday, March 05, 2012 1:17 PM
To: Anastos, Heather L; Menjivar, Carolina S
Cc: McKinney, Steve G
Subject: RE: S Farm Barrier - ICP-MS -Per Tab- Analysis Issues - Batch 33419

Heather,
We can of course reanalyze these samples. Reanalysis would, however, be beyond the holding time for most if not all the samples in this batch. Their current age is from 175 to 236 days beyond sampling. The reanalysis data should still be usable.
If we decided report the existing data, flagging may not be necessary for the follow reasons:

- The blank result appears to be from carryover. The batch was analyzed for only arsenic and selenium. The selenium result, though below the MDL, was markedly higher than the other blanks or sample results, which indicates carryover.
- The sample result that followed the blank was 1.26ug/g, which is lower than the average for S Farm samples (see below), indicating it was not affected by carryover.

Please let us know if you want us to reanalyze these samples.

Core Number	Customer Sample ID	Sample Depth	Lab ID	ANALYTE	Units	LCS	Blank	Result	Dup	RPD	MS	Det Limit	CCB/ Result%
C8394	B2D441	43'-45'	S11V004609	Arsenic	ug/g	93.0	<0.0168	0.812	n/a	n/a	n/a	0.163	234
C8394	B2D442	88'-90'	S11V004627	Arsenic	ug/g	93.0	<0.0168	2.24	n/a	n/a	n/a	0.167	87
C8394	B2D443	126'-128'	S11V004645	Arsenic	ug/g	93.0	<0.0168	2.75	2.67	2.87	90.8	0.168	71
C8402	B2FDL3	47'-49'	S11V005397	Arsenic	ug/g	93.0	<0.0168	<0.167	n/a	n/a	n/a	0.167	
C8402	B2FDL4	107'-109'	S11V005415	Arsenic	ug/g	93.0	<0.0168	1.36	n/a	n/a	n/a	0.161	138
C8402	B2FDL5	126'-128'	S11V005433	Arsenic	ug/g	93.0	<0.0168	2.86	n/a	n/a	n/a	0.166	68
C8408	B2H106	47'-49'	S11V005719	Arsenic	ug/g	93.0	<0.0168	1.26	n/a	n/a	n/a	0.161	149
C8408	B2H107	94'-96'	S11V005757	Arsenic	ug/g	93.0	<0.0168	3.31	n/a	n/a	n/a	0.160	56
C8408	B2H108	129'-131'	S11V005775	Arsenic	ug/g	93.0	<0.0168	1.38	n/a	n/a	n/a	0.167	141
							Average in 33419	**1.79**					
							Average for S Farm 2011	**3.6**					
							Average for S-SX Barrier	**4.23**					

Gerald "JR" Ritenour
Project Manager
ATL Analytical Operations
Advanced Technologies and Laboratories International, Inc.
Contractor to the Office of River Protection
U.S. Department of Energy
(509) 372-2742 office
(509) 438-8837 cell
gerald_p_ritenour@rl.gov

From: Anastos, Heather L
Sent: Monday, March 05, 2012 10:04 AM
To: Menjivar, Carolina S
Cc: McKinney, Steve G; Ritenour, Gerald P
Subject: RE: S Farm Barrier - ICP-MS -Per Tab- Analysis Issues

Is there an option to reanalyze for As? It sounds possible that there was carryover, and there really is no way to appropriately/accurately flag the possible quality issue.

From: Menjivar, Carolina S
Sent: Thursday, March 01, 2012 10:21 AM
To: Anastos, Heather L
Cc: McKinney, Steve G; Ritenour, Gerald P
Subject: S Farm Barrier - ICP-MS -Per Tab- Analysis Issues

Heather,
In reviewing the analytical results for ICP/MS-Per tab, the following issue was discovered on one of the analytical runs: The middle CCB produced a result for As that was greater than 20% of the sample results. However, the beginning ICB and the prep blank were below the detection limit. In addition, the sample results were above the EQL for As. Can we report these results with an explanation in the narrative? Please advise.

Thanks,

Carolina S. Menjívar
Project Manager
Advanced Technologies and Laboratories International, Inc.
Contractor to the Office of River Protection
U.S. Department of Energy
2704S/31B/200W
509-372-2525

Attachment 9

RECEIPT PAPERWORK-222S

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	☑ LO-090-101 Rev E.E.0 ○ LO-090-102 Rev

Date Samples Received: 7.13.11 Group #: 20110713

Number of Samples: 5-FAM VAdose 8394 I001

Sample Custodian: [signature]

Sample Custodian to Complete:

Action	Yes	No	N/A	Comments
RSA/COC provided?	✓			
RSR provided?	✓			
Verify GKI is complete				☑ In Project File
Check that outer custody seal is intact, if present			✓	
Record cooler temperature in centigrade, as appropriate	1°C			☐ Check if no cooler and/or no ice
Samples are intact and in good condition	✓			If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:				
• Client name and client sample number	✓			
• Date and time of sampling	✓			
• Sampling location or origin	✓			
• Container type, size, and number	✓			
• Analysis request is clear	✓			
• Signature of persons relinquishing and receiving samples	✓			
• Date and/or time of sample custody exchange	✓			
Verify that sample numbers on containers match the COC and/or RSA	✓			
Samples stored properly (e.g., refrigeration)	✓			

Notify the PM immediately if any problems are noted. (Any "No" checked requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? yes PM Initials CSM Date 07/13/11

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 1)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-013	PAGE 1 OF 1
COLLECTOR: Ekstrom / Campbell	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8394 I001	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 43 to 45 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: 222-S Lab Operations	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2D430	SOIL	7/13/11	1015	✓
B2D431	SOIL	7/13/11	1015	✓
B2D432	SOIL	7/13/11	1015	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: PR Ekstrom BC Ekstrom	DATE/TIME: 7/13/11 1050	RECEIVED BY/STORED IN: RTSteele RTSteele ATL	DATE/TIME: 7.13.11 1050
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

7-13-11

Temp blank 1°C

GRP# 20110713

S11V004599 Liner A
S11V004600 Liner B
S11V004601 Liner C

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME	

PRINTED ON 5/24/2011 A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-008	PAGE 1 OF 1
COLLECTOR: Ekstrom / Campbell	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8394 Rad Screen I001	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	60 Days / 120 Days
ICE CHEST NO.: TFV2-09-008 (7/29/12/11)	FIELD LOGBOOK NO.: TFU2-10-000002	ACTUAL SAMPLE DEPTH: 43 to 45 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: 222-S Lab Operations	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B2D3P0

PRESERVATION	None
HOLDING TIME	6 Months
TYPE OF CONTAINER	G/P
NO. OF CONTAINER(S)	1
VOLUME	60mL
SAMPLE ANALYSIS	Rad Screen;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2D3P0	SOIL	7/13/11	1015	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: BCEkstrom BCEkstrom	DATE/TIME: 7/13/11 1050	RECEIVED BY/STORED IN: RTSteele RTSteele ATC	DATE/TIME: 7-13-11 1050
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
7-13-11
Temp blank 1°C attach
GRP# 20110713
S11V004602 ~~Shoe~~ radscreen
11/7/11 mmQ

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 5/10/2011 A-6003-618 (REV 2)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev E.E.0

Date Samples Received: 7.19.11 Group #: 20110717

Number of Samples: 1 set 5-Farm Barrier (C8394 - I002)

Sample Custodian: RHtab

Sample Custodian to Complete:

Action	Yes	No	N/A	Comments
RSA/COC provided?	✓			
RSR provided?	✓			
Verify GKI is complete				☑ In Project File
Check that outer custody seal is intact, if present			✓	
Record cooler temperature in centigrade, as appropriate	✓ 1°			☐ Check if no cooler and/or no ice
Samples are intact and in good condition	✓			If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:				
• Client name and client sample number	✓			
• Date and time of sampling	✓			
• Sampling location or origin	✓			
• Container type, size, and number	✓			
• Preservatives (if used) are noted on the COC/RSA and sample bottle			✓	
• Analysis request is clear	✓			
• Signature of persons relinquishing and receiving samples	✓			
• Date and/or time of sample custody exchange	✓			
Verify that sample numbers on containers match the COC and/or RSA	✓			
Samples stored properly (e.g., refrigeration)	✓			

Notify the PM immediately if any problems are noted. (Any "No" checked requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? Yes PM Initials RHS Date 7.19.11

If No, comment on communication and resolution: per. CSM

Other Comments:

A-6005-342 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-015	PAGE 1 OF 1
COLLECTOR: Ekstrom / Harris	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND: 60 Days / 120 Days
SAMPLING LOCATION: C8394 I002	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 88 to 90 ft.	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: 222-S Lab Operations	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2D434 A	SOIL	7/19/11	0925	✓
B2D435 B	SOIL	7/19/11	0925	✓
B2D436 C	SOIL	7/19/11	0925	✓

CHAIN OF POSSESSION	DATE/TIME	SIGN/ PRINT NAMES: RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM: [signature] BC Ekstrom	7/19/11 1000	RECEIVED BY/STORED IN: [signature] RTSteele ATL	7.19.11 1000
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

[signature] 7-19-11

Temp blank -1°C [signature]

GRP # 20110713
S11V004617 Liner A
S11V004618 Liner B
S11V004619 Liner C

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 5/24/2011 A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	V11-006-014	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE C03	DATA TURNAROUND
Elstrom / Harris	ANASTOS, HL	373-2616	SYDNOR, HA	AIR QUALITY ☐	60 Days / 120 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C8394 I002	Direct Push Samples for S Tank Farm - Interim Barrier		V11-006		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
TFVS-09-008	TFV2-10-000002	88 to 90 ft.	N/A	GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
222-S Lab Operations	N/A		N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	G
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2D433	SOIL	7/19/11	0925	✓

CHAIN OF POSSESSION — **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
BCElstrom BCElstrom	7/19/11 1000	RTSteele RTSteele ATL	7.19.11 1000

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

Don Harris 7-19-11

Temp Blank -1°C

GEPH 20110713

S11V004620 Shoe

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 5/24/2011 A-6003-618 (REV 2)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev E.G.0

Date Samples Received: 7.20.11 Group #: 20110713

Number of Samples: 1 set 5-Farm

Sample Custodian: [illegible]

Sample Custodian to Complete:

Action	Yes	No	N/A	Comments
RSA/COC provided?	✓			
RSR provided?	✓			
Verify GKI is complete				☑ In Project File
Check that outer custody seal is intact, if present			✓	
Record cooler temperature in centigrade, as appropriate				☐ Check if no cooler and/or no ice
Samples are intact and in good condition	✓			If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:				
• Client name and client sample number	✓			
• Date and time of sampling	✓			
• Sampling location or origin	✓			
• Container type, size, and number	✓			
• Preservatives (if used) are noted on the COC/RSA and sample bottle			✓	
• Analysis request is clear	✓			
• Signature of persons relinquishing and receiving samples	✓			
• Date and/or time of sample custody exchange	✓			
Verify that sample numbers on containers match the COC and/or RSA	✓			
Samples stored properly (e.g., refrigeration)	✓			

Notify the PM immediately if any problems are noted. (Any "No" checked requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? Yes PM Initials RTS Date 7.20.11

If No, comment on communication and resolution: PM CSM

Other Comments:

A-6005-342 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	V11-006-017	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE C03	DATA TURNAROUND
Ekstrom / Campbell	ANASTOS, HL	373-2616	SYDNOR, HA		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	**60 Days / 120 Days**
C8394 I003	Direct Push Samples for S Tank Farm - Interim Barrier		V11-006		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
S 7/20/11 BCE TFV2-09-008	TFV2-10-000002	126 to 128 ft.	N/A	GOVERNMENT VEHICLE	**ORIGINAL**
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
222-S Lab Operations	N/A		N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2D438	A	SOIL	7/20/11	1030	✓
B2D439	B	SOIL	7/20/11	1030	✓
B2D440	C	SOIL	7/20/11	1030	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
BCEkstrom BCEkstrom	7/20/11 1100	RHHeck R.S.Hecke ATL	7.20.11 1100
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

-10C T.B. RHHeck 7-20-11

GRP # 20110713

S11V004635 Liner A
S11V004636 Liner B
S11V004637 Liner C

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 5/24/2011 A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	V11-006-016	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE C03	DATA TURNAROUND
Ekstrom / Campbell	ANASTOS, HL	373-2616	SYDNOR, HA	AIR QUALITY ☐	60 Days / 120 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C8394 I003	Direct Push Samples for S Tank Farm - Interim Barrier		V11-006		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
TFVS-09-008	TFVZ-10-000002	126 to 128 ft	N/A	GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
222-S Lab Operations	N/A		N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	G
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2D437	SOIL	7/20/11	1030	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
B Ekstrom B Ekstrom	7/20/11 1100	R Steele R Steele ATL	7.20.11 1100
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

-1°C T.B.
[illegible]

[illegible] 7-20-11

GRH 20110713
SIV004638 Shoe

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 5/24/2011

A-6003-618 (REV 2)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev E.E.0 ~~SFarm~~ mm@ 10/20/11

Date Samples Received: 10·13·11

Number of Samples: 21 total

Sample Custodian: [signature]

Group #: ~~20111030~~, 20111250 S-Farm
20111272
20111243 } SFarm
20111290

Sample Custodian to Complete:

Action	Yes	No	N/A	Comments
RSA/COC provided?	✓			
RSR provided?	✓			
Verify GKI is complete			✓	☑ In Project File
Check that outer custody seal is intact, if present	✓			ON Ice Cooler
Record cooler temperature in centigrade, as appropriate			✓	☐ Check if no cooler and/or no ice Cooler 1, 0°C Cooler 2, 0°C
Samples are intact and in good condition	✓			If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:				
• Client name and client sample number	✓			
• Date and time of sampling	✓			
• Sampling location or origin	✓			
• Container type, size, and number	✓			
• Preservatives (if used) are noted on the COC/RSA and sample bottle	✓			
• Analysis request is clear	✓			
• Signature of persons relinquishing and receiving samples	✓			
• Date and/or time of sample custody exchange	✓			
Verify that sample numbers on containers match the COC and/or RSA	✓			
Samples stored properly (e.g., refrigeration)	✓			

Notify the PM immediately if any problems are noted. (Any "No" checked requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? Yes PM Initials [initials] Date 10/13/11

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 2)

Assembler	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. No. 20111272
N/A		Page 1 of 1

Collector: Ekstrom/Rivera	Contact/Requestor: Jo Marie Johnson/Steve McKinney	Telephone No. 372-9474 MSIN T6-02 FAX
SAF No.: N/A	Sample Origin: S Farm Vadose	Purchase Order/Charge Code: N/A
Project Title: S Farm Barrier	Logbook/ Work Package No.: N/A	Ice Chest No.: GWS-210 Temp.: N/A
Shipped To (Lab): WSCF	Method of Shipment: Govt. Vehicle	Bill of Lading/Air Bill No.: N/A
Protocol: N/A	Data Turnaround: 2 working days from sample receipt	Parts and Return No.: N/A

Sample No.	Lab ID	*	Date	Time	No./Type Container	Sample Analysis	Preservative
3	B2FYT0		8-4-11	0925	1 L glass	see list 1 (Lab Sample ID ~~S11V005623~~) S11V005573-I001 *	<6 C
4	B2FYT1		8-8-11	1305	1 L glass	see list 1 (Lab Sample ID ~~S11V005624~~) cm 10/17/11 S11V005591-I002 *	<6 C
	~~B2FYT2~~		~~8-9-11~~		~~1 L glass~~	~~see list 1 (Lab Sample ID S11V005628)~~ cm 10/17/11 LAD 8-9-11	<6 C
						~~List 1: %moisture, Tc 99 by ICP/MS on a 1:1 water digest and nitrate on 1:1~~	
						~~water digest~~ csm 10/17/11	
						*C8396 - Sample group 20111272 - composites	

POSSIBLE SAMPLE HAZARDS/REMARKS (List all known wastes) MSDS ○ Yes ◉ No

SPECIAL INSTRUCTIONS

~~Send results to Steve McKinney (Steve G Mckinney@rl.gov) and Mellissa Carrard (see SOW for e-mail address) Contract 36612, rel. 9~~ csm 10/17/11

Report per FSAP required analyses per e-mail dated 10-20-11

Hold Time: ~~48 hours from sample receipt~~ csm 10/17/11

0°C [signature]

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Leslie Diaz	Leslie Diaz	8/9/11	1535	TA Frazier	Teresa Frazier	8/9/11	1535
TA Frazier	Teresa Frazier	10/13/11	1000	L.D. Wall	L.D. Wall	10/13/11	1000
L.D. Wall	L.D. Wall	10/13/11	1045	RT Steele	RT Steele ATL	10/13/11	1045

Matrix*

S	= Soil	DL	= Drum Liquids
SE	= Sediment	T	= Tissue
SO	= Solid	WI	= Wipe
SL	= Sludge	L	= Liquid
W	= Water	V	= Vegetation
O	= Oil	VA	= Vapor
A	= Air	X	= Other
DS	= Drum Solids		

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

All samples containing hazardous materials shall be picked up by requestor and returned to parent container or site of origin.

A-6003-962 (03/05)

Assembler	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. No. 20111272
N/A		Page 1 of 1

Collector: Ekstrom/Rivera	Contact/Requestor: Jo Marie Johnson/Steve McKinney	Telephone No. 372-9474 MSIN T6-02 FAX
SAF No.: N/A	Sample Origin: S Farm Vadose	Purchase Order/Charge Code: N/A
Project Title: S Farm Barrier	Logbook/ Work Package No.: N/A	Ice Chest No. GWS-210 Temp. N/A
Shipped To (Lab): WSCF	Method of Shipment: Govt. vehicle	Bill of Lading/Air Bill No. N/A
Protocol: N/A 12905	Data Turnaround: 2 working days from sample receipt	Parts and Return No. N/A

Sample No.	Lab ID	*	Date	Time	No./Type Container	Sample Analysis	Preservative
DDS	B2FYT2		8-9-11	1145	1 L glass	see list 1 (Lab Sample ID ~~S11V005620~~) S11V005609 - I003*	<6 C
						cm 10/17/11	
						*C8396 - Sample group 20111272- composite	
						~~List 1: %moisture, Tc-99 by ICP/MS on a 1:1 water digest and nitrate on 1:1~~	
						~~water digest.~~ csm 10/17/11	

POSSIBLE SAMPLE HAZARDS/REMARKS (List all known wastes) MSDS ○ Yes ◉ No

SPECIAL INSTRUCTIONS

~~Send results to Steve McKinney (Steve C Mckinney@rl.gov) and Mellissa Garrard (see SOW for e-mail address) Contract 36612, rel. 9~~
csm 10/17/11
Report per FSAP.
Required analyses per e-mail dated 10-20-11

Hold Time
~~48 hours from sample receipt~~ csm 10/17/11
0°C RHSteele

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Leslie Diaz	Leslie Diaz		8/10/11 1240				8/10/11 1240
TA Frazier	Teresa Frazier		10/13/11 1000	L.D. WALL	L.D. Wall		10/13/11 1000
L.D. WALL	L.D. Wall		10/13/11 1045	RF Steele	RF Steele	ATL	10/13/11 1045
Relinquished By			Date/Time	Received By			Date/Time

Matrix*

S	= Soil	DL	= Drum Liquids
SE	= Sediment	T	= Tissue
SO	= Solid	WI	= Wipe
SL	= Sludge	L	= Liquid
W	= Water	V	= Vegetation
O	= Oil	VA	= Vapor
A	= Air	X	= Other
DS	= Drum Solids		

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

All samples containing hazardous materials shall be picked up by requestor and returned to parent container or site of origin.

