AR TARGET SHEET

The following document was too large to scan as one unit, therefore, it has been broken down into sections.

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TITLE:	RI Report for 200-MW-1 Miscellaneous Waste Group OU

6.0 CONCLUSIONS AND PATH FORWARD

The 200-MW-1 OU will be remediated under the CERCLA process. Compliance with regulatory requirements will be documented through completion of the CERCLA process as described in the Implementation Plan (DOE/RL-98-28). Tasks to be completed following this RI include preparing an FS, a CERCLA proposed plan, and a CERCLA ROD.

6.1 CONCLUSIONS

The purpose of this RI report was to perform the following.

1. Determine if sufficient data have been collected to support risk assessment and remedial decision making.

2. Estimate risks at the representative waste sites, based on the data collected during the RI and other existing data.

3. Determine if any treatability investigations are required.

4. Determine the need to proceed with an FS.

5. Determine those constituents and site-specific considerations that need to be addressed in the FS.

The first purpose was met for all four of the representative waste sites evaluated. The data collected were of sufficient quantity and quality both for the risk assessment activities and to proceed to the FS to support evaluation of remedial alternatives and identify preferred remedial actions. Because drilling/sampling activities at the 216-A-4 Crib in the 200-MW-1 OU are incomplete, the evaluation of this representative waste site was not presented in this RI. The outcome of RI activities associated with the 216-A-4 Crib will be discussed in the 200-MW-1 OU FS.

The second, third, and fourth purposes were achieved by estimating risk to human health (described in Chapter 5.0), which includes screening potential ecological risk and evaluating the impact to groundwater (described in Chapter 4.0) from COPCs. Evaluation of the data collected during the RI concluded that no treatability investigations are required at this time. The risk screening indicates that human health and ecological risks, evaluated under an industrial land-use scenario, will require an evaluation of remedial alternatives in an FS.

Exposure durations and intakes are less for an industrial worker than for some other exposure scenarios (such as unrestricted land use), where more time is spent at the waste site and greater volumes of contaminants will be encountered. Therefore, other scenarios would have even higher risks. The Tri-Parties' response (Klein et al. 2002) to HAB 132 committed to an evaluation of risk to potential intruders; this evaluation will be conducted as part of the FS and will include a potential residential exposure scenario.

Potential groundwater impacts also were evaluated at the four representative sites. An evaluation of protection of groundwater indicated that all the constituents detected in the vadose zone would not impact groundwater in the future. Those constituents and site-specific considerations that the FS needs to address are presented in Table 6-1. Table 6-2 identifies those contaminants that should be considered for confirmatory sampling in the future.

6.2 REMEDIAL INVESTIGATION REPORT SUMMARY

The RI was conducted according to the Work Plan (DOE/RL-2001-65). The data were evaluated against the DQOs identified in the DQO summary report (BHI-01592). Through a DQA, the data were found to have met the DQOs established for this work. Contaminants were identified at the 216-T-33 Crib that may present a risk to human health and the environment. The data from these sites were used to estimate the risk, determine the need to proceed with an FS, and determine those constituents and site-specific considerations that need to be addressed in the FS. This RI report also provides data to support the evaluation of alternatives in the FS with regard to meeting potential ARARs and reducing risk.

The evaluation of the representative waste sites involved site characterization, refinement of the contaminant distribution and exposure models, a baseline risk evaluation, ecological risk screening, and fate and transport modeling. The data collected from the four representative sites, the 216-U-3 French Drain, 200-E-4 French Drain, 216-T-13 Trench, and 216-T-33 Crib, are considered sufficient for human-health and ecological risk assessment and for remedial decision making.

6.2.1 Characterization

Large-diameter push-hole (drive-casing) installation, borehole drilling, test pit excavation, and sampling and analysis of soils were used to characterize the representative waste sites. Data from these sites were collected during characterization activities in fiscal years 2005 and 2006. Geophysical surveys were performed on the boreholes completed at the 216-T-33 Crib and 216-U-3 French Drain. An SGLS and an HRLS were used to capture the down-hole radiometric signature at these boreholes. The DQO summary report (BHI-01592) indicates that the information collected before the RI in addition to the data collected during the RI is sufficient for remedial decision making.

6.2.1.1 Contaminant Distribution Models and Exposure Models

The waste site-specific conceptual contaminant distribution models and the conceptual exposure model developed in the Work Plan (DOE/RL-2001-65) were evaluated based on the data obtained during the RI and other data-collection activities. The current contaminant distribution models are presented in Chapter 3.0 but generally can be described as follows.

- Contamination associated with less mobile contaminants of concern, such as cesium, plutonium, and strontium, is detected in the highest concentrations near the bottom of the waste sites.

- Contaminant concentrations generally decrease with depth below the bottom of the waste site.
- Most of the contamination occurs in the upper portion of the vadose zone and does not extend to the water table.
- Highly mobile contaminants of concern such as nitrate have passed through the vadose zone and are detected in the lower portion of the vadose zone in low concentrations.

The exposure pathway model for this OU is presented in Chapter 5.0 and generally is summarized as follows.

- Potentially contaminated media are shallow-zone soils (0 to 4.6 m [0-15 ft] bgs).
- Potential receptors are mainly current and future workers (based on the current land-use assumptions) and terrestrial biota.
- Exposure pathways are ingestion, dermal contact, inhalation, and exposure to external radiation.

The contaminant distribution models in this RI report generally have changed very little from the models in the Work Plan (DOE/RL-2001-65) with respect to the distribution of contamination. The distribution models were updated using the data collected during the RI to depict the nature and vertical extent of contamination relative to the subsurface setting. The revised models identify the specific contaminants present, contaminant concentrations, and the vertical extent of contamination relative to ground surface and the water table.

The conceptual exposure model contains the following media types:

- Surface soils or shallow-zone soils from 0 to 4.6 m (0 to 15 ft) bgs
- Subsurface soils or deep-zone soils from 0 m to groundwater
- Groundwater
- Biota.

Based on current land-use assumptions, potential receptors are current workers, future workers, and terrestrial biota.

6.2.1.2 Contaminants of Concern and Site Risks

Contaminants of concern were identified by following a data evaluation process that is based on regulatory guidance and professional judgment. Nonradioactive constituents analyzed in the RI were screened based on detection (constituents with no detections were eliminated), comparison to background, and comparison to regulatory requirements. Estimates for cancer risk were generated. Radiological constituents were evaluated based on detection, background and available screening levels. Radiological dose and cancer risk to receptors were determined using RESRAD (ANL/EAD-4). The COCs, relative risks, and radiological dose rates for each representative waste site are summarized in Table 6-1. Table 6-1 identifies those contaminants of concern that, based on the results of the data evaluation, must be considered for further risk

assessment and remedial action in the FS. Table 6-2 identifies the COPCs that were detected at the 200-MW-1 OU representative waste sites and are the constituents that should be considered future sampling (i.e., confirmatory sampling, remedial design sampling, verification sampling).

6.2.1.3 Need for Treatability Investigations

Field and analytical results are consistent with the conceptual contaminant distribution models that were developed in the Work Plan (DOE/RL-2001-65) and that are seen at similar waste sites in other OUs. Based on the evaluation of the data derived from characterization of the representative waste sites against the preliminary remedial technologies identified in Appendix D of the Implementation Plan (DOE/RL-98-28), the potential technologies (e.g., removal and disposal, containment) currently identified will be adequate to address the contamination. Therefore, no treatability investigation requirements are identified at this time. Site-specific testing may be required later to support the remedial-design phase and to define operating parameters.

6.2.2 Ecological Screening

Constituents detected were compared to ecological soil-screening indicators in WAC-173-340-900, Table 749-3 (see Table 5-10 of this RI report for chemical screening), and DOE-STD-1153-2002 (see Table 5-11 of this RI report for radionuclide screening).

6.2.3 Fate and Transport Modeling and Evaluation

The initial screening of the nonradioactive contaminants was performed by comparing the analysis results to the RBC, based on WAC 173-340-720, "Ground Water Cleanup Standards." Maximum concentrations of detected analytes were compared to the established background levels presented in Table 3-3. For screening of direct exposure risk, the inorganic constituents that were detected were compared to background values and RBCs, as presented in Table 5-1. For groundwater protection screening, detected constituent maximum concentrations were compared against background and risk-based levels, as shown on Tables 4-2 and 5-3.

For radionuclides and nonradionuclides, evaluation of the potential impact to groundwater was based on the results of transport screening analyses performed using RESRAD modeling (ANL/EAD-4) and regulatory considerations. A qualitative assessment also was performed to determine whether modeling was needed for certain constituents. This included evaluation of the detected constituent's partition coefficient, frequency of detections, depth of detection in the soil column, and whether the constituent currently has been identified in a groundwater plume near the site. Results of the fate and transport modeling are provided in Chapter 4.0 of this RI report. A chart showing the flow of data through the screening and modeling processing is shown in Appendix A, Figure A-1.

The results of the fate and transport evaluation indicated that all COPCs are effectively attenuated in the vadose zone and do not pose a threat to future groundwater quality within the simulated timeframe. No radionuclides were identified as impacting groundwater quality during

the 1,000-year simulation period. None of the nonradiological constituents that reach groundwater exceed MCLs.

6.3 PATH FORWARD

6.3.1 Feasibility Study

The FS will follow CERCLA guidance and the strategy in the Implementation Plan (DOE/RL-98-28). Although some refinement is expected during the FS, Appendix D of the Implementation Plan fulfills many of the requirements for the screening phase (Steps 1 through 6) of the FS process. The potential ARARs, preliminary RAOs, preliminary remediation goals, general response actions, and the screening-level analysis of alternatives are identified in the Implementation Plan. The information is not repeated here but is incorporated by this reference into this RI report. Potential ARARs are expected to be fully developed in the FS. Although the need for treatability studies is not anticipated as being needed at this time, the FS also will identify any applicable treatability studies.

As a result of the work completed in the Implementation Plan (DOE/RL-98-28), the FS report will focus on the final phase of the FS, which consists of refining and analyzing in detail a limited number of alternatives identified in the screening phase. General response actions considered applicable to the 200-MW-1 OU are as follows:

- No action
- Institutional controls and monitored natural attenuation
- Engineered surface barriers
- Excavation and disposal with or without ex situ treatment
- In situ grouting or stabilization
- In situ vitrification.

An initial activity of the FS will be the detailed evaluation of available information for the analogous waste sites in the OUs. Characterization data for the 216-A-4 Crib will be included. Data will be compiled to evaluate the applicability of the representative waste sites to the analogous waste sites, based on the contaminant distribution models and relative risks developed in this RI report. Waste sites that are determined not to be analogous to the representative waste sites will be evaluated against representative waste sites from other OUs. Based on the specific characteristics, such a waste site may be reassigned to a more appropriate OU or may be maintained in the current OU with a requirement for confirmatory sampling. Changes to the preferred alternative would be evaluated, as needed, based on confirmatory data. The waste sites that are determined to be analogous to one or more of the representative waste sites will be evaluated for appropriate remedial measures through the FS process. Additional data needs may be identified during the FS process and during the DQO to support the confirmatory sampling for these analogous waste sites.

To support evaluation of the CERCLA criteria in the FS, additional risk-assessment activities will be conducted to evaluate the potential risks to inadvertent intruders. As reported in DOE/RL-2004-24, *Feasibility Study for the 200-CW-5 (U Pond/Z Ditches Cooling Water Waste*

Group), 200-CW-2 (S Pond and Ditches Cooling Water Waste Group), 200-CW-4 (T Pond and Ditches Cooling Water Waste Group), and 200-SC-1 (Steam Condensate Waste Group) Operable Units, and DOE/RL-2003-23, *Focused Feasibility Study for the 200-UW-1 Operable Unit*, the inadvertent intruder focuses on someone 150 years in the future who engages in an activity that results in contact with wastes that have been left in place. This could include a construction trench worker, a well driller, or a rural resident. The latter is considered the worst case scenario and, therefore, will be analyzed in the greatest detail.

6.3.2 Further Ecological Evaluations

Ecological risk will be evaluated using the EPA eight-step process as outlined in DOE/RL-2001-54. DOE/RL-2001-54 serves as the screening-level assessment for the Central Plateau. For the 200-MW-1 OU, an OU-specific screening has been conducted, and the results are included in this RI report.

DOE/RL-2001-54 is a foundation for the Central Plateau ecological evaluation DQO process that was conducted in fiscal years 2003 and 2004. This ecological DQO process will further develop data gaps identified in DOE/RL-2001-54 and will identify data needs for the Central Plateau to support remedial decision making. An ecological evaluation sampling and analysis plan will be prepared and implemented for the Central Plateau, either on an area-wide basis or by OU, depending on the actual data needs.

Based on the results of the DQO and the screening-level evaluation, additional risk-assessment activities, including a baseline ecological risk assessment, may be conducted using the eight-step process. The evaluation will be conducted based on soil data collected during the RI, existing soil and ecological data, and, if identified during the Central Plateau ecological evaluation DQO, new ecological data collected through a separate ecological evaluation sampling and analysis. The evaluation may be conducted on an OU-specific basis as part of the FS or on a Central Plateau basis, which would be reported in a separate report. This decision will be made through the DQO process.

6.3.3 Proposed Plan

The decision-making process for the waste sites in the 200-MW-1 OU will be based on the use of a proposed plan and a ROD. As part of the RI/FS process, a number of options for developing proposed plans and RODs are being evaluated. Remedial decisions may proceed on an OU-by-OU basis, but alternate site groupings may be considered for waste sites in the Central Plateau. Several alternatives currently are under consideration, some of which may be used for the waste sites addressed in this RI report.

Three alternatives to the OU-by-OU remediation approach have been identified to provide flexibility in the decision-making process, facilitate early action, and remediate and close specific areas or zones. Examples of these alternatives are as follows.

6.3.3.1 High-Risk Waste Sites Identified for Early Action

The first alternative accelerates the start of remedial actions and closure of waste sites that present an ongoing or expected future threat to groundwater. Some high-risk sites already have been identified for early actions in the BC Cribs and Trenches Area and near the U Plant, the PUREX Plant, and the Plutonium Finishing Plant.

6.3.3.2 Regional Site Closure

Under the second alternative, waste site remedial decision-making may be realigned under a regional closure strategy that aligns waste sites into groups defined by geographical zones.

6.3.3.3 Waste Site Grouping by Characteristics or Hazards

The third alternative for remedial decision-making strategies is based on a specific characteristic or hazard that mandates additional requirements, such as supplemental ARARs, or more robust remedial alternatives. Grouping waste sites with other similarly contaminated soil sites in other OUs could streamline the decision-making process and tailor the requirements and alternatives to these specific hazards.

Following the completion of the FS, a proposed plan will be prepared that identifies the preferred remedial alternative for this OU. In addition to identifying the preferred alternative, the proposed plan will serve the following purposes:

- Provide a summary of the completed RI/FS
- Provide criteria by which analogous waste sites within the OU that were not previously characterized will be evaluated after the ROD is issued, to confirm that the contaminant distribution model for the site is consistent with the preferred alternative. Contingencies to move a waste site to a more appropriate waste group also will be developed
- Identify performance standards and ARARs that are applicable to the OU.

After the public review process is complete, a final decision on the remedial action to be taken will be recommended in a ROD.

Because the 200 Areas are composed of CERCLA past-practice, RCRA past-practice, and TSD sites, the Tri-Parties have committed that the cleanup strategies will be integrated to the maximum extent possible. This is consistent with specific recommendations for integration in the Tri-Party Agreement (Ecology et al. 1989) and Section 2.4 of the Implementation Plan (DOE/RL-98-28) and can be accommodated under the *Hanford Facility RCRA Permit*.

6.4 POST-RECORD OF DECISION ACTIVITIES AND ANALOGOUS SITE APPROACH

The ROD for this OU will cover all of the waste sites in the OU, not just the four representative waste sites characterized under the RI. This analogous site approach is described in more detail in the Implementation Plan (DOE/RL-98-28). The basic approach is that the representative waste sites contain types, concentrations, and distributions of contaminants similar to those at the other sites in the OU, because the waste sites are grouped on the basis of similar site histories and processes. The waste sites, therefore, share similar risks and a similar need for remedial action. The data collected for the representative waste sites will be considered to be analogous to the remaining sites (Section 1.3.5).

After the ROD has been issued, a remedial design report and remedial action work plan will be prepared to detail the scope of the remedial action. As part of this activity, DQOs will be established and sampling and analysis plans will be prepared to direct confirmatory and/or remedial design and verification sampling and analysis activities. Before remediation is started, confirmation and/or remedial design sampling will be performed to ensure that sufficient characterization data are available to confirm that the selected remedy is appropriate for the waste sites covered by the ROD, to collect data necessary for the remedial design, and to support the final cumulative risk assessment for the entire 200 Areas National Priorities List (CERCLA) site (40 CFR 300, "National Oil and Hazardous Substances Pollution Contingency Plan," Appendix B, "National Priorities List"). Verification sampling will be performed after the remedial action is complete to determine if ROD requirements have been met and if the remedy was protective of human health and the environment. Additional guidance for confirmatory and verification sampling is provided in Section 6.2 of DOE/RL-98-28.

The remedial design report/remedial action work plan will include an integrated schedule of remediation activities for waste sites and releases covered by the ROD or RODs. The available options for remedy implementation throughout the 200 Areas will be explored during the course of the RI/FS process and may be reflected in the remedial action work plan. Following the completion of the remediation activity for this OU, CERCLA closeout activities will be performed as discussed in Section 2.4.5.2 of DOE/RL-98-28.

Table 6-1. Contaminants of Concern, Risk, and Dose Summary.

Site	Nonradiological			Radiological					
	Total Excess Lifetime Cancer Risk from Shallow Nonradiological Contaminants of Concern (Dimensionless)	**Nonradiological Exceeding Groundwater Protection Soil Risk-Based Concentration**	**Nonradiological Contaminants of Concern Exceeding Ecological Screening Levels (WAC 173-340-900, Table 749-3)***	**Total Maximum Excess Lifetime Cancer Risk from Radiological Contaminants of Concern (Dimensionless)**		**Total maximum Dose Rate/Time**	**Primary Dose Contributor**	**Total Maximum Dose Rate for Ground-water at Less Than 1,000 Years**	**Radiological Contaminants of Concern Exceeding Ecological Screening Levels**
200-E-4 French Drain	None[1]	None[2]	Barium[b], copper[b], Diethylphthalate[a], Di-n-butylphthalate[a], TPH-kerosene[a]	Cover	None[3]			None[4]	None[5]
				No Cover	None[3]				
216-U-3 French Drain	None[1]	None[2]	Boron[a], Diethylphthalate[a], Di-n-butylphthalate[a]	Cover	None[3]			None[4]	None[5]
				No Cover	None[3]				
216-T-33 Crib	None[1]	None[2]	Mercury[b], Di-n-butylphthalate[a], Oil and grease[a], TPH- motor oil range organics[a]	Cover	None[3]			None[4]	Cs-137[b], Sr-90[b]
				No Cover	1.88 E-04	13.94 mrem/yr at year 1	Cs-137		
216-T-13 Trench	None[1]	None[2]	Mercury[b], Di-n-Butylphthalate[a]	Cover	None[3]			None[4]	None[5]
				No Cover	None[3]				

WAC 173-340-900, "Tables."

[a] Retained for consideration during the feasibility study, because no background and wildlife screening levels were available.

[b] Retained for consideration during the feasibility study, because constituent concentration exceeded background and wildlife or biota concentration guide screening levels.

COC = contaminant of concern.
GWP = groundwater protection.
MCL = maximum contaminant level.
none[1] = no carcinogens or other contaminants detected above direct exposure RBCs.
none[2] = no contaminants detected above groundwater protection RBCs or MCLs, based on fate and transport modeling results.
none[3] = no radiological constituents detected above direct exposure RBCs.
none[4] = no radionuclides migrate to groundwater within 1000 years.
none[5] = no radiological constituents above ecological risk screening threshold values.
RBC = risk-based concentration.
TPH = total petroleum hydrocarbon.
WAC = *Washington Administrative Code.*

Table 6-2. Preliminary List of Contaminants for Future Sampling Phases at the 200-MW-1 Operable Unit.

Radioactive Constituents [a]
Cesium-137
Strontium-90
Nonradioactive Constituents [a]
Barium
Boron
Copper
Mercury
Diethylphthalate
Di-n-butylphthalate
Oil and grease
Total Petroleum Hydrocarbon-kerosene
Total Petroleum Hydrocarbon -motor oil range

Future sampling phases include confirmatory sampling, remedial design sampling, and/or verification sampling.

Risk-based concentrations are from WAC 173-340-747(4), "Deriving Soil Concentrations for Ground Water Protection," "Fixed Parameter Three-Phase Partitioning Model," or WAC 173-340-900, "Tables," Table 749-3.

[a] Listed contaminants may have a risk-based concentration in one section of the *Washington Administrative Code* (and passed screening) but no risk-based concentration in another section of the code (and failed because of no background or because background was exceeded).

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APPENDIX A

FREQUENCY OF DETECTION AND DATA SUMMARY TABLES

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TERMS

AEA	alpha energy analysis
bgs	below ground surface
EPC	exposure-point concentration
GEA	gamma energy analysis
GW	groundwater
HEIS	*Hanford Environmental Information System* database
ICP	inductively coupled plasma
KPA	kinetic phosphorescence analysis
MS	mass spectrometry
RBC	risk-based concentration
RESRAD	RESidual RADioactivity (ANL/EAD-4)
TPH	total petroleum hydrocarbon
WAC	*Washington Administrative Code*
WTPH	Washington total petroleum hydrocarbon (Ecology 97-602)

APPENDIX A

FREQUENCY OF DETECTION AND DATA SUMMARY TABLES

Appendix Tables A-1 and A-2 are summaries of laboratory data collected for the remedial investigation. The tables are arranged in two sets. Table A-1 summarizes the data for shallow-zone soils, consisting of analysis results for samples taken from the surface to 4.6 m (15 ft) below ground surface (bgs). Table A-2 summarizes the data for deep-zone soils, consisting of analysis results for samples taken from the surface to the full depth of the borehole, which varies among the representative waste sites.

Samples were included in the shallow-zone soil table (Table A-1) if any part of the depth interval at which the sample was taken was at or above the 4.6 m (15-ft) bgs level.

The tables include the constituent, constituent class, reporting units, number of samples, number of detects, frequency of detects, minimum and maximum concentrations for detected constituents, and the depth at which the maximum concentration was reported. In addition, when one or more nondetected analytical results were reported, the table includes the minimum and maximum sample-specific concentration (i.e., minimum detectable activity or detection limit). For radiological analyses, if no sample-specific detection limit was provided (or a zero was provided), the minimum detected activity in the Appendix B tables was used as an estimate of the detection limit.

A1.0 SAMPLE SIZE, EXPOSURE-POINT CONCENTRATIONS, AND MAXIMUM CONCENTRATIONS

Laboratory sample sizes for the 200-MW-1 Operable Unit representative waste sites varied from one to four samples for different analytes at each depth. Sample results from the same depth could be larger for some constituents (some radiological constituents, metals, miscellaneous organics, ammonia, cyanide, and pH) if multiple analytical methods were applied and/or if field duplicates were taken.

The maximum concentration in the depth range of interest (shallow or deep) was selected as the exposure-point concentration. This is because sampling at the 200-MW-1 Operable Unit representative waste sites was designed to sample areas at which suspected soil contamination had the highest probability of maximum concentration, based on historical knowledge about the sites and on presampling activities. This meets the criteria for direct comparison of soil sample concentrations with cleanup levels under *Washington Administrative Code* (WAC) 173-340-745(8), "Soil Cleanup Standards for Industrial Properties - Compliance Monitoring," for the direct exposure pathway. There is documented, reliable information that the soil samples have been taken from the appropriate locations. The Work Plan (DOE/RL-2001-65, *200-MW-1 Miscellaneous Waste Group Operable Unit RI/FS Work Plan*) documents how the location(s) of the maximum radiological contamination were selected for the representative waste sites. Historical gamma-ray logging, laboratory samples, and other characterization information were used to determine the location of maximum concentration for each representative waste site.

In addition, maximum detected concentrations were used as exposure-point concentrations because, based on Federal guidance (EPA, 2002, *Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites,* OSWER 9285.6-10), the sample sizes taken at these waste sites are insufficient to generate a valid upper one-sided 95 percent confidence limit on the true mean soil concentration using Land's method, as specified in WAC 173-340-740(7)(d)(i)(A), "Unrestricted Land Use Soil Cleanup Standards," "Compliance Monitoring."

Figure A-1 shows the flow of analytical data in the 200-MW-1 Operable Unit remedial investigation, beginning with the reported laboratory data in Appendix B, through the selection of exposure-point concentrations in Appendix A, the data screening in Chapter 4.0 of this remedial investigation report, discussion of results in Chapter 5.0, and the conclusions made in Chapter 6.0.

A2.0 MULTIPLE ANALYTICAL METHODS

In cases where sample material within the same borehole was analyzed by different methods, the following procedure was used to determine the maximum detected result (or nondetect), the minimum detected result (or nondetect), and the number of samples and detects.

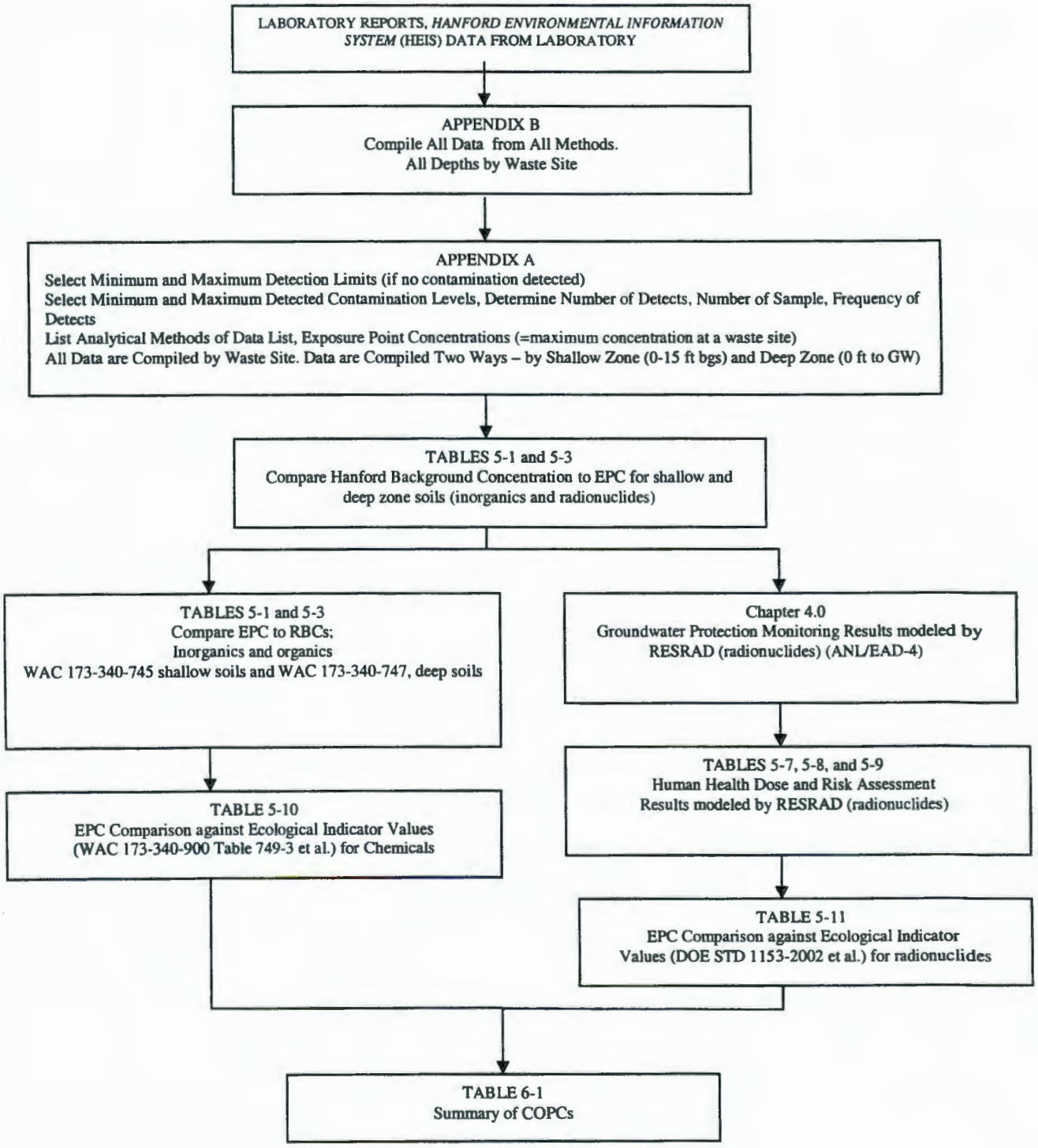
A2.1 RADIOLOGICAL ANALYSES

There are three cases and multiple methods.

Case 1: A gamma energy analysis (GEA) method and one or more alpha energy analysis (AEA) methods were reported in some cases for Am-241, Pu-238, Pu-239/240, Th-228, Th-232, U-234 (also reported as U-233/234), U-235, and U-238. In these cases, only the AEA results were selected for use, because these analytes are strong alpha emitters and the AEA methods yield lower detection limits. For example, Am-241 at the 216-T-33 Crib was analyzed with GEA and two AEA methods. The GEA data were not considered in the risk screening. Data from the AEA methods were combined in the same manner as in Case 2.

Case 2: In some cases, data were present from two or more of the various preparation methods used with AEA analysis (e.g., preparation of the sample for counting using electroplating versus preparation using precipitation). In these cases, the larger result was used to determine the maximum. The combined data from all methods (including duplicates but excluding rinsates) were used to determine the number of samples, the number of detects, and the number of nondetects. Using all AEA data by all preparation methods also allowed complete vertical coverage of the borehole, because all depths in a given borehole were not necessarily analyzed by the same set of methods for a given analyte. Because the AEA methods predominantly meet the Work Plan (DOE/RL-2001-65) accuracy and precision criteria with few quality control failures, the methods are equivalent for use and comparison. Continuing the example of Am-241 in the 216-T-33 Crib as begun in Case 1, the data were obtained with electroplate AEA (1 sample, 1 detect) and precipitation AEA (9 samples, 4 detects) for a detection frequency of 5/10 or 50 percent and a maximum of 2.3 pCi/g by precipitation AEA.

Figure A-1. Flow of Analytical Data in the 200-MW-1 Operable Unit Remedial Investigation.



Case 3: For some samples, total uranium was analyzed by both the kinetic phosphorescence analysis (KPA) and the inductively coupled plasma / mass spectrometry (ICP/MS) methods. Because the methods predominantly meet the Work Plan (DOE/RL-2001-65) accuracy and precision criteria with few quality control failures, the methods are equivalent for use and comparison. The larger number was selected as the maximum. As in Case 2, data from both methods (including duplicates but excluding rinsates) were used to determine number of samples, detects, and nondetects. For example, total uranium was analyzed by both KPA and ICP/MS for the 216-T-33 Crib. There was one KPA result, one detect, and eight ICP/MS results, of which five were detects. The frequency is 6/9 or 66.67 percent. The maximum detected value was by KPA, 1.7 mg/kg.

A2.2 METALS ANALYSES

For many metals, ICP emission spectrometry and ICP/MS (typically with detection limits lower than ICP) were used. Generally, only a single method was used for samples obtained at a particular location (i.e., borehole depth). For some waste sites, however, samples from various depths in the same borehole were analyzed by different methods for the same analyte. For example, cadmium in the 216-T-33 Crib was obtained with ICP (one sample, one detect) and ICP/MS (nine samples, six detects), for a detection frequency of 7/10 or 70 percent and a maximum of 1.63 mg/kg by ICP/MS. The methods were considered to be equivalent for obtaining the maximum so as to obtain coverage at all depths for each borehole. The highest result was selected as the maximum, regardless of the method. These methods met the accuracy and precision requirements in the Work Plan. All soil duplicates were analyzed by the same analytical method that was used for the primary sample.

A2.3 MISCELLANEOUS ANALYSES

For select analytes, multiple methods were used in a single borehole, as follows:

Analytical Methods Used on Miscellaneous Analytes.

Analyte	EPA Methods[a]	Comment
1-Butanol	8015, 8260	All results were nondetects. Results by both 8260 gas chromatography/mass spectrometry and 8015 gas chromatography were obtained at 19.5 to 22 ft bgs in the 216-T-33 Crib, Borehole C4738, and also at 22 to 24.5 ft bgs in the 216-U-3 French Drain, Borehole C4559. The largest detect was used as the maximum. All data were used to count the number of samples and nondetects.
Cyanide	335.2, 9010	All results were nondetects. For cyanide, either manual or automated colorimetric methods were used. Both methods predominantly meet the Work Plan (DOE/RL-2001-65) accuracy and precision criteria with few quality control failures; thus, all data were combined for complete borehole coverage and are equivalent for evaluation. All nondetects are less than the 800 μg/kg groundwater protection-screening limit. Results by both 335.2 and 9010 were obtained at 14 to 20.5 ft bgs in the 200-E-4 French Drain, Borehole C4854, and at 22 to 24.5 ft bgs in the 216-U-3 French Drain, Borehole C4559. The largest detect was used as the maximum. All data were used to count the number of samples and nondetects.
pH	150.1, 9045	For pH, the methods are both electrode methods. Method 150.1 was modified to handle soils in a manner consistent with 9045 methods, and the methods are equivalent. The pH is not a contaminant of concern, but it affects properties of some other analytes.
TPH-gasoline range	8015, WTPH-gasoline	All results were nondetects. Results by both 8015 gas chromatography and WTPH-gasoline were obtained at 22 to 24.5 ft bgs in the 216-U-3 French Drain, Borehole C4559. The largest detect was used as the maximum. All data were used to count the number of samples and nondetects.

[a] U.S. Environmental Protection Agency test methods. The 4-digit EPA methods are found in SW-846. Methods 150.1 and 335.2 are found in EPA/600/4-79/020.

DOE/RL-2001-65, *200-MW-1 Miscellaneous Waste Group Operable Unit RI/FS Work Plan.*

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TPH = total petroleum hydrocarbon.
WTPH = Washington total petroleum hydrocarbon.

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TERMS USED IN APPENDIX A TABLES

NOTE: This is an approximate list of the terms used in Appendix A, Tables A-1 and A-2. Capitalization of the terms in this list follows what appears in the tables, not what is industry correct.

AEA	alpha energy analysis
AM	americium
C14	carbon-14
CM	curium
COX	combustion oxidation

CR6	chromium-6
CVAA	cold vapor atomic absorption
DIST	distillation
ETVDSK	Eichrome (Industries) TEVA (filter) disk separation[1]
GC	gas chromatography
GCMS	gas chromatography mass spectrometry
GPC	gas proportional counting
GS	gamma spectroscopy
H3	tritium
HG	mercury
I129	iodine-129
IC	ion chromatography
ICP	inductively coupled plasma
ICPMS	inductively coupled plasma mass spectrometry
IE	ion exchange
ISO	isotopic
KPA	kinetic phosphorescence analysis
LEPS	low-energy photon spectroscopy
LSC	liquid scintillation counting
NI63	nickel-63
NO3/NO2	NO_3/NO_2
NP237	neptunium-237
PCB	polychlorinated biphenyl
PH	(pH) acidity or alkalinity of an aqueous solution
PLATE	electroplated
PRECIP	precipitated
PU	plutonium
RAD	radionuclide
SEP	separation
SR	strontium
SVOA	semivolatile organic analysis
SVOC	semivolatile organic compound
TC99	technetium-99
TH	thorium
TOT	total
TPH	total petroleum hydrocarbon
TR	trace
U	uranium
VOA	volatile organic analysis
VOC	volatile organic compound
WTPH	Washington total petroleum hydrocarbon (Ecology 97-602, *Analytical Methods for Petroleum Hydrocarbons*)

[1] TEVA (filter) is a trademark of Eichrome Industries, Inc., Deerfield, Illinois.