A-6003-962 (03/05)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev E.E.6

Date Samples Received: 8-9-11 Group #: Q0111140

Number of Samples: 1 Field blank (CC8398) VADOSE

Sample Custodian: [illegible]

Sample Custodian to Complete:

Action	Yes	No	N/A	Comments
RSA/COC provided?	✓			
RSR provided?			✓	
Verify GKI is complete			✓	☐ In Project File
Check that outer custody seal is intact, if present			✓	
Record cooler temperature in centigrade, as appropriate	4°C			☐ Check if no cooler and/or no ice
Samples are intact and in good condition				If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:				
• Client name and client sample number	✓			
• Date and time of sampling	✓			
• Sampling location or origin	✓			
• Container type, size, and number	✓			
• Preservatives (if used) are noted on the COC/RSA and sample bottle	✓			
• Analysis request is clear	✓			
• Signature of persons relinquishing and receiving samples	✓			
• Date and/or time of sample custody exchange	✓			
Verify that sample numbers on containers match the COC and/or RSA	✓			
Samples stored properly (e.g., refrigeration)	✓			

Notify the PM immediately if any problems are noted. (Any "No" checked requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? yes PM Initials DBR Date 8/9/11

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-007-004	PAGE 1 OF 2
COLLECTOR: Elstrom / Snook	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8398 - Field Blank	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier - QC Sample		SAF NO.: V11-007	AIR QUALITY: ☐	60 Days / 120 Days
ICE CHEST NO.: S BRE 8/10/11 TFVZ-09-001	FIELD LOGBOOK NO.: TFVZ-10-000002	ACTUAL SAMPLE DEPTH: N/A	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF BRE 8/10/11 222-S	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

DI Lot # J28E02

PRESERVATION	HNO3 to pH <2	H2SO4 to pH <2/Cool~6C	Cool~6C	NaOH to pH >=12/Cool~6C	None	HNO3 to pH <2
HOLDING TIME	28 Days	7 Days	28 Days/48 Hours	14 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	G/P	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1	1	1	2
VOLUME	500mL	250mL	500mL	250mL	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	300.7_AMMONIUM (TF);	IC Anions - 9056;	Total Cyanide - 9014 (TF);	C-14; H3 - TRITIUM; I129_SEP_GEA (TF);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	1	2	3	4	5	6
B2FDM2	WATER	8/10/11	0755	✓	✓	✓	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
BE Elstrom	BRE 8/10/11 8/10/11 8/10/11 1250	RTSteele RTSteele ATL	8.10.11 1355
RELINQUISHED BY/REMOVED FROM	DATE/TIME 1355	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

Aircraft Check 8-10-11

Temp blank -4 °C RTSteele

1- S11V005314
2- S11V005313
3- S11V005311
4- S11V005312
5- S11V005315
6- S11V005316

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 6/21/2011 A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-007-004	PAGE 2 OF 2
COLLECTOR Ehstrom / Snook	COMPANY CONTACT ANASTOS, HL	TELEPHONE NO. 373-2616	PROJECT COORDINATOR SYDNOR, HA	PRICE CODE C03 AIR QUALITY ☐	DATA TURNAROUND 60 Days / 120 Days
SAMPLING LOCATION C8398 - Field Blank	PROJECT DESIGNATION Direct Push Samples for S Tank Farm - Interim Barrier - QC Sample		SAF NO. V11-007		
ICE CHEST NO. TFVS-09-008	FIELD LOGBOOK NO. TFVZ-10-000002	ACTUAL SAMPLE DEPTH ~~131-133 ft~~ N/A BRE 8/10	COA N/A	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO 222-S Lab Operations	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

SPECIAL INSTRUCTIONS

(1) Mercury - 7470 - (CV) (TF); 6010_Metals_ICP {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Vanadium, Yttrium, Zinc, Zirconium}; RADISO_ICPMS (TF) {Neptunium-237, Technetium-99, Thorium-230, Thorium-232, Tin-126, Uranium-233, Uranium-234, Uranium-235, Uranium-236, Uranium-238};
(2) GAMMA ENERGY ANALYSIS (TF); Americium-241 (TF); Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; CURIUM {Curium-242, Curium-243/244}; Nickel-63 (TF); Strontium-89,90 -- Total Sr; Selenium-79 (TF);

PRINTED ON 6/21/2011 A-6003-618 (REV 2)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev E.0 ~~S Farm~~ mmg 10/20/11

Date Samples Received: 10·13·11

Number of Samples: 21 total

Sample Custodian: [illegible]

Group #: ~~20111030~~, 20111250 S-Farm
20111272
20111243 } S Farm
20111290

Sample Custodian to Complete:

Action	Yes	No	N/A	Comments
RSA/COC provided?	✓			
RSR provided?	✓			
Verify GKI is complete			✓	☑ In Project File
Check that outer custody seal is intact, if present	✓			ON Ice Cooler
Record cooler temperature in centigrade, as appropriate			✓	☐ Check if no cooler and/or no ice Cooler 1, 0°C Cooler 2, 0°C
Samples are intact and in good condition	✓			If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:				
• Client name and client sample number	✓			
• Date and time of sampling	✓			
• Sampling location or origin	✓			
• Container type, size, and number	✓			
• Preservatives (if used) are noted on the COC/RSA and sample bottle	✓			
• Analysis request is clear	✓			
• Signature of persons relinquishing and receiving samples	✓			
• Date and/or time of sample custody exchange	✓			
Verify that sample numbers on containers match the COC and/or RSA	✓			
Samples stored properly (e.g., refrigeration)	✓			

Notify the PM immediately if any problems are noted. (Any "No" checked requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? YES PM Initials tm Date 10/13/11

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 2)

Assembler	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. No. 20111143
N/A		Page 1 of 1

Collector: Ekstrom/Rivera	Contact/Requestor: Jo Marie Johnson/Steve McKinney	Telephone No. 372-9474 MSIN T6-02 FAX
SAF No.: N/A	Sample Origin: S Farm Vadose	Purchase Order/Charge Code: N/A
Project Title: S Farm Barrier	Logbook/ Work Package No.: N/A	Ice Chest No. GWS-210 Temp. N/A
Shipped To (Lab): WSCF	Method of Shipment: Govt. Vehicle	Bill of Lading/Air Bill No.: N/A
Protocol: N/A	Data Turnaround: 2 working days from sample receipt	Parts and Return No.: N/A

Sample No.	Lab ID	*	Date	Time	No./Type Container	Sample Analysis	Preservative
1	B2FDJ8		8-8-11	0925	1 L glass	see list 1 (Lab Sample ID ~~S11V005625~~) ✓ S11V005321 - I001 * cm 10/17/11	<6 C
2	B2FDJ9		8-9-11	0910	1 L glass	see list 1 (Lab Sample ID ~~S11V005626~~) S11V005339 - I002 * cm 10/17/11	<6 C
	~~B2FDK0~~				~~1 L glass~~	~~see list 1 (Lab Sample ID S11V005627)~~ LAD 8-9-11	<6 C
						* C8398 - Group # 20111143 - composites	
						~~List 1: %moisture, Tc-99 by ICP/MS on a 1:1 water digest and nitrate on 1:1~~	
						~~water digest~~. csm 10/17/11	

POSSIBLE SAMPLE HAZARDS/REMARKS (List all known wastes) MSDS ○ Yes ◉ No

112905

SPECIAL INSTRUCTIONS

~~Send results to Steve McKinney (Steve G Mckinney@rl.gov) and Mellissa Garrard (see SOW for e-mail address) Contract 36612, rel. 9~~ csm 10/17/11

Report per FSAP.
Required analyses per e-mail dated 10-20-11

Hold Time: ~~48 hours from sample receipt~~ csm 10/17/11

0°C RtLteele

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Leslie Diaz	Leslie Diaz	8/9/11	1535	TA Frazier	Teresa Frazier	8/9/11	1535
TA Frazier	Teresa Frazier	10/13/11	1000	L.D. Wall	L.D. Wall	10/13/11	1000
L.D. Wall	L.D. Wall	10/13/11	1045	RtLteele	RtLteele ATL	10/13/11	1045

Matrix*

S	= Soil	DL	= Drum Liquids
SE	= Sediment	T	= Tissue
SO	= Solid	WI	= Wipe
SL	= Sludge	L	= Liquid
W	= Water	V	= Vegetation
O	= Oil	VA	= Vapor
A	= Air	X	= Other
DS	= Drum Solids		

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

All samples containing hazardous materials shall be picked up by requestor and returned to parent container or site of origin.

A-6003-962 (03/05)

Assembler	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. No. 20111143
N/A		Page 1 of 1

Collector: Ekstrom/Rivera	Contact/Requestor: Jo Marie Johnson/Steve McKinney	Telephone No. 372-9474 MSIN T6-02 FAX
SAF No.: N/A	Sample Origin: S Farm Vadose	Purchase Order/Charge Code: N/A
Project Title: S Farm Barrier	Logbook/ Work Package No.: N/A	Ice Chest No. GWS-210 Temp. N/A
Shipped To (Lab): WSCF	Method of Shipment: Govt. vehicle	Bill of Lading/Air Bill No.: N/A
Protocol: N/A	Data Turnaround: 2 working days from sample receipt	Parts and Return No.: N/A

Sample No.	Lab ID	*	Date	Time	No./Type Container	Sample Analysis	Preservative
6	B2FDK0		8-10-11		1 L glass	see list 1 (Lab Sample ID ~~S11V005627~~) S11V005357 - I003	<6 C
						cm 10/17/11	
						C 8398 - Sample group # 2011 - composite	
						~~List 1: %moisture, Tc-99 by ICP/MS on a 1:1 water digest and nitrate on 1:1~~	
						~~water digest~~. csm 10/17/11	

POSSIBLE SAMPLE HAZARDS/REMARKS (List all known wastes) MSDS ○ Yes ◉ No

SPECIAL INSTRUCTIONS

~~Send results to Steve McKinney (Steve.G.Mckinney@rl.gov) and Melliesa Garrard (see SOW for e-mail address) Contract 36612, rel. 9~~
csm 10/17/11
Report per FSAP.
Required analyses per e-mail dated 10-20-11

Hold Time: ~~40 hours from sample receipt~~ csm 10/17/11

0°C RHSteele

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Leslie Diaz	Leslie Diaz		8/10/11 1435				8/10/11 1435
TA Frazier	Teresa Frazier		10/13/11 1000	L.D. WALL	L.D. Wall		10/13/11 1000
L.D. WALL	L.D. Wall		10/13/11 1045	R I Steele	RHSteele	ATL	10/13/11 1045
Relinquished By			Date/Time	Received By			Date/Time

Matrix*

S	= Soil	DL	= Drum Liquids
SE	= Sediment	T	= Tissue
SO	= Solid	WI	= Wipe
SL	= Sludge	L	= Liquid
W	= Water	V	= Vegetation
O	= Oil	VA	= Vapor
A	= Air	X	= Other
DS	= Drum Solids		

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

All samples containing hazardous materials shall be picked up by requestor and returned to parent container or site of origin.

A-6003-962 (03/05)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev E.0

Date Samples Received: 10.13.11
Number of Samples: 21 total
Sample Custodian: [illegible]

Group #: ~~20111030~~, 20111250 S-Farm
20111272
20111243 } SFarm
20111290

Sample Custodian to Complete:

Action	Yes	No	N/A	Comments
RSA/COC provided?	✓			
RSR provided?	✓			
Verify GKI is complete			✓	☑ In Project File
Check that outer custody seal is intact, if present	✓			ON Ice Cooler
Record cooler temperature in centigrade, as appropriate			✓	☐ Check if no cooler and/or no ice Cooler 1, 0°C Cooler 2, 0°C
Samples are intact and in good condition	✓			If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:				
• Client name and client sample number	✓			
• Date and time of sampling	✓			
• Sampling location or origin	✓			
• Container type, size, and number	✓			
• Preservatives (if used) are noted on the COC/RSA and sample bottle	✓			
• Analysis request is clear	✓			
• Signature of persons relinquishing and receiving samples	✓			
• Date and/or time of sample custody exchange	✓			
Verify that sample numbers on containers match the COC and/or RSA	✓			
Samples stored properly (e.g., refrigeration)	✓			

Notify the PM immediately if any problems are noted. (Any "No" checked requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? Yes PM Initials [illegible] Date 10/13/11

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 2)

Assembler	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. No. 20111290
N/A		Page 1 of 1

Collector: Ekstrom/Rivera	Contact/Requestor: Jo Marie Johnson/Steve McKinney	Telephone No. 372-9474 MSIN T6-02 FAX
SAF No.: N/A	Sample Origin: S Farm Vadose	Purchase Order/Charge Code: N/A
Project Title: S Farm Barrier	Logbook/ Work Package No.: N/A	Ice Chest No. GWS-210 Temp. N/A
Shipped To (Lab): WSCF	Method of Shipment: Govt. Vehicle	Bill of Lading/Air Bill No.: N/A
Protocol: N/A 113006	Data Turnaround: 2 working days from sample receipt	Parts and Return No.: N/A

Sample No.	Lab ID	*	Date	Time	No./Type Container	Sample Analysis	Preservative
1	B2FYY0		8-12-11	0930	1 L glass	see list 1 (Lab Sample ID ~~S11V005634~~) S11V005635-I001 *	<6 C
2	B2FYY1		8-15-11	1355	1 L glass	see list 1 (Lab Sample ID ~~S11V005652~~) cm 10/17/11 S11V005653 cm 10/17/11	<6 C
MP 8-17-11	~~B2FYY2~~		~~8-17-11~~		~~1 L glass~~	~~see list 1 (Lab Sample ID S11V005688)~~ cm 10/17/11 5653-I002 *	<6 C
						* C 8400 - sample group 20111290 - composites	
						~~List 1: %moisture, Tc 99 by ICP/MS on a 1:1 water digest and nitrate on 1:1~~	
						~~water digest.~~ csm 10/17/11	

POSSIBLE SAMPLE HAZARDS/REMARKS (List all known wastes) MSDS ○ Yes ◉ No

SPECIAL INSTRUCTIONS: ~~Send results to Steve McKinney (Steve_G_McKinney@rl.gov) and Mollissa Garrard Tsoo SOW for e-mail address) Contract 36612, rel. 9.~~ csm 10/17/11 Report per FSAP. Required analyses per e-mail dated 10/20/11 0°C RTLeele

Hold Time: ~~48 hours from sample receipt~~ csm 10/17/11

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Leslie Leslie			8/17/11 1350				8/17/11 1350
TA Frazier			10/13/11 1000	L.D. WALL		L.D. Wall	10/13/11 1000
L.D. WALL		L.D. Wall	10/14/11 1045	RT Steele		RTSteele	10/13/11 1045
Relinquished By			Date/Time	Received By			Date/Time

Matrix*

S	= Soil	DL	= Drum Liquids
SE	= Sediment	T	= Tissue
SO	= Solid	WI	= Wipe
SL	= Sludge	L	= Liquid
W	= Water	V	= Vegetation
O	= Oil	VA	= Vapor
A	= Air	X	= Other
DS	= Drum Solids		

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

All samples containing hazardous materials shall be picked up by requestor and returned to parent container or site of origin.

A-6003-962 (03/05)

Assembler	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. No. 20111290
N/A		Page 1 of 1

Collector: Ekstrom/Rivera	Contact/Requestor: Jo Marie Johnson/Steve McKinney	Telephone No. 372-9474 MSIN T6-02 FAX
SAF No.: N/A	Sample Origin: S Farm Vadose	Purchase Order/Charge Code: N/A
Project Title: S Farm Barrier	Logbook/ Work Package No.: N/A	Ice Chest No. GWS-210 Temp. N/A
Shipped To (Lab): WSCF	Method of Shipment: Govt. vehicle	Bill of Lading/Air Bill No.: N/A
Protocol: N/A	Data Turnaround: 2 working days from sample receipt	Parts and Return No.: N/A

Sample No.	Lab ID	*	Date	Time	No./Type Container	Sample Analysis	Preservative
3	B2FYY2		8-18-11	0825	1 L glass	see list 1 (Lab Sample ID ~~S11V005688~~) S11V00 5689 -I003 *	<6 C
						cm 10/17/11	
						* C8400 - Group# 20111290- Composite	
						~~List 1: %moisture, Tc-99 by ICP/MS on a 1:1 water digest and nitrate on 1:1~~	
						~~water digest~~ csm 10/17/11	

POSSIBLE SAMPLE HAZARDS/REMARKS (List all known wastes) MSDS ○ Yes ◉ No

SPECIAL INSTRUCTIONS

~~Send results to Steve McKinney (Steve_G_McKinney@rl.gov) and Melissa Garrard (see SOW for e-mail address) Contract 36612, rel. 9~~ csm 10/17/11

report per FSAP. 0°C RHSteele

Required analyses per e-mail 10/20/2011.

Hold Time: ~~48 hours from sample receipt~~ csm 10/17/11

Relinquished By (Print / Sign)	Date/Time	Received By (Print / Sign)	Date/Time
BARBARA Miller B Miller	8/18/11 1430	KBerrend KBerrend	8/18/11 1430
TA Pnazier Teresa Frazier	10/13/11 1000	L.D. WALL L.D. Wall	LW. 10/13/11 10/13/11 1000
L.D. WALL L.D. Wall	10/13/11 1045	RHSteele RHSteele AtL	10/13/11 1045

Matrix*

S	= Soil	DL	= Drum Liquids
SE	= Sediment	T	= Tissue
SO	= Solid	WI	= Wipe
SL	= Sludge	L	= Liquid
W	= Water	V	= Vegetation
O	= Oil	VA	= Vapor
A	= Air	X	= Other
DS	= Drum Solids		

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

All samples containing hazardous materials shall be picked up by requestor and returned to parent container or site of origin.

A-6003-962 (03/05)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev EG.0

Date Samples Received: 9.13.11 Group #: 20111159

Number of Samples: 1 SFARM EQ C8402

Sample Custodian: [illegible]

Sample Custodian to Complete:

Action	Yes	No	N/A	Comments
RSA/COC provided?	✓			
RSR provided?	✓			
Verify GKI is complete				☑ In Project File
Check that outer custody seal is intact, if present			✓	
Record cooler temperature in centigrade, as appropriate	4°C PK			☐ Check if no cooler and/or no ice
Samples are intact and in good condition	✓			If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:				
• Client name and client sample number	✓			
• Date and time of sampling	✓			
• Sampling location or origin	✓			
• Container type, size, and number	✓			
• Preservatives (if used) are noted on the COC/RSA and sample bottle				
• Analysis request is clear	✓			
• Signature of persons relinquishing and receiving samples	✓			
• Date and/or time of sample custody exchange	✓			
Verify that sample numbers on containers match the COC and/or RSA	✓			
Samples stored properly (e.g., refrigeration)	✓			

Notify the PM immediately if any problems are noted. (Any "No" checked requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? Yes PM Initials [illegible] Date 9.13.11

If No, comment on communication and resolution: [illegible] CSM

Other Comments:

A-6005-342 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	V11-007-002	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE C03	DATA TURNAROUND
Ehsirom / Riviera	ANASTOS, HL	373-2616	SYDNOR, HA		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	60 Days / 120 Days
C8402 - Equipment Blank Prior to I003	Direct Push Samples for S Tank Farm - Interim Barrier - QC Sample		V11-007		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
TFVS-09-004	TFVZ-10-000002	BRE 9/13/11 N/A ~~126 to 128 ft~~	N/A	GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
222-S Lab Operations	N/A		N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	H2SO4 to pH <2/Cool~6C	Cool~6C	NaOH to pH >=12/Cool~6C	None	HNO3 to pH <2
HOLDING TIME	28 Days	7 Days	28 Days/48 Hours	14 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	G/P	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1	1	1	2
VOLUME	500mL	250mL	500mL	250mL	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	300.7_AMMONIUM (TF);	IC Anions - 9056;	Total Cyanide - 9014 (TF);	C-14; H3 - TRITIUM; I129_SEP_GEA (TF);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	1	2	3	4	5	6
B2FDM0	WATER	9/13/11	0820	✓	✓	✓	✓	✓	✓

CHAIN OF POSSESSION	DATE/TIME	SIGN/ PRINT NAMES	DATE/TIME
RELINQUISHED BY/REMOVED FROM: BR Ehsirom BC Ehsirom	9/13/11 0930	RECEIVED BY/STORED IN: RJ Steele RJ Steele ATL	9.13.11 0930
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

Grp # 20111159

Temp 4°C 9-12-11

pt Cole

1-S11V005378
2-S11V005377
3-S11V005375
4-S11V005376
5-S11V005379
6-S11V005380

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 6/21/2011

A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-007-002	PAGE 2 OF 2
COLLECTOR Elstrom/Riviera	COMPANY CONTACT ANASTOS, HL	TELEPHONE NO. 373-2616	PROJECT COORDINATOR SYDNOR, HA	PRICE CODE C03 AIR QUALITY ☐	DATA TURNAROUND 60 Days / 120 Days
SAMPLING LOCATION C8402 - Equipment Blank Prior to I003	PROJECT DESIGNATION Direct Push Samples for S Tank Farm - Interim Barrier - QC Sample		SAF NO. V11-007		
ICE CHEST NO. TFVS-09-004	FIELD LOGBOOK NO. TFV2-10-000002	ACTUAL SAMPLE DEPTH ~~126 to 128 ft~~ N/A	COA N/A	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO 222-S Lab Operations	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

SPECIAL INSTRUCTIONS

(1) Mercury - 7470 - (CV) (TF); 6010_Metals_ICP {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Vanadium, Yttrium, Zinc, Zirconium}; RADISO_ICPMS (TF) {Neptunium-237, Technetium-99, Thorium-230, Thorium-232, Tin-126, Uranium-233, Uranium-234, Uranium-235, Uranium-236, Uranium-238};
(2) GAMMA ENERGY ANALYSIS (TF); Americium-241 (TF); Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; CURIUM {Curium-242, Curium-243/244}; Nickel-63 (TF); Strontium-89,90 -- Total Sr; Selenium-79 (TF);

PRINTED ON 6/21/2011 A-6003-618 (REV 2)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev E.G.O