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Table A-1. Summary Table for All 200-MW-1 Operable Unit Constituents in Shallow-Zone Soil Samples (10 Sheets)

Constituent	Constituent Class	Units	Number of Samples	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Result	Maximum Result	Analytical Method, Minimum Nondetect or Result	Analytical Method, Maximum Nondetect or Result	Depth Of Maxium Result (ft bgs)
200-E-4 French Drain												
Antimony	METALS	ug/kg	1	0	0	989	989			200.8_METALS_ICPMS	200.8_METALS_ICPMS	
Arsenic	METALS	ug/kg	1	1	100			1130	1130	200.8_METALS_ICPMS	200.8_METALS_ICPMS	8-11 ft
Barium	METALS	ug/kg	1	1	100			202000	202000	200.8_METALS_ICPMS	200.8_METALS_ICPMS	8-11 ft
Beryllium	METALS	ug/kg	1	1	100			578	578	200.8_METALS_ICPMS	200.8_METALS_ICPMS	8-11 ft
Bismuth	METALS	ug/kg	1	0	0	2110	2110			6010_METALS_ICP	6010_METALS_ICP	
Boron	METALS	ug/kg	1	0	0	2490	2490			6010_METALS_ICP	6010_METALS_ICP	
Cadmium	METALS	ug/kg	4	4	100			160	1080	6010_METALS_ICP	200.8_METALS_ICPMS	8-11 ft
Chromium	METALS	ug/kg	4	4	100			4710	7400	200.8_METALS_ICPMS	6010_METALS_ICP	14-20.5 ft
Copper	METALS	ug/kg	4	4	100			23500	4080000	200.8_METALS_ICPMS	200.8_METALS_ICPMS	8-11 ft
Lead	METALS	ug/kg	4	4	100			3200	25400	6010_METALS_ICP	200.8_METALS_ICPMS	8-11 ft
Mercury	METALS	ug/kg	2	0	0	20	99			7471_HG_CVAA	200.8_METALS_ICPMS	
Nickel	METALS	ug/kg	1	1	100			15200	15200	200.8_METALS_ICPMS	200.8_METALS_ICPMS	8-11 ft
Selenium	METALS	ug/kg	1	0	0	396	396			200.8_METALS_ICPMS	200.8_METALS_ICPMS	
Silver	METALS	ug/kg	4	4	100			190	1360	6010_METALS_ICP	200.8_METALS_ICPMS	11-14 ft
Uranium	METALS	ug/kg	3	3	100			530	1210	200.8_METALS_ICPMS	UTOT_KPA	14-20.5 ft
Cyanide	CONV	ug/kg	3	0	0	200	490			335.2_CYANIDE	9010_CYANIDE	
Nitrate	CONV	ug/kg	2	2	100			2950	7260	300.0_ANIONS_IC	300.0_ANIONS_IC	11-14 ft
Nitrite	CONV	ug/kg	2	0	0	1030	3120			300.0_ANIONS_IC	300.0_ANIONS_IC	
Percent Solids	CONV	%	2	2	100			95	96.5	%SOLIDS	%SOLIDS	14-20.5 ft
pH Measurement	CONV	pH	3	3	100			7.81	8.69	150.1_PH	150.1_PH	14-20.5 ft
Phosphate	CONV	ug/kg	3	0	0	1000	8280			300.0_ANIONS_IC	300.0_ANIONS_IC	
Sulfate	CONV	ug/kg	3	3	100			14200	18100	300.0_ANIONS_IC	300.0_ANIONS_IC	14-20.5 ft
1,1,1-Trichloroethane	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,1,2,2-Tetrachloroethane	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,1,2-Trichloroethane	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,1-Dichloroethane	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,1-Dichloroethene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloroethane	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloroethene(Total)	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloropropane	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1-Butanol	VOC	ug/kg	3	0	0	41	42			8260_VOA_GCMS	8260_VOA_GCMS	
2-Butanone	VOC	ug/kg	4	0	0	2.1	11			8260_VOA_GCMS	8260_VOA_GCMS	
2-Hexanone	VOC	ug/kg	4	0	0	2.1	11			8260_VOA_GCMS	8260_VOA_GCMS	
4-Methyl-2-Pentanone	VOC	ug/kg	4	0	0	2.1	11			8260_VOA_GCMS	8260_VOA_GCMS	
Acetone	VOC	ug/kg	4	1	25	2.1	2.1	4	4	8260_VOA_GCMS	8260_VOA_GCMS	14-20.5 ft
Benzene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Bromodichloromethane	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Bromoform	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Bromomethane	VOC	ug/kg	4	0	0	2.1	11			8260_VOA_GCMS	8260_VOA_GCMS	
Carbon disulfide	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Carbon tetrachloride	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Chlorobenzene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Chloroethane	VOC	ug/kg	4	0	0	2.1	11			8260_VOA_GCMS	8260_VOA_GCMS	
Chloroform	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Chloromethane	VOC	ug/kg	4	0	0	2.1	11			8260_VOA_GCMS	8260_VOA_GCMS	
cis-1,2-Dichloroethylene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	

Table A-1. Summary Table for All 200-MW-1 Operable Unit Constituents in Shallow-Zone Soil Samples (10 Sheets)

Constituent	Constituent Class	Units	Number of Samples	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Result	Maximum Result	Analytical Method, Minimum Nondetect or Result	Analytical Method, Maximum Nondetect or Result	Depth Of Maxium Result (ft bgs)
cis-1,3-Dichloropropene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Dibromochloromethane	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Ethylbenzene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Methylene chloride	VOC	ug/kg	4	0	0	2.1	5			8260_VOA_GCMS	8260_VOA_GCMS	
Styrene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Tetrachloroethene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Toluene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
trans-1,2-Dichloroethylene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
trans-1,3-Dichloropropene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Trichloroethene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Vinyl chloride	VOC	ug/kg	4	0	0	2.1	11			8260_VOA_GCMS	8260_VOA_GCMS	
Xylenes (total)	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,2,4-Trichlorobenzene	SVOC	ug/kg	2	0	0	83	85			8270_SVOA_GCMS	8270_SVOA_GCMS	
1,4-Dichlorobenzene	SVOC	ug/kg	2	0	0	140	150			8270_SVOA_GCMS	8270_SVOA_GCMS	
2,4-Dinitrotoluene	SVOC	ug/kg	2	0	0	63	64			8270_SVOA_GCMS	8270_SVOA_GCMS	
2-Chlorophenol	SVOC	ug/kg	2	0	0	130	130			8270_SVOA_GCMS	8270_SVOA_GCMS	
4-Chloro-3-methylphenol	SVOC	ug/kg	2	0	0	75	77			8270_SVOA_GCMS	8270_SVOA_GCMS	
4-Nitrophenol	SVOC	ug/kg	2	0	0	160	160			8270_SVOA_GCMS	8270_SVOA_GCMS	
Acenaphthene	SVOC	ug/kg	2	0	0	55	56			8270_SVOA_GCMS	8270_SVOA_GCMS	
Aroclor-1016	SVOC	ug/kg	4	0	0	14	52			8082_PCB_GC	8082_PCB_GC	
Aroclor-1221	SVOC	ug/kg	4	0	0	14	100			8082_PCB_GC	8082_PCB_GC	
oclor-1232	SVOC	ug/kg	4	0	0	14	52			8082_PCB_GC	8082_PCB_GC	
oclor-1242	SVOC	ug/kg	4	0	0	14	52			8082_PCB_GC	8082_PCB_GC	
Aroclor-1248	SVOC	ug/kg	4	0	0	14	52			8082_PCB_GC	8082_PCB_GC	
Aroclor-1254	SVOC	ug/kg	4	0	0	14	52			8082_PCB_GC	8082_PCB_GC	
Aroclor-1260	SVOC	ug/kg	4	0	0	14	52			8082_PCB_GC	8082_PCB_GC	
Aroclor-1262	SVOC	ug/kg	3	0	0	16	52			8082_PCB_GC	8082_PCB_GC	
Aroclor-1268	SVOC	ug/kg	3	0	0	16	52			8082_PCB_GC	8082_PCB_GC	
Diethylphthalate	SVOC	ug/kg	2	2	100			410	790	8270_SVOA_GCMS	8270_SVOA_GCMS	11-14 ft
Di-n-butylphthalate	SVOC	ug/kg	2	2	100			250	370	8270_SVOA_GCMS	8270_SVOA_GCMS	14-20.5 ft
N-Nitrosodi-n-dipropylamine	SVOC	ug/kg	2	0	0	73	74			8270_SVOA_GCMS	8270_SVOA_GCMS	
Octadecanoic acid	SVOC	ug/kg	1	1	100			160	160	8270_SVOA_GCMS	8270_SVOA_GCMS	11-14 ft
Oil and grease	SVOC	ug/kg	3	0	0	207000	702000			9071_OILGREASE	413.1_OILGREASE	
Pentachlorophenol	SVOC	ug/kg	2	0	0	74	75			8270_SVOA_GCMS	8270_SVOA_GCMS	
Phenol	SVOC	ug/kg	2	0	0	87	88			8270_SVOA_GCMS	8270_SVOA_GCMS	
Pyrene	SVOC	ug/kg	2	0	0	50	51			8270_SVOA_GCMS	8270_SVOA_GCMS	
Total petroleum hydrocarbons - diesel range	SVOC	ug/kg	3	1	33.33	3900	12400	120000	120000	WTPH_DIESEL	WTPH_DIESEL	14-20.5 ft
Total petroleum hydrocarbons - gasoline range	SVOC	ug/kg	2	0	0	250	250			WTPH_GASOLINE	WTPH_GASOLINE	
Total petroleum hydrocarbons - kerosene range	SVOC	ug/kg	3	1	33.33	3900	12400	100000	100000	WTPH_DIESEL	WTPH_DIESEL	14-20.5 ft
Tributyl phosphate	SVOC	ug/kg	3	0	0	33	340			8270_SVOA_GCMS	8270_SVOA_GCMS	
Americium-241	RAD	pCi/g	2	1	50	0.119	0.119	0.2	0.2	AMCMISO_IE_PLATE_AEA	AMCMISO_IE_PREC_AEA	8-11 ft
Antimony-125	RAD	pCi/g	1	0	0	-0.009	-0.009			GAMMA_GS	GAMMA_GS	
Cesium-134	RAD	pCi/g	1	0	0	0.018	0.018			GAMMA_GS	GAMMA_GS	
Cesium-137	RAD	pCi/g	2	0	0	0.003	0.082			GAMMA_GS	GAMMA_GS	
balt-60	RAD	pCi/g	2	0	0	-0.005	0.088			GAMMA_GS	GAMMA_GS	
ropium-152	RAD	pCi/g	2	0	0	-0.011	0.2			GAMMA_GS	GAMMA_GS	

Table A-1. Summary Table for All 200-MW-1 Operable Unit Constituents in Shallow-Zone Soil Samples (10 Sheets)

Constituent	Constituent Class	Units	Number of Samples	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Result	Maximum Result	Analytical Method, Minimum Nondetect or Result	Analytical Method, Maximum Nondetect or Result	Depth Of Maxium Result (ft bgs)
Europium-154	RAD	pCi/g	2	0	0	-0.001	0.27			GAMMA_GS	GAMMA_GS	
Europium-155	RAD	pCi/g	2	1	50	0.18	0.18	0.028	0.028	GAMMA_GS	GAMMA_GS	8-11 ft
Neptunium-237	RAD	pCi/g	1	0	0	0.001	0.001			NP237_IE_PRECIP_AEA	NP237_IE_PRECIP_AEA	
Plutonium-238	RAD	pCi/g	2	0	0	-0.012	0.025			PUISO_IE_PRECIP_AEA	PUISO_PLATE_AEA	
Plutonium-239/240	RAD	pCi/g	2	0	0	0	0.013			PUISO_PLATE_AEA	PUISO_IE_PRECIP_AEA	
Potassium-40	RAD	pCi/g	1	1	100			14.9	14.9	GAMMA_GS	GAMMA_GS	14-20.5 ft
Radium-226	RAD	pCi/g	2	2	100			0.377	0.407	GAMMA_GS	GAMMA_GS	14-20.5 ft
Radium-228	RAD	pCi/g	2	2	100			0.464	0.742	GAMMA_GS	GAMMA_GS	14-20.5 ft
Technetium-99	RAD	pCi/g	3	0	0	0.082	0.184			TC99_TR_SEP_LSC	TC99_SEP_LSC	
Thorium-228	RAD	pCi/g	1	1	100			0.644	0.644	GAMMA_GS	GAMMA_GS	14-20.5 ft
Thorium-232	RAD	pCi/g	1	1	100			0.742	0.742	GAMMA_GS	GAMMA_GS	14-20.5 ft
Total beta radiostrontium	RAD	pCi/g	2	1	50	0.04	0.04	0.52	0.52	SRTOT_SEP_PRECIP_GPC	SRTOT_SEP_PRECIP_GPC	8-11 ft
Tritium	RAD	pCi/g	3	0	0	0.000233	0.11			TRITIUM_DIST_LSC	906.0_H3_LSC	
Uranium-233/234	RAD	pCi/g	2	2	100			0.38	0.697	UISO_IE_PRECIP_AEA	UISO_PLATE_AEA	14-20.5 ft
Uranium-235	RAD	pCi/g	2	1	50	0.037	0.037	0.023	0.023	UISO_IE_PRECIP_AEA	UISO_PLATE_AEA	8-11 ft
Uranium-238	RAD	pCi/g	2	2	100			0.32	0.455	UISO_IE_PRECIP_AEA	UISO_PLATE_AEA	14-20.5 ft
216-T-13 Trench												
Antimony	METALS	ug/kg	2	0	0	909	1010			200.8_METALS_ICPMS	200.8_METALS_ICPMS	
Arsenic	METALS	ug/kg	2	2	100			2780	2950	200.8_METALS_ICPMS	200.8_METALS_ICPMS	8-9 ft
Barium	METALS	ug/kg	2	2	100			79200	82100	200.8_METALS_ICPMS	200.8_METALS_ICPMS	8-9 ft
eryllium	METALS	ug/kg	2	2	100			282	289	200.8_METALS_ICPMS	200.8_METALS_ICPMS	8-9 ft
ismuth	METALS	ug/kg	2	0	0	2160	2200			6010_METALS_ICP	6010_METALS_ICP	
Boron	METALS	ug/kg	2	0	0	2550	2600			6010_METALS_ICP	6010_METALS_ICP	
Cadmium	METALS	ug/kg	7	7	100			130	397	6010_METALS_ICP	200.8_METALS_ICPMS	8-9 ft
Chromium	METALS	ug/kg	7	7	100			3500	9340	6010_METALS_ICP	200.8_METALS_ICPMS	8-9 ft
Lead	METALS	ug/kg	7	7	100			7450	24100	200.8_METALS_ICPMS	200.8_METALS_ICPMS	8-9 ft
Mercury	METALS	ug/kg	3	2	66.67	101	101	40	13300	7471_HG_CVAA	200.8_METALS_ICPMS	8-9 ft
Nickel	METALS	ug/kg	1	1	100			9960	9960	200.8_METALS_ICPMS	200.8_METALS_ICPMS	8-9 ft
Selenium	METALS	ug/kg	2	0	0	364	404			200.8_METALS_ICPMS	200.8_METALS_ICPMS	
Silver	METALS	ug/kg	2	0	0	91	101			200.8_METALS_ICPMS	200.8_METALS_ICPMS	
Uranium	METALS	ug/kg	5	5	100			901	2060	200.8_METALS_ICPMS	UTOT_KPA	12-13 ft
Ammonium ion	CONV	ug/kg	2	1	50	252	252	307	307	300.7_IC	300.7_IC	8-9 ft
Cyanide	CONV	ug/kg	1	0	0	200	200			335.2_CYANIDE	335.2_CYANIDE	
pH Measurement	CONV	pH	7	7	100			9.49	9.7	150.1_PH	150.1_PH	14-15 ft
Phosphate	CONV	ug/kg	7	1	14.29	8130	8280	7900	7900	300.0_ANIONS_IC	300.0_ANIONS_IC	12-13 ft
Sulfate	CONV	ug/kg	7	6	85.71	4900	4900	12000	66600	300.0_ANIONS_IC	300.0_ANIONS_IC	8-9 ft
1,1,1-Trichloroethane	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
1,1,2,2-Tetrachloroethane	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
1,1,2-Trichloroethane	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
1,1-Dichloroethane	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
1,1-Dichloroethene	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloroethane	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloroethene(Total)	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloropropane	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
1-Butanol	VOC	ug/kg	6	0	0	41	44			8260_VOA_GCMS	8260_VOA_GCMS	
Butanone	VOC	ug/kg	7	0	0	2	10			8260_VOA_GCMS	8260_VOA_GCMS	
Hexanone	VOC	ug/kg	7	0	0	2	10			8260_VOA_GCMS	8260_VOA_GCMS	

Table A-1. Summary Table for All 200-MW-1 Operable Unit Constituents in Shallow-Zone Soil Samples (10 Sheets)

Constituent	Constituent Class	Units	Number of Samples	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Result	Maximum Result	Analytical Method, Minimum Nondetect or Result	Analytical Method, Maximum Nondetect or Result	Depth Of Maxium Result (ft bgs)
4-Methyl-2-Pentanone	VOC	ug/kg	7	0	0	2	10			8260_VOA_GCMS	8260_VOA_GCMS	
Acetone	VOC	ug/kg	7	0	0	2	10			8260_VOA_GCMS	8260_VOA_GCMS	
Benzene	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Bromodichloromethane	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Bromoform	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Bromomethane	VOC	ug/kg	7	0	0	2	10			8260_VOA_GCMS	8260_VOA_GCMS	
Carbon disulfide	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Carbon tetrachloride	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Chlorobenzene	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Chloroethane	VOC	ug/kg	7	0	0	2	10			8260_VOA_GCMS	8260_VOA_GCMS	
Chloroform	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Chloromethane	VOC	ug/kg	7	0	0	2	10			8260_VOA_GCMS	8260_VOA_GCMS	
cis-1,2-Dichloroethylene	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
cis-1,3-Dichloropropene	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Dibromochloromethane	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Ethylbenzene	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Methylene chloride	VOC	ug/kg	7	1	14.29	2	2.2	3.5	3.5	8260_VOA_GCMS	8260_VOA_GCMS	12-13 ft
Styrene	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Tetrachloroethene	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Toluene	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
trans-1,2-Dichloroethylene	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
ns-1,3-Dichloropropene	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
richloroethene	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Vinyl chloride	VOC	ug/kg	7	0	0	2	10			8260_VOA_GCMS	8260_VOA_GCMS	
Xylenes (total)	VOC	ug/kg	7	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
1,2,4-Trichlorobenzene	SVOC	ug/kg	6	0	0	180	200			8270_SVOA_GCMS	8270_SVOA_GCMS	
1,4-Dichlorobenzene	SVOC	ug/kg	6	0	0	270	290			8270_SVOA_GCMS	8270_SVOA_GCMS	
2,4-Dinitrotoluene	SVOC	ug/kg	6	0	0	110	120			8270_SVOA_GCMS	8270_SVOA_GCMS	
2-Chlorophenol	SVOC	ug/kg	6	0	0	150	170			8270_SVOA_GCMS	8270_SVOA_GCMS	
4-Chloro-3-methylphenol	SVOC	ug/kg	6	0	0	94	100			8270_SVOA_GCMS	8270_SVOA_GCMS	
4-Nitrophenol	SVOC	ug/kg	6	0	0	170	190			8270_SVOA_GCMS	8270_SVOA_GCMS	
Acenaphthene	SVOC	ug/kg	6	0	0	140	150			8270_SVOA_GCMS	8270_SVOA_GCMS	
Aroclor-1016	SVOC	ug/kg	7	0	0	14	55			8082_PCB_GC	8082_PCB_GC	
Aroclor-1221	SVOC	ug/kg	7	0	0	14	110			8082_PCB_GC	8082_PCB_GC	
Aroclor-1232	SVOC	ug/kg	7	0	0	14	55			8082_PCB_GC	8082_PCB_GC	
Aroclor-1242	SVOC	ug/kg	7	0	0	14	55			8082_PCB_GC	8082_PCB_GC	
Aroclor-1248	SVOC	ug/kg	7	0	0	14	55			8082_PCB_GC	8082_PCB_GC	
Aroclor-1254	SVOC	ug/kg	7	0	0	14	55			8082_PCB_GC	8082_PCB_GC	
Aroclor-1260	SVOC	ug/kg	7	0	0	14	55			8082_PCB_GC	8082_PCB_GC	
Aroclor-1262	SVOC	ug/kg	6	0	0	49	55			8082_PCB_GC	8082_PCB_GC	
Aroclor-1268	SVOC	ug/kg	6	0	0	49	55			8082_PCB_GC	8082_PCB_GC	
Di-n-butylphthalate	SVOC	ug/kg	4	4	100			430	710	8270_SVOA_GCMS	8270_SVOA_GCMS	10-11 ft
N-Nitrosodi-n-dipropylamine	SVOC	ug/kg	6	0	0	150	160			8270_SVOA_GCMS	8270_SVOA_GCMS	
Oil and grease	SVOC	ug/kg	6	0	0	677000	738000			413.1_OILGREASE	413.1_OILGREASE	
Pentachlorophenol	SVOC	ug/kg	6	0	0	150	160			8270_SVOA_GCMS	8270_SVOA_GCMS	
Phenol	SVOC	ug/kg	6	0	0	140	150			8270_SVOA_GCMS	8270_SVOA_GCMS	
rene	SVOC	ug/kg	6	0	0	160	170			8270_SVOA_GCMS	8270_SVOA_GCMS	
Total petroleum hydrocarbons - diesel range	SVOC	ug/kg	7	1	14.29	3800	4100	21000	21000	WTPH_DIESEL	WTPH_DIESEL	12-13 ft

Table A-1. Summary Table for All 200-MW-1 Operable Unit Constituents in Shallow-Zone Soil Samples (10 Sheets)

Constituent	Constituent Class	Units	Number of Samples	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Result	Maximum Result	Analytical Method, Minimum Nondetect or Result	Analytical Method, Maximum Nondetect or Result	Depth Of Maxium Result (ft bgs)
Total petroleum hydrocarbons - gasoline range	SVOC	ug/kg	7	0	0	30	250			WTPH_GASOLINE	WTPH_GASOLINE	
Total petroleum hydrocarbons - kerosene range	SVOC	ug/kg	7	0	0	3800	13000			WTPH_DIESEL	WTPH_DIESEL	
Tributyl phosphate	SVOC	ug/kg	7	0	0	140	360			8270_SVOA_GCMS	8270_SVOA_GCMS	
Americium-241	RAD	pCi/g	7	0	0	0.009	0.033			AMCMISO_IE_PREC_AEA	AMCMISO_IE_PREC_AEA	
Antimony-125	RAD	pCi/g	2	0	0	-0.006	0			GAMMA_GS	GAMMA_GS	
Carbon-14	RAD	pCi/g	2	0	0	0.835	1.76			C14_COX_LSC	C14_COX_LSC	
Cesium-134	RAD	pCi/g	2	0	0	0.032	0.034			GAMMA_GS	GAMMA_GS	
Cesium-137	RAD	pCi/g	7	7	100			0.221	1.21	GAMMA_GS	GAMMA_GS	8-9 ft
Cobalt-60	RAD	pCi/g	7	0	0	-0.01	0.027			GAMMA_GS	GAMMA_GS	
Europium-152	RAD	pCi/g	7	0	0	-0.01	0.063			GAMMA_GS	GAMMA_GS	
Europium-154	RAD	pCi/g	7	0	0	-0.036	0.085			GAMMA_GS	GAMMA_GS	
Europium-155	RAD	pCi/g	7	2	28.57	-0.009	0.072	0.052	0.087	GAMMA_GS	GAMMA_GS	10-11 ft
Iodine-129	RAD	pCi/g	1	0	0	-0.203	-0.203			I129_SEP_LEPS_GS	I129_SEP_LEPS_GS	
Neptunium-237	RAD	pCi/g	2	0	0	0.001	0.004			NP237_IE_PRECIP_AEA	NP237_IE_PRECIP_AEA	
Nickel-63	RAD	pCi/g	2	0	0	0.803	2.25			NI63_LSC	NI63_LSC	
Plutonium-238	RAD	pCi/g	7	0	0	-0.012	0.017			PUISO_IE_PRECIP_AEA	PUISO_IE_PRECIP_AEA	
Plutonium-239/240	RAD	pCi/g	7	4	57.14	0.008	0.06	0.02	0.055	PUISO_IE_PRECIP_AEA	PUISO_PLATE_AEA	12-13 ft
Potassium-40	RAD	pCi/g	1	1	100			9.42	9.42	GAMMA_GS	GAMMA_GS	12-13 ft
Radium-226	RAD	pCi/g	3	3	100			0.38	0.657	GAMMA_GS	GAMMA_GS	8-9 ft
adium-228	RAD	pCi/g	3	3	100			0.426	0.697	GAMMA_GS	GAMMA_GS	8-9 ft
echnetium-99	RAD	pCi/g	7	0	0	0.068	0.527			TC99_TR_SEP_LSC	TC99_ETVDSK_LSC	
Thorium-228	RAD	pCi/g	3	3	100			0.444	0.777	GAMMA_GS	THISO_IE_PLATE_AEA	8-9 ft
Thorium-230	RAD	pCi/g	2	2	100			0.442	0.634	THISO_IE_PLATE_AEA	THISO_IE_PLATE_AEA	8-9 ft
Thorium-232	RAD	pCi/g	3	3	100			0.426	0.765	GAMMA_GS	THISO_IE_PLATE_AEA	8-9 ft
Total beta radiostrontium	RAD	pCi/g	7	4	57.14	-0.1	0.17	0.304	0.78	SRTOT_SEP_PRECIP_GPC	SRTOT_SEP_PRECIP_GPC	8-9 ft
Tritium	RAD	pCi/g	2	0	0	1.34	2.99			TRITIUM_COX_LSC	TRITIUM_COX_LSC	
Uranium-233/234	RAD	pCi/g	7	7	100			0.23	0.996	UISO_IE_PRECIP_AEA	UISO_PLATE_AEA	12-13 ft
Uranium-235	RAD	pCi/g	7	6	85.71	0	0	0.015	0.03	UISO_PLATE_AEA	UISO_IE_PRECIP_AEA	12-13 ft
Uranium-238	RAD	pCi/g	7	7	100			0.3	0.622	UISO_IE_PRECIP_AEA	UISO_PLATE_AEA	12-13 ft
216-T-33 Crib												
Antimony	METALS	ug/kg	1	0	0	7130	7130			200.8_METALS_ICPMS	200.8_METALS_ICPMS	
Arsenic	METALS	ug/kg	1	1	100			4630	4630	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
Barium	METALS	ug/kg	1	1	100			90100	90100	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
Beryllium	METALS	ug/kg	1	1	100			390	390	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
Bismuth	METALS	ug/kg	1	0	0	2150	2150			6010_METALS_ICP	6010_METALS_ICP	
Boron	METALS	ug/kg	1	0	0	2540	2540			6010_METALS_ICP	6010_METALS_ICP	
Cadmium	METALS	ug/kg	1	1	100			1630	1630	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
Chromium	METALS	ug/kg	1	1	100			33700	33700	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
Copper	METALS	ug/kg	1	1	100			21000	21000	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
Hexavalent Chromium	METALS	ug/kg	1	0	0	210	210			7196_CR6	7196_CR6	
Lead	METALS	ug/kg	1	1	100			30700	30700	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
Mercury	METALS	ug/kg	1	1	100			1030	1030	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
Nickel	METALS	ug/kg	1	1	100			20600	20600	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
elenium	METALS	ug/kg	1	1	100			933	933	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
lver	METALS	ug/kg	1	1	100			341	341	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft

Table A-1. Summary Table for All 200-MW-1 Operable Unit Constituents in Shallow-Zone Soil Samples (10 Sheets)

Constituent	Constituent Class	Units	Number of Samples	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Result	Maximum Result	Analytical Method, Minimum Nondetect or Result	Analytical Method, Maximum Nondetect or Result	Depth Of Maxium Result (ft bgs)
Ammonium ion	CONV	ug/kg	1	1	100			3640	3640	300.7_IC	300.7_IC	12.5-15 ft
Cyanide	CONV	ug/kg	1	0	0	200	200			335.2_CYANIDE	335.2_CYANIDE	
Fluoride	CONV	ug/kg	1	1	100			5990	5990	300.0_ANIONS_IC	300.0_ANIONS_IC	12.5-15 ft
Nitrate	CONV	ug/kg	1	1	100			254000	254000	300.0_ANIONS_IC	300.0_ANIONS_IC	12.5-15 ft
Nitrite	CONV	ug/kg	1	0	0	3120	3120			300.0_ANIONS_IC	300.0_ANIONS_IC	
Nitrogen in Nitrite and Nitrate	CONV	ug/kg	1	1	100			66400	66400	353.2_NO3/NO2	353.2_NO3/NO2	12.5-15 ft
pH Measurement	CONV	pH	1	1	100			7.92	7.92	150.1_PH	150.1_PH	12.5-15 ft
Phosphate	CONV	ug/kg	1	1	100			31600	31600	300.0_ANIONS_IC	300.0_ANIONS_IC	12.5-15 ft
Sulfate	CONV	ug/kg	1	1	100			159000	159000	300.0_ANIONS_IC	300.0_ANIONS_IC	12.5-15 ft
1,1,1-Trichloroethane	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
1,1,2,2-Tetrachloroethane	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
1,1,2-Trichloroethane	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
1,1-Dichloroethane	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
1,1-Dichloroethene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloroethane	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloroethene(Total)	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloropropane	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
1-Butanol	VOC	ug/kg	1	0	0	42	42			8260_VOA_GCMS	8260_VOA_GCMS	
2-Butanone	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
2-Hexanone	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
4-Methyl-2-Pentanone	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
:etone	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
:nzene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Bromodichloromethane	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Bromoform	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Bromomethane	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Carbon disulfide	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Carbon tetrachloride	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Chlorobenzene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Chloroethane	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Chloroform	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Chloromethane	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
cis-1,2-Dichloroethylene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
cis-1,3-Dichloropropene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Dibromochloromethane	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Ethylbenzene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Methylene chloride	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
n-Butylbenzene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Styrene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Tetrachloroethene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Toluene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
trans-1,2-Dichloroethylene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
trans-1,3-Dichloropropene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Trichloroethene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Vinyl chloride	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Xylenes (total)	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
),4-Trichlorobenzene	SVOC	ug/kg	1	0	0	310	310			8270_SVOA_GCMS	8270_SVOA_GCMS	
,,l-Dichlorobenzene	SVOC	ug/kg	1	0	0	330	330			8270_SVOA_GCMS	8270_SVOA_GCMS	

Table A-1. Summary Table for All 200-MW-1 Operable Unit Constituents in Shallow-Zone Soil Samples (10 Sheets)

Constituent	Constituent Class	Units	Number of Samples	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Result	Maximum Result	Analytical Method, Minimum Nondetect or Result	Analytical Method, Maximum Nondetect or Result	Depth Of Maxium Result (ft bgs)
2,4-Dinitrotoluene	SVOC	ug/kg	1	0	0	70	70			8270_SVOA_GCMS	8270_SVOA_GCMS	
2-Chlorophenol	SVOC	ug/kg	1	0	0	150	150			8270_SVOA_GCMS	8270_SVOA_GCMS	
4-Chloro-3-methylphenol	SVOC	ug/kg	1	0	0	70	70			8270_SVOA_GCMS	8270_SVOA_GCMS	
4-Nitrophenol	SVOC	ug/kg	1	1	100			1100	1100	8270_SVOA_GCMS	8270_SVOA_GCMS	12.5-15 ft
Acenaphthene	SVOC	ug/kg	1	0	0	70	70			8270_SVOA_GCMS	8270_SVOA_GCMS	
Aroclor-1016	SVOC	ug/kg	1	0	0	510	510			8082_PCB_GC	8082_PCB_GC	
Aroclor-1221	SVOC	ug/kg	1	0	0	1000	1000			8082_PCB_GC	8082_PCB_GC	
Aroclor-1232	SVOC	ug/kg	1	0	0	510	510			8082_PCB_GC	8082_PCB_GC	
Aroclor-1242	SVOC	ug/kg	1	0	0	510	510			8082_PCB_GC	8082_PCB_GC	
Aroclor-1248	SVOC	ug/kg	1	0	0	510	510			8082_PCB_GC	8082_PCB_GC	
Aroclor-1254	SVOC	ug/kg	1	1	100			9400	9400	8082_PCB_GC	8082_PCB_GC	12.5-15 ft
Aroclor-1260	SVOC	ug/kg	1	1	100			3900	3900	8082_PCB_GC	8082_PCB_GC	12.5-15 ft
Aroclor-1262	SVOC	ug/kg	1	0	0	510	510			8082_PCB_GC	8082_PCB_GC	
Aroclor-1268	SVOC	ug/kg	1	0	0	510	510			8082_PCB_GC	8082_PCB_GC	
Di-n-butylphthalate	SVOC	ug/kg	1	1	100			110	110	8270_SVOA_GCMS	8270_SVOA_GCMS	12.5-15 ft
N-Nitrosodi-n-dipropylamine	SVOC	ug/kg	1	0	0	70	70			8270_SVOA_GCMS	8270_SVOA_GCMS	
Oil and grease	SVOC	ug/kg	1	1	100			842000	842000	413.1_OILGREASE	413.1_OILGREASE	12.5-15 ft
Pentachlorophenol	SVOC	ug/kg	1	0	0	320	320			8270_SVOA_GCMS	8270_SVOA_GCMS	
Phenol	SVOC	ug/kg	1	0	0	110	110			8270_SVOA_GCMS	8270_SVOA_GCMS	
Pyrene	SVOC	ug/kg	1	0	0	70	70			8270_SVOA_GCMS	8270_SVOA_GCMS	
Total petroleum hydrocarbons - diesel range	SVOC	ug/kg	1	0	0	6600	6600			WTPH_DIESEL	WTPH_DIESEL	
tal petroleum hydrocarbons - gasoline range	SVOC	ug/kg	1	0	0	250	250			WTPH_GASOLINE	WTPH_GASOLINE	
Total petroleum hydrocarbons - kerosene range	SVOC	ug/kg	1	0	0	6600	6600			WTPH_DIESEL	WTPH_DIESEL	
Total petroleum hydrocarbons - motor oil (high boiling)	SVOC	ug/kg	1	1	100			570000	570000	WTPH_DIESEL	WTPH_DIESEL	12.5-15 ft
Tributyl phosphate	SVOC	ug/kg	1	0	0	70	70			8270_SVOA_GCMS	8270_SVOA_GCMS	
Americium-241	RAD	pCi/g	1	1	100			2.3	2.3	AMCMISO_IE_PREC_AEA	AMCMISO_IE_PREC_AEA	12.5-15 ft
Antimony-125	RAD	pCi/g	1	0	0	-0.009	-0.009			GAMMA_GS	GAMMA_GS	
Carbon-14	RAD	pCi/g	1	0	0	0.266	0.266			C14_COX_LSC	C14_COX_LSC	
Cesium-134	RAD	pCi/g	1	0	0	0.024	0.024			GAMMA_GS	GAMMA_GS	
Cesium-137	RAD	pCi/g	1	1	100			33.1	33.1	GAMMA_GS	GAMMA_GS	12.5-15 ft
Cobalt-60	RAD	pCi/g	1	1	100			0.18	0.18	GAMMA_GS	GAMMA_GS	12.5-15 ft
Europium-152	RAD	pCi/g	1	1	100			2.64	2.64	GAMMA_GS	GAMMA_GS	12.5-15 ft
Europium-154	RAD	pCi/g	1	1	100			0.317	0.317	GAMMA_GS	GAMMA_GS	12.5-15 ft
Europium-155	RAD	pCi/g	1	0	0	0.054	0.054			GAMMA_GS	GAMMA_GS	
Iodine-129	RAD	pCi/g	1	0	0	-0.397	-0.397			I129_SEP_LEPS_GS	I129_SEP_LEPS_GS	
Neptunium-237	RAD	pCi/g	1	0	0	0.002	0.002			NP237_IE_PRECIP_AEA	NP237_IE_PRECIP_AEA	
Nickel-63	RAD	pCi/g	1	1	100			34.9	34.9	NI63_LSC	NI63_LSC	12.5-15 ft
Plutonium-238	RAD	pCi/g	1	1	100			0.34	0.34	PUISO_IE_PRECIP_AEA	PUISO_IE_PRECIP_AEA	12.5-15 ft
Plutonium-239/240	RAD	pCi/g	1	1	100			63	63	PUISO_IE_PRECIP_AEA	PUISO_IE_PRECIP_AEA	12.5-15 ft
Radium-226	RAD	pCi/g	1	1	100			0.395	0.395	GAMMA_GS	GAMMA_GS	12.5-15 ft
Radium-228	RAD	pCi/g	1	1	100			0.463	0.463	GAMMA_GS	GAMMA_GS	12.5-15 ft
Technetium-99	RAD	pCi/g	1	0	0	0.412	0.412			TC99_TR_SEP_LSC	TC99_TR_SEP_LSC	
Thorium-228	RAD	pCi/g	1	1	100			0.83	0.83	THISO_IE_PLATE_AEA	THISO_IE_PLATE_AEA	12.5-15 ft
orium-230	RAD	pCi/g	1	0	0	0.067	0.067			THISO_IE_PLATE_AEA	THISO_IE_PLATE_AEA	
orium-232	RAD	pCi/g	1	1	100			0.47	0.47	THISO_IE_PLATE_AEA	THISO_IE_PLATE_AEA	12.5-15 ft

Table A-1. Summary Table for All 200-MW-1 Operable Unit Constituents in Shallow-Zone Soil Samples (10 Sheets)

Constituent	Constituent Class	Units	Number of Samples	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Result	Maximum Result	Analytical Method, Minimum Nondetect or Result	Analytical Method, Maximum Nondetect or Result	Depth Of Maxium Result (ft bgs)
Total beta radiostrontium	RAD	pCi/g	1	1	100			49	49	SRTOT_SEP_PRECIP_GPC	SRTOT_SEP_PRECIP_GPC	12.5-15 ft
Tritium	RAD	pCi/g	1	0	0	0.061	0.061			906.0_H3_LSC	906.0_H3_LSC	
Uranium-233/234	RAD	pCi/g	1	1	100			0.94	0.94	UISO_IE_PRECIP_AEA	UISO_IE_PRECIP_AEA	12.5-15 ft
Uranium-235	RAD	pCi/g	1	1	100			0.084	0.084	UISO_IE_PRECIP_AEA	UISO_IE_PRECIP_AEA	12.5-15 ft
Uranium-238	RAD	pCi/g	1	1	100			0.8	0.8	UISO_IE_PRECIP_AEA	UISO_IE_PRECIP_AEA	12.5-15 ft
216-U-3 French Drain												
Antimony	METALS	ug/kg	1	0	0	6890	6890			200.8_METALS_ICPMS	200.8_METALS_ICPMS	
Arsenic	METALS	ug/kg	1	0	0	2320	2320			200.8_METALS_ICPMS	200.8_METALS_ICPMS	
Barium	METALS	ug/kg	1	1	100			20400	20400	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
Beryllium	METALS	ug/kg	1	1	100			289	289	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
Bismuth	METALS	ug/kg	1	0	0	2140	2140			6010_METALS_ICP	6010_METALS_ICP	
Boron	METALS	ug/kg	1	1	100			28100	28100	6010_METALS_ICP	6010_METALS_ICP	12.5-15 ft
Cadmium	METALS	ug/kg	1	0	0	19	19			200.8_METALS_ICPMS	200.8_METALS_ICPMS	
Chromium	METALS	ug/kg	1	0	0	3240	3240			200.8_METALS_ICPMS	200.8_METALS_ICPMS	
Copper	METALS	ug/kg	1	1	100			2540	2540	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
Hexavalent Chromium	METALS	ug/kg	1	0	0	210	210			7196_CR6	7196_CR6	
Lead	METALS	ug/kg	1	0	0	251	251			200.8_METALS_ICPMS	200.8_METALS_ICPMS	
Mercury	METALS	ug/kg	1	1	100			622	622	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
Nickel	METALS	ug/kg	1	1	100			2930	2930	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
Selenium	METALS	ug/kg	1	1	100			1290	1290	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
lver	METALS	ug/kg	1	1	100			170	170	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
nmonium ion	CONV	ug/kg	1	0	0	258	258			300.7_IC	300.7_IC	
Cyanide	CONV	ug/kg	1	0	0	200	200			335.2_CYANIDE	335.2_CYANIDE	
Fluoride	CONV	ug/kg	1	0	0	1150	1150			300.0_ANIONS_IC	300.0_ANIONS_IC	
Nitrate	CONV	ug/kg	1	1	100			8150	8150	300.0_ANIONS_IC	300.0_ANIONS_IC	12.5-15 ft
Nitrite	CONV	ug/kg	1	0	0	3120	3120			300.0_ANIONS_IC	300.0_ANIONS_IC	
Nitrogen in Nitrite and Nitrate	CONV	ug/kg	1	1	100			330	330	353.2_NO3/NO2	353.2_NO3/NO2	12.5-15 ft
pH Measurement	CONV	pH	1	1	100			9.51	9.51	150.1_PH	150.1_PH	12.5-15 ft
Phosphate	CONV	ug/kg	1	0	0	8280	8280			300.0_ANIONS_IC	300.0_ANIONS_IC	
Sulfate	CONV	ug/kg	1	1	100			20100	20100	300.0_ANIONS_IC	300.0_ANIONS_IC	12.5-15 ft
1,1,1-Trichloroethane	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
1,1,2,2-Tetrachloroethane	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
1,1,2-Trichloroethane	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
1,1-Dichloroethane	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
1,1-Dichloroethene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloroethane	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloroethene(Total)	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloropropane	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
1-Butanol	VOC	ug/kg	1	0	0	41	41			8260_VOA_GCMS	8260_VOA_GCMS	
2-Butanone	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
2-Hexanone	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
4-Methyl-2-Pentanone	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Acetone	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Benzene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Bromodichloromethane	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
omoform	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
omomethane	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	