Date Samples Received: 9.13.11 Group #: 20111160

Number of Samples: 1, 5 FARm C 8402 Field blank

Sample Custodian: pt Ltr

Sample Custodian to Complete:

Action	Yes	No	N/A	Comments
RSA/COC provided?	✓			
RSR provided?	✓			
Verify GKI is complete				☑ In Project File
Check that outer custody seal is intact, if present			✓	
Record cooler temperature in centigrade, as appropriate	5°C			☐ Check if no cooler and/or no ice
Samples are intact and in good condition	✓			If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:				
• Client name and client sample number	✓			
• Date and time of sampling	✓			
• Sampling location or origin	✓			
• Container type, size, and number	✓			
• Preservatives (if used) are noted on the COC/RSA and sample bottle	✓			
• Analysis request is clear	✓			
• Signature of persons relinquishing and receiving samples	✓			
• Date and/or time of sample custody exchange	✓			
Verify that sample numbers on containers match the COC and/or RSA	✓			
Samples stored properly (e.g., refrigeration)	✓			

Notify the PM immediately if any problems are noted. (Any "No" checked requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? Yes PM Initials RK Date 9.13.11

If No, comment on communication and resolution: per CSM

Other Comments:

A-6005-342 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	V11-007-003	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE C03	DATA TURNAROUND
Elstrom / Riviera	ANASTOS, HL	373-2616	SYDNOR, HA		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	**60 Days / 120 Days**
C8402 - Field Blank Prior to I003	Direct Push Samples for S Tank Farm - Interim Barrier - QC Sample		V11-007		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
TFVS-09-004	TFV2-10-000002	N/A	N/A	GOVERNMENT VEHICLE	**ORIGINAL**
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
222-S Lab Operations	N/A		N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	H2SO4 to pH <2/Cool~6C	Cool~6C	NaOH to pH >=12/Cool~6C	None	HNO3 to pH <2
HOLDING TIME	28 Days	7 Days	28 Days/48 Hours	14 Days	6 Months	6 Months
TYPE OF CONTAINER	G/P	G/P	G/P	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1	1	1	2
VOLUME	500mL	250mL	500mL	250mL	1000mL	1000mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	300.7_AMMONIUM (TF);	IC Anions - 9056;	Total Cyanide - 9014 (TF);	C-14; H3 - TRITIUM; I129_SEP_GEA (TF);	SEE ITEM (2) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	1	2	3	4	5	6
B2FDM1	WATER	9/13/11	0910	✓	✓	✓	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
BR Elstrom BR Elstrom	9/13/11 1005	RT Steele RT Steele ATL	9.13.11 1005
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

Grp # 20111160
Temp 5°C 9-13-11
1- S11V005384
2- S11V005383
3- S11V005381
4- S11V005382
5- S11V005385
6- S11V005386
Rtstel

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 6/21/2011 A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-007-003	PAGE 2 OF 2
COLLECTOR Ekstrom / Riviera	COMPANY CONTACT ANASTOS, HL	TELEPHONE NO. 373-2616	PROJECT COORDINATOR SYDNOR, HA	PRICE CODE C03 AIR QUALITY ☐	DATA TURNAROUND 60 Days / 120 Days
SAMPLING LOCATION C8402 - Field Blank	PROJECT DESIGNATION Direct Push Samples for S Tank Farm - Interim Barrier - QC Sample		SAF NO. V11-007		
ICE CHEST NO. S. Ekstrom 9/13/11 TFV2-09-004	FIELD LOGBOOK NO. TFV2-10-000002	ACTUAL SAMPLE DEPTH N/A	COA N/A	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO 222-S Lab Operations	OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A		

SPECIAL INSTRUCTIONS

(1) Mercury - 7470 - (CV) (TF); 6010_Metals_ICP {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cerium, Chromium, Cobalt, Copper, Europium, Iron, Lanthanum, Lead, Lithium, Magnesium, Manganese, Molybdenum, Neodymium, Nickel, Niobium, Palladium, Phosphorus, Potassium, Praseodymium, Rhodium, Rubidium, Ruthenium, Samarium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Tantalum, Tellurium, Thallium, Thorium, Tin, Titanium, Tungsten, Vanadium, Yttrium, Zinc, Zirconium}; RADISO_ICPMS (TF) {Neptunium-237, Technetium-99, Thorium-230, Thorium-232, Tin-126, Uranium-233, Uranium-234, Uranium-235, Uranium-236, Uranium-238};
(2) GAMMA ENERGY ANALYSIS (TF); Americium-241 (TF); Isotopic Plutonium {Plutonium-238, Plutonium-239/240}; CURIUM {Curium-242, Curium-243/244}; Nickel-63 (TF); Strontium-89,90 -- Total Sr; Selenium-79 (TF);

PRINTED ON 6/21/2011 A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-028	PAGE 1 OF 1
COLLECTOR: SHARP / RIVERA	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8402 I001	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-08	FIELD LOGBOOK NO.: TFVZ-10-000002	ACTUAL SAMPLE DEPTH: 47-49	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: 9-9-11 RS ~~222-S Lab Operations~~ WSCF	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FDK2	SOIL	9-8-11	1010	✓
B2FDK3	SOIL	9-8-11	1010	✓
B2FDK4	SOIL	9-8-11	1010	✓

GRP # 20111161
S11V005387
5388
5389

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: RSharp 9-8-11	DATE/TIME: 1210	RECEIVED BY/STORED IN: KBreazeal K Breazeal	DATE/TIME: 9/8/11 1210
RELINQUISHED BY/REMOVED FROM: KBreazeal K Breazeal	DATE/TIME: 9/15/11 0950	RECEIVED BY/STORED IN: R.D. Julian	DATE/TIME: 9/15/11 0950
RELINQUISHED BY/REMOVED FROM: R.D. Julian	DATE/TIME: 9-15-11 1000	RECEIVED BY/STORED IN: KBeebe	DATE/TIME: 9/15/11 1000
RELINQUISHED BY/REMOVED FROM: KBeebe	DATE/TIME: 9/15/11 1320	RECEIVED BY/STORED IN: [illegible]	DATE/TIME: 9/15/11 1320
RELINQUISHED BY/REMOVED FROM: [illegible]	DATE/TIME: 9/15/11 1400	RECEIVED BY/STORED IN: RTSteele ATL	DATE/TIME: 9.15.11 1400
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

[signature] 9-8-11

0°C RTSteele 9.15.11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 6/21/2011 A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-027	PAGE 1 OF 1
COLLECTOR: SHARP / RIVERA	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8402 I001	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-08-04	FIELD LOGBOOK NO.: TFVZ-10-000002	ACTUAL SAMPLE DEPTH: 47.49	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: 9-8-11 RS ~~222-S Lab Operations~~ WSCF	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	G
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FDK1	SOIL	9-8-11	1010	✓

GRP # 20111161
511V005390

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: RSP RSharp 9-8-11	DATE/TIME: 1210	RECEIVED BY/STORED IN: KBreazeal KBreazeal 9/8/11	DATE/TIME: 1210
RELINQUISHED BY/REMOVED FROM: KBreazeal KBreazeal 9/15/11	DATE/TIME: 0950	RECEIVED BY/STORED IN: R.D. Julian [signature] 9/15/11	DATE/TIME: 0950
RELINQUISHED BY/REMOVED FROM: R.D. Julian [signature] 9-15-11	DATE/TIME: 1000	RECEIVED BY/STORED IN: [signature] 9-15-11	DATE/TIME: 1000
RELINQUISHED BY/REMOVED FROM: [signature] 9/15/11	DATE/TIME: 1330	RECEIVED BY/STORED IN: [signature] 9/15/11	DATE/TIME: 1330
RELINQUISHED BY/REMOVED FROM: [signature] 9/15/11	DATE/TIME: 1400	RECEIVED BY/STORED IN: RTSteele ATL 9.15.11	DATE/TIME: 1400
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

[signature] 9-8-11

0°C RTSteele 9.15.11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 6/21/2011 A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-030	PAGE 1 OF 1
COLLECTOR: Ekstrom / Rivera	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8402 I002	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 107 to 109 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ BRE 9/12/11 WSCF	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A	42°F / 60°F	

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FDK6	SOIL	9/12/11	1315	✓
B2FDK7	SOIL	9/12/11	1315	✓
B2FDK8	SOIL	9/12/11	1315	✓

GRP# 20111161
S1N00 5405
S11V00 5406
S11V00 5407

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: [signature]	DATE/TIME: 9/12/11 1400	RECEIVED BY/STORED IN: [signature]	DATE/TIME: 9/12/11 1400
RELINQUISHED BY/REMOVED FROM: K Breazeal [signature]	DATE/TIME: 9/15/11 0950	RECEIVED BY/STORED IN: R.D. Julian [signature]	DATE/TIME: 9/15/11 0950
RELINQUISHED BY/REMOVED FROM: R.D. Julian [signature]	DATE/TIME: 9-15-11 1000	RECEIVED BY/STORED IN: [signature]	DATE/TIME: 9-15-11 1000
RELINQUISHED BY/REMOVED FROM: [signature]	DATE/TIME: 9/15/11 1330	RECEIVED BY/STORED IN: [signature]	DATE/TIME: 9/15/11 1530
RELINQUISHED BY/REMOVED FROM: [signature]	DATE/TIME: 9/15/11 1400	RECEIVED BY/STORED IN: RtReele ATL	DATE/TIME: 9.15.11 1400
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

[signature] 9-12-11

0°C RtReele 9.15.11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 6/21/2011 A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-029	PAGE 1 OF 1
COLLECTOR: Ekstrom / Rivera	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND: 60 Days / 120 Days
SAMPLING LOCATION: C8402 I002	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 107 to 109 ft.	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF BRE 9/12/11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	G
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FDK5	SOIL	9/12/11	1315	✓

GRP# 20111161
S11V005408

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: BEkstrom BEkstrom	DATE/TIME: 9/12/11 1400	RECEIVED BY/STORED IN: [signature]	DATE/TIME: 9/12/11 1400
RELINQUISHED BY/REMOVED FROM: KBreazeal KBreazeal	DATE/TIME: 9/15/11 0950	RECEIVED BY/STORED IN: R.D Julian [signature]	DATE/TIME: 9/15/11 0950
RELINQUISHED BY/REMOVED FROM: R.D Julian [signature]	DATE/TIME: 9-15-11 1000	RECEIVED BY/STORED IN: [signature]	DATE/TIME: 9-15-11 100
RELINQUISHED BY/REMOVED FROM: [signature]	DATE/TIME: 9/15/11 1330	RECEIVED BY/STORED IN: [signature]	DATE/TIME: 9/15/11 1330
RELINQUISHED BY/REMOVED FROM: K Patterson [signature]	DATE/TIME: 9/15/11 1400	RECEIVED BY/STORED IN: RTSteele ATL	DATE/TIME: 9.15.11 1400
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.
[signature] 9-12-11
0°C RTSteele 9.15.11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 6/21/2011 A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-032	PAGE 1 OF 1
COLLECTOR: Ekstrom / Riviera	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND: 60 Days / 120 Days
SAMPLING LOCATION: C8402 I003	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 126 to 128 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ BEE 9/13/11 WSCF	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FDL0	SOIL A	9/13/11	1040	✓
B2FDL1	SOIL B	9/13/11	1040	✓
B2FDL2	SOIL C	9/13/11	1040	✓

GRP# 20111161
S11V005423
S11V005424
S11V005425

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: B Ekstrom B Ekstrom	DATE/TIME: 9/13/11 1140	RECEIVED BY/STORED IN: K Breazeal K Breazeal	DATE/TIME: 9/13/11 1140
RELINQUISHED BY/REMOVED FROM: K Breazeal K Breazeal	DATE/TIME: 9/15/11 0950	RECEIVED BY/STORED IN: R.D. Julian [signature]	DATE/TIME: 9/15/11 0950
RELINQUISHED BY/REMOVED FROM: R.D. Julian [signature]	DATE/TIME: 9-15-11 1000	RECEIVED BY/STORED IN: [signature]	DATE/TIME: 9-15-11 1000
RELINQUISHED BY/REMOVED FROM: [signature]	DATE/TIME: 9/15/11 1330	RECEIVED BY/STORED IN: [signature]	DATE/TIME: 9/15/11 1330
RELINQUISHED BY/REMOVED FROM: [signature]	DATE/TIME: 9/15/11 1400	RECEIVED BY/STORED IN: RT Steele ATL	DATE/TIME: 9.15.11 1400
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

[signature] 9-13-11

9.15.11 RT Steele OEC

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 6/21/2011 A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-031	PAGE 1 OF 1
COLLECTOR: Ekstrom / Riviera	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8402 I003	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 126 to 128 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ BEE 9/13/11 WSCF	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	G
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FDK9	SOIL	9/13/11	1040	✓

GRPH 20111161
S11V005426

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: B Ekstrom	DATE/TIME: 9/13/11 1140	RECEIVED BY/STORED IN: K Breazeel	DATE/TIME: 9/13/11 1140
RELINQUISHED BY/REMOVED FROM: K Breazeel	DATE/TIME: 9/15/11 0950	RECEIVED BY/STORED IN: R.D. Julian	DATE/TIME: 9/15/11 0950
RELINQUISHED BY/REMOVED FROM: R.D. Julian	DATE/TIME: 9-15-11 1000	RECEIVED BY/STORED IN: [illegible]	DATE/TIME: 9-15-11 1000
RELINQUISHED BY/REMOVED FROM: [illegible]	DATE/TIME: 9/15/11 1330	RECEIVED BY/STORED IN: [illegible]	DATE/TIME: 9/3/11 1330
RELINQUISHED BY/REMOVED FROM: [illegible]	DATE/TIME: 9/15/11 1400	RECEIVED BY/STORED IN: RTSteele ATL	DATE/TIME: 9.15.11 1400
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

[signature] 9-13-11

0°C RTSteele 9.15.11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 6/21/2011 A-6003-618 (REV 2)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev E.E.0 ~~SFarm~~ mmc 10/20/11

Date Samples Received: 10·13·11

Number of Samples: 21 total

Sample Custodian: [signature]

Group #: ~~20111030~~, 20111250 S-Farm
20111272
20111243 } SFarm
20111290

Sample Custodian to Complete:

Action	Yes	No	N/A	Comments
RSA/COC provided?	✓			
RSR provided?	✓			
Verify GKI is complete			✓	☑ In Project File
Check that outer custody seal is intact, if present	✓			ON Ice Cooler
Record cooler temperature in centigrade, as appropriate			✓	☐ Check if no cooler and/or no ice Cooler 1, 0°C Cooler 2, 0°C
Samples are intact and in good condition	✓			If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:				
• Client name and client sample number	✓			
• Date and time of sampling	✓			
• Sampling location or origin	✓			
• Container type, size, and number	✓			
• Preservatives (if used) are noted on the COC/RSA and sample bottle	✓			
• Analysis request is clear	✓			
• Signature of persons relinquishing and receiving samples	✓			
• Date and/or time of sample custody exchange	✓			
Verify that sample numbers on containers match the COC and/or RSA	✓			
Samples stored properly (e.g., refrigeration)	✓			

Notify the PM immediately if any problems are noted. (Any "No" checked requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? Yes PM Initials [initials] Date 10/13/11

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 2)

Assembler	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. No. 20111250
N/A 112857		Page 1 of 1

Collector: Ekstrom/Rivera	Contact/Requestor: Jo Marie Johnson/Steve McKinney	Telephone No. 372-9474 MSIN T6-02 FAX
SAF No.: N/A	Sample Origin: S Farm Vadose	Purchase Order/Charge Code: N/A
Project Title: S Farm Barrier	Logbook/ Work Package No.: N/A	Ice Chest No. GWS-210 Temp. N/A
Shipped To (Lab): WSCF	Method of Shipment: Govt. vehicle	Bill of Lading/Air Bill No.: N/A
Protocol: N/A	Data Turnaround: 2 working days from sample receipt	Parts and Return No.: N/A

Sample No.	Lab ID	*	Date	Time	No./Type Container	Sample Analysis	Preservative
1	B2FXM5		7-29-11	0945	1 L glass	see list 1 (Lab Sample ID S11V005517) ✓ - I001 - composite *	<6 C
2	B2FXM6		8-1-11	1305	1 L glass	see list 1 (Lab Sample ID S11V005535) ✓ - I002 - composite *	<6 C
3	B2FXM7		8-2-11	1030	1 L glass	see list 1 (Lab Sample ID S11V005553) ✓ - I003 - composite *	<6 C
						* C8406 - Sample # 20111250	
						~~List 1: %moisture, Tc-99 by ICP/MS on a 1:1 water digest and nitrate on 1:1~~	
						~~water digest.~~ csm 10/17/11	

POSSIBLE SAMPLE HAZARDS/REMARKS (List all known wastes) MSDS ○ Yes ◉ No

SPECIAL INSTRUCTIONS

~~Send results to Steve McKinney (Steve G Mckinney@rl.gov) and Mellissa Garrard (see SOW for e-mail address) Contract 36612, Tel. 9~~
csm 10/17/11
Report per FSAP.
Required analyses per e-mail dated 10/20/11

Hold Time
~~per work instruction~~ csm 10/17/11
0°C [signature]

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Leslie Diaz	Leslie Diaz	8/3/11	1330	K Breazeal	K Breazeal	8/3/11	1330
TA Frazier	[signature]	10/13/11	1000	L.D. Wall	L.D. Wall	10/13/11	1000
L.D. Wall	L.D. Wall	10/13/11	1045	RHTeele	RHTeele ATL	10/13/11	1045

Matrix*

S	= Soil	DL	= Drum Liquids
SE	= Sediment	T	= Tissue
SO	= Solid	WI	= Wipe
SL	= Sludge	L	= Liquid
W	= Water	V	= Vegetation
O	= Oil	VA	= Vapor
A	= Air	X	= Other
DS	= Drum Solids		

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

All samples containing hazardous materials shall be picked up by requestor and returned to parent container or site of origin.

A-6003-962 (03/05)

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev 6.6.0

Date Samples Received: 9.15.11
Number of Samples: 15
Sample Custodian: [illegible]

3 S-FARM C8408 — Composits
12 S-FARM

Group #: 20111300 (3)
20111161 (12)

Sample Custodian to Complete:

Action	Yes	No	N/A	Comments
RSA/COC provided?	✓			
RSR provided?	✓			
Verify GKI is complete				☑ In Project File
Check that outer custody seal is intact, if present	✓			
Record cooler temperature in centigrade, as appropriate	0°C			☐ Check if no cooler and/or no ice
Samples are intact and in good condition	✓			If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:				
• Client name and client sample number	✓			
• Date and time of sampling	✓			
• Sampling location or origin	✓			
• Container type, size, and number	✓			
• Preservatives (if used) are noted on the COC/RSA and sample bottle			✓	
• Analysis request is clear	✓			
• Signature of persons relinquishing and receiving samples	✓			
• Date and/or time of sample custody exchange	✓			
Verify that sample numbers on containers match the COC and/or RSA	✓			
Samples stored properly (e.g., refrigeration)	✓			

Notify the PM immediately if any problems are noted. (Any "No" checked requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? yes PM Initials CSM Date 09/15/11

If No, comment on communication and resolution:

Other Comments:

A-6005-342 (REV 2)

Assembler N/A 113132	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. No. 20111300 Page 1 of 2
Collector Ekstrom/Rivera	Contact/Requestor Jo Marie Johnson/Steve McKinney	Telephone No. 372-9474 MSIN T6-02 FAX
SAF No. N/A	Sample Origin S Farm Vadose	Purchase Order/Charge Code
Project Title S Farm Barrier	Logbook/ Work Package No. N/A	Ice Chest No. Temp.
Shipped To (Lab) WSCF	Method of Shipment	Bill of Lading/Air Bill No.
Protocol N/A	Data Turnaround 2 working days from sample receipt	Parts and Return No.

Sample No.	Lab ID	*	Date	Time	No./Type Container	Sample Analysis GRP # 20111300	Preservative
1	B2H106		9-1-11	0850	1 L glass	see list 1 (Lab Sample ID S11V005712) → S11V005714	<6 C
2	B2H107		9-6-11	0930	1 L glass	see list 1 (Lab Sample ID S11V005751) → S11V005752	<6 C
3	B2H108		9-7-11	0825	1 L glass	see list 1 (Lab Sample ID S11V005769) → S11V005770	<6 C
						List 1: %moisture, Tc-99 by ICP/MS on a 1:1 water digest and nitrate on 1:1	
						water digest.	

POSSIBLE SAMPLE HAZARDS/REMARKS (List all known wastes) MSDS ○ Yes ◉ No

SPECIAL INSTRUCTIONS
Send results to Steve McKinney (Steve_G_Mckinney@rl.gov) and Mellissa Garrard (see SOW for e-mail address) Contract 36612, rel. 9

Hold Time
48 hours from sample receipt

Relinquished By (Print / Sign)	Date/Time	Received By (Print / Sign)	Date/Time
Leslie Diaz	9/8/11 1140		9/8/11 1140
	9/15/11 0950	RD Julian CHPRC	9/15/11 0950
RD Julian CHPRC	9-15-11 1000		9-15-11 1000
	9/15/11 1327		9/15/11 1327

Matrix*

S	= Soil	DL	= Drum Liquids
SE	= Sediment	T	= Tissue
SO	= Solid	WI	= Wipe
SL	= Sludge	L	= Liquid
W	= Water	V	= Vegetation
O	= Oil	VA	= Vapor
A	= Air	X	= Other
DS	= Drum Solids		

FINAL SAMPLE DISPOSITION: Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time

All samples containing hazardous materials shall be picked up by requestor and returned to parent container or site of origin.

A-6003-962 (03/05)

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST (continued)

O BC PS

C.O.C. No. 20111300

Page 2 of 2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
K Patterson		K Patterson	9/15/11 1400	RT Steele	RT Steele	AR	9.15.11 1400
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time

A-6003-962 (03/05)

Attachment 10

RECEIPT PAPERWORK-WSCF

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-063	PAGE 1 OF 1
COLLECTOR: Ekstrom / Snook	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8396 I001	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFVZ-10-000002	ACTUAL SAMPLE DEPTH: 55 to 57 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF BEE 8/4/11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B2FYT3

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FYT5 A	SOIL	8/4/11	0925	✓
B2FYT6 B	SOIL	8/4/11	0925	✓
B2FYT7 C	SOIL	8/4/11	0925	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: B Ekstrom BEE	DATE/TIME: 8/4/11 1000	RECEIVED BY/STORED IN: [illegible]	DATE/TIME: 8/4/11 1000
RELINQUISHED BY/REMOVED FROM: [illegible]	DATE/TIME: 8/9/11 1200	RECEIVED BY/STORED IN: Leslie Diaz [illegible]	DATE/TIME: 8/9/11 1200
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

Scott Snook 8-4-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/28/2011

A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-062	PAGE 1 OF 1
COLLECTOR: Ekstrom / Snook	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND: 60 Days / 120 Days
SAMPLING LOCATION: C8396 I001	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	
ICE CHEST NO.: TFVS-~~10~~ 09-008 BE 8/4/11	FIELD LOGBOOK NO.: TFVZ-10-000002	ACTUAL SAMPLE DEPTH: 55 to 57 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF BE 8/4/11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A	32°F / 55°C	

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS		
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	Cool~6C
		HOLDING TIME	24 Hours
		TYPE OF CONTAINER	G
		NO. OF CONTAINER(S)	1
		VOLUME	500mL
	SPECIAL HANDLING AND/OR STORAGE RADIOACTIVE TIE TO: B2FYT3	SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FYT4	SOIL	8/4/11	0925	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: BL Ekstrom BL Ekstrom	DATE/TIME: 8/4/11 1000	RECEIVED BY/STORED IN: K Breazeel K Breazeel	DATE/TIME: 8/4/11 1000
RELINQUISHED BY/REMOVED FROM: [signature] K Breazeel	DATE/TIME: 8/9/11 1200	RECEIVED BY/STORED IN: Leslie Diaz Leslie Diaz	DATE/TIME: 8/9/11 1200
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

Scott Snook 8-4-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/28/2011 A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-066	PAGE 1 OF 1
COLLECTOR: Elstrom / Snook	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND: 60 Days / 120 Days
SAMPLING LOCATION: C8396 I002	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFVR-10-000002	ACTUAL SAMPLE DEPTH: 103 to 105 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: 222-S Lab Operations BRE 8/8/11 WSCF	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		32°F-60°F

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B2FYT8

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FYV0 A	SOIL	8/8/11	1345	✓
B2FYV1 B	SOIL	8/8/11	1345	✓
B2FYV2 C	SOIL	8/8/11	1345	✓

CHAIN OF POSSESSION	DATE/TIME	SIGN/ PRINT NAMES: RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM: B.E. Elstrom B.E. Elstrom	8/8/11 1425	M. Nelson M. Nelson	1425 8/8/11
RELINQUISHED BY/REMOVED FROM: [illegible]	8/9/11 1200	Leslie Diaz [illegible]	8/9/11 1200
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

[illegible] 8-8-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/28/2011

A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-065	PAGE 1 OF 1
COLLECTOR: Elstrom/Snook	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8396 I002	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 103 to 105 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF BLE 8/8/11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B2FYT8

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	G
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FYT9	SOIL	8/8/11	1345	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: BLE Elstrom	DATE/TIME: 8/8/11 1425	RECEIVED BY/STORED IN: M. Nelson M. Nelson	DATE/TIME: 8/8/11 1425
RELINQUISHED BY/REMOVED FROM: K Beebe	DATE/TIME: 8/9/11 1200	RECEIVED BY/STORED IN: Leslie Diaz Leslie Diaz	DATE/TIME: 8/9/11 1200
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

Scott Sweet 8-8-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/28/2011 A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-069	PAGE 1 OF 1
COLLECTOR: Elstrom/Snook	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8396 I003	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 117 to 119 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ B2E 8/9/11 WSCF	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B2FYV3

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FYV5 A	SOIL	8/9/11	1145	✓
B2FYV6 B	SOIL	8/9/11	1145	✓
B2FYV7 C	SOIL	8/10/11	1145	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: BC Elstrom	DATE/TIME: 8/9/11 1225	RECEIVED BY/STORED IN: K Breazeal	DATE/TIME: 8/9/11 1225
RELINQUISHED BY/REMOVED FROM: TA Frazier	DATE/TIME: 8-10-11 1140	RECEIVED BY/STORED IN: Leslie Dine	DATE/TIME: 8/10/11 1140
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

8-9-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/28/2011

A-6002-618 (REV.2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-068	PAGE 1 OF 1
COLLECTOR: Ekstrom / Snook	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8396 I003	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFVZ-10-000002	ACTUAL SAMPLE DEPTH: 117 to 119 ft.	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF B&E 8/9/11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B2FYV3

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	G
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FYV4	SOIL	8/9/11	11:45	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: B L Ekstrom	DATE/TIME: 8/9/11 1225	RECEIVED BY/STORED IN: O Breazeal	DATE/TIME: 8/9/11 1225
RELINQUISHED BY/REMOVED FROM: TA Frazier	DATE/TIME: 8-10-11 1140	RECEIVED BY/STORED IN: Leslie Diaz	DATE/TIME: 8/10/11 11:40
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

8-9-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/28/2011

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-022	PAGE 1 OF 1
COLLECTOR: Ekstrom / Snook	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND: 60 Days / 120 Days
SAMPLING LOCATION: C8398 I001	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 46 to 48 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ BCE 8/8/11 WSCF	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner / Jar 500ml BCE 8/8/11
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FDH7 A	SOIL	8/8/11	0925	✓
B2FDH8 B	SOIL	8/8/11	0925	✓
B2FDH9 C	SOIL	8/8/11	0925	✓

Liner B material placed in 500ml JAR BCE 8/8/11

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: BEkstrom BEkstrom	DATE/TIME: 8/8/11 1300	RECEIVED BY/STORED IN: KBracelet Bracelet	DATE/TIME: 8/8/11 1300
RELINQUISHED BY/REMOVED FROM: [illegible]	DATE/TIME: 8/9/11 1200	RECEIVED BY/STORED IN: Leslie Dixie [illegible]	DATE/TIME: 8/9/11 1200
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

Scott Snook 8-8-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 6/21/2011 A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-021	PAGE 1 OF 1
COLLECTOR: Ekstrom / Snook	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8398 I001	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFVZ-10-000002	ACTUAL SAMPLE DEPTH: 46 to 48 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF BRE 8/4/11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	G
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FDH6	SOIL	8/8/11	0925	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: BE Ekstrom BE Ekstrom	DATE/TIME: 8/8/11 1300	RECEIVED BY/STORED IN: K Bacon K Bacon	DATE/TIME: 8/8/11 1300
RELINQUISHED BY/REMOVED FROM: K Bacon K Bacon	DATE/TIME: 8/9/11 1200	RECEIVED BY/STORED IN: Leslie Diaz Leslie Diaz	DATE/TIME: 8/9/11 1200
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

Scott Snook 8-8-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

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Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-024	PAGE 1 OF 1
COLLECTOR: Ekstrom / Snook	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8398 I002	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 86 to 88 ft.	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF BRE 8/9/11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A	37°F / 50°F	

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FDJ1	SOIL A	8/9/11	0910	✓
B2FDJ2	SOIL B	8/9/11	0910	✓
B2FDJ3	SOIL C	8/9/11	0910	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: BC Ekstrom BC Ekstrom	DATE/TIME: 8/9/11 0940	RECEIVED BY/STORED IN: K Bearcal K Bearcal 8/9/11	DATE/TIME: 0940
RELINQUISHED BY/REMOVED FROM: [signature]	DATE/TIME: 8/9/11 1200	RECEIVED BY/STORED IN: Leslie DIAZ Leslie Diaz 8/9/11	DATE/TIME: 1200
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

Scott Snook 8-9-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 6/21/2011 A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	V11-006-023	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE C03	DATA TURNAROUND
Ekstrom/Snook	ANASTOS, HL	373-2616	SYDNOR, HA		
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**	**AIR QUALITY** ☐	60 Days / 120 Days
C8398 I002	Direct Push Samples for S Tank Farm - Interim Barrier		V11-006		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
TFVS-09-008	TFVZ-10-000002	86 to 88 ft	N/A	GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
~~222-S Lab Operations~~ BeE 8/9/11 WSCF	N/A		N/A		

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS		
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	Cool~6C
		HOLDING TIME	24 Hours
		TYPE OF CONTAINER	G
		NO. OF CONTAINER(S)	1
		VOLUME	500mL
	SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FDJ0	SOIL	8/9/11	0910	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
BE Ekstrom BE Ekstrom	8/9/11 0940	VBracal & Bergt	8/9/11 0940
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
[illegible]	8/9/11 1200	Joshua Diaz [illegible]	8/9/11 1200
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

Jerrett Snook 8-9-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

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Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-026	PAGE 1 OF 1
COLLECTOR: Ekstrom / Snook	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8398 I003	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-001	FIELD LOGBOOK NO.: TFVZ-10-000002	ACTUAL SAMPLE DEPTH: 131 to 137	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ BRE 8/10/11 WSCF	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SPECIAL HANDLING AND/OR STORAGE

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FDJ5	SOIL A	8/10/11	0815	✓
B2FDJ6	SOIL B	8/10/11	0815	✓
B2FDJ7	SOIL C	8/10/11	0815	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: BRE Ekstrom BC Ekstrom	DATE/TIME: BRE 8/10/11 8/10/11 ~~1250~~ 1305	RECEIVED BY/STORED IN: Victor Bim[illegible]	DATE/TIME: 8/10/11 1305
RELINQUISHED BY/REMOVED FROM: [illegible]	DATE/TIME: 08/10/11 1335	RECEIVED BY/STORED IN: Leslie DIAZ [illegible]	DATE/TIME: 8/10/11 1335
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.
Scott Snook 8-10-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

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Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-025	PAGE 1 OF 1
COLLECTOR: Ekstrom / Snook	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8398 I003	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY ☐	60 Days / 120 Days
ICE CHEST NO.: BEE 8/10/11 TFV~~B~~S-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 131 + 133ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~221-S Lab Operations~~ BEE 8/10/11 WSCF	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	G
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FDJ4	SOIL	8/10/11	0815	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: BEEkstrom BEEkstrom	DATE/TIME: 8/10/11 ~~1250~~ BEE 8/10/11 1305	RECEIVED BY/STORED IN: Victor [signature] 8/10/11	DATE/TIME: 1305
RELINQUISHED BY/REMOVED FROM: [signature]	DATE/TIME: 8/10/11 1335	RECEIVED BY/STORED IN: Leslie Schatz [signature] 8/10/11	DATE/TIME: 1335
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.
Scott Sweet 8-10-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

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Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-053	PAGE 1 OF 1
COLLECTOR: Elstrom/Villarreal	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8400 I001	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 54 to 56 ft.	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: BRE 8/12/11 ~~222-S Lab Operations~~ WSCF	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B2FYP2

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FYP4 A	SOIL	8/12/11	0930	✓
B2FYP5 B	SOIL	8/12/11	0930	✓
B2FYP6 C	SOIL	8/12/11	0930	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: B2Elstrom BC Elstrom	DATE/TIME: 8/12/11 1005	RECEIVED BY/STORED IN: M Nelson M Nelson	DATE/TIME: 8/12/11 1005
RELINQUISHED BY/REMOVED FROM: Victor Sims	DATE/TIME: 8/12/11 1145	RECEIVED BY/STORED IN: Leslie Diaz Leslie Diaz	DATE/TIME: 8/17/11 1145
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.
Scott Smith 8-12-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

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Chain of Custody

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-052	PAGE 1 OF 1
COLLECTOR: Elestrom / Villarreal	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8400 I001	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	60 Days / 120 Days
ICE CHEST NO.: TFV5-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 54 to 56 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ BCE 8/12/11 WSCF	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS		
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	Cool~6C
		HOLDING TIME	24 Hours
		TYPE OF CONTAINER	G
		NO. OF CONTAINER(S)	1
		VOLUME	500mL
	SPECIAL HANDLING AND/OR STORAGE RADIOACTIVE TIE TO: B2FYP2	SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FYP3	SOIL	8/12/11	0930	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: BCElstrom	DATE/TIME: 8/12/11 1005	RECEIVED BY/STORED IN: M. Nelson	DATE/TIME: 8/12/11 1005
RELINQUISHED BY/REMOVED FROM: Victor Sierra	DATE/TIME: 8/17/11 1145	RECEIVED BY/STORED IN: Leslie Dale	DATE/TIME: 8/17/11 11:45
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

Scott Duncan 8-12-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

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Chain of Custody

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Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-056	PAGE 1 OF 1
COLLECTOR: Eksmann/Snook	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND: 60 Days / 120 Days
SAMPLING LOCATION: C8400 I002	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 93 to 95 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF BRE 8/15/11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A 325/605		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B2FYP7

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner ~~500ml~~
NO. OF CONTAINER(S)	1 ~~2 500ml~~
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FYP9 A	SOIL	8/15/11	1355	✓
B2FYR0 B	SOIL	8/15/11	1355	✓ 500 ml jar BRE 8/15/11
B2FYR1 C	SOIL	8/15/11	1355	✓ 500 ml jar BRE 8/15/11

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: BR Eksmann	DATE/TIME: 8/15/11 1455	RECEIVED BY/STORED IN: Victor Sing	DATE/TIME: 8/15/11 1455
RELINQUISHED BY/REMOVED FROM: Victor Sing	DATE/TIME: 8/17/11 1145	RECEIVED BY/STORED IN: Leslie Diaz	DATE/TIME: 8/17/11 1145
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

Brett Snook 8-15-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

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Chain of Custody

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-055	PAGE 1 OF 1
COLLECTOR: Ekstrom / Snook	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8400 I002	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFVZ-10-000002	ACTUAL SAMPLE DEPTH: 93 to 95 ft.	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ BRE 8/15/11 WSCF	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B2FYP7

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	G
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FYP8	SOIL	8/15/11	1355	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: [signature]	DATE/TIME: 8/15/11 1455	RECEIVED BY/STORED IN: Victor Sims [signature]	DATE/TIME: 8/15/11 1455
RELINQUISHED BY/REMOVED FROM: Victor Sims [signature]	DATE/TIME: 8/17/11 1145	RECEIVED BY/STORED IN: Leslie Diaz [signature]	DATE/TIME: 8/17/11 11:45
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

Scott Snook 8-15-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

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Chain of Custody

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	V11-006-058	PAGE 1 OF 1

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE C03	DATA TURNAROUND
Eksstrom / Snook	ANASTOS, HL	373-2616	SYDNOR, HA	AIR QUALITY ☐	60 Days / 120 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C8400 I003	Direct Push Samples for S Tank Farm - Interim Barrier		V11-006		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA**	**METHOD OF SHIPMENT**	
TFVS-09-008	TFVZ-10-000002	126 to 128 ft.	N/A	GOVERNMENT VEHICLE	**ORIGINAL**
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
~~222-S Lab Operations~~ RCE 8/16/11 WSCF	N/A		N/A		

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS		
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	Cool~6C
		HOLDING TIME	24 Hours
		TYPE OF CONTAINER	G
		NO. OF CONTAINER(S)	1
		VOLUME	500mL
	SPECIAL HANDLING AND/OR STORAGE RADIOACTIVE TIE TO: B2FYR2	SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FYR3	SOIL	8/18/11	0825	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
[signature]	8/18/11 0930	[signature]	8/18/11 0930
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
[signature]	8/18/11	[signature]	8/18/11 1312
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

[signature] 8-18-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

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Chain of Custody

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-059	PAGE 1 OF 1
COLLECTOR: Ekstrom / Snook	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8400 I003	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 126 to 128 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF BEE 8/16/11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B2FYR2

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FYR4 A	SOIL	8/18/11	0825	✓
B2FYR5 B	SOIL	8/18/11	0825	✓
B2FYR6 C	SOIL	8/18/11	0825	✓

← Liner Bis contamerized BEE 8/18/11
500 mL Jar BEE 8/18/11

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: BEEkstrom BCEkstrom	DATE/TIME: 8/18/11 0930	RECEIVED BY/STORED IN: [signature]	DATE/TIME: 8/18/11 0930
RELINQUISHED BY/REMOVED FROM: [signature]	DATE/TIME: 8/18/11	RECEIVED BY/STORED IN: Barbara [signature]	DATE/TIME: 8/18/11 1312
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

Scott Snook 8-18-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

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Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-040	PAGE 1 OF 1
COLLECTOR: Elstrom/ Riviera	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND: 60 Days / 120 Days
SAMPLING LOCATION: C8406 I001	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 52 to 54 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF BRE 7/29/11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A	43°F / 57°F	

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B2FXK4

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FXL6 A	SOIL	7/29/11	0945	✓
B2FXL7 B	SOIL	7/29/11	0945	✓
B2FXL8 C	SOIL	7/29/11	0945	✓

CHAIN OF POSSESSION	DATE/TIME	SIGN/ PRINT NAMES: RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM: BCElstrom	7/29/11 1050	M Nelson M.Nelson	7/29/11 1050
RELINQUISHED BY/REMOVED FROM: TA Frazier	8/3/11 1025	Leslie Diaz	8/3/11 1025
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN	

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

7-29-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-039	PAGE 1 OF 1
COLLECTOR: Elstrom / Riviera	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND: 60 Days / 120 Days
SAMPLING LOCATION: C8406 I001	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFVZ-10-000002	ACTUAL SAMPLE DEPTH: 52 to 54 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ BOE 7/29/11 WSCF	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		43°-57°F

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS		
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	Cool~6C
		HOLDING TIME	24 Hours
		TYPE OF CONTAINER	G
		NO. OF CONTAINER(S)	1
		VOLUME	500mL
	SPECIAL HANDLING AND/OR STORAGE RADIOACTIVE TIE TO: B2FXK4	SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FXL3	SOIL	7/29/11	0945	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: BC Elstrom BC Elstrom	DATE/TIME: 7/29/11 1050	RECEIVED BY/STORED IN: M Nelson Mnelson	DATE/TIME: 7/29/11 1050
RELINQUISHED BY/REMOVED FROM: JA Frazier [signature]	DATE/TIME: 8/3/11 1025	RECEIVED BY/STORED IN: Leslie Diaz [signature]	DATE/TIME: 8/3/11 1025
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

[signature] 7-29-11

~~7-29-11~~

7-29-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-042	PAGE 1 OF 1
COLLECTOR: Ekstrom / Rivera	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8406 I002	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFVZ-10-000002	ACTUAL SAMPLE DEPTH: 98 to 100 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF MA 08/03/11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B2FXK5

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FXL9	A	SOIL	8/1/11	1305	✓
B2FXM0	B	SOIL	8/1/11	1305	✓
B2FXM1	C	SOIL	8/1/11	1305	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: BC Ekstrom BC Ekstrom	DATE/TIME: 8/1/11 1350	RECEIVED BY/STORED IN: KBreazeal KBreazeal	DATE/TIME: 8/1/11 1350
RELINQUISHED BY/REMOVED FROM: TA Frazim Teresa Frazim	DATE/TIME: 8/3/11 1025	RECEIVED BY/STORED IN: Leslie DIAZ Leslie Diaz	DATE/TIME: 8/3/11 1025
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

[signature] 8/1/11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

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Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-041	PAGE 1 OF 1
COLLECTOR: Ekstrom / Rivera	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8406 I002	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 98 to 100 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF MA 08/03/11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B2FXK5