Table A-1. Summary Table for All 200-MW-1 Operable Unit Constituents in Shallow-Zone Soil Samples (10 Sheets)

Constituent	Constituent Class	Units	Number of Samples	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Result	Maximum Result	Analytical Method, Minimum Nondetect or Result	Analytical Method, Maximum Nondetect or Result	Depth Of Maxium Result (ft bgs)
Carbon disulfide	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Carbon tetrachloride	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Chlorobenzene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Chloroethane	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Chloroform	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Chloromethane	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
cis-1,2-Dichloroethylene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
cis-1,3-Dichloropropene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Dibromochloromethane	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Ethylbenzene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Methylene chloride	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
n-Butylbenzene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Styrene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Tetrachloroethene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Toluene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
trans-1,2-Dichloroethylene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
trans-1,3-Dichloropropene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Trichloroethene	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Vinyl chloride	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
Xylenes (total)	VOC	ug/kg	1	0	0	2.1	2.1			8260_VOA_GCMS	8260_VOA_GCMS	
1,2,4-Trichlorobenzene	SVOC	ug/kg	1	0	0	300	300			8270_SVOA_GCMS	8270_SVOA_GCMS	
4-Dichlorobenzene	SVOC	ug/kg	1	0	0	320	320			8270_SVOA_GCMS	8270_SVOA_GCMS	
4-Dinitrotoluene	SVOC	ug/kg	1	0	0	69	69			8270_SVOA_GCMS	8270_SVOA_GCMS	
2-Chlorophenol	SVOC	ug/kg	1	0	0	150	150			8270_SVOA_GCMS	8270_SVOA_GCMS	
4-Chloro-3-methylphenol	SVOC	ug/kg	1	0	0	69	69			8270_SVOA_GCMS	8270_SVOA_GCMS	
4-Nitrophenol	SVOC	ug/kg	1	0	0	670	670			8270_SVOA_GCMS	8270_SVOA_GCMS	
Acenaphthene	SVOC	ug/kg	1	0	0	69	69			8270_SVOA_GCMS	8270_SVOA_GCMS	
Aroclor-1016	SVOC	ug/kg	1	0	0	50	50			8082_PCB_GC	8082_PCB_GC	
Aroclor-1221	SVOC	ug/kg	1	0	0	100	100			8082_PCB_GC	8082_PCB_GC	
Aroclor-1232	SVOC	ug/kg	1	0	0	50	50			8082_PCB_GC	8082_PCB_GC	
Aroclor-1242	SVOC	ug/kg	1	0	0	50	50			8082_PCB_GC	8082_PCB_GC	
Aroclor-1248	SVOC	ug/kg	1	0	0	50	50			8082_PCB_GC	8082_PCB_GC	
Aroclor-1254	SVOC	ug/kg	1	0	0	50	50			8082_PCB_GC	8082_PCB_GC	
Aroclor-1260	SVOC	ug/kg	1	0	0	50	50			8082_PCB_GC	8082_PCB_GC	
Aroclor-1262	SVOC	ug/kg	1	0	0	50	50			8082_PCB_GC	8082_PCB_GC	
Aroclor-1268	SVOC	ug/kg	1	0	0	50	50			8082_PCB_GC	8082_PCB_GC	
Diethylphthalate	SVOC	ug/kg	1	1	100			530	530	8270_SVOA_GCMS	8270_SVOA_GCMS	12.5-15 ft
Di-n-butylphthalate	SVOC	ug/kg	1	1	100			200	200	8270_SVOA_GCMS	8270_SVOA_GCMS	12.5-15 ft
N-Nitrosodi-n-dipropylamine	SVOC	ug/kg	1	0	0	69	69			8270_SVOA_GCMS	8270_SVOA_GCMS	
Oil and grease	SVOC	ug/kg	1	0	0	689000	689000			9071_OILGREASE	9071_OILGREASE	
Pentachlorophenol	SVOC	ug/kg	1	0	0	310	310			8270_SVOA_GCMS	8270_SVOA_GCMS	
Phenol	SVOC	ug/kg	1	0	0	100	100			8270_SVOA_GCMS	8270_SVOA_GCMS	
Pyrene	SVOC	ug/kg	1	0	0	69	69			8270_SVOA_GCMS	8270_SVOA_GCMS	
Total petroleum hydrocarbons - diesel range	SVOC	ug/kg	1	0	0	3900	3900			WTPH_DIESEL	WTPH_DIESEL	
Total petroleum hydrocarbons - gasoline range	SVOC	ug/kg	1	0	0	250	250			WTPH_GASOLINE	WTPH_GASOLINE	
›tal petroleum hydrocarbons - kerosene range	SVOC	ug/kg	1	0	0	3900	3900			WTPH_DIESEL	WTPH_DIESEL	

Table A-1. Summary Table for All 200-MW-1 Operable Unit Constituents in Shallow-Zone Soil Samples (10 Sheets)

Constituent	Constituent Class	Units	Number of Samples	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Result	Maximum Result	Analytical Method, Minimum Nondetect or Result	Analytical Method, Maximum Nondetect or Result	Depth Of Maxium Result (ft bgs)
Tributyl phosphate	SVOC	ug/kg	1	0	0	69	69			8270_SVOA_GCMS	8270_SVOA_GCMS	
Americium-241	RAD	pCi/g	1	0	0	0.016	0.016			AMCMISO_IE_PREC_AEA	AMCMISO_IE_PREC_AEA	
Antimony-125	RAD	pCi/g	1	0	0	0.001	0.001			GAMMA_GS	GAMMA_GS	
Carbon-14	RAD	pCi/g	1	0	0	-0.412	-0.412			C14_COX_LSC	C14_COX_LSC	
Cesium-134	RAD	pCi/g	1	0	0	0.02	0.02			GAMMA_GS	GAMMA_GS	
Cesium-137	RAD	pCi/g	1	0	0	-0.001	-0.001			GAMMA_GS	GAMMA_GS	
Cobalt-60	RAD	pCi/g	1	0	0	0	0			GAMMA_GS	GAMMA_GS	
Europium-152	RAD	pCi/g	1	0	0	-0.028	-0.028			GAMMA_GS	GAMMA_GS	
Europium-154	RAD	pCi/g	1	0	0	-0.016	-0.016			GAMMA_GS	GAMMA_GS	
Europium-155	RAD	pCi/g	1	0	0	0.005	0.005			GAMMA_GS	GAMMA_GS	
Iodine-129	RAD	pCi/g	1	0	0	-0.172	-0.172			I129_SEP_LEPS_GS	I129_SEP_LEPS_GS	
Neptunium-237	RAD	pCi/g	1	0	0	-0.003	-0.003			NP237_IE_PRECIP_AEA	NP237_IE_PRECIP_AEA	
Nickel-63	RAD	pCi/g	1	0	0	1.16	1.16			NI63_LSC	NI63_LSC	
Plutonium-238	RAD	pCi/g	1	0	0	-0.004	-0.004			PUISO_IE_PRECIP_AEA	PUISO_IE_PRECIP_AEA	
Plutonium-239/240	RAD	pCi/g	1	0	0	0.004	0.004			PUISO_IE_PRECIP_AEA	PUISO_IE_PRECIP_AEA	
Radium-226	RAD	pCi/g	1	1	100			0.345	0.345	GAMMA_GS	GAMMA_GS	12.5-15 ft
Radium-228	RAD	pCi/g	1	1	100			0.42	0.42	GAMMA_GS	GAMMA_GS	12.5-15 ft
Technetium-99	RAD	pCi/g	1	0	0	0.068	0.068			TC99_TR_SEP_LSC	TC99_TR_SEP_LSC	
Thorium-228	RAD	pCi/g	1	1	100			0.488	0.488	THISO_IE_PLATE_AEA	THISO_IE_PLATE_AEA	12.5-15 ft
Thorium-230	RAD	pCi/g	1	1	100			0.433	0.433	THISO_IE_PLATE_AEA	THISO_IE_PLATE_AEA	12.5-15 ft
Thorium-232	RAD	pCi/g	1	1	100			0.486	0.486	THISO_IE_PLATE_AEA	THISO_IE_PLATE_AEA	12.5-15 ft
otal beta radiostrontium	RAD	pCi/g	1	0	0	0.054	0.054			SRTOT_SEP_PRECIP_GPC	SRTOT_SEP_PRECIP_GPC	
ritium	RAD	pCi/g	1	0	0	0.164	0.164			906.0_H3_LSC	906.0_H3_LSC	
Uranium-233/234	RAD	pCi/g	1	1	100			0.16	0.16	UISO_IE_PRECIP_AEA	UISO_IE_PRECIP_AEA	12.5-15 ft
Uranium-235	RAD	pCi/g	1	0	0	0.009	0.009			UISO_IE_PRECIP_AEA	UISO_IE_PRECIP_AEA	
Uranium-238	RAD	pCi/g	1	1	100			0.13	0.13	UISO_IE_PRECIP_AEA	UISO_IE_PRECIP_AEA	12.5-15 ft

Table A-2. Summary Table for All 200-MW-1 Operable Unit Constituents in Deep-Zone Soil Samples (10 Sheets)

Constituent	Constituent Class	Units	Number of Samples	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Result	Maximum Result	Analytical Method, Minimum Nondetect or Result	Analytical Method, Maximum Nondetect or Result	Depth of Maximum Result (ft bgs)
200-E-4 French Drain												
Antimony	METALS	ug/kg	1	0	0	989	989			200.8_METALS_ICPMS	200.8_METALS_ICPMS	
Arsenic	METALS	ug/kg	1	1	100			1130	1130	200.8_METALS_ICPMS	200.8_METALS_ICPMS	8-11 ft
Barium	METALS	ug/kg	1	1	100			202000	202000	200.8_METALS_ICPMS	200.8_METALS_ICPMS	8-11 ft
Beryllium	METALS	ug/kg	1	1	100			578	578	200.8_METALS_ICPMS	200.8_METALS_ICPMS	8-11 ft
Bismuth	METALS	ug/kg	1	0	0	2110	2110			6010_METALS_ICP	6010_METALS_ICP	
Boron	METALS	ug/kg	1	0	0	2490	2490			6010_METALS_ICP	6010_METALS_ICP	
Cadmium	METALS	ug/kg	4	4	100			160	1080	6010_METALS_ICP	200.8_METALS_ICPMS	8-11 ft
Chromium	METALS	ug/kg	4	4	100			4710	7400	200.8_METALS_ICPMS	6010_METALS_ICP	14-20.5 ft
Copper	METALS	ug/kg	4	4	100			23500	4080000	200.8_METALS_ICPMS	200.8_METALS_ICPMS	8-11 ft
Lead	METALS	ug/kg	4	4	100			3200	25400	6010_METALS_ICP	200.8_METALS_ICPMS	8-11 ft
Mercury	METALS	ug/kg	2	0	0	20	99			7471_HG_CVAA	200.8_METALS_ICPMS	
Nickel	METALS	ug/kg	1	1	100			15200	15200	200.8_METALS_ICPMS	200.8_METALS_ICPMS	8-11 ft
Selenium	METALS	ug/kg	1	0	0	396	396			200.8_METALS_ICPMS	200.8_METALS_ICPMS	
Silver	METALS	ug/kg	4	4	100			190	1360	6010_METALS_ICP	200.8_METALS_ICPMS	11-14 ft
Uranium	METALS	ug/kg	3	3	100			530	1210	200.8_METALS_ICPMS	UTOT_KPA	14-20.5 ft
Cyanide	CONV	ug/kg	3	0	0	200	490			335.2_CYANIDE	9010_CYANIDE	
Nitrate	CONV	ug/kg	2	2	100			2950	7260	300.0_ANIONS_IC	300.0_ANIONS_IC	11-14 ft
Nitrite	CONV	ug/kg	2	0	0	1030	3120			300.0_ANIONS_IC	300.0_ANIONS_IC	
Percent Solids	CONV	%	2	2	100			95	96.5	%SOLIDS	%SOLIDS	14-20.5 ft
H Measurement	CONV	pH	3	3	100			7.81	8.69	150.1_PH	150.1_PH	14-20.5 ft
hosphate	CONV	ug/kg	3	0	0	1000	8280			300.0_ANIONS_IC	300.0_ANIONS_IC	
Sulfate	CONV	ug/kg	3	3	100			14200	18100	300.0_ANIONS_IC	300.0_ANIONS_IC	14-20.5 ft
1,1,1-Trichloroethane	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,1,2,2-Tetrachloroethane	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,1,2-Trichloroethane	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,1-Dichloroethane	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,1-Dichloroethene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloroethane	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloroethene(Total)	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloropropane	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1-Butanol	VOC	ug/kg	3	0	0	41	42			8260_VOA_GCMS	8260_VOA_GCMS	
2-Butanone	VOC	ug/kg	4	0	0	2.1	11			8260_VOA_GCMS	8260_VOA_GCMS	
2-Hexanone	VOC	ug/kg	4	0	0	2.1	11			8260_VOA_GCMS	8260_VOA_GCMS	
4-Methyl-2-Pentanone	VOC	ug/kg	4	0	0	2.1	11			8260_VOA_GCMS	8260_VOA_GCMS	
Acetone	VOC	ug/kg	4	1	25	2.1	2.1	4	4	8260_VOA_GCMS	8260_VOA_GCMS	14-20.5 ft
Benzene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Bromodichloromethane	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Bromoform	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Bromomethane	VOC	ug/kg	4	0	0	2.1	11			8260_VOA_GCMS	8260_VOA_GCMS	
Carbon disulfide	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Carbon tetrachloride	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Chlorobenzene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Chloroethane	VOC	ug/kg	4	0	0	2.1	11			8260_VOA_GCMS	8260_VOA_GCMS	
Chloroform	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
hloromethane	VOC	ug/kg	4	0	0	2.1	11			8260_VOA_GCMS	8260_VOA_GCMS	
s-1,2-Dichloroethylene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	

Table A-2. Summary Table for All 200-MW-1 Operable Unit Constituents in Deep-Zone Soil Samples (10 Sheets)

Constituent	Constituent Class	Units	Number of Samples	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Result	Maximum Result	Analytical Method, Minimum Nondetect or Result	Analytical Method, Maximum Nondetect or Result	Depth of Maximum Result (ft bgs)
cis-1,3-Dichloropropene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Dibromochloromethane	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Ethylbenzene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Methylene chloride	VOC	ug/kg	4	0	0	2.1	5			8260_VOA_GCMS	8260_VOA_GCMS	
Styrene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Tetrachloroethene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Toluene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
trans-1,2-Dichloroethylene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
trans-1,3-Dichloropropene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Trichloroethene	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Vinyl chloride	VOC	ug/kg	4	0	0	2.1	11			8260_VOA_GCMS	8260_VOA_GCMS	
Xylenes (total)	VOC	ug/kg	4	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,2,4-Trichlorobenzene	SVOC	ug/kg	2	0	0	83	85			8270_SVOA_GCMS	8270_SVOA_GCMS	
1,4-Dichlorobenzene	SVOC	ug/kg	2	0	0	140	150			8270_SVOA_GCMS	8270_SVOA_GCMS	
2,4-Dinitrotoluene	SVOC	ug/kg	2	0	0	63	64			8270_SVOA_GCMS	8270_SVOA_GCMS	
2-Chlorophenol	SVOC	ug/kg	2	0	0	130	130			8270_SVOA_GCMS	8270_SVOA_GCMS	
4-Chloro-3-methylphenol	SVOC	ug/kg	2	0	0	75	77			8270_SVOA_GCMS	8270_SVOA_GCMS	
4-Nitrophenol	SVOC	ug/kg	2	0	0	160	160			8270_SVOA_GCMS	8270_SVOA_GCMS	
Acenaphthene	SVOC	ug/kg	2	0	0	55	56			8270_SVOA_GCMS	8270_SVOA_GCMS	
Aroclor-1016	SVOC	ug/kg	4	0	0	14	52			8082_PCB_GC	8082_PCB_GC	
Aroclor-1221	SVOC	ug/kg	4	0	0	14	100			8082_PCB_GC	8082_PCB_GC	
roclor-1232	SVOC	ug/kg	4	0	0	14	52			8082_PCB_GC	8082_PCB_GC	
roclor-1242	SVOC	ug/kg	4	0	0	14	52			8082_PCB_GC	8082_PCB_GC	
Aroclor-1248	SVOC	ug/kg	4	0	0	14	52			8082_PCB_GC	8082_PCB_GC	
Aroclor-1254	SVOC	ug/kg	4	0	0	14	52			8082_PCB_GC	8082_PCB_GC	
Aroclor-1260	SVOC	ug/kg	4	0	0	14	52			8082_PCB_GC	8082_PCB_GC	
Aroclor-1262	SVOC	ug/kg	3	0	0	16	52			8082_PCB_GC	8082_PCB_GC	
Aroclor-1268	SVOC	ug/kg	3	0	0	16	52			8082_PCB_GC	8082_PCB_GC	
Diethylphthalate	SVOC	ug/kg	2	2	100			410	790	8270_SVOA_GCMS	8270_SVOA_GCMS	11-14 ft
Di-n-butylphthalate	SVOC	ug/kg	2	2	100			250	370	8270_SVOA_GCMS	8270_SVOA_GCMS	14-20.5 ft
N-Nitrosodi-n-dipropylamine	SVOC	ug/kg	2	0	0	73	74			8270_SVOA_GCMS	8270_SVOA_GCMS	
Octadecanoic acid	SVOC	ug/kg	1	1	100			160	160	8270_SVOA_GCMS	8270_SVOA_GCMS	11-14 ft
Oil and grease	SVOC	ug/kg	3	0	0	207000	702000			9071_OILGREASE	413.1_OILGREASE	
Pentachlorophenol	SVOC	ug/kg	2	0	0	74	75			8270_SVOA_GCMS	8270_SVOA_GCMS	
Phenol	SVOC	ug/kg	2	0	0	87	88			8270_SVOA_GCMS	8270_SVOA_GCMS	
Pyrene	SVOC	ug/kg	2	0	0	50	51			8270_SVOA_GCMS	8270_SVOA_GCMS	
Total petroleum hydrocarbons - diesel range	SVOC	ug/kg	3	1	33.33	3900	12400	120000	120000	WTPH_DIESEL	WTPH_DIESEL	14-20.5 ft
Total petroleum hydrocarbons - gasoline range	SVOC	ug/kg	2	0	0	250	250			WTPH_GASOLINE	WTPH_GASOLINE	
Total petroleum hydrocarbons - kerosene range	SVOC	ug/kg	3	1	33.33	3900	12400	100000	100000	WTPH_DIESEL	WTPH_DIESEL	14-20.5 ft
Tributyl phosphate	SVOC	ug/kg	3	0	0	33	340			8270_SVOA_GCMS	8270_SVOA_GCMS	
Americium-241	RAD	pCi/g	2	1	50	0.119	0.119	0.2	0.2	AMCMISO_IE_PLATE_AEA	AMCMISO_IE_PREC_AEA	8-11 ft
Antimony-125	RAD	pCi/g	1	0	0	-0.009	-0.009			GAMMA_GS	GAMMA_GS	
Cesium-134	RAD	pCi/g	1	0	0	0.018	0.018			GAMMA_GS	GAMMA_GS	
esium-137	RAD	pCi/g	2	0	0	0.003	0.082			GAMMA_GS	GAMMA_GS	
obalt-60	RAD	pCi/g	2	0	0	-0.005	0.088			GAMMA_GS	GAMMA_GS	
uropium-152	RAD	pCi/g	2	0	0	-0.011	0.2			GAMMA_GS	GAMMA_GS	