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	G
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FXL4	SOIL	8/1/11	1305	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: BCEkstrom BCEkstrom	DATE/TIME: 8/1/11 1350	RECEIVED BY/STORED IN: CBrennan CBrennan	DATE/TIME: 8/1/11 1350
RELINQUISHED BY/REMOVED FROM: TA Pinzon	DATE/TIME: 8/3/11 1025	RECEIVED BY/STORED IN: Leshie IAC Leshie	DATE/TIME: 8/3/11 1025
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

8/1/11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-044	PAGE 1 OF 1
COLLECTOR: Ekstrom / Rivera	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND: 60 Days / 120 Days
SAMPLING LOCATION: C8406 I003	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFVZ-10-000002	ACTUAL SAMPLE DEPTH: 130 to 132 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF BDE 8/2/11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		32°C/55°F

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B2FXK6

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FXM2 A	SOIL	8/2/11	1030	✓
B2FXM3 B	SOIL	8/2/11	1030	✓
B2FXM4 C	SOIL	8/2/11	1030	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: BE Ekstrom – BE Ekstrom	DATE/TIME: 8/2/11 1130	RECEIVED BY/STORED IN: M. Nelson M. Nelson	DATE/TIME: 8/2/11 1130
RELINQUISHED BY/REMOVED FROM: TA Rivera	DATE/TIME: 8/3/11 1025	RECEIVED BY/STORED IN: Leslie Diaz	DATE/TIME: 8/3/11 1025
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

8/2/11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/25/2011

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Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-043	PAGE 1 OF 1
COLLECTOR: Ekstrom/Rivera	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8406 I003	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFVZ-10-000002	ACTUAL SAMPLE DEPTH: 130 to 132 ft.	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF BC 8/2/11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B2FXK6

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	G
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FXL5	SOIL	8/2/11	1030	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
BC Ekstrom BC Ekstrom	8/2/11 1130	M. Nelson M. Nelson	8/2/11 1130
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
TA Pinazion	8/3/11 1025	Leslie Diaz	8/3/11 1025
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

8/2/11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/25/2011

A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-077	PAGE 1 OF 1
COLLECTOR: Ellstrom/Campbell	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8408 I001	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 47 to 49 ft.	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF RRE 9/1/11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE:

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2H0Y2	SOIL A	9/1/11	0850	✓
B2H0Y3	SOIL B	9/1/11	0850	✓
B2H0Y4	SOIL C	9/1/11	0850	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: Ellstrom Campbell	DATE/TIME: 9/1/11 0925	RECEIVED BY/STORED IN: [signature]	DATE/TIME: 9/1/11 0925
RELINQUISHED BY/REMOVED FROM: TA Frazier	DATE/TIME: 9-8-11 0910	RECEIVED BY/STORED IN: Leslie Diaz	DATE/TIME: 9/8/11 910
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

[signature] 9-1-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-076	PAGE 1 OF 1
COLLECTOR: Ekstrom/Campbell	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8408 I001	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 47 to 49 ft.	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF BRE 9/1/11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS		
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	Cool~6C
		HOLDING TIME	24 Hours
		TYPE OF CONTAINER	G
		NO. OF CONTAINER(S)	1
		VOLUME	500mL
	SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2H0Y1	SOIL	9/1/11	0850	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: BRE Ekstrom BRE 9/1/11	DATE/TIME: 9/1/11 0925	RECEIVED BY/STORED IN: [illegible]	DATE/TIME: 9/1/11 0925
RELINQUISHED BY/REMOVED FROM: TA Frazier	DATE/TIME: 9-8-11 0910	RECEIVED BY/STORED IN: Leslie Diaz	DATE/TIME: 9/8/11 910
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

[illegible] 9-1-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 8/9/2011

A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-080	PAGE 1 OF 1
COLLECTOR: Elstmon / Sharp	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND: 60 Days / 120 Days
SAMPLING LOCATION: C8408 I002	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFVZ-10-000002	ACTUAL SAMPLE DEPTH: 94 to 96 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF BEE 9/6/11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2H0Y7	SOIL A	9/6/11	0930	✓
B2H0Y8	SOIL B	9/6/11	0930	✓
B2H0Y9	SOIL C	9/6/11	0930	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: B Elstmon	DATE/TIME: 9/6/11 1000	RECEIVED BY/STORED IN: K Beazeal	DATE/TIME: 9/6/11 1000
RELINQUISHED BY/REMOVED FROM: TA Frazier	DATE/TIME: 9-8-11 0910	RECEIVED BY/STORED IN: Leslie Diaz	DATE/TIME: 9/8/11 910
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

9-6-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 8/9/2011

A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-079	PAGE 1 OF 1
COLLECTOR: Elsmon / Sharp	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND: 60 Days / 120 Days
SAMPLING LOCATION: C8408 I002	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 94 to 96 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ BRE 9/6/11 WSCF	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	G
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2H0Y6	SOIL	9/6/11	0930	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: B Elsmon B Elsmon	DATE/TIME: 9/6/11 1000	RECEIVED BY/STORED IN: K Breazeal K Breazeal	DATE/TIME: 9/6/11 1000
RELINQUISHED BY/REMOVED FROM: TA Frazier [signature]	DATE/TIME: 9-8-11 0910	RECEIVED BY/STORED IN: [signature] Leslie Diaz	DATE/TIME: 9/8/11 910
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

[signature] 9-6-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 8/9/2011

A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-083	PAGE 1 OF 1
COLLECTOR: Ekstrom / Sharp	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8408 I003	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-008 BRE 9/7/11	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 129 to 131 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF BRE 9/7/11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2H102	SOIL A	9/7/11	0825	✓
B2H103	SOIL B	9/7/11	0825	✓
B2H104	SOIL C	9/7/11	0825	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: BRE Ekstrom BRE	DATE/TIME: 9/7/11 0910	RECEIVED BY/STORED IN: M Nelson M. Nelson	DATE/TIME: 9/7/11 0910
RELINQUISHED BY/REMOVED FROM: TA Frazier	DATE/TIME: 9-8-11 0910	RECEIVED BY/STORED IN: Leslie Diaz	DATE/TIME: 9/8/11 910
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
9-7-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 8/9/2011

A-6003-618 (REV 2)

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-082	PAGE 1 OF 1
COLLECTOR: Ekstrom / Sharp	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND: 60 Days / 120 Days
SAMPLING LOCATION: C8408 I003	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 129 to 131 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ BEE 9/7/11 WSCF	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	G
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2H101	SOIL	9/7/11	0825	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: BL Ekstrom / BL Ekstrom	DATE/TIME: 9/7/11 0910	RECEIVED BY/STORED IN: M. Nelson M. Nelson	DATE/TIME: 9/7/11 0910
RELINQUISHED BY/REMOVED FROM: TA Frazier / Teresita Frazier	DATE/TIME: 9-8-11 0910	RECEIVED BY/STORED IN: Leslie Dig / Leslie Dig AZ	DATE/TIME: 9/8/11 910
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

[signature] 9-7-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 8/9/2011

A-6003-618 (REV 2)

Appendix A

WASTE SAMPLING AND CHARACTERIZATION FACILITY
ANALYTICAL REPORT

WSCF Laboratory

PO Box 650 S3-30
Richland, WA 99352

August 24, 2011

Steve McKinney

Dear Steve McKinney,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF112905

Reference: (1) NA - No Customer Specification
(2) HNF-SD-CD-QAPP-017, current version, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains the following information for sample delivery group WSCF112905

* Cover Sheet (Attachment 1)
* Narrative (Attachment 2)
* Analytical Results (Attachment 3)
* Sample Receipt Information (Attachment 4)

Very truly yours,

Electronically signed by Joseph Hale

For Lab Manager

WSCF Analytical Lab

(509) 373-7495

Attachments 4

CC: w/Attachments
Heather Anastos
Melissa Garrard

File/LB

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF112905
Data Deliverable Date 08/12/11

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
	B2FDJ8	112905001	SOIL	08/08/11	08/09/11
	B2FDJ9	112905002	SOIL	08/09/11	08/09/11
	B2FYT0	112905003	SOIL	08/04/11	08/09/11
	B2FYT1	112905004	SOIL	08/08/11	08/09/11
	B2FYT2	112905005	SOIL	08/09/11	08/10/11
	B2FDK0	112905006	SOIL	08/10/11	08/10/11

ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

Attachment 2
Narrative
WSCF112905

Introduction

Samples were received at the WSCF laboratory as referenced on the WSCF SAF Number Cross Reference table included in the final report. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Statement of Work (SOW), Modification No. 2 to Agreement 36587, Release 3, "FH WSCF ANALYTICAL SERVICES FOR GROUNDWATER."*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

It should be noted that the attached chain of custody was not stamped "ICED" by the WSCF Laboratory Sample Custodian during sample receiving. However, based on procedure LO-090-403 form "NOTICE OF IMPROPER SAMPLE SUBMITTAL" was not submitted and was not stamped "NOT ICED". No anomaly was noted during sample receipt.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

ICP-MS Metals – The hold time requirements for this analysis were met. A Blank and Laboratory Control Sample were analyzed with this delivery group. Technetium-99 is analyzed

without prep therefore there is no Matrix Spike or Matrix Spike Duplicate with analysis.
Analytical Note(s):

- All applicable QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 28 pages
Including cover page

WSCF ANALYTICAL RESULTS REPORT

For

Washington River Protection Solutions

Attention: Steve McKinney

Contract #	NA
Group #	WSCF112905
Report Date	August 24, 2011

Analytical: Electronically signed by Joseph Hale

Client Services: Electronically signed by Richard Barker

Solid samples results that have a 'Percent Solid' test are reported on a "dry weight basis", except results of TCLP, Percent Solid, and Total Activity. If no `Percent Solid' test is reported then the results are reported on an "as received" basis.

This information is intended for the use of the addressee only. If the reader of this report is not the intended recipient or is not authorized by the recipient to receive the report, you are hereby notified that any dissemination, distribution or copying of this report is strictly prohibited. If you have received this report in error, please notify WSCF Laboratory immediately by telephone at (509) 373-7020 or (509) 531-8004. Information designation of this report is the responsibility of the customer.

Batch QC List

Attention Steve McKinney
Department Inorganic

Group # WSCF112905

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
188156	188159	2	BLANK	62882	BLANK		Anions by Ion Chromatography (Solid)
188156	188159	3	LCS	62883	LCS		Anions by Ion Chromatography (Solid)
188156	188159	4	MS	62884	B2FDJ9(112905002MS)	112905002	Anions by Ion Chromatography (Solid)
188156	188159	5	MSD	62885	B2FDJ9(112905002MSD)	112905002	Anions by Ion Chromatography (Solid)
188156	188159	6	DUP	62886	B2FDJ9(112905002DUP)	112905002	Anions by Ion Chromatography (Solid)
188156	188159	7	SAMPLE	112905002	B2FDJ9		Anions by Ion Chromatography (Solid)
188156	188159	8	SAMPLE	112905001	B2FDJ8		Anions by Ion Chromatography (Solid)
188156	188159	9	SAMPLE	112905003	B2FYT0		Anions by Ion Chromatography (Solid)
188156	188159	10	SAMPLE	112905004	B2FYT1		Anions by Ion Chromatography (Solid)
188156	188159	11	SAMPLE	112905005	B2FYT2		Anions by Ion Chromatography (Solid)
188156	188159	12	SAMPLE	112905006	B2FDK0		Anions by Ion Chromatography (Solid)

Batch QC List

Attention Steve McKinney
Department Radiochemistry

Group # WSCF112905

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
188422	188423	1	BLANK	63338	BLANK		Technetium-99 by ICP MS
188422	188423	2	LCS	63339	LCS		Technetium-99 by ICP MS
188422	188423	3	SAMPLE	112905001	B2FDJ8		Technetium-99 by ICP MS
188422	188423	4	SAMPLE	112905002	B2FDJ9		Technetium-99 by ICP MS
188422	188423	5	SAMPLE	112905003	B2FYT0		Technetium-99 by ICP MS
188422	188423	6	SAMPLE	112905004	B2FYT1		Technetium-99 by ICP MS
188422	188423	7	SAMPLE	112905005	B2FYT2		Technetium-99 by ICP MS
188422	188423	8	SAMPLE	112905006	B2FDK0		Technetium-99 by ICP MS

Batch QC List

Attention Steve McKinney
Department Wet Chemistry

Group # WSCF112905

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
188089	188089	1	SAMPLE	112905001	B2FDJ8		Dry Weight/Percent Moisture
188089	188089	2	SAMPLE	112905002	B2FDJ9		Dry Weight/Percent Moisture
188089	188089	3	SAMPLE	112905003	B2FYT0		Dry Weight/Percent Moisture
188089	188089	4	SAMPLE	112905004	B2FYT1		Dry Weight/Percent Moisture
188089	188089	5	SAMPLE	112905005	B2FYT2		Dry Weight/Percent Moisture
188089	188089	6	SAMPLE	112905006	B2FDK0		Dry Weight/Percent Moisture

Method Reference

Attention Steve McKinney
Department Inorganic

Group # WSCF112905

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-533-410	Anion Analysis by Ion Chromatography		
	EPA-600/R-94-111	300.0	Determination of Inorganic Anions by Ion Chromatography
	HEIS	300.0_ANIONS_IC	Determination of Inorganic Anions by Ion Chromatography

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at

Method Reference

Attention Steve McKinney
Department Radiochemistry

Group # WSCF112905

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-505-412 Technicium-99 by ICP-MS

HEIS	RADISOTOPES_ICPMS	Tc-99 by ICPMS

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at

Method Reference

Attention Steve McKinney
Department Wet Chemistry

Group # WSCF112905

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-519-412 Total Residual Percent Solids Dried at 103 - 105 Degrees C

EPA-600/4-79-020	160.3	Total Residue
Standard Methods	2540B	Total Solids Dried at 103-105 C
HEIS	%SOLIDS	Dry Weight, Percent Solids

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at

WSCF Analytical Results Report

Attention Steve McKinney
Department Inorganic

Group # WSCF112905

Sample # 112905001
SAF#
Sample ID B2FDJ8

Matrix SOIL
Sampled 08/08/11
Received 08/09/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**08/11/11**
Anions by IC										
Nitrate-N	NO3-N	LA-533-410	B	4.03		mg/kg	1	1.1	5.7	08/11/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Steve McKinney
Department Inorganic

Group # WSCF112905

Sample # 112905002
SAF#
Sample ID B2FDJ9

Matrix SOIL
Sampled 08/09/11
Received 08/09/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**08/11/11**
Anions by IC										
Nitrate-N	NO3-N	LA-533-410		7.19		mg/kg	1	1.1	5.5	08/11/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Steve McKinney
Department Inorganic

Group # WSCF112905

Sample # 112905003
SAF#
Sample ID B2FYT0

Matrix SOIL
Sampled 08/04/11
Received 08/09/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**08/11/11**
Anions by IC										
Nitrate-N	NO3-N	LA-533-410		17.9		mg/kg	1	1.1	5.6	08/11/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Steve McKinney
Department Inorganic

Group # WSCF112905

Sample # 112905004
SAF#
Sample ID B2FYT1

Matrix SOIL
Sampled 08/08/11
Received 08/09/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**08/11/11**
Anions by IC										
Nitrate-N	NO3-N	LA-533-410		18.5		mg/kg	1	1.1	5.5	08/11/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Steve McKinney
Department Inorganic

Group # WSCF112905

Sample # 112905005
SAF#
Sample ID B2FYT2

Matrix SOIL
Sampled 08/09/11
Received 08/10/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**08/11/11**
Anions by IC										
Nitrate-N	NO3-N	LA-533-410		22.7		mg/kg	1	0.99	5.2	08/11/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Steve McKinney
Department Inorganic

Group # WSCF112905

Sample # 112905006
SAF#
Sample ID B2FDK0

Matrix SOIL
Sampled 08/10/11
Received 08/10/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**08/11/11**
Anions by IC										
Nitrate-N	NO3-N	LA-533-410	B	3.19		mg/kg	1	1.0	5.5	08/11/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Steve McKinney
Department Radiochemistry

Group # WSCF112905

Sample # 112905001
SAF#
Sample ID B2FDJ8

Matrix SOIL
Sampled 08/08/11
Received 08/09/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										**08/11/11**
TC-99 ICP/MS										
Technetium-99	14133-76-7	LA-505-412		4.3E-4		ug/kg	1			08/11/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Steve McKinney
Department Radiochemistry

Group # WSCF112905

Sample # 112905002
SAF#
Sample ID B2FDJ9

Matrix SOIL
Sampled 08/09/11
Received 08/09/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										**08/11/11**
TC-99 ICP/MS										
Technetium-99	14133-76-7	LA-505-412		5.0E-4		ug/kg	1			08/11/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Steve McKinney
Department Radiochemistry

Group # WSCF112905

Sample # 112905003
SAF#
Sample ID B2FYT0

Matrix SOIL
Sampled 08/04/11
Received 08/09/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										**08/11/11**
TC-99 ICP/MS										
Technetium-99	14133-76-7	LA-505-412		0.039		ug/kg	1			08/11/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Steve McKinney
Department Radiochemistry

Group # WSCF112905

Sample # 112905004
SAF#
Sample ID B2FYT1

Matrix SOIL
Sampled 08/08/11
Received 08/09/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										**08/11/11**
TC-99 ICP/MS										
Technetium-99	14133-76-7	LA-505-412		0.058		ug/kg	1			08/11/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Steve McKinney
Department Radiochemistry

Group # WSCF112905

Sample # 112905005
SAF#
Sample ID B2FYT2

Matrix SOIL
Sampled 08/09/11
Received 08/10/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										**08/11/11**
TC-99 ICP/MS										
Technetium-99	14133-76-7	LA-505-412		0.14		ug/kg	1			08/11/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Steve McKinney
Department Radiochemistry

Group # WSCF112905

Sample # 112905006
SAF#
Sample ID B2FDK0

Matrix SOIL
Sampled 08/10/11
Received 08/10/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										**08/11/11**
TC-99 ICP/MS										
Technetium-99	14133-76-7	LA-505-412		5.3E-4		ug/kg	1			08/11/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Steve McKinney
Department Wet Chemistry

Group # WSCF112905

Sample # 112905001
SAF#
Sample ID B2FDJ8

Matrix SOIL
Sampled 08/08/11
Received 08/09/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**08/10/11**
Total Residue										
Percent Solids	PCTSOLIDS	LA-519-412		87		percent	1			08/10/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Steve McKinney
Department Wet Chemistry

Group # WSCF112905

Sample # 112905002
SAF#
Sample ID B2FDJ9

Matrix SOIL
Sampled 08/09/11
Received 08/09/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**08/10/11**
Total Residue										
Percent Solids	PCTSOLIDS	LA-519-412		90		percent	1			08/10/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Steve McKinney
Department Wet Chemistry

Group # WSCF112905

Sample # 112905003
SAF#
Sample ID B2FYT0

Matrix SOIL
Sampled 08/04/11
Received 08/09/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**08/10/11**
Total Residue										
Percent Solids	PCTSOLIDS	LA-519-412		88		percent	1			08/10/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Steve McKinney
Department Wet Chemistry

Group # WSCF112905

Sample # 112905004
SAF#
Sample ID B2FYT1

Matrix SOIL
Sampled 08/08/11
Received 08/09/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**08/10/11**
Total Residue										
Percent Solids	PCTSOLIDS	LA-519-412		90		percent	1			08/10/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Steve McKinney
Department Wet Chemistry

Group # WSCF112905

Sample # 112905005
SAF#
Sample ID B2FYT2

Matrix SOIL
Sampled 08/09/11
Received 08/10/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**08/10/11**
Total Residue										
Percent Solids	PCTSOLIDS	LA-519-412		96		percent	1			08/10/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Steve McKinney
Department Wet Chemistry

Group # WSCF112905

Sample # 112905006
SAF#
Sample ID B2FDK0

Matrix SOIL
Sampled 08/10/11
Received 08/10/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**08/10/11**
Total Residue										
Percent Solids	PCTSOLIDS	LA-519-412		91		percent	1			08/10/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

Quality Control Report

Attention Steve McKinney
Department Inorganic

Group # WSCF112905

QC Batch 188156 **Test** Anions by Ion Chromatography (Solid)
Associated Samples 112905001, 112905002, 112905003, 112905004, 112905005, 112905006

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #62882**								
Nitrate-N	NO3-N		<0.019	ug/mL						U	08/11/11
LCS			**QC Sample #62883**								
Nitrate-N	NO3-N		0.893	ug/mL	100.8	90 - 110					08/11/11
MS			**QC Sample #62884**								
			Original 112905002								
Nitrate-N	NO3-N	7.19	22.0	mg/kg	97.5	80 - 120					08/11/11
MSD			**QC Sample #62885**								
			Original 112905002						**Paired**	**62884**	
Nitrate-N	NO3-N	7.19	22.4	mg/kg	99.3	80 - 120	1.40	30			08/11/11
DUP			**QC Sample #62886**								
			Original 112905002								
Nitrate-N	NO3-N	7.19	7.52	mg/kg			4.40	30			08/11/11

Quality Control Report

Attention Steve McKinney
Department Radiochemistry

Group # WSCF112905

QC Batch 188422 **Test** Technetium-99 by ICP MS
Associated Samples 112905001, 112905002, 112905003, 112905004, 112905005, 112905006

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #63338**							
Technetium-99	14133-76-7		<0.0010	ug/kg					U	08/11/11
LCS			**QC Sample #63339**							
Technetium-99	14133-76-7		0.041	ug/kg	93.8	85 - 115				08/11/11

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 8 pages
Including cover page

Sample Receipt

Waste Sampling and Characterization Facility
P.O. Box 1970 S3-30, Richland WA 99352
Phone: (509) 373-7004/FAX: (509) 373-7134

ACKNOWLEDGEMENT OF SAMPLES RECEIVED

WSCF Laboratory
PO Box 650 S3-30
Richland, WA 99352

ATTN: Melissa Garrard

Customer Code: WRPS
PO #:
Work Order #: 112905
Profile #: VADOSE 8/9/11
Proj. Mgr.:
Phone:

The following samples were received from you on 8/9/2011 3:35:00 PM. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

Sample #	Sample ID	Matrix	Collected	Received
		Tests scheduled		
112905001	B2FDJ8	SOIL	8/8/2011 09:25	8/9/2011 15:35
		DRY-WEIGHT; IC-S; TC99-MS-S		
112905002	B2FDJ9	SOIL	8/9/2011 09:10	8/9/2011 15:35
		DRY-WEIGHT; IC-S; TC99-MS-S		
112905003	B2FYT0	SOIL	8/4/2011 09:25	8/9/2011 15:35
		DRY-WEIGHT; IC-S; TC99-MS-S		
112905004	B2FYT1	SOIL	8/8/2011 13:05	8/9/2011 15:35
		DRY-WEIGHT; IC-S; TC99-MS-S		
112905005	B2FYT2	SOIL	8/9/2011 11:45	8/10/2011 12:40
		DRY-WEIGHT; IC-S; TC99-MS-S		
112905006	B2FDK0	SOIL	8/10/2011 00:00	8/10/2011 14:35
		DRY-WEIGHT; IC-S; TC99-MS-S		

Test Acronym Description

Test Acronym	Description
DRY-WEIGHT	Dry Weight as Pct Moisture
IC-S	Anions by IC (S)
TC99-MS-S	TECHNICIUM 99 BY ICP-MS

Sample Receipt

Assembler	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. No. 20111143
N/A		Page 1 of 1

Collector: Ekstrom/Rivera	Contact/Requestor: Jo Marie Johnson/Steve McKinney	Telephone No. 372-9474 MSIN T6-02 FAX
SAF No.: N/A	Sample Origin: S Farm Vadose	Purchase Order/Charge Code
Project Title: S Farm Barrier	Logbook/ Work Package No.: N/A	Ice Chest No. Temp.
Shipped To (Lab): WSCF	Method of Shipment	Bill of Lading/Air Bill No.
Protocol: N/A	Data Turnaround: 2 working days from sample receipt	Parts and Return No.

Sample No.	Lab ID	*	Date	Time	No./Type Container	Sample Analysis	Preservative
1	B2FDJ8		8-8-11	0925	1 L glass	see list 1 (Lab Sample ID S11V005625)	<6 C
2	B2FDJ9		8-9-11	0910	1 L glass	see list 1 (Lab Sample ID S11V005626)	<6 C
	~~B2FDK0~~				~~1 L glass~~	~~see list 1 (Lab Sample ID S11V005627)~~ LAD 8-9-11	<6 C
						List 1: %moisture, Tc-99 by ICP/MS on a 1:1 water digest and nitrate on 1:1	
						water digest.	

POSSIBLE SAMPLE HAZARDS/REMARKS (List all known wastes) MSDS ○ Yes ◉ No

112905

SPECIAL INSTRUCTIONS
Send results to Steve McKinney (Steve_G_McKinney@rl.gov) and Mellissa Garrard (see SOW for e-mail address) Contract 36612, rel. 9

Hold Time: 48 hours from sample receipt

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Leslie Diaz	Leslie Diaz	8/9/11	1535	TA Frazier	[illegible]	8/9/11	1535
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix*

S	= Soil	DL	= Drum Liquids
SE	= Sediment	T	= Tissue
SO	= Solid	WI	= Wipe
SL	= Sludge	L	= Liquid
W	= Water	V	= Vegetation
O	= Oil	VA	= Vapor
A	= Air	X	= Other
DS	= Drum Solids		

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

All samples containing hazardous materials shall be picked up by requestor and returned to parent container or site of origin.

A-6003-962 (03/05)

Sample Receipt

Chain of Custody

Assembler	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. No. 20111272
N/A		Page 1 of 1

Collector: Ekstrom/Rivera	Contact/Requestor: Jo Marie Johnson/Steve McKinney	Telephone No. 372-9474 MSIN T6-02 FAX
SAF No.: N/A	Sample Origin: S Farm Vadose	Purchase Order/Charge Code
Project Title: S Farm Barrier	Logbook/ Work Package No.: N/A	Ice Chest No. Temp.
Shipped To (Lab): WSCF	Method of Shipment	Bill of Lading/Air Bill No.
Protocol: N/A	Data Turnaround: 2 working days from sample receipt	Parts and Return No.

Sample No.	Lab ID	*	Date	Time	No./Type Container	Sample Analysis	Preservative
3	B2FYT0		8-4-11	0925	1 L glass	see list 1 (Lab Sample ID S11V005623)	<6 C
4	B2FYT1		8-8-11	1305	1 L glass	see list 1 (Lab Sample ID S11V005624)	<6 C
	~~B2FYT2~~		~~8-9-11~~		~~1 L glass~~	~~see list 1 (Lab Sample ID S11V005628)~~ MD 8-9-11	<6 C
						List 1: %moisture, Tc-99 by ICP/MS on a 1:1 water digest and nitrate on 1:1	
						water digest.	

POSSIBLE SAMPLE HAZARDS/REMARKS (List all known wastes) MSDS ○ Yes ◉ No

SPECIAL INSTRUCTIONS
Send results to Steve McKinney (Steve G Mckinney@rl.gov) and Mellissa Garrard (see SOW for e-mail address) Contract 36612, rel. 9

Hold Time
48 hours from sample receipt

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Leslie Diaz			8/9/11 1535	TA Frazier			8/9/11 1535
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix*

S	= Soil	DL	= Drum Liquids
SE	= Sediment	T	= Tissue
SO	= Solid	WI	= Wipe
SL	= Sludge	L	= Liquid
W	= Water	V	= Vegetation
O	= Oil	VA	= Vapor
A	= Air	X	= Other
DS	= Drum Solids		

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

All samples containing hazardous materials shall be picked up by requestor and returned to parent container or site of origin.

A-6003-962 (03/05)

Sample Receipt

Chain of Custody

Assembler	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. No. 20111272
N/A		Page 1 of 1

Collector: Ekstrom/Rivera	Contact/Requestor: Jo Marie Johnson/Steve McKinney	Telephone No. 372-9474 MSIN T6-02 FAX
SAF No.: N/A	Sample Origin: S Farm Vadose	Purchase Order/Charge Code
Project Title: S Farm Barrier	Logbook/ Work Package No.: N/A	Ice Chest No. Temp.
Shipped To (Lab): WSCF	Method of Shipment	Bill of Lading/Air Bill No.
Protocol: N/A 12905	Data Turnaround: 2 working days from sample receipt	Parts and Return No.

Sample No.	Lab ID	*	Date	Time	No./Type Container	Sample Analysis	Preservative
005	B2FYT2		8-9-11	1145	1 L glass	see list 1 (Lab Sample ID S11V005628)	<6 C
						List 1: %moisture, Tc-99 by ICP/MS on a 1:1 water digest and nitrate on 1:1 water digest.	

POSSIBLE SAMPLE HAZARDS/REMARKS (List all known wastes) MSDS ○ Yes ◉ No

SPECIAL INSTRUCTIONS
Send results to Steve McKinney (Steve G McKinney@rl.gov) and Mellissa Garrard (see SOW for e-mail address) Contract 36612, rel. 9

Hold Time: 48 hours from sample receipt

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Leslie Diaz	Leslie Diaz	8/10/11	1240	[signature]	[signature]	8/10/11	1240
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix*

S	= Soil	DL	= Drum Liquids
SE	= Sediment	T	= Tissue
SO	= Solid	WI	= Wipe
SL	= Sludge	L	= Liquid
W	= Water	V	= Vegetation
O	= Oil	VA	= Vapor
A	= Air	X	= Other
DS	= Drum Solids		

FINAL SAMPLE DISPOSITION — Disposal Method (e.g., Return to customer, per lab procedure, used in process) — Disposed By — Date/Time

All samples containing hazardous materials shall be picked up by requestor and returned to parent container or site of origin.

A-6003-962 (03/05)

Sample Receipt

Chain of Custody

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-069	PAGE 1 OF 1
COLLECTOR: Ekstrom / Snook	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND: 60 Days / 120 Days
SAMPLING LOCATION: C8396 I003	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 117 to 119 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF BEE 8/9/11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS		
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	Cool~6C
		HOLDING TIME	24 Hours
		TYPE OF CONTAINER	Liner
		NO. OF CONTAINER(S)	1
		VOLUME	160g
	SPECIAL HANDLING AND/OR STORAGE RADIOACTIVE TIE TO: B2FYV3	SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FYV5 A	SOIL	8/9/11	1145	✓
B2FYV6 B	SOIL	8/9/11	1145	✓
B2FYV7 C	SOIL	8/9/11	1145	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
BC Ekstrom BC Ekstrom	8/9/11 1225	KBrown KBrown / TA Bailey	8/9/11 1225
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
TA Frazier	8-10-11 1140	Leshie Dilz	8/10/11 1140
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

8-9-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME	

PRINTED ON 7/28/2011 A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-068	PAGE 1 OF 1
COLLECTOR: Elkstream / Snook	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND: 60 Days / 120 Days
SAMPLING LOCATION: C8396 I003	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFVZ-10-000002	ACTUAL SAMPLE DEPTH: 117 to 119 ft.	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF BrE 8/9/11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE: RADIOACTIVE TIE TO: B2FYV3

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	G
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FYV4	SOIL	8/9/11	1145	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: Brian BE Elkstream	DATE/TIME: 8/9/11 1225	RECEIVED BY/STORED IN: OBrezacol Flores /	DATE/TIME: 8/9/11 1225
RELINQUISHED BY/REMOVED FROM: TA Frazier	DATE/TIME: 8-10-11 1140	RECEIVED BY/STORED IN: Leslie Diaz	DATE/TIME: 8/10/11 1140
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS: The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

8-9-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/28/2011 A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

Assembler	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. No. 20111143
N/A		Page 1 of 1

Collector: Ekstrom/Rivera	Contact/Requestor: Jo Marie Johnson/Steve McKinney	Telephone No. 372-9474 MSIN T6-02 FAX
SAF No.: N/A	Sample Origin: S Farm Vadose	Purchase Order/Charge Code
Project Title: S Farm Barrier	Logbook/ Work Package No.: N/A	Ice Chest No. Temp.
Shipped To (Lab): WSCF	Method of Shipment	Bill of Lading/Air Bill No.
Protocol: N/A	Data Turnaround: 2 working days from sample receipt	Parts and Return No.

Sample No.	Lab ID	*	Date	Time	No./Type Container	Sample Analysis	Preservative
1P	B2FDK0		8-10-11		1 L glass	see list 1 (Lab Sample ID S11V005627)	<6 C
						List 1: %moisture, Tc-99 by ICP/MS on a 1:1 water digest and nitrate on 1:1 water digest.	

POSSIBLE SAMPLE HAZARDS/REMARKS (List all known wastes) MSDS ○ Yes ◉ No

SPECIAL INSTRUCTIONS
Send results to Steve McKinney (Steve_G_McKinney@rl.gov) and Melissa Garrard (see SOW for e-mail address) Contract 36612, rel. 9

Hold Time: 48 hours from sample receipt

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Leslie Diaz	Leslie Diaz	8/10/11	1435	[illegible]	[illegible]	8/10/11	1435
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix*

S	= Soil	DL	= Drum Liquids
SE	= Sediment	T	= Tissue
SO	= Solid	WI	= Wipe
SL	= Sludge	L	= Liquid
W	= Water	V	= Vegetation
O	= Oil	VA	= Vapor
A	= Air	X	= Other
DS	= Drum Solids		

FINAL SAMPLE DISPOSITION — Disposal Method (e.g., Return to customer, per lab procedure, used in process) — Disposed By — Date/Time

All samples containing hazardous materials shall be picked up by requestor and returned to parent container or site of origin.

A-6003-962 (03/05)

WSCF Laboratory

PO Box 650 S3-30
Richland, WA 99352

September 1, 2011

Steve McKinney

Dear Steve McKinney,

REVISED113006 - 526226 [Report ID: 113006]

Reference: (1) NA - No Customer Specification
(2) HNF-SD-CD-QAPP-017, current version, Waste Sampling & Characterization Facility Quality Assurance Plan

This letter contains the following information for sample delivery group WSCF113006

* Cover Sheet (Attachment 1)
* Narrative (Attachment 2)
* Analytical Results (Attachment 3)
* Sample Receipt Information (Attachment 4)

Very truly yours,

Electronically signed by Joseph Hale
For Lab Manager
WSCF Analytical Lab
(509) 373-7495

Attachments 4

CC: w/Attachments
Melissa Garrard
Heather Anastos

File/LB

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF113006
Data Deliverable Date 08/23/11

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
	B2FYY0	113006001	SOIL	08/12/11	08/17/11
	B2FYY1	113006002	SOIL	08/15/11	08/17/11
	B2FYY2	113006003	SOIL	08/18/11	08/18/11

ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

Attachment 2
Narrative, Rev. 1
WSCF113006

Introduction

Three (3) samples were received at the WSCF Laboratory on August 18, 2011. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *HNF-SD-CP-QAPP-017, current version, Waste Sampling & Characterization Facility Quality Assurance Program Plan* and *Contract 36612, release 9.*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results and a comment report detailing method abnormalities as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

ICP-MS Metals – The hold time requirements for this analysis were met. A Blank and Laboratory Control Sample were analyzed with this delivery group. Technetium-99 is analyzed without prep therefore there is no Matrix Spike or Matrix Spike Duplicate with analysis. Analytical Note(s):

- All applicable QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this

data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 19 pages
Including cover page

WSCF ANALYTICAL RESULTS REPORT

For

Washington River Protection Solutions

Attention: Steve McKinney

Contract #	NA
Group #	WSCF113006
Report Date	September 1, 2011

Analytical: Electronically signed by Joseph Hale

Client Services: Electronically signed by Richard Barker

Solid samples results that have a 'Percent Solid' test are reported on a "dry weight basis", except results of TCLP, Percent Solid, and Total Activity. If no `Percent Solid' test is reported then the results are reported on an "as received" basis.

This information is intended for the use of the addressee only. If the reader of this report is not the intended recipient or is not authorized by the recipient to receive the report, you are hereby notified that any dissemination, distribution or copying of this report is strictly prohibited. If you have received this report in error, please notify WSCF Laboratory immediately by telephone at (509) 373-7020 or (509) 531-8004. Information designation of this report is the responsibility of the customer.

Batch QC List

Attention Steve McKinney
Department Inorganic

Group # WSCF113006

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
188694	188695	2	BLANK	63636	BLANK		Anions by Ion Chromatography (Solid)
188694	188695	3	LCS	63637	LCS		Anions by Ion Chromatography (Solid)
188694	188695	4	MS	63638	B2C6P6(112971001MS)	112971001	Anions by Ion Chromatography (Solid)
188694	188695	5	MSD	63639	B2C6P6(112971001MSD)	112971001	Anions by Ion Chromatography (Solid)
188694	188695	6	DUP	63640	B2C6P6(112971001DUP)	112971001	Anions by Ion Chromatography (Solid)
188694	188695	9	SAMPLE	113006001	B2FYY0		Anions by Ion Chromatography (Solid)
188694	188695	10	SAMPLE	113006002	B2FYY1		Anions by Ion Chromatography (Solid)
188694	188695	11	SAMPLE	113006003	B2FYY2		Anions by Ion Chromatography (Solid)

Batch QC List

Attention Steve McKinney
Department Radiochemistry

Group # WSCF113006

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
188555	188556	1	BLANK	63539	BLANK		Technetium-99 by ICP MS
188555	188556	2	LCS	63540	LCS		Technetium-99 by ICP MS
188555	188556	3	SAMPLE	113006001	B2FYY0		Technetium-99 by ICP MS
188555	188556	4	SAMPLE	113006002	B2FYY1		Technetium-99 by ICP MS
188555	188556	5	SAMPLE	113006003	B2FYY2		Technetium-99 by ICP MS

Batch QC List

Attention Steve McKinney
Department Wet Chemistry

Group # WSCF113006

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
189080	189080	11	SAMPLE	113006001	B2FYY0		Dry Weight/Percent Moisture
189080	189080	12	SAMPLE	113006002	B2FYY1		Dry Weight/Percent Moisture
189080	189080	13	SAMPLE	113006003	B2FYY2		Dry Weight/Percent Moisture

Method Reference

Attention Steve McKinney
Department Inorganic

Group # WSCF113006

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-533-410	Anion Analysis by Ion Chromatography		
	EPA-600/R-94-111	300.0	Determination of Inorganic Anions by Ion Chromatography
	HEIS	300.0_ANIONS_IC	Determination of Inorganic Anions by Ion Chromatography

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at

Method Reference

Attention Steve McKinney
Department Radiochemistry

Group # WSCF113006

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-505-412 Technicium-99 by ICP-MS
HEIS RADISOTOPES_ICPMS Tc-99 by ICPMS

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at

Method Reference

Attention Steve McKinney
Department Wet Chemistry

Group # WSCF113006

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-519-412 Total Residual Percent Solids Dried at 103 - 105 Degrees C

EPA-600/4-79-020	160.3	Total Residue
Standard Methods	2540B	Total Solids Dried at 103-105 C
HEIS	%SOLIDS	Dry Weight, Percent Solids

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at

WSCF Analytical Results Report

Attention Steve McKinney
Department Inorganic

Group # WSCF113006

Sample # 113006001
SAF#
Sample ID B2FYY0

Matrix SOIL
Sampled 08/12/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**08/22/11**
Anions by IC										
Nitrate-N	NO3-N	LA-533-410	B	2.34		mg/kg	1	1.0	5.3	08/22/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

REVISED113006 -

WSCF Analytical Results Report

Attention Steve McKinney
Department Inorganic

Group # WSCF113006

Sample # 113006002
SAF#
Sample ID B2FYY1

Matrix SOIL
Sampled 08/15/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**08/22/11**
Anions by IC										
Nitrate-N	NO3-N	LA-533-410		22.2		mg/kg	1	1.1	5.7	08/22/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

REVISED113006 -

WSCF Analytical Results Report

Attention Steve McKinney
Department Inorganic

Group # WSCF113006

Sample # 113006003
SAF#
Sample ID B2FYY2

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**08/22/11**
Anions by IC										
Nitrate-N	NO3-N	LA-533-410		6.24		mg/kg	1	1.1	5.6	08/22/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

REVISED113006 -

WSCF Analytical Results Report

Attention Steve McKinney
Department Radiochemistry

Group # WSCF113006

Sample # 113006001
SAF#
Sample ID B2FYY0

Matrix SOIL
Sampled 08/12/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										**08/22/11**
TC-99 ICP/MS										
Technetium-99	14133-76-7	LA-505-412		2.1E-3		ug/kg	1			08/22/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

REVISED113006 -

WSCF Analytical Results Report

Attention Steve McKinney
Department Radiochemistry

Group # WSCF113006

Sample # 113006002
SAF#
Sample ID B2FYY1

Matrix SOIL
Sampled 08/15/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										**08/22/11**
TC-99 ICP/MS										
Technetium-99	14133-76-7	LA-505-412		0.073		ug/kg	1			08/22/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

REVISED113006 -

WSCF Analytical Results Report

Attention Steve McKinney
Department Radiochemistry

Group # WSCF113006

Sample # 113006003
SAF#
Sample ID B2FYY2

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										**08/22/11**
TC-99 ICP/MS										
Technetium-99	14133-76-7	LA-505-412		6.8E-5		ug/kg	1			08/22/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

REVISED113006 -

WSCF Analytical Results Report

Attention Steve McKinney
Department Wet Chemistry

Group # WSCF113006

Sample # 113006001
SAF#
Sample ID B2FYY0

Matrix SOIL
Sampled 08/12/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**08/26/11**
Total Residue										
Percent Solids	PCTSOLIDS	LA-519-412		93		percent	1			08/26/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