Table A-2. Summary Table for All 200-MW-1 Operable Unit Constituents in Deep-Zone Soil Samples (10 Sheets)

Constituent	Constituent Class	Units	Number of Samples	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Result	Maximum Result	Analytical Method, Minimum Nondetect or Result	Analytical Method, Maximum Nondetect or Result	Depth of Maximum Result (ft bgs)
Europium-154	RAD	pCi/g	2	0	0	-0.001	0.27			GAMMA_GS	GAMMA_GS	
Europium-155	RAD	pCi/g	2	1	50	0.18	0.18	0.028	0.028	GAMMA_GS	GAMMA_GS	8-11 ft
Neptunium-237	RAD	pCi/g	1	0	0	0.001	0.001			NP237_IE_PRECIP_AEA	NP237_IE_PRECIP_AEA	
Plutonium-238	RAD	pCi/g	2	0	0	-0.012	0.025			PUISO_IE_PRECIP_AEA	PUISO_PLATE_AEA	
Plutonium-239/240	RAD	pCi/g	2	0	0	0	0.013			PUISO_PLATE_AEA	PUISO_IE_PRECIP_AEA	
Potassium-40	RAD	pCi/g	1	1	100			14.9	14.9	GAMMA_GS	GAMMA_GS	14-20.5 ft
Radium-226	RAD	pCi/g	2	2	100			0.377	0.407	GAMMA_GS	GAMMA_GS	14-20.5 ft
Radium-228	RAD	pCi/g	2	2	100			0.464	0.742	GAMMA_GS	GAMMA_GS	14-20.5 ft
Technetium-99	RAD	pCi/g	3	0	0	0.082	0.184			TC99_TR_SEP_LSC	TC99_SEP_LSC	
Thorium-228	RAD	pCi/g	1	1	100			0.644	0.644	GAMMA_GS	GAMMA_GS	14-20.5 ft
Thorium-232	RAD	pCi/g	1	1	100			0.742	0.742	GAMMA_GS	GAMMA_GS	14-20.5 ft
Total beta radiostrontium	RAD	pCi/g	2	1	50	0.04	0.04	0.52	0.52	SRTOT_SEP_PRECIP_GPC	SRTOT_SEP_PRECIP_GPC	8-11 ft
Tritium	RAD	pCi/g	3	0	0	0.000233	0.11			TRITIUM_DIST_LSC	906.0_H3_LSC	
Uranium-233/234	RAD	pCi/g	2	2	100			0.38	0.697	UISO_IE_PRECIP_AEA	UISO_PLATE_AEA	14-20.5 ft
Uranium-235	RAD	pCi/g	2	1	50	0.037	0.037	0.023	0.023	UISO_IE_PRECIP_AEA	UISO_PLATE_AEA	8-11 ft
Uranium-238	RAD	pCi/g	2	2	100			0.32	0.455	UISO_IE_PRECIP_AEA	UISO_PLATE_AEA	14-20.5 ft
216-T-13 Trench												
Antimony	METALS	ug/kg	2	0	0	909	1010			200.8_METALS_ICPMS	200.8_METALS_ICPMS	
Arsenic	METALS	ug/kg	2	2	100			2780	2950	200.8_METALS_ICPMS	200.8_METALS_ICPMS	8-9 ft
Barium	METALS	ug/kg	2	2	100			79200	82100	200.8_METALS_ICPMS	200.8_METALS_ICPMS	8-9 ft
ryllium	METALS	ug/kg	2	2	100			282	289	200.8_METALS_ICPMS	200.8_METALS_ICPMS	8-9 ft
smuth	METALS	ug/kg	2	0	0	2160	2200			6010_METALS_ICP	6010_METALS_ICP	
Boron	METALS	ug/kg	2	0	0	2550	2600			6010_METALS_ICP	6010_METALS_ICP	
Cadmium	METALS	ug/kg	9	8	88.89	99	99	130	397	200.8_METALS_ICPMS	200.8_METALS_ICPMS	8-9 ft
Chromium	METALS	ug/kg	9	8	88.89	3970	3970	3500	9340	6010_METALS_ICP	200.8_METALS_ICPMS	8-9 ft
Lead	METALS	ug/kg	9	9	100			3020	24100	200.8_METALS_ICPMS	200.8_METALS_ICPMS	8-9 ft
Mercury	METALS	ug/kg	3	2	66.67	101	101	40	13300	7471_HG_CVAA	200.8_METALS_ICPMS	8-9 ft
Nickel	METALS	ug/kg	1	1	100			9960	9960	200.8_METALS_ICPMS	200.8_METALS_ICPMS	8-9 ft
Selenium	METALS	ug/kg	2	0	0	364	404			200.8_METALS_ICPMS	200.8_METALS_ICPMS	
Silver	METALS	ug/kg	2	0	0	91	101			200.8_METALS_ICPMS	200.8_METALS_ICPMS	
Uranium	METALS	ug/kg	7	7	100			459	2060	200.8_METALS_ICPMS	UTOT_KPA	12-13 ft
Ammonium ion	CONV	ug/kg	2	1	50	252	252	307	307	300.7_IC	300.7_IC	8-9 ft
Cyanide	CONV	ug/kg	1	0	0	200	200			335.2_CYANIDE	335.2_CYANIDE	
pH Measurement	CONV	pH	9	9	100			9.44	9.7	150.1_PH	150.1_PH	14-15 ft
Phosphate	CONV	ug/kg	9	1	11.11	8130	8280	7900	7900	300.0_ANIONS_IC	300.0_ANIONS_IC	12-13 ft
Sulfate	CONV	ug/kg	9	8	88.89	4900	4900	7320	66600	300.0_ANIONS_IC	300.0_ANIONS_IC	8-9 ft
1,1,1-Trichloroethane	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
1,1,2,2-Tetrachloroethane	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
1,1,2-Trichloroethane	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
1,1-Dichloroethane	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
1,1-Dichloroethene	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloroethane	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloroethene(Total)	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloropropane	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
1-Butanol	VOC	ug/kg	8	0	0	41	44			8260_VOA_GCMS	8260_VOA_GCMS	
Butanone	VOC	ug/kg	9	0	0	2	10			8260_VOA_GCMS	8260_VOA_GCMS	
Hexanone	VOC	ug/kg	9	0	0	2	10			8260_VOA_GCMS	8260_VOA_GCMS	

Table A-2. Summary Table for All 200-MW-1 Operable Unit Constituents in Deep-Zone Soil Samples (10 Sheets)

Constituent	Constituent Class	Units	Number of Samples	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Result	Maximum Result	Analytical Method, Minimum Nondetect or Result	Analytical Method, Maximum Nondetect or Result	Depth of Maximum Result (ft bgs)
4-Methyl-2-Pentanone	VOC	ug/kg	9	0	0	2	10			8260_VOA_GCMS	8260_VOA_GCMS	
Acetone	VOC	ug/kg	9	0	0	2	10			8260_VOA_GCMS	8260_VOA_GCMS	
Benzene	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Bromodichloromethane	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Bromoform	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Bromomethane	VOC	ug/kg	9	0	0	2	10			8260_VOA_GCMS	8260_VOA_GCMS	
Carbon disulfide	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Carbon tetrachloride	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Chlorobenzene	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Chloroethane	VOC	ug/kg	9	0	0	2	10			8260_VOA_GCMS	8260_VOA_GCMS	
Chloroform	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Chloromethane	VOC	ug/kg	9	0	0	2	10			8260_VOA_GCMS	8260_VOA_GCMS	
cis-1,2-Dichloroethylene	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
cis-1,3-Dichloropropene	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Dibromochloromethane	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Ethylbenzene	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Methylene chloride	VOC	ug/kg	9	1	11.11	2	2.2	3.5	3.5	8260_VOA_GCMS	8260_VOA_GCMS	12-13 ft
Styrene	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Tetrachloroethene	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Toluene	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
trans-1,2-Dichloroethylene	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
ans-1,3-Dichloropropene	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
ichloroethene	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
Vinyl chloride	VOC	ug/kg	9	0	0	2	10			8260_VOA_GCMS	8260_VOA_GCMS	
Xylenes (total)	VOC	ug/kg	9	0	0	2	5			8260_VOA_GCMS	8260_VOA_GCMS	
1,2,4-Trichlorobenzene	SVOC	ug/kg	8	0	0	180	200			8270_SVOA_GCMS	8270_SVOA_GCMS	
1,4-Dichlorobenzene	SVOC	ug/kg	8	0	0	270	290			8270_SVOA_GCMS	8270_SVOA_GCMS	
2,4-Dinitrotoluene	SVOC	ug/kg	8	0	0	110	120			8270_SVOA_GCMS	8270_SVOA_GCMS	
2-Chlorophenol	SVOC	ug/kg	8	0	0	150	170			8270_SVOA_GCMS	8270_SVOA_GCMS	
4-Chloro-3-methylphenol	SVOC	ug/kg	8	0	0	94	100			8270_SVOA_GCMS	8270_SVOA_GCMS	
4-Nitrophenol	SVOC	ug/kg	8	0	0	170	190			8270_SVOA_GCMS	8270_SVOA_GCMS	
Acenaphthene	SVOC	ug/kg	8	0	0	140	150			8270_SVOA_GCMS	8270_SVOA_GCMS	
Aroclor-1016	SVOC	ug/kg	9	0	0	14	55			8082_PCB_GC	8082_PCB_GC	
Aroclor-1221	SVOC	ug/kg	9	0	0	14	110			8082_PCB_GC	8082_PCB_GC	
Aroclor-1232	SVOC	ug/kg	9	0	0	14	55			8082_PCB_GC	8082_PCB_GC	
Aroclor-1242	SVOC	ug/kg	9	0	0	14	55			8082_PCB_GC	8082_PCB_GC	
Aroclor-1248	SVOC	ug/kg	9	0	0	14	55			8082_PCB_GC	8082_PCB_GC	
Aroclor-1254	SVOC	ug/kg	9	0	0	14	55			8082_PCB_GC	8082_PCB_GC	
Aroclor-1260	SVOC	ug/kg	9	0	0	14	55			8082_PCB_GC	8082_PCB_GC	
Aroclor-1262	SVOC	ug/kg	8	0	0	49	55			8082_PCB_GC	8082_PCB_GC	
Aroclor-1268	SVOC	ug/kg	8	0	0	49	55			8082_PCB_GC	8082_PCB_GC	
Di-n-butylphthalate	SVOC	ug/kg	5	5	100			430	710	8270_SVOA_GCMS	8270_SVOA_GCMS	10-11 ft
N-Nitrosodi-n-dipropylamine	SVOC	ug/kg	8	0	0	150	160			8270_SVOA_GCMS	8270_SVOA_GCMS	
Oil and grease	SVOC	ug/kg	8	0	0	677000	738000			413.1_OILGREASE	413.1_OILGREASE	
Pentachlorophenol	SVOC	ug/kg	8	0	0	150	160			8270_SVOA_GCMS	8270_SVOA_GCMS	
Phenol	SVOC	ug/kg	8	0	0	140	150			8270_SVOA_GCMS	8270_SVOA_GCMS	
rene	SVOC	ug/kg	8	0	0	160	170			8270_SVOA_GCMS	8270_SVOA_GCMS	
otal petroleum hydrocarbons - diesel range	SVOC	ug/kg	9	1	11.11	3800	4100	21000	21000	WTPH_DIESEL	WTPH_DIESEL	12-13 ft

Table A-2. Summary Table for All 200-MW-1 Operable Unit Constituents in Deep-Zone Soil Samples (10 Sheets)

Constituent	Constituent Class	Units	Number of Samples	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Result	Maximum Result	Analytical Method, Minimum Nondetect or Result	Analytical Method, Maximum Nondetect or Result	Depth of Maximum Result (ft bgs)
Total petroleum hydrocarbons - gasoline range	SVOC	ug/kg	9	0	0	30	250			WTPH_GASOLINE	WTPH_GASOLINE	
Total petroleum hydrocarbons - kerosene range	SVOC	ug/kg	9	0	0	3800	13000			WTPH_DIESEL	WTPH_DIESEL	
Tributyl phosphate	SVOC	ug/kg	9	0	0	140	360			8270_SVOA_GCMS	8270_SVOA_GCMS	
Americium-241	RAD	pCi/g	9	0	0	0.003	0.033			AMCMISO_IE_PREC_AEA	AMCMISO_IE_PREC_AEA	
Antimony-125	RAD	pCi/g	2	0	0	-0.006	0			GAMMA_GS	GAMMA_GS	
Carbon-14	RAD	pCi/g	2	0	0	0.835	1.76			C14_COX_LSC	C14_COX_LSC	
Cesium-134	RAD	pCi/g	2	0	0	0.032	0.034			GAMMA_GS	GAMMA_GS	
Cesium-137	RAD	pCi/g	9	8	88.89	0.003	0.003	0.012	1.21	GAMMA_GS	GAMMA_GS	8-9 ft
Cobalt-60	RAD	pCi/g	9	0	0	-0.01	0.027			GAMMA_GS	GAMMA_GS	
Europium-152	RAD	pCi/g	9	0	0	-0.014	0.063			GAMMA_GS	GAMMA_GS	
Europium-154	RAD	pCi/g	9	0	0	-0.036	0.085			GAMMA_GS	GAMMA_GS	
Europium-155	RAD	pCi/g	9	2	22.22	-0.009	0.072	0.052	0.087	GAMMA_GS	GAMMA_GS	10-11 ft
Iodine-129	RAD	pCi/g	1	0	0	-0.203	-0.203			I129_SEP_LEPS_GS	I129_SEP_LEPS_GS	
Neptunium-237	RAD	pCi/g	2	0	0	0.001	0.004			NP237_IE_PRECIP_AEA	NP237_IE_PRECIP_AEA	
Nickel-63	RAD	pCi/g	2	0	0	0.803	2.25			NI63_LSC	NI63_LSC	
Plutonium-238	RAD	pCi/g	9	0	0	-0.012	0.018			PUISO_IE_PRECIP_AEA	PUISO_IE_PRECIP_AEA	
Plutonium-239/240	RAD	pCi/g	9	5	55.56	-0.006	0.06	0.013	0.055	PUISO_IE_PRECIP_AEA	PUISO_PLATE_AEA	12-13 ft
Potassium-40	RAD	pCi/g	1	1	100			9.42	9.42	GAMMA_GS	GAMMA_GS	12-13 ft
Radium-226	RAD	pCi/g	3	3	100			0.38	0.657	GAMMA_GS	GAMMA_GS	8-9 ft
ıdium-228	RAD	pCi/g	3	3	100			0.426	0.697	GAMMA_GS	GAMMA_GS	8-9 ft
:chnetium-99	RAD	pCi/g	9	0	0	0.068	0.527			TC99_TR_SEP_LSC	TC99_ETVDSK_LSC	
Thorium-228	RAD	pCi/g	3	3	100			0.444	0.777	GAMMA_GS	THISO_IE_PLATE_AEA	8-9 ft
Thorium-230	RAD	pCi/g	2	2	100			0.442	0.634	THISO_IE_PLATE_AEA	THISO_IE_PLATE_AEA	8-9 ft
Thorium-232	RAD	pCi/g	3	3	100			0.426	0.765	GAMMA_GS	THISO_IE_PLATE_AEA	8-9 ft
Total beta radiostrontium	RAD	pCi/g	9	5	55.56	-0.1	0.3	0.304	1.1	SRTOT_SEP_PRECIP_GPC	SRTOT_SEP_PRECIP_GPC	19-20 ft
Tritium	RAD	pCi/g	2	0	0	1.34	2.99			TRITIUM_COX_LSC	TRITIUM_COX_LSC	
Uranium-233/234	RAD	pCi/g	9	9	100			0.11	0.996	UISO_IE_PRECIP_AEA	UISO_PLATE_AEA	12-13 ft
Uranium-235	RAD	pCi/g	9	8	88.89	0	0	0.01	0.03	UISO_PLATE_AEA	UISO_IE_PRECIP_AEA	12-13 ft
Uranium-238	RAD	pCi/g	9	9	100			0.15	0.622	UISO_IE_PRECIP_AEA	UISO_PLATE_AEA	12-13 ft
216-T-33 Crib												
Antimony	METALS	ug/kg	1	0	0	7130	7130			200.8_METALS_ICPMS	200.8_METALS_ICPMS	
Arsenic	METALS	ug/kg	1	1	100			4630	4630	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
Barium	METALS	ug/kg	1	1	100			90100	90100	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
Beryllium	METALS	ug/kg	1	1	100			390	390	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
Bismuth	METALS	ug/kg	1	0	0	2150	2150			6010_METALS_ICP	6010_METALS_ICP	
Boron	METALS	ug/kg	1	0	0	2540	2540			6010_METALS_ICP	6010_METALS_ICP	
Cadmium	METALS	ug/kg	10	7	70	991	1000	55	1630	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
Chromium	METALS	ug/kg	10	10	100			8250	33700	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
Copper	METALS	ug/kg	10	10	100			10300	30800	200.8_METALS_ICPMS	6010_METALS_ICP	19-21.5 ft
Hexavalent Chromium	METALS	ug/kg	10	2	20	200	210	220	469	7196_CR6	7196_CR6	19-21.5 ft
Lead	METALS	ug/kg	10	7	70	11900	12000	3210	30700	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
Mercury	METALS	ug/kg	10	7	70	991	1000	50	1030	7471_HG_CVAA	200.8_METALS_ICPMS	12.5-15 ft
Nickel	METALS	ug/kg	1	1	100			20600	20600	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
lenium	METALS	ug/kg	1	1	100			933	933	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
ver	METALS	ug/kg	10	5	50	10.1	2000	71.4	341	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft

Table A-2. Summary Table for All 200-MW-1 Operable Unit Constituents in Deep-Zone Soil Samples (10 Sheets)

Constituent	Constituent Class	Units	Number of Samples	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Result	Maximum Result	Analytical Method, Minimum Nondetect or Result	Analytical Method, Maximum Nondetect or Result	Depth of Maximum Result (ft bgs)
Uranium	METALS	ug/kg	9	6	66.67	991	1000	592	1700	200.8_METALS_ICPMS	UTOT_KPA	19-21.5 ft
Ammonium ion	CONV	ug/kg	1	1	100			3640	3640	300.7_IC	300.7_IC	12.5-15 ft
Cyanide	CONV	ug/kg	10	0	0	200	510			335.2_CYANIDE	9010_CYANIDE	
Fluoride	CONV	ug/kg	10	4	40	1130	13000	4590	6460	300.0_ANIONS_IC	300.0_ANIONS_IC	16.5-19 ft
Nitrate	CONV	ug/kg	10	10	100			17500	254000	300.0_ANIONS_IC	300.0_ANIONS_IC	12.5-15 ft
Nitrite	CONV	ug/kg	10	0	0	1300	3120			300.0_ANIONS_IC	300.0_ANIONS_IC	
Nitrogen in Nitrite and Nitrate	CONV	ug/kg	10	9	90	27	27	2100	66400	353.1_NO3/NO2	353.2_NO3/NO2	12.5-15 ft
pH Measurement	CONV	pH	10	10	100			7.8	9.22	9045_PH	150.1_PH	27.5-30 ft
Phosphate	CONV	ug/kg	10	6	60	8130	8280	8300	38300	300.0_ANIONS_IC	300.0_ANIONS_IC	16.5-19 ft
Sulfate	CONV	ug/kg	10	9	90	5000	5000	45200	159000	300.0_ANIONS_IC	300.0_ANIONS_IC	12.5-15 ft
1,1,1-Trichloroethane	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,1,2,2-Tetrachloroethane	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,1,2-Trichloroethane	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,1-Dichloroethane	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,1-Dichloroethene	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloroethane	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloroethene(Total)	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloropropane	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1-Butanol	VOC	ug/kg	10	0	0	42	4800			8260_VOA_GCMS	8015_VOA_GC	
2-Butanone	VOC	ug/kg	10	0	0	2.1	11			8260_VOA_GCMS	8260_VOA_GCMS	
2-Hexanone	VOC	ug/kg	10	0	0	2.1	11			8260_VOA_GCMS	8260_VOA_GCMS	
Methyl-2-Pentanone	VOC	ug/kg	10	0	0	2.1	11			8260_VOA_GCMS	8260_VOA_GCMS	
Acetone	VOC	ug/kg	10	1	10	2.1	2.1	10	10	8260_VOA_GCMS	8260_VOA_GCMS	19-21.5 ft
Benzene	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Bromodichloromethane	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Bromoform	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Bromomethane	VOC	ug/kg	10	0	0	2.1	11			8260_VOA_GCMS	8260_VOA_GCMS	
Carbon disulfide	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Carbon tetrachloride	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Chlorobenzene	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Chloroethane	VOC	ug/kg	10	0	0	2.1	11			8260_VOA_GCMS	8260_VOA_GCMS	
Chloroform	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Chloromethane	VOC	ug/kg	10	0	0	2.1	11			8260_VOA_GCMS	8260_VOA_GCMS	
cis-1,2-Dichloroethylene	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
cis-1,3-Dichloropropene	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Dibromochloromethane	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Ethylbenzene	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Methylene chloride	VOC	ug/kg	10	0	0	2.1	15			8260_VOA_GCMS	8260_VOA_GCMS	
n-Butylbenzene	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Styrene	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Tetrachloroethene	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Toluene	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
trans-1,2-Dichloroethylene	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
trans-1,3-Dichloropropene	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Trichloroethene	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
Vinyl chloride	VOC	ug/kg	10	0	0	2.1	11			8260_VOA_GCMS	8260_VOA_GCMS	
Xylenes (total)	VOC	ug/kg	10	0	0	2.1	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,2,4-Trichlorobenzene	SVOC	ug/kg	10	0	0	190	350			8270_SVOA_GCMS	8270_SVOA_GCMS	

Table A-2. Summary Table for All 200-MW-1 Operable Unit Constituents in Deep-Zone Soil Samples (10 Sheets)

Constituent	Constituent Class	Units	Number of Samples	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Result	Maximum Result	Analytical Method, Minimum Nondetect or Result	Analytical Method, Maximum Nondetect or Result	Depth of Maximum Result (ft bgs)
1,4-Dichlorobenzene	SVOC	ug/kg	10	0	0	280	350			8270_SVOA_GCMS	8270_SVOA_GCMS	
2,4-Dinitrotoluene	SVOC	ug/kg	10	0	0	69	350			8270_SVOA_GCMS	8270_SVOA_GCMS	
2-Chlorophenol	SVOC	ug/kg	10	0	0	150	350			8270_SVOA_GCMS	8270_SVOA_GCMS	
4-Chloro-3-methylphenol	SVOC	ug/kg	10	0	0	69	350			8270_SVOA_GCMS	8270_SVOA_GCMS	
4-Nitrophenol	SVOC	ug/kg	10	1	10	180	860	1100	1100	8270_SVOA_GCMS	8270_SVOA_GCMS	12.5-15 ft
Acenaphthene	SVOC	ug/kg	10	0	0	69	350			8270_SVOA_GCMS	8270_SVOA_GCMS	
Aroclor-1016	SVOC	ug/kg	10	0	0	50	510			8082_PCB_GC	8082_PCB_GC	
Aroclor-1221	SVOC	ug/kg	10	0	0	100	1000			8082_PCB_GC	8082_PCB_GC	
Aroclor-1232	SVOC	ug/kg	10	0	0	50	510			8082_PCB_GC	8082_PCB_GC	
Aroclor-1242	SVOC	ug/kg	10	0	0	50	510			8082_PCB_GC	8082_PCB_GC	
Aroclor-1248	SVOC	ug/kg	10	0	0	50	510			8082_PCB_GC	8082_PCB_GC	
Aroclor-1254	SVOC	ug/kg	10	6	60	50	53	410	9400	8082_PCB_GC	8082_PCB_GC	12.5-15 ft
Aroclor-1260	SVOC	ug/kg	10	5	50	50	280	160	3900	8082_PCB_GC	8082_PCB_GC	12.5-15 ft
Aroclor-1262	SVOC	ug/kg	9	0	0	50	510			8082_PCB_GC	8082_PCB_GC	
Aroclor-1268	SVOC	ug/kg	9	0	0	50	510			8082_PCB_GC	8082_PCB_GC	
Bis(2-ethylhexyl) phthalate	SVOC	ug/kg	1	1	100			76	76	8270_SVOA_GCMS	8270_SVOA_GCMS	19-21.5 ft
Diethylphthalate	SVOC	ug/kg	6	5	83.33	350	350	200	370	8270_SVOA_GCMS	8270_SVOA_GCMS	19-21.5 ft
Di-n-butylphthalate	SVOC	ug/kg	8	8	100			20	360	8270_SVOA_GCMS	8270_SVOA_GCMS	130.5-133 ft
N-Nitrosodi-n-dipropylamine	SVOC	ug/kg	10	0	0	69	350			8270_SVOA_GCMS	8270_SVOA_GCMS	
Oil and grease	SVOC	ug/kg	10	2	20	678000	712000	101000	842000	9071_OILGREASE	413.1_OILGREASE	12.5-15 ft
Pentachlorophenol	SVOC	ug/kg	10	0	0	150	860			8270_SVOA_GCMS	8270_SVOA_GCMS	
henol	SVOC	ug/kg	10	0	0	100	350			8270_SVOA_GCMS	8270_SVOA_GCMS	
yrene	SVOC	ug/kg	10	0	0	69	350			8270_SVOA_GCMS	8270_SVOA_GCMS	
Total petroleum hydrocarbons - diesel range	SVOC	ug/kg	10	0	0	130	6600			WTPH_DIESEL	WTPH_DIESEL	
Total petroleum hydrocarbons - gasoline range	SVOC	ug/kg	10	0	0	28	250			WTPH_GASOLINE	WTPH_GASOLINE	
Total petroleum hydrocarbons - kerosene range	SVOC	ug/kg	10	0	0	76	6600			WTPH_DIESEL	WTPH_DIESEL	
Total petroleum hydrocarbons - motor oil (high boiling)	SVOC	ug/kg	4	4	100			160000	570000	WTPH_DIESEL	WTPH_DIESEL	12.5-15 ft
Tributyl phosphate	SVOC	ug/kg	10	0	0	69	350			8270_SVOA_GCMS	8270_SVOA_GCMS	
Americium-241	RAD	pCi/g	10	5	50	-0.003	0.014	0.39	2.3	AMCMISO_IE_PREC_AEA	AMCMISO_IE_PREC_AEA	12.5-15 ft
Antimony-125	RAD	pCi/g	1	0	0	-0.009	-0.009			GAMMA_GS	GAMMA_GS	
Carbon-14	RAD	pCi/g	1	0	0	0.266	0.266			C14_COX_LSC	C14_COX_LSC	
Cesium-134	RAD	pCi/g	1	0	0	0.024	0.024			GAMMA_GS	GAMMA_GS	
Cesium-137	RAD	pCi/g	10	5	50	-0.008	0.00254	3.1	33.1	GAMMA_GS	GAMMA_GS	12.5-15 ft
Cobalt-60	RAD	pCi/g	10	5	50	-0.003	0.096	0.0265	0.18	GAMMA_GS	GAMMA_GS	12.5-15 ft
Europium-152	RAD	pCi/g	10	5	50	-0.0184	0.0128	2.64	4.68	GAMMA_GS	GAMMA_GS	16.5-19 ft
Europium-154	RAD	pCi/g	10	5	50	-0.062	0.024	0.31	0.508	GAMMA_GS	GAMMA_GS	16.5-19 ft
Europium-155	RAD	pCi/g	10	3	30	0.0012	0.34	0.027	0.052	GAMMA_GS	GAMMA_GS	110.5-113 ft
Iodine-129	RAD	pCi/g	10	0	0	-0.798	0.497			I129_SEP_LEPS_GS	I129_SEP_LEPS_GS	
Neptunium-237	RAD	pCi/g	1	0	0	0.002	0.002			NP237_IE_PRECIP_AEA	NP237_IE_PRECIP_AEA	
Nickel-63	RAD	pCi/g	1	1	100			34.9	34.9	NI63_LSC	NI63_LSC	12.5-15 ft
Plutonium-238	RAD	pCi/g	10	3	30	-0.024	0.07	0.08	0.34	PUISO_IE_PRECIP_AEA	PUISO_IE_PRECIP_AEA	12.5-15 ft
Plutonium-239/240	RAD	pCi/g	10	7	70	0.003	0.012	0.019	63	PUISO_IE_PRECIP_AEA	PUISO_IE_PRECIP_AEA	12.5-15 ft
Potassium-40	RAD	pCi/g	1	1	100			9.78	9.78	GAMMA_GS	GAMMA_GS	19-21.5 ft
adium-226	RAD	pCi/g	2	2	100			0.382	0.395	GAMMA_GS	GAMMA_GS	12.5-15 ft
adium-228	RAD	pCi/g	2	2	100			0.463	0.587	GAMMA_GS	GAMMA_GS	19-21.5 ft

Table A-2. Summary Table for All 200-MW-1 Operable Unit Constituents in Deep-Zone Soil Samples (10 Sheets)

Constituent	Constituent Class	Units	Number of Samples	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Result	Maximum Result	Analytical Method, Minimum Nondetect or Result	Analytical Method, Maximum Nondetect or Result	Depth of Maximum Result (ft bgs)
Technetium-99	RAD	pCi/g	10	0	0	0.007	0.412			TC99_TR_SEP_LSC	TC99_TR_SEP_LSC	
Thorium-228	RAD	pCi/g	2	2	100			0.539	0.83	GAMMA_GS	THISO_IE_PLATE_AEA	12.5-15 ft
Thorium-230	RAD	pCi/g	1	0	0	0.067	0.067			THISO_IE_PLATE_AEA	THISO_IE_PLATE_AEA	
Thorium-232	RAD	pCi/g	2	2	100			0.47	0.587	THISO_IE_PLATE_AEA	GAMMA_GS	19-21.5 ft
Total beta radiostrontium	RAD	pCi/g	10	6	60	-0.13	-0.05	1.6	49	SRTOT_SEP_PRECIP_GPC	SRTOT_SEP_PRECIP_GPC	12.5-15 ft
Tritium	RAD	pCi/g	10	1	10	-0.029	0.223	0.094	0.094	906.0_H3_LSC	906.0_H3_LSC	19-21.5 ft
Uranium-233/234	RAD	pCi/g	10	10	100			0.13	1.03	UISO_IE_PRECIP_AEA	UISO_PLATE_AEA	19-21.5 ft
Uranium-235	RAD	pCi/g	10	9	90	0.085	0.085	0.013	0.084	UISO_IE_PRECIP_AEA	UISO_PLATE_AEA	12.5-15 ft
Uranium-238	RAD	pCi/g	10	10	100			0.12	0.8	UISO_IE_PRECIP_AEA	UISO_IE_PRECIP_AEA	12.5-15 ft
216-U-3 French Drain												
Antimony	METALS	ug/kg	1	0	0	6890	6890			200.8_METALS_ICPMS	200.8_METALS_ICPMS	
Arsenic	METALS	ug/kg	1	0	0	2320	2320			200.8_METALS_ICPMS	200.8_METALS_ICPMS	
Barium	METALS	ug/kg	1	1	100			20400	20400	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
Beryllium	METALS	ug/kg	1	1	100			289	289	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
Bismuth	METALS	ug/kg	1	0	0	2140	2140			6010_METALS_ICP	6010_METALS_ICP	
Boron	METALS	ug/kg	1	1	100			28100	28100	6010_METALS_ICP	6010_METALS_ICP	12.5-15 ft
Cadmium	METALS	ug/kg	9	0	0	19	998			200.8_METALS_ICPMS	200.8_METALS_ICPMS	
Chromium	METALS	ug/kg	9	6	66.67	2840	3240	5400	52100	200.8_METALS_ICPMS	200.8_METALS_ICPMS	35-37.5 ft
Copper	METALS	ug/kg	9	9	100			2540	21900	200.8_METALS_ICPMS	200.8_METALS_ICPMS	127-129.5 ft
Hexavalent Chromium	METALS	ug/kg	9	2	22.22	210	250	230	240	7196_CR6	7196_CR6	127-129.5 ft
;ad	METALS	ug/kg	9	1	11.11	251	12000	3600	3600	200.8_METALS_ICPMS	200.8_METALS_ICPMS	22.5-25 ft
ercury	METALS	ug/kg	9	4	44.44	10	998	586	1250	7471_HG_CVAA	200.8_METALS_ICPMS	47-49.5 ft
Nickel	METALS	ug/kg	1	1	100			2930	2930	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
Selenium	METALS	ug/kg	1	1	100			1290	1290	200.8_METALS_ICPMS	200.8_METALS_ICPMS	12.5-15 ft
Silver	METALS	ug/kg	9	3	33.33	10	1980	170	2640	200.8_METALS_ICPMS	200.8_METALS_ICPMS	127-129.5 ft
Uranium	METALS	ug/kg	8	4	50	947	991	320	1470	200.8_METALS_ICPMS	UTOT_KPA	22.5-25 ft
Ammonium ion	CONV	ug/kg	1	0	0	258	258			300.7_IC	300.7_IC	
Cyanide	CONV	ug/kg	9	0	0	200	500			335.2_CYANIDE	9010_CYANIDE	
Fluoride	CONV	ug/kg	9	0	0	1000	1150			300.0_ANIONS_IC	300.0_ANIONS_IC	
Nitrate	CONV	ug/kg	9	9	100			2550	10500	300.0_ANIONS_IC	300.0_ANIONS_IC	17.5-20 ft
Nitrite	CONV	ug/kg	9	0	0	1040	3120			300.0_ANIONS_IC	300.0_ANIONS_IC	
Nitrogen in Nitrite and Nitrate	CONV	ug/kg	9	7	77.78	210	210	330	940	353.2_NO3/NO2	353.2_NO3/NO2	127-129.5 ft
pH Measurement	CONV	pH	9	9	100			8.51	9.51	150.1_PH	150.1_PH	12.5-15 ft
Phosphate	CONV	ug/kg	9	0	0	1000	8280			300.0_ANIONS_IC	300.0_ANIONS_IC	
Sulfate	CONV	ug/kg	9	7	77.78	5000	5000	9960	21700	300.0_ANIONS_IC	300.0_ANIONS_IC	35-37.5 ft
1,1,1-Trichloroethane	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,1,2,2-Tetrachloroethane	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,1,2-Trichloroethane	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,1-Dichloroethane	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,1-Dichloroethene	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloroethane	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloroethene(Total)	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,2-Dichloropropane	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
1-Butanol	VOC	ug/kg	9	0	0	34	5000			8260_VOA_GCMS	8015_VOA_GC	
2-Butanone	VOC	ug/kg	9	0	0	1.7	11			8260_VOA_GCMS	8260_VOA_GCMS	
Hexanone	VOC	ug/kg	9	0	0	1.7	11			8260_VOA_GCMS	8260_VOA_GCMS	
Methyl-2-Pentanone	VOC	ug/kg	9	0	0	1.7	11			8260_VOA_GCMS	8260_VOA_GCMS	

Table A-2. Summary Table for All 200-MW-1 Operable Unit Constituents in Deep-Zone Soil Samples (10 Sheets)

Constituent	Constituent Class	Units	Number of Samples	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Result	Maximum Result	Analytical Method, Minimum Nondetect or Result	Analytical Method, Maximum Nondetect or Result	Depth of Maximum Result (ft bgs)
Acetone	VOC	ug/kg	9	0	0	1.7	11			8260_VOA_GCMS	8260_VOA_GCMS	
Benzene	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
Bromodichloromethane	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
Bromoform	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
Bromomethane	VOC	ug/kg	9	0	0	1.7	11			8260_VOA_GCMS	8260_VOA_GCMS	
Carbon disulfide	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
Carbon tetrachloride	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
Chlorobenzene	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
Chloroethane	VOC	ug/kg	9	0	0	1.7	11			8260_VOA_GCMS	8260_VOA_GCMS	
Chloroform	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
Chloromethane	VOC	ug/kg	9	0	0	1.7	11			8260_VOA_GCMS	8260_VOA_GCMS	
cis-1,2-Dichloroethylene	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
cis-1,3-Dichloropropene	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
Dibromochloromethane	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
Ethylbenzene	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
Methylene chloride	VOC	ug/kg	9	0	0	1.7	15			8260_VOA_GCMS	8260_VOA_GCMS	
n-Butylbenzene	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
Styrene	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
Tetrachloroethene	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
Toluene	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
trans-1,2-Dichloroethylene	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
ıns-1,3-Dichloropropene	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
ichloroethene	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
Vinyl chloride	VOC	ug/kg	9	0	0	1.7	11			8260_VOA_GCMS	8260_VOA_GCMS	
Xylenes (total)	VOC	ug/kg	9	0	0	1.7	6			8260_VOA_GCMS	8260_VOA_GCMS	
1,2,4-Trichlorobenzene	SVOC	ug/kg	9	0	0	300	350			8270_SVOA_GCMS	8270_SVOA_GCMS	
1,4-Dichlorobenzene	SVOC	ug/kg	9	0	0	320	350			8270_SVOA_GCMS	8270_SVOA_GCMS	
2,4-Dinitrotoluene	SVOC	ug/kg	9	0	0	69	350			8270_SVOA_GCMS	8270_SVOA_GCMS	
2-Chlorophenol	SVOC	ug/kg	9	0	0	150	350			8270_SVOA_GCMS	8270_SVOA_GCMS	
4-Chloro-3-methylphenol	SVOC	ug/kg	9	0	0	69	350			8270_SVOA_GCMS	8270_SVOA_GCMS	
4-Nitrophenol	SVOC	ug/kg	9	0	0	670	870			8270_SVOA_GCMS	8270_SVOA_GCMS	
Acenaphthene	SVOC	ug/kg	9	0	0	69	350			8270_SVOA_GCMS	8270_SVOA_GCMS	
Aroclor-1016	SVOC	ug/kg	9	0	0	13	66			8082_PCB_GC	8082_PCB_GC	
Aroclor-1221	SVOC	ug/kg	9	0	0	13	130			8082_PCB_GC	8082_PCB_GC	
Aroclor-1232	SVOC	ug/kg	9	0	0	13	66			8082_PCB_GC	8082_PCB_GC	
Aroclor-1242	SVOC	ug/kg	9	0	0	13	66			8082_PCB_GC	8082_PCB_GC	
Aroclor-1248	SVOC	ug/kg	9	0	0	13	66			8082_PCB_GC	8082_PCB_GC	
Aroclor-1254	SVOC	ug/kg	9	0	0	13	66			8082_PCB_GC	8082_PCB_GC	
Aroclor-1260	SVOC	ug/kg	9	0	0	13	66			8082_PCB_GC	8082_PCB_GC	
Aroclor-1262	SVOC	ug/kg	8	0	0	50	66			8082_PCB_GC	8082_PCB_GC	
Aroclor-1268	SVOC	ug/kg	8	0	0	50	66			8082_PCB_GC	8082_PCB_GC	
Bis(2-ethylhexyl) phthalate	SVOC	ug/kg	1	1	100			51	51	8270_SVOA_GCMS	8270_SVOA_GCMS	22.5-25 ft
Diethylphthalate	SVOC	ug/kg	4	4	100			280	540	8270_SVOA_GCMS	8270_SVOA_GCMS	22.5-25 ft
Di-n-butylphthalate	SVOC	ug/kg	9	9	100			52	1100	8270_SVOA_GCMS	8270_SVOA_GCMS	97.5-100 ft
N-Nitrosodi-n-dipropylamine	SVOC	ug/kg	9	0	0	69	350			8270_SVOA_GCMS	8270_SVOA_GCMS	
Oil and grease	SVOC	ug/kg	9	1	11.11	87300	731000	864000	864000	9071_OILGREASE	9071_OILGREASE	35-37.5 ft
ntachlorophenol	SVOC	ug/kg	9	0	0	310	870			8270_SVOA_GCMS	8270_SVOA_GCMS	
enol	SVOC	ug/kg	9	0	0	100	350			8270_SVOA_GCMS	8270_SVOA_GCMS	