REVISED113006 -

WSCF Analytical Results Report

Attention Steve McKinney
Department Wet Chemistry

Group # WSCF113006

Sample # 113006002
SAF#
Sample ID B2FYY1

Matrix SOIL
Sampled 08/15/11
Received 08/17/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**08/26/11**
Total Residue										
Percent Solids	PCTSOLIDS	LA-519-412		87		percent	1			08/26/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

REVISED113006 -

WSCF Analytical Results Report

Attention Steve McKinney
Department Wet Chemistry

Group # WSCF113006

Sample # 113006003
SAF#
Sample ID B2FYY2

Matrix SOIL
Sampled 08/18/11
Received 08/18/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**08/26/11**
Total Residue										
Percent Solids	PCTSOLIDS	LA-519-412		88		percent	1			08/26/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

REVISED113006 -

Quality Control Report

Attention Steve McKinney
Department Inorganic

Group # WSCF113006

QC Batch 188694
Associated Samples 113006001, 113006002, 113006003

Test Anions by Ion Chromatography (Solid)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #63636**								
Nitrate-N	NO3-N		<0.019	ug/mL						U	08/22/11
LCS			**QC Sample #63637**								
Nitrate-N	NO3-N		0.889	ug/mL	100.4	90 - 110					08/22/11
MS			**QC Sample #63638**								
			Original 112971001								
Nitrate-N	NO3-N		22.4	mg/kg	100.4	80 - 120					08/22/11
MSD			**QC Sample #63639**								
			Original 112971001						**Paired**	**63638**	
Nitrate-N	NO3-N		21.7	mg/kg	98	80 - 120	3.10	30			08/22/11
DUP			**QC Sample #63640**								
			Original 112971001								
Nitrate-N	NO3-N		1.59	mg/kg			15.50	30		B	08/22/11

REVISED113006 -

Quality Control Report

Attention Steve McKinney
Department Radiochemistry

Group # WSCF113006

QC Batch 188555
Associated Samples 113006001, 113006002, 113006003

Test Technetium-99 by ICP MS

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #63539**							
Technetium-99	14133-76-7		<0.0010	ug/kg					U	08/22/11
LCS			**QC Sample #63540**							
Technetium-99	14133-76-7		0.040	ug/kg	90.6	85 - 115				08/22/11

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 10 pages
Including cover page

Sample Receipt

Waste Sampling and Characterization Facility
P.O. Box 1970 S3-30, Richland WA 99352
Phone: (509) 373-7004/FAX: (509) 373-7134

ACKNOWLEDGEMENT OF SAMPLES RECEIVED

WSCF Laboratory
PO Box 650 S3-30
Richland, WA 99352

ATTN: Melissa Garrard

Customer Code: WRPS
PO #: 402061
Work Order #: 113006
Profile #: 20111290 WRPS
Proj. Mgr.:
Phone:

The following samples were received from you on 8/17/2011 1:50:00 PM. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

Sample #	Sample ID	Matrix	Collected	Received
		Tests scheduled		
113006001	B2FYY0	SOIL	8/12/2011 09:30	8/17/2011 13:50
		DRY-WEIGHT; IC-S; TC99-MS-S		
113006002	B2FYY1	SOIL	8/15/2011 13:55	8/17/2011 13:50
		DRY-WEIGHT; IC-S; TC99-MS-S		
113006003	B2FYY2	SOIL	8/18/2011 08:25	8/18/2011 14:30
		DRY-WEIGHT; IC-S; TC99-MS-S		

Test Acronym Description

Test Acronym	Description
DRY-WEIGHT	Dry Weight as Pct Moisture
IC-S	Anions by IC (S)
TC99-MS-S	TECHNICIUM 99 BY ICP-MS

Assembler	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. No. 20111290
N/A		Page 1 of 1
Collector: Ekstrom/Sivels	Contact/Requestor: Jo Marie Johnson/Steve McKinney	Telephone No. 372-9474 MSIN T6-02 FAX
SAF No.: N/A	Sample Origin: S Farm Vadose	Purchase Order/Charge Code
Project Title: S Farm Barrier	Logbook/ Work Package No.: N/A	Ice Chest No. Temp.
Shipped To (Lab): WSCF	Method of Shipment	Bill of Lading/Air Bill No.
Protocol: N/A 113006	Data Turnaround: 2 working days from sample receipt	Parts and Return No.

Sample No.	Lab ID	*	Date	Time	No./Type Container	Sample Analysis	Preservative
1	B2FYY0		8-12-11	0930	1 L glass	see list 1 (Lab Sample ID S11V005634)	<6 C
2	B2FYY1		8-15-11	1355	1 L glass	see list 1 (Lab Sample ID S11V005652)	<6 C
MP 8-17-11	~~B2FYY2~~		~~8-17-11~~		~~1 L glass~~	~~see list 1 (Lab Sample ID S11V005688)~~	<6 C
						List 1: %moisture, Tc-99 by ICP/MS on a 1:1 water digest and nitrate on 1:1	
						water digest.	

POSSIBLE SAMPLE HAZARDS/REMARKS (List all known wastes) MSDS ○ Yes ◉ No

SPECIAL INSTRUCTIONS:
Send results to Steve McKinney (Steve_G_Mckinney@rl.gov) and Mellissa Garrard (see SOW for e-mail address) Contract 36612, rel. 9

Hold Time: 48 hours from sample receipt

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	Leslie Dine	Leslie Dine	8/17/11 1350				8/17/11 1350
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix*

S	= Soil	DL	= Drum Liquids
SE	= Sediment	T	= Tissue
SO	= Solid	WI	= Wipe
SL	= Sludge	L	= Liquid
W	= Water	V	= Vegetation
O	= Oil	VA	= Vapor
A	= Air	X	= Other
DS	= Drum Solids		

FINAL SAMPLE DISPOSITION: Disposal Method (e.g., Return to customer, per lab procedure, used in process) | Disposed By | Date/Time

All samples containing hazardous materials shall be picked up by requestor and returned to parent container or site of origin.

A-6003-962 (03/05)

Sample Receipt

Chain of Custody

Assembler	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. No. 20111290
N/A		Page 1 of 1

Collector: Ekstrom/Rivera	Contact/Requestor: Jo Marie Johnson/Steve McKinney	Telephone No. 372-9474 MSIN T6-02 FAX
SAF No.: N/A	Sample Origin: S Farm Vadose	Purchase Order/Charge Code
Project Title: S Farm Barrier	Logbook/ Work Package No.: N/A	Ice Chest No. Temp.
Shipped To (Lab): WSCF	Method of Shipment	Bill of Lading/Air Bill No.
Protocol: N/A	Data Turnaround: 2 working days from sample receipt	Parts and Return No.

Sample No.	Lab ID	*	Date	Time	No./Type Container	Sample Analysis	Preservative
3	B2FYY2		8-18-11	0825	1 L glass	see list 1 (Lab Sample ID S11V005688)	<6 C
						List 1: %moisture, Tc-99 by ICP/MS on a 1:1 water digest and nitrate on 1:1 water digest.	

POSSIBLE SAMPLE HAZARDS/REMARKS (List all known wastes) MSDS ○ Yes ◉ No

SPECIAL INSTRUCTIONS
Send results to Steve McKinney (Steve_G_Mckinney@rl.gov) and Mellissa Garrard (see SOW for e-mail address) Contract 36612, rel. 9

Hold Time: 48 hours from sample receipt

Relinquished By (Print / Sign)	Date/Time	Received By (Print / Sign)	Date/Time
Barbara Miller B Miller	8/18/11/1430	K Breeze K Breeze	8/18/11 1430

Matrix*

S	= Soil	DL	= Drum Liquids
SE	= Sediment	T	= Tissue
SO	= Solid	WI	= Wipe
SL	= Sludge	L	= Liquid
W	= Water	V	= Vegetation
O	= Oil	VA	= Vapor
A	= Air	X	= Other
DS	= Drum Solids		

FINAL SAMPLE DISPOSITION — Disposal Method (e.g., Return to customer, per lab procedure, used in process) — Disposed By — Date/Time

All samples containing hazardous materials shall be picked up by requestor and returned to parent container or site of origin.

A-6003-962 (03/05)

Thursday, August 18, 2011 3:36:20 PM
Page 3 of 9

September 01, 2011 15:09:17 REVISED113006 - Page 29 of 35 3004.1.1084.3
Report ID: 113006
Group # WSCF113006

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Sample Receipt

Chain of Custody

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-053	PAGE 1 OF 1
COLLECTOR: Ekstrom/Villarreal	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND: 60 Days / 120 Days
SAMPLING LOCATION: C8400 I001	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 54 to 56 ft.	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: BRE 8/12/11 ~~222-S Lab Operations~~ WSCF	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (T*);

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B2FYP2

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FYP4 A	SOIL	8/12/11	0930	✓
B2FYP5 B	SOIL	8/12/11	0930	✓
B2FYP6 C	SOIL	8/12/11	0930	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: [signature]	DATE/TIME: 8/12/11 1005	RECEIVED BY/STORED IN: H. Nelson [signature]	DATE/TIME: 8/12/11 1005
RELINQUISHED BY/REMOVED FROM: Victor Silvas [signature]	DATE/TIME: 8/12/11 1145	RECEIVED BY/STORED IN: Leslie Diaz [signature]	DATE/TIME: 8/12/11 1145
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.
[signature] 8-12-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/28/2011 A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-052 PAGE 1 OF 1
COLLECTOR: Elstrom / Villarreal	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03 — DATA TURNAROUND: 60 Days / 120 Days
SAMPLING LOCATION: C8400 I001	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 54 to 56 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE — ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ BCE 8/12/11 WSCF	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B2FYP2

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	G
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FYP3	SOIL	8/12/11	0930	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: B Elstrom	DATE/TIME: 8/12/11 1005	RECEIVED BY/STORED IN: M. Nelson Munch	DATE/TIME: 8/12/11 1005
RELINQUISHED BY/REMOVED FROM: Victor Sanchez	DATE/TIME: 8/12/11 1145	RECEIVED BY/STORED IN: Leslie Diaz	DATE/TIME: 8/12/11 11:45
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.
Scott Sweet 8-12-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/28/2011 A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-056	PAGE 1 OF 1
COLLECTOR: Ekstrom / Snook	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND: 60 Days / 120 Days
SAMPLING LOCATION: C8400 I002	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 93 to 95 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ BRE 8/15/11 WSCF	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A	32 f / 60 f	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B2FYP7

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner / 500ml
NO. OF CONTAINER(S)	1 / 2 500ml
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2FYP9 A	SOIL	8/15/11	1355	✓	
B2FYR0 B	SOIL	8/15/11	1365	✓	500 ml jar BRE 8/15/11
B2FYR1 C	SOIL	8/15/11	1355	✓	500 ml jar BRE 8/15/11

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: BR Ekstrom / Ekstrom	DATE/TIME: 8/15/11 1455	RECEIVED BY/STORED IN: Victor Snook	DATE/TIME: 8/15/11 1455
RELINQUISHED BY/REMOVED FROM: Victor Snook	DATE/TIME: 8/17/11 1145	RECEIVED BY/STORED IN: Leslie Dale	DATE/TIME: 8/17/11 1145
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

Scott Snook 8-15-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/28/2011 A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-055	PAGE 1 OF 1
COLLECTOR: Ekstrom / Snook	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8400 I002	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 93 to 95 ft.	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~221-S Lab Operations~~ BRE 8/15/11 WSCF	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B2FYP7

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	G
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FYP8	SOIL	8/15/11	1355	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: [signature]	DATE/TIME: 8/15/11 1455	RECEIVED BY/STORED IN: Victor Sims [signature]	DATE/TIME: 8/15/11 1455
RELINQUISHED BY/REMOVED FROM: Victor Sims [signature]	DATE/TIME: 8/17/11 1145	RECEIVED BY/STORED IN: Leshedia Leshedia [signature]	DATE/TIME: 8/17/11 11:45
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.
Scott Snook 8-15-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/28/2011 A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-058	PAGE 1 OF 1
COLLECTOR: Ekstrom / Snook	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND: 60 Days / 120 Days
SAMPLING LOCATION: C8400 I003	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY:	
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFVZ-10-000002	ACTUAL SAMPLE DEPTH: 126 to 128 ft.	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~333 S Lab Operations~~ RCE 8/16/11 WSCF	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B2FYR2

PRESERVATION	Cool<6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	G
NO. OF CONTAINER(S)	1
VOLUME	500mL
SAMPLE ANALYSIS	Generic Testing;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B2FYR3	SOIL	8/18/11	0825 ✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: Beth Ekstrom	DATE/TIME: 8/18/11 0930	RECEIVED BY/STORED IN: [illegible]	DATE/TIME: 8/18/11 0930
RELINQUISHED BY/REMOVED FROM: [illegible]	DATE/TIME: 8/18/11	RECEIVED BY/STORED IN: Barbara Allen	DATE/TIME: 8/18/11 1312
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

Scott Snook 8-18-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/28/2011 A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-059	PAGE 1 OF 1
COLLECTOR: Elsinom / Snook	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8400 I003	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 126 to 128 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF BLE 8/16/11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum, Liquids, DS=Drum, Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WT=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B2FYR2

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FYR4 A	SOIL	8/18/11	0825	✓
B2FYR5 B	SOIL	8/18/11	0825	✓
B2FYR6 C	SOIL	8/18/11	0825	✓

← Liner Bis contamerized BLE 8/18/11
500 mL Jar BLE 8/18/11

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: BC Elsinom BC Elsinom	DATE/TIME: 8/18/11 0930	RECEIVED BY/STORED IN: Barbara L Breay	DATE/TIME: 8/18/11 0930
RELINQUISHED BY/REMOVED FROM: [signature]	DATE/TIME: 8/18/11	RECEIVED BY/STORED IN: Barbara M [signature]	DATE/TIME: 8/18/11 1312
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.
Scott Snook 8-18-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/28/2011 A-6003-618 (REV 2)

WSCF Laboratory

PO Box 650 S3-30
Richland, WA 99352

September 12, 2011

Steve McKinney

Dear Steve McKinney,

FINAL RESULT FOR SAMPLE DELIVERY GROUP WSCF112857

Reference: (1) NA - No Customer Specification
(2) MSC-SD-CD-QAPP-017, current version, Waste Sampling & Characterization Facility Quality Assurance Program Plan

This letter contains the following information for sample delivery group WSCF112857

* Cover Sheet (Attachment 1)
* Narrative (Attachment 2)
* Analytical Results (Attachment 3)
* Sample Receipt Information (Attachment 4)

Very truly yours,

Electronically signed by Joseph Hale
For Lab Manager
WSCF Analytical Lab
(509) 373-7495

Attachments 4

CC: w/Attachments
Melissa Garrard
Heather Anastos

File/LB

ATTACHMENT 1

COVER SHEET

Consisting of 2 pages
Including cover page

WSCF SAF Number Cross Reference

Group # WSCF112857
Data Deliverable Date 08/06/11

SAF #	Sample ID	Sample #	Matrix	Sampled	Received
	B2FXM5	112857001	SOIL	07/29/11	08/03/11
	B2FXM6	112857002	SOIL	08/01/11	08/03/11
	B2FXM7	112857003	SOIL	08/02/11	08/03/11

ATTACHMENT 2

NARRATIVE

Consisting of 3 pages
Including cover page

Attachment 2
Narrative
WSCF112857

Introduction

Three (3) samples were received at the WSCF Laboratory on August 3, 2011. The samples were analyzed for the analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *HNF-SD-CP-QAPP-017, current version, Waste Sampling & Characterization Facility Quality Assurance Program Plan.*

The narrative (Attachment 2) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 3) includes analytical results and a comment report detailing method abnormalities as applicable. Copies of the chain of custody and sample receipt documentation are included as Attachment 4.

The following generic data qualifiers (i.e., B, D, U and J) may be applicable to this report, as appropriate

- **B** – Sample results with a concentration greater than the MDL but less than the PQL are B flagged (applies to inorganic and wet chemical analyses), as appropriate.
- **D** – Sample results are D flagged if dilution(s) were required, as appropriate.
- **J** – Sample results with a concentration greater than the MDL but less than the PQL are J flagged (applies to organic analyses), as appropriate.
- **U** – Analyzed for but not detected above limiting criteria. Relative Percent Difference (RPD) values associated with an analyte qualified with a "U" are not applicable.

Analytical Methodology for Requested Analyses

Refer to *WSCF Method References Report* for a complete listing of approved analytical methods.

Inorganic Comments

Anions – Hold time requirements for this analysis were met. A Duplicate, Matrix Spike, Matrix Spike Duplicate, Blank and Laboratory Control Sample were analyzed with this delivery group. Analytical Note(s):

- All applicable QC controls are within the established limits.

ICP-MS Metals – The hold time requirements for this analysis were met. A Blank and Laboratory Control Sample were analyzed with this delivery group. Technetium-99 is analyzed without prep therefore there is no Matrix Spike or Matrix Spike Duplicate with analysis. Analytical Note(s):

- All applicable QC controls are within the established limits.

We certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this

data package has been authorized by the Analytical Laboratory Manager (or designee) and the Client Services representative as verified by electronic signatures shown on the WSCF ANALYTICAL RESULTS REPORT.

ATTACHMENT 3

ANALYTICAL RESULTS

Consisting of 19 pages
Including cover page

WSCF ANALYTICAL RESULTS REPORT

For

Washington River Protection Solutions

Attention: Steve McKinney

Contract #	NA
Group #	WSCF112857
Report Date	September 12, 2011

Analytical: Electronically signed by Joseph Hale

Client Services: Electronically signed by Marisol Avila

Solid samples results that have a 'Percent Solid' test are reported on a "dry weight basis", except results of TCLP, Percent Solid, and Total Activity. If no `Percent Solid' test is reported then the results are reported on an "as received" basis.

This information is intended for the use of the addressee only. If the reader of this report is not the intended recipient or is not authorized by the recipient to receive the report, you are hereby notified that any dissemination, distribution or copying of this report is strictly prohibited. If you have received this report in error, please notify WSCF Laboratory immediately by telephone at (509) 373-7020 or (509) 531-8004. Information designation of this report is the responsibility of the customer.

Batch QC List

Attention Steve McKinney
Department Inorganic

Group # WSCF112857

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
187669	187670	2	BLANK	62261	BLANK		Anions by Ion Chromatography (Solid)
187669	187670	3	LCS	62262	LCS		Anions by Ion Chromatography (Solid)
187669	187670	4	MS	62263	B2FPF1(112817001MS)	112817001	Anions by Ion Chromatography (Solid)
187669	187670	5	MSD	62264	B2FPF1(112817001MSD)	112817001	Anions by Ion Chromatography (Solid)
187669	187670	6	DUP	62265	B2FPF1(112817001DUP)	112817001	Anions by Ion Chromatography (Solid)
187669	187670	9	SAMPLE	112857001	B2FXM5		Anions by Ion Chromatography (Solid)
187669	187670	10	SAMPLE	112857002	B2FXM6		Anions by Ion Chromatography (Solid)
187669	187670	11	SAMPLE	112857003	B2FXM7		Anions by Ion Chromatography (Solid)

Batch QC List

Attention Steve McKinney
Department Radiochemistry

Group # WSCF112857

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
187663	188088	1	BLANK	62244	BLANK		Technetium-99 by ICP MS
187663	188088	2	LCS	62245	LCS		Technetium-99 by ICP MS
187663	188088	4	DUP	62653	B2FPF1(112817001DUP)	112817001	Technetium-99 by ICP MS
187663	188088	6	SAMPLE	112857001	B2FXM5		Technetium-99 by ICP MS
187663	188088	7	SAMPLE	112857002	B2FXM6		Technetium-99 by ICP MS
187663	188088	8	SAMPLE	112857003	B2FXM7		Technetium-99 by ICP MS

Batch QC List

Attention Steve McKinney
Department Wet Chemistry

Group # WSCF112857

QC Batch	Analytical Batch	S#	Type	Sample #	Client Sample#	Original	Test
188085	188085	1	SAMPLE	112857001	B2FXM5		Dry Weight/Percent Moisture
188085	188085	2	SAMPLE	112857002	B2FXM6		Dry Weight/Percent Moisture
188085	188085	3	SAMPLE	112857003	B2FXM7		Dry Weight/Percent Moisture

Method Reference

Attention	Steve McKinney	**Group #**	WSCF112857
Department	Inorganic		

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-533-410	Anion Analysis by Ion Chromatography		
	EPA-600/R-94-111	300.0	Determination of Inorganic Anions by Ion Chromatography
	HEIS	300.0_ANIONS_IC	Determination of Inorganic Anions by Ion Chromatography

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at

Method Reference

Attention Steve McKinney
Department Radiochemistry

Group # WSCF112857

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-505-412 Technicium-99 by ICP-MS

HEIS	RADISOTOPES_ICPMS	Tc-99 by ICPMS

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at

Method Reference

Attention Steve McKinney
Department Wet Chemistry

Group # WSCF112857

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory, industry methods or HEIS methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

LA-519-412 Total Residual Percent Solids Dried at 103 - 105 Degrees C

EPA-600/4-79-020	160.3	Total Residue
Standard Methods	2540B	Total Solids Dried at 103-105 C
HEIS	%SOLIDS	Dry Weight, Percent Solids

Note: A complete list of WSCF analytical procedures and reference regulatory or industry methods is available online at

WSCF Analytical Results Report

Attention Steve McKinney
Department Inorganic

Group # WSCF112857

Sample # 112857001
SAF#
Sample ID B2FXM5

Matrix SOIL
Sampled 07/29/11
Received 08/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**08/08/11**
Anions by IC										
Nitrate-N	NO3-N	LA-533-410	B	0.343		mg/kg	1	0.17	0.90	08/08/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Steve McKinney
Department Inorganic

Group # WSCF112857

Sample # 112857002
SAF#
Sample ID B2FXM6

Matrix SOIL
Sampled 08/01/11
Received 08/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**08/08/11**
Anions by IC										
Nitrate-N	NO3-N	LA-533-410		1.45		mg/kg	1	0.17	0.90	08/08/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Steve McKinney
Department Inorganic

Group # WSCF112857

Sample # 112857003
SAF#
Sample ID B2FXM7

Matrix SOIL
Sampled 08/02/11
Received 08/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Anions by IC										**08/08/11**
Anions by IC										
Nitrate-N	NO3-N	LA-533-410		27.4		mg/kg	1	0.18	0.96	08/08/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the PQL(or EQL)but >= the IDL/MDL(Inorganic)
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
E - Analyte is an estimate, see comment section.
N - MS and/or MSD recovery outside control limits.

U - Analyzed for but not detected above limiting criteria.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Steve McKinney
Department Radiochemistry

Group # WSCF112857

Sample # 112857001
SAF#
Sample ID B2FXM5

Matrix SOIL
Sampled 07/29/11
Received 08/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										**08/07/11**
TC-99 ICP/MS										
Technetium-99	14133-76-7	LA-505-412	U	<1.1E-3		ug/kg	1	1.1E-3		08/08/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Steve McKinney
Department Radiochemistry

Group # WSCF112857

Sample # 112857002
SAF#
Sample ID B2FXM6

Matrix SOIL
Sampled 08/01/11
Received 08/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										**08/07/11**
TC-99 ICP/MS										
Technetium-99	14133-76-7	LA-505-412		0.012		ug/kg	1	1.1E-3		08/08/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Steve McKinney
Department Radiochemistry

Group # WSCF112857

Sample # 112857003
SAF#
Sample ID B2FXM7

Matrix SOIL
Sampled 08/02/11
Received 08/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
ICPMS Prep										**08/07/11**
TC-99 ICP/MS										
Technetium-99	14133-76-7	LA-505-412		1.1		ug/kg	1	1.2E-3		08/08/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte was detected in both the BLANK and SAMPLE
U - Analyzed for but not detected above limiting criteria.
N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.

WSCF Analytical Results Report

Attention Steve McKinney
Department Wet Chemistry

Group # WSCF112857

Sample # 112857001
SAF#
Sample ID B2FXM5

Matrix SOIL
Sampled 07/29/11
Received 08/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**08/09/11**
Total Residue										
Percent Solids	PCTSOLIDS	LA-519-412		92		percent	1			08/09/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Steve McKinney
Department Wet Chemistry

Group # WSCF112857

Sample # 112857002
SAF#
Sample ID B2FXM6

Matrix SOIL
Sampled 08/01/11
Received 08/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**08/09/11**
Total Residue										
Percent Solids	PCTSOLIDS	LA-519-412		91		percent	1			08/09/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

WSCF Analytical Results Report

Attention Steve McKinney
Department Wet Chemistry

Group # WSCF112857

Sample # 112857003
SAF#
Sample ID B2FXM7

Matrix SOIL
Sampled 08/02/11
Received 08/03/11

Test Performed	CAS #	Method	RQ	Result	TP Err	Units	DF	MDL	PQL	Analyzed
Total Residue										**08/09/11**
Total Residue										
Percent Solids	PCTSOLIDS	LA-519-412		86		percent	1			08/09/11

MDL = Minimum Detection
RQ = Result Qualifier
TP Err = Total Propagated
DF = Dilution Factor
+ - Indicates more than nine qualifier

B - Analyte < the RDL but >= the IDL/MDL.
C - Analyte was found in the Associated Blank. (Inorganic)
D - Analyte was reported at a secondary diltution factor.
N - MS and/or MSD sample recovery outside control limits.
U - Analyzed for but not detected above limiting criteria.

N - Spike Recovery is Outside Control Limits.
X,Y or Z - See comment detail and/or narrative.
PQL is equivalent to Estimated Quantitation Limit (EQL)

Quality Control Report

Attention Steve McKinney
Department Inorganic

Group # WSCF112857

QC Batch 187669
Associated Samples 112857001, 112857002, 112857003

Test Anions by Ion Chromatography (Solid)

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit		RQ	Analyzed
BLANK			**QC Sample #62261**								
Nitrate-N	NO3-N		<0.019	ug/mL						U	08/08/11
LCS			**QC Sample #62262**								
Nitrate-N	NO3-N		0.879	ug/mL	99.3	90 - 110					08/08/11
MS			**QC Sample #62263**								
			Original 112817001								
Nitrate-N	NO3-N		23.3	mg/kg	103.1	80 - 120					08/08/11
MSD			**QC Sample #62264**								
			Original 112817001						**Paired**	**62263**	
Nitrate-N	NO3-N		23.4	mg/kg	103.7	80 - 120	0.60	30			08/08/11
DUP			**QC Sample #62265**								
			Original 112817001								
Nitrate-N	NO3-N		0.336	mg/kg			13.90	30		B	08/08/11

Quality Control Report

Attention Steve McKinney
Department Radiochemistry

Group # WSCF112857

QC Batch 187663
Associated Samples 112857001, 112857002, 112857003

Test Technetium-99 by ICP MS

Analyte	CAS #	Original Found	QC Found	Units	% Recov	Limits	RPD	RPD Limit	RQ	Analyzed
BLANK			**QC Sample #62244**							
Technetium-99	14133-76-7		<0.0010	ug/kg					U	08/08/11
LCS			**QC Sample #62245**							
Technetium-99	14133-76-7		0.040	ug/kg	91.4	85 - 115				08/08/11
DUP			**QC Sample #62653**							
			Original 112817001							
Technetium-99	14133-76-7		<1.0E-4	ug/kg			-35.20		U	08/08/11

ATTACHMENT4

SAMPLE RECEIPT

Consisting of 6 pages
Including cover page

Sample Receipt

Waste Sampling and Characterization Facility
P.O. Box 1970 S3-30, Richland WA 99352
Phone: (509) 373-7004/FAX: (509) 373-7134

ACKNOWLEDGEMENT OF SAMPLES RECEIVED

WSCF Laboratory
PO Box 650 S3-30
Richland, WA 99352

ATTN: Melissa Garrard

Customer Code: WRPS
PO #:
Work Order #: 112857
Profile #: VADOSE 08-03-11
Proj. Mgr.:
Phone:

The following samples were received from you on 8/3/2011 1:30:00 PM. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

Sample #	Sample ID	Matrix	Collected	Received
		Tests scheduled		
112857001	B2FXM5	SOIL	7/29/2011 09:45	8/3/2011 13:30
		DRY-WEIGHT; IC-S; TC99-MS-S		
112857002	B2FXM6	SOIL	8/1/2011 13:05	8/3/2011 13:30
		DRY-WEIGHT; IC-S; TC99-MS-S		
112857003	B2FXM7	SOIL	8/2/2011 10:30	8/3/2011 13:30
		DRY-WEIGHT; IC-S; TC99-MS-S		

Test Acronym Description

Test Acronym	Description
DRY-WEIGHT	Dry Weight as Pct Moisture
IC-S	Anions by IC (S)
TC99-MS-S	TECHNICIUM 99 BY ICP-MS

Sample Receipt

Assembler	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. No. 20111250
N/A 112857		Page 1 of 1

Collector: Ehstrom/Rivera	Contact/Requestor: Jo Marie Johnson/Steve McKinney	Telephone No. 372-9474 MSIN T6-02 FAX
SAF No.: N/A	Sample Origin: S Farm Vadose	Purchase Order/Charge Code
Project Title: S Farm Barrier	Logbook/ Work Package No.: N/A	Ice Chest No. Temp.
Shipped To (Lab): WSCF	Method of Shipment	Bill of Lading/Air Bill No.
Protocol: N/A	Data Turnaround: 2 working days from sample receipt	Parts and Return No.

Sample No.	Lab ID	*	Date	Time	No./Type Container	Sample Analysis	Preservative
1	B2FXM5		7 29 11	0945	1 L glass	see list 1 (Lab Sample ID S11V005517)	<6 C
2	B2FXM6		8-1-11	1305	1 L glass	see list 1 (Lab Sample ID S11V005535)	<6 C
3	B2FXM7		8-2-11	1030	1 L glass	see list 1 (Lab Sample ID S11V005553)	<6 C
						List 1: %moisture, Tc-99 by ICP/MS on a 1:1 water digest and nitrate on 1:1	
						water digest.	

POSSIBLE SAMPLE HAZARDS/REMARKS (List all known wastes) MSDS ○ Yes ◉ No

SPECIAL INSTRUCTIONS
Send results to Steve McKinney (Steve G Mckinney@rl.gov) and Mellissa Garrard (see SOW for e-mail address) Contract 36612, rel. 9

Hold Time: per work instruction

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Leslie Diaz	Leslie Diaz	8/3/11	1330	K Breazeal	K Breazeal	8/3/11	1330
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix*

S	= Soil	DL	= Drum Liquids
SE	= Sediment	T	= Tissue
SO	= Solid	WI	= Wipe
SL	= Sludge	L	= Liquid
W	= Water	V	= Vegetation
O	= Oil	VA	= Vapor
A	= Air	X	= Other
DS	= Drum Solids		

FINAL SAMPLE DISPOSITION — Disposal Method (e.g., Return to customer, per lab procedure, used in process) — Disposed By — Date/Time

All samples containing hazardous materials shall be picked up by requestor and returned to parent container or site of origin.

A-6003-962 (03/05)

Sample Receipt

Chain of Custody

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-040	PAGE 1 OF 1
COLLECTOR: Ekstrom/ Riviera	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8406 1001	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 52 to 54 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ BRE 7/29/11 WSCF	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A	43°F / 57°F	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B2FXK4

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FXL6	A	SOIL	7/29/11	0945	✓
B2FXL7	B	SOIL	7/29/11	0945	✓
B2FXL8	C	SOIL	7/29/11	0945	✓

COPY

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: BCEkstrom	DATE/TIME: 7/29/11 1050	RECEIVED BY/STORED IN: [illegible]	DATE/TIME: 7/29/11 1050
RELINQUISHED BY/REMOVED FROM: TA Frazier [illegible]	DATE/TIME: 8/3/11 1025	RECEIVED BY/STORED IN: Leslie Diaz [illegible]	DATE/TIME: 8/3/11 1025
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

[signature] 7-29-11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/25/2011 A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-042	PAGE 1 OF 1
COLLECTOR: Ekstrom / Rivera	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8406 I002	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFV2-10-000002	ACTUAL SAMPLE DEPTH: 75 to 100 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF MA 08/03/11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

SPECIAL HANDLING AND/OR STORAGE
RADIOACTIVE TIE TO: B2FXK5

PRESERVATION	Cool~6C
HOLDING TIME	24 Hours
TYPE OF CONTAINER	Liner
NO. OF CONTAINER(S)	1
VOLUME	160g
SAMPLE ANALYSIS	Bulk Density - D2937 (TP);

SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FXL9	A	SOIL	8/1/11	1305	✓
B2FXM0	B	SOIL	8/1/11	1305	✓
B2FXM1	C	SOIL	8/1/11	1305	✓

COPY

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: B Ekstrom / B Ekstrom	DATE/TIME: 8/1/11 1352	RECEIVED BY/STORED IN: K Brenard / K Brenard 8/1/11	DATE/TIME: 1350
RELINQUISHED BY/REMOVED FROM: TA Pinzon / [illegible] 8/3/11	DATE/TIME: 1025	RECEIVED BY/STORED IN: Leslie Diaz / Leslie Diaz 8/3/11	DATE/TIME: 1025
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

[signature] 8/1/11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 7/25/2011 A-6003-618 (REV 2)

Sample Receipt

Chain of Custody

Washington River Protection Solutions	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			V11-006-044	PAGE 1 OF 1
COLLECTOR: Elostrom / Rivera	COMPANY CONTACT: ANASTOS, HL	TELEPHONE NO.: 373-2616	PROJECT COORDINATOR: SYDNOR, HA	PRICE CODE: C03	DATA TURNAROUND
SAMPLING LOCATION: C8406 1003	PROJECT DESIGNATION: Direct Push Samples for S Tank Farm - Interim Barrier		SAF NO.: V11-006	AIR QUALITY: ☐	60 Days / 120 Days
ICE CHEST NO.: TFVS-09-008	FIELD LOGBOOK NO.: TFVZ-10-00002	ACTUAL SAMPLE DEPTH: 130 to 132 ft	COA: N/A	METHOD OF SHIPMENT: GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO: ~~222-S Lab Operations~~ WSCF BE 8/2/11	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: N/A		32°F/55°F

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS		
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	Cool~6C
		HOLDING TIME	24 Hours
		TYPE OF CONTAINER	Liner
		NO. OF CONTAINER(S)	1
		VOLUME	160g
	SPECIAL HANDLING AND/OR STORAGE RADIOACTIVE TIE TO: B2FXK6	SAMPLE ANALYSIS	Bulk Density - D2937 (TF);

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2FXM2 A	SOIL	8/2/11	1030	✓
B2FXM3 B	SOIL	8/2/11	1030	✓
B2FXM4 C	SOIL	8/2/11	1030	✓

COPY

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: B2 Elostrom	DATE/TIME: 8/2/11 1130	RECEIVED BY/STORED IN: M. Nelson M. Nelson	DATE/TIME: 8/2/11 1130
RELINQUISHED BY/REMOVED FROM: B2 Martin	DATE/TIME: 8/3/11 1025	RECEIVED BY/STORED IN: Leslie Diaz	DATE/TIME: 8/3/11 1025
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS

The laboratory will determine bulk density for each liner, then the material from the liners and shoe (500 ml glass jar assigned to generic testing) shall be composited and analyzed for the composite analyses.

8/2/11

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

A-6003-518 (REV 2)

DISTRIBUTION SHEET

To	From	
S. J. Eberlein	G. P. Ritenour	Page 1 of 1
Project Title/Work Order		Date 4/17/12
FINAL ANALYTICAL REPORT FOR SOIL SAMPLES IN SUPPORT OF AN INTERIM BARRIER AT S FARM		EDT No. N/A
		ECN No. N/A

Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
G. P. Ritenour	T6-10	X			
S. J. Eberlein	E6-31	X			
M. P. Connelly	E6-31	X			
D. R. Glaser	H6-13	X			
H. A. Sydnor	E6-31	X			
J. M. Johnson	T6-02	X			
S. G. McKinney	T6-02	X			
H. L. Anastos	T6-05	X			
A. Shrum	E6-31	X			
J. R. Prilucik	T6-02	X			
C. P. Mangano	H8-51	X			
S. A. Lynch	R3-50	X			
DOE Reading Room	H2-53	H			
R. W. Lober	H6-60	X			

INFORMATION CLEARANCE REVIEW AND RELEASE APPROVAL

Part I: Background Information

Title: Final Analytical Report for Soil Samples in Support of an Interim Barrier at S Farm

Information Category:
- ☐ Abstract ☐ Journal Article ☐ Summary
- ☐ Internet ☐ Visual Aid ☐ Software
- ☐ Full Paper ☑ Report ☐ Other

Publish to OSTI? ☐ Yes ☑ No

Trademark/Copyright "Right to Use" Information or Permission Documentation	Yes	NA
	☐	☑

Document Number: RPP-RPT-51962 Revision 0 Date: April 2012

Author: Tabor, Cindy L

Part II: External/Public Presentation Information

Conference Name:

Sponsoring Organization(s): WRPS

Date of Conference: Conference Location:

Will Material be Handed Out? ☐ Yes ☑ No Will Information be Published? ☐ Yes ☑ No *(If Yes, attach copy of Conference format instructions/guidance.)*

Part III: WRPS Document Originator Checklist

Description	*Yes*	*N/A*	*Print/Sign/Date*
Information Product meets requirements in TFC-BSM-AD-C-01?	☐	☑	
Document Release Criteria in TFC-ENG-DESIGN-C-25 completed? (Attach checklist)	☐	☑	
If product contains pictures, safety review completed?	☑	☐	Roberts, Sheryl K Approved - IDMS data file att.

Part IV: WRPS Internal Review

Function	*Organization*	*Date*	*Print Name/Signature/Date*
Subject Matter Expert	WRPS	04/14/2020	Tabor, Cindy L Approved - IDMS data file att.
Responsible Manager	WRPS	04/09/2020	Rutland, Paul L Approved - IDMS data file att.
Other:			

Part V: IRM Clearance Services Review

Description	*Yes*	*No*	*Print Name/Signature*
Document Contains Classified Information?	☐	☒	If Answer is "Yes," ADC Approval Required Print Name/Signature/Date
Document Contains Information Restricted by DOE Operational Security Guidelines?	☐	☒	Reviewer Signature: Print Name/Signature/Date
Document is Subject to Release Restrictions? *If the answer is "Yes," please mark category at right and describe limitation or responsible organization below:*	☐	☒	Document contains: ☐ Applied Technology ☐ Protected CRADA ☐ Personal/Private ☐ Export Controlled ☐ Proprietary ☐ Procurement – Sensitive ☐ Patentable Info. ☐ OUO ☐ Predecisional Info. ☐ UCNI ☐ Restricted by Operational Security Guidelines ☐ Other (Specify)
Additional Comments from Information Clearance Specialist Review?	☐	☒	Information Clearance Specialist Approval APPROVED By Sarah Harrison at 12:07 pm, Apr 20, 2020 Print Name/Signature/Date

When IRM Clearance Review is Complete – Return to WRPS Originator for Final Signature Routing (Part VI)

INFORMATION CLEARANCE REVIEW AND RELEASE APPROVAL

Part VI: Final Review and Approvals

Description	*Approved for Release*		*Print Name/Signature*	
	Yes	*N/A*		
WRPS External Affairs	☒	☐	McKenna, Mark	Approved - IDMS data file att.
WRPS Office of Chief Counsel	☒	☐	Peters, Amber D	Approved - IDMS data file att.
DOE – ORP Public Affairs/Communications	☒	☐	Levardi, Yvonne M / Tyree, Geoff T	Approved - IDMS data file att.
Other: ORP OCC	☒	☐	Zelen, Benjamin J	Approved - IDMS data file att.
Other: ORP SME	☒	☐	Blackwell, Becky	Approved - IDMS data file att.

Comments Required for WRPS-Indicate Purpose of Document:

This final report contains the analytical results supporting characterization of soil samples for an interim barrier for 241-S Tank Farm. It also contains the results for associated field and equipment blanks supporting the sampling effort.

APPROVED
By Sarah Harrison at 12:08 pm, Apr 20, 2020

Approved for Public Release; Further Dissemination Unlimited

Information Release Station

Was/Is Information Product Approved for Release? ☒ Yes ☐ No

If Yes, what is the Level of Releaser? ☑ Public/Unrestricted ☐ Other (Specify) _____

Date Information Product Stamped/Marked for Release: 04/20/2020

Was/Is Information Product Transferred to OSTI? ☐ Yes ☒ No

Forward Copies of Completed Form to WRPS Originator

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- <workflow name="(SEH) Expedite - RPP-RPT-51962 Rev0" id="260312465">
  - <task name="Clearance Process" id="0" date-initiated="20200409T0912"
      performer="Sarah E Harrison" performer-id="252341659" username="h5635746">
      <comments>Due Monday April 20th 2020 - COB Please expedite the approval of
        the Final Analytical Report for Soil Samples in Support of an Interim Barrier at
        S Farm submitted by Cindy Tabor for public release to Ecology. Thank you,
        Sarah Harrison Information Clearance</comments>
    </task>
    <task name="Add XML" id="1" date-done="20200409T0912" />
    <task name="Expedite - Manager Approval" id="6" date-due="20200413T0912" date-
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      username="h4494439" disposition="Approve" authentication="true" />
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      id="171787680" username="h0081997" disposition="Public Release"
      authentication="true" />
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      id="242759597" username="h9138590" disposition="Public Release"
      authentication="true" />
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      username="h3022486" disposition="Public Release" authentication="true" />
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      done="20200413T1102" performer="Cynthia L Tabor" performer-id="173738849"
      username="h6436378" disposition="Send On" authentication="true" />
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    <task name="Verify Doc Consistency" id="4" date-due="20200421T0606" date-
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