Table A-2. Summary Table for All 200-MW-1 Operable Unit Constituents in Deep-Zone Soil Samples (10 Sheets)

Constituent	Constituent Class	Units	Number of Samples	Number of Detects	Frequency of Detects (%)	Minimum Nondetect	Maximum Nondetect	Minimum Result	Maximum Result	Analytical Method, Minimum Nondetect or Result	Analytical Method, Maximum Nondetect or Result	Depth of Maximum Result (ft bgs)
Pyrene	SVOC	ug/kg	9	0	0	69	350			8270_SVOA_GCMS	8270_SVOA_GCMS	
Total petroleum hydrocarbons - diesel range	SVOC	ug/kg	9	0	0	3900	12500			WTPH_DIESEL	WTPH_DIESEL	
Total petroleum hydrocarbons - gasoline range	SVOC	ug/kg	9	0	0	30	250			8015M_TPH_GC	WTPH_GASOLINE	
Total petroleum hydrocarbons - kerosene range	SVOC	ug/kg	9	0	0	3900	12500			WTPH_DIESEL	WTPH_DIESEL	
Total petroleum hydrocarbons - motor oil (high boiling)	SVOC	ug/kg	1	1	100			15000	15000	WTPH_DIESEL	WTPH_DIESEL	22.5-25 ft
Tributyl phosphate	SVOC	ug/kg	9	0	0	69	350			8270_SVOA_GCMS	8270_SVOA_GCMS	
Americium-241	RAD	pCi/g	9	6	66.67	0	0.02	0.028	0.048	AMCMISO_IE_PLATE_AEA	AMCMISO_IE_PREC_AEA	22.5-25 ft
Antimony-125	RAD	pCi/g	1	0	0	0.001	0.001			GAMMA_GS	GAMMA_GS	
Carbon-14	RAD	pCi/g	1	0	0	-0.412	-0.412			C14_COX_LSC	C14_COX_LSC	
Cesium-134	RAD	pCi/g	1	0	0	0.02	0.02			GAMMA_GS	GAMMA_GS	
Cesium-137	RAD	pCi/g	9	0	0	-0.001	0.026			GAMMA_GS	GAMMA_GS	
Cobalt-60	RAD	pCi/g	9	1	11.11	-0.006	0.027	0.011	0.011	GAMMA_GS	GAMMA_GS	35-37.5 ft
Europium-152	RAD	pCi/g	9	0	0	-0.047	0.068			GAMMA_GS	GAMMA_GS	
Europium-154	RAD	pCi/g	9	0	0	-0.029	0.083			GAMMA_GS	GAMMA_GS	
Europium-155	RAD	pCi/g	9	2	22.22	0.005	0.075	0.024	0.052	GAMMA_GS	GAMMA_GS	127-129.5 ft
Iodine-129	RAD	pCi/g	9	0	0	-0.336	0.533			I129_SEP_LEPS_GS	I129_SEP_LEPS_GS	
Neptunium-237	RAD	pCi/g	1	0	0	-0.003	-0.003			NP237_IE_PRECIP_AEA	NP237_IE_PRECIP_AEA	
Nickel-63	RAD	pCi/g	1	0	0	1.16	1.16			NI63_LSC	NI63_LSC	
ıtonium-238	RAD	pCi/g	9	0	0	-0.013	0.042			PUISO_IE_PRECIP_AEA	PUISO_IE_PRECIP_AEA	
..ıtonium-239/240	RAD	pCi/g	9	0	0	-0.002	0.035			PUISO_IE_PRECIP_AEA	PUISO_PLATE_AEA	
Potassium-40	RAD	pCi/g	1	1	100			10.4	10.4	GAMMA_GS	GAMMA_GS	22.5-25 ft
Radium-226	RAD	pCi/g	2	2	100			0.345	0.43	GAMMA_GS	GAMMA_GS	22.5-25 ft
Radium-228	RAD	pCi/g	2	2	100			0.42	0.634	GAMMA_GS	GAMMA_GS	22.5-25 ft
Technetium-99	RAD	pCi/g	9	0	0	-0.183	0.252			TC99_TR_SEP_LSC	TC99_TR_SEP_LSC	
Thorium-228	RAD	pCi/g	2	2	100			0.488	0.553	THISO_IE_PLATE_AEA	GAMMA_GS	22.5-25 ft
Thorium-230	RAD	pCi/g	1	1	100			0.433	0.433	THISO_IE_PLATE_AEA	THISO_IE_PLATE_AEA	12.5-15 ft
Thorium-232	RAD	pCi/g	2	2	100			0.486	0.634	THISO_IE_PLATE_AEA	GAMMA_GS	22.5-25 ft
Total beta radiostrontium	RAD	pCi/g	9	2	22.22	-0.49	0.13	0.23	0.26	SRTOT_SEP_PRECIP_GPC	SRTOT_SEP_PRECIP_GPC	22.5-25 ft
Tritium	RAD	pCi/g	9	5	55.56	0.105	0.175	0.362	1.78	906.0_H3_LSC	906.0_H3_LSC	97.5-100 ft
Uranium-233/234	RAD	pCi/g	9	9	100			0.12	0.592	UISO_IE_PRECIP_AEA	UISO_PLATE_AEA	22.5-25 ft
Uranium-235	RAD	pCi/g	9	4	44.44	0.004	0.025	0.01	0.02	UISO_IE_PRECIP_AEA	UISO_PLATE_AEA	127-129.5 ft
Uranium-238	RAD	pCi/g	9	9	100			0.12	0.551	UISO_IE_PRECIP_AEA	UISO_PLATE_AEA	22.5-25 ft

APPENDIX B

DATA EVALUATION AND DATA SUMMARY TABLES

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TERMS

bgs	below ground surface
COPC	contaminant of potential concern
J	estimated
LAPAL	lowest applicable preliminary action limit
PCB	polychlorinated biphenyl
TQL	target quantitation limit
U	not detected

APPENDIX B

DATA EVALUATION AND DATA SUMMARY TABLES

B1.0 DATA EVALUATION

Samples from representative waste sites in the 200-MW-1 Operable Unit and associated field quality-control samples were obtained and analyzed in accordance with the sampling and analysis plan in DOE/RL-2001-65, *200-MW-1 Miscellaneous Waste Group Operable Unit RI/FS Work Plan*, Appendix A; EPA/600/R-96/084, *Guidance for Data Quality Assessment, Practical Methods for Data Analysis*, EPA QA/G-9, QA00 Update; and Fluor Hanford, Inc., procedure GRP-EE-01-1.22, *Data Quality Assessment*. Also, as required by the plan, the analytical data from these samples were evaluated to ensure that the quality assurance objectives of the project were achieved. This evaluation is documented in D&D-26937, *Data Quality Assessment Report for the 200-MW-1 Operable Unit*. The evaluation consisted of three activities:

- Formal validation of a portion of the data
- Review of the complete data set to determine the degree to which detection-limit requirements were achieved
- Evaluation of the field quality control sample data.

The results of these activities are summarized in the following sections.

B1.1 DATA VALIDATION RESULTS

Laboratory data from 36 samples in seven sample delivery groups (H3027, WSCF20050265, H2905, WCSF20042380, H3130, WCSF20050854, and WCSF20050940) were validated to Level "C" as described in HNF-20433, *Data Validation Procedure for Chemical Analyses*, and HNF-20434, *Data Validation Procedure for Radiochemical Analyses*. The criteria established for qualification of analytical results are defined in these validation procedures.

Validation resulted in the rejection of one undetected gasoline result for sample number B1C7D5, *Hanford Environmental Information System* database number H3130, for hold time exceeding the requirement by more than a factor of two. The rejected result was in borehole C4854 (the 200-E-4 French Drain) at 4.27 to 6.25 m (14 to 20.5 ft) below ground surface (bgs). This result should be rejected for use in decision-making.

In addition, several minor deficiencies were found, resulting in sample results being flagged with a "J" (estimate) and/or a "U" (not detected) qualifier. Deficiencies included hold time exceedances, samples not being properly preserved, blank contamination, insufficient detection limit in blank analysis, unsatisfactory blank or laboratory control sample or blank spike results, and instances of the matrix spike, surrogates, or tracers not meeting laboratory acceptance criteria. However, the majority of the data were obtained without any discrepancy.

The amount of laboratory analytical data obtained in the validated sample delivery groups was well above the normal 90 percent "completeness" criterion for site characterization studies.

B1.2 DATA COMPLETENESS AND DETECTION LIMITS

As a supplement to formal data validation, the data were examined with respect to completeness and detection limits. Reported analytical detection levels for nondetected analytes were compared to the target quantitation limits (TQL) specified in the sampling and analysis plan (DOE/RL-2001-65, Appendix A).

B1.2.1 Data Completeness

The analytical data were reviewed to determine whether the goal of analyzing all contaminants of potential concern (COPC) at each sampling location had been achieved. A complete set of data, including results for each COPC at each depth, was reported for boreholes in the 216-T-33 Crib (C4738) and the 216-U-3 (C4559) French Drain and for test pits T-13A and T-13B in the 216-T-13 Trench.

Data for borehole C4854, drilled in the 200-E-4 French Drain, were incomplete. For the 2.44 to 3.36 m (8 to 11 ft) bgs sample depth, no results were obtained for organics, kerosene, tributyl phosphate, nitrate/nitrite, phosphate, sulfate, or Tc-99. And for the 3.36 to 4.27 m (11 to 14 ft) bgs sample depth, no radionuclide results were obtained except for tritium and Tc-99. These missing results should represent only minor modeling difficulties, because all results reported at other sample depths for the missing analytes were below the lowest applicable preliminary action level (LAPAL). Also, no analyte was missing at more than one sample depth, and results for all COPCs were obtained at the deepest sample depth, 4.27 to 6.25 m (14 to 20.5 ft) bgs.

B1.2.2 Detection Limits

Reported analytical detection levels for nondetected analytes were compared to the TQL and the preliminary action levels specified in the sampling and analysis plan (DOE/RL-2001-65, Appendix A). Although the detection limits for most determinations met both standards, exceedance of the TQLs was not uncommon. Exceedance of the LAPALs occurred with only four analytes: polychlorinated biphenyls (PCB), copper, cadmium, and mercury. The table below summarizes the results for undetected analytes with detection limits greater than the LAPAL given in the sampling and analysis plan, Table A-7 (DOE/RL-2001-65, Appendix A).

Detection Limits Exceeding the Lowest Applicable Preliminary Action Limit.

Species or Analyte	Lowest Applicable Preliminary Action Limit (mg/kg)	Number of Results Exceeding the Lowest Applicable Preliminary Action Limit
Polychlorinated biphenyls	0.0165	240
Copper	2.5	4
Cadmium	0.81	8
Mercury	0.33	4

B1.3 FIELD QUALITY CONTROL SAMPLES

A total of 23 field quality control samples were collected and analyzed. These consisted of 6 field duplicate samples, 6 field split samples, 7 equipment rinsate blanks, and 4 trip blanks. The number of field duplicate samples and field split samples obtained for the four waste sites satisfies the sampling and analysis plan (DOE/RL-2001-65, Appendix A) requirements of one duplicate for every 20 site characterization samples and one field duplicate and field split for each representative waste site. The number of equipment blanks and trip blanks obtained satisfies the sampling and analysis plan requirement of obtaining equipment rinsate blanks at the same frequency that the duplicate samples were obtained and also the requirement that at least one trip blank be collected from each representative waste site.

For both field duplicate samples and field split samples, the relative percent difference between field duplicates/splits and their corresponding primary field samples were calculated to determine whether they meet the relative precision requirement of the sampling and analysis plan. In more than 95 percent of the cases, the resulting relative percent difference was satisfactory. About half of the unsatisfactory matches were for radionuclides and about half were for metals. One unsatisfactory result was for PCBs. These results show that the overall precision of sampling and analysis generally is within the project requirements, even at the very low concentrations of contaminants of concern found in most samples.

Equipment blanks were analyzed for gross alpha, gross beta, metals (except hexavalent chromium and mercury), anions (except cyanide), and volatile organic analytes of interest. An analyte was detected in 11 cases. And among the nondetect results for equipment blanks, the detection limit never exceeded the TQL.

The trip blanks were analyzed for volatile organic analytes as required in the sampling and analysis plan. Acetone was detected in one result. It was above its TQL but well below its LAPAL.

B2.0 CONCLUSION

The conclusion of this evaluation is that the data are of the right type, quality, and quantity to support remedial action decisions related to the waste sites. Detection limits, precision, accuracy, and data completeness were analyzed to determine if any analytical data should be rejected as a result of quality assurance / quality control deficiencies. The analytical data were found to be acceptable for decision-making purposes in the remedial investigation/feasibility study.

B3.0 ANALYTICAL RESULTS

The tables at the end of this appendix (B1-x, B2-x, B3-x, B4-x) list all of the chemical and radiochemical results obtained in response to DOE/RL-2001-65.

The "Sample Interval Depth" columns in these tables indicate the upper and lower bounds of the sample interval in feet bgs at which the sample was taken. The "Sample Interval Depth"

columns also designate the field quality control samples (field duplicate samples -"Dup," equipment blank samples - "Equip blank," and trip blank samples - "Trip blank").

Analyte names are given in the top row of each table. Below each analyte name are the U.S. Environmental Protection Agency method number(s) or brief descriptive name(s) of the analytical method(s) used for the analyte. The following analytical method numbers and terms/abbreviations are used in the Appendix B tables.

Table Features. (3 Pages)

Analytical Method/ Term/ Abbreviation	Definition	Reference
150.1	Determination of pH by electrometric measurement	EPA/600/4-79/020, *Methods of Chemical Analysis of Water and Wastes*
200.8	Determination of trace metal elements by inductive coupled plasma/mass spectrometry	EPA/600/4-91/010, *Methods for the Determination of Metals in Environmental Samples*
300.0	Determination of inorganic anions by ion chromatography	EPA/600/R-93/100, *Methods for the Determination of Inorganic Substances in Environmental Samples*
300.7	Determination of anions by chromatography method for anions	EPA/600/4-86/024, *Development of Standard Methods for the Collection and Analysis of Precipitation*
335.2	Determination of cyanide by titrimetric spectrophotometry	EPA/600/4-79/020, *Methods of Chemical Analysis of Water and Wastes*
353.2	Determination of nitrate-nitrite by automated colorimetry	EPA/600/R-93/100, *Methods for the Determination of Inorganic Substances in Environmental Samples*
413.1	Determination of oil and grease by total recoverable, spectrophotometric, infrared	EPA/600/4-79/020, *Methods of Chemical Analysis of Water and Wastes*
906	Determination of tritium in various matrices by liquid scintillation counting	EPA/600/4-80/032, *Prescribed Procedures for Measurement of Radioactivity in Drinking Water*
6010	Determination of metals and trace elements by inductive coupled plasma	SW-846, 1999, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update III-A*
7196	Determination of hexavalent chromium by automated colorimetry	SW-846, 1999, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update III-A*
7471	Determination of mercury by cold vapor atomic absorption	SW-846, 1999, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update III-A*
8015	Determination of nonhalogenated volatile organics by gas chromatography	SW-846, 1999, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update III-A*

Table Features. (3 Pages)

Analytical Method/ Term/ Abbreviation	Definition	Reference
8082	Determination of polychlorinated biphenyls by gas chromatography	SW-846, 1999, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update III-A*
8260	Determination of volatile organics by gas chromatography/mass spectrometry	SW-846, 1999, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update III-A*
8270	Determination of semivolatile organics by gas chromatography/mass spectrometry	SW-846, 1999, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update III-A*
9010	Determination of total and amenable cyanide by colorimetry	SW-846, 1999, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update III-A*
9045	Determination of pH	SW-846, 1999, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update III-A*
9071	Determination of oil and grease by solvent extraction	SW-846, 1999, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update III-A*
D422	Determination of soil particulate size	ASTM D422-63, 2002, *Standard Test Method for Particle-Size Analysis of Soils*
D2216	Determination of soil water content	ASTM D2216-98, 1998, *Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass*
D2937	Determination of soil density	ASTM D2937-001e1, 2000, *Standard Test Method for Density of Soil in Place by the Drive-Cylinder Method*
TPH	Total petroleum hydrocarbon	Ecology 97-602, *Analytical Methods for Petroleum Hydrocarbons*
WTPH-Diesel WTPH-Kerosene	Washington State method to determine total petroleum hydrocarbons, diesel range and kerosene range, by gas chromatography	Ecology 97-602, *Analytical Methods for Petroleum Hydrocarbons*
WTPH-Gasoline	Washington State method to determine total petroleum hydrocarbons, gasoline range, by gas chromatography	Ecology 97-602, *Analytical Methods for Petroleum Hydrocarbons*

The letters in the columns labeled "Q" are quality control flags affixed by the laboratories. The flags have the following meanings.

B: For organic analyses, indicates that the blank was contaminated with the analyte.

D: Analyte was identified in an analysis at the secondary dilution factor (i.e. dilution factor different than 1.0)

E: For inorganic analyses, result is an estimate because of interference.

J: Result is an estimate.

U: Analyte was undetected, with the indicated reporting limit.

Where more than one letter is used for a result, the meanings of the individual letters are combined.

Where validation qualifier flags were assigned by the data validator, they are entered in a separate column labeled "VQ." Where validation flags do not occur, this column is omitted. Validation flags have the following meanings.

J: Result is an estimate.

U: Analyte was undetected, with the indicated reporting limit.

R: Result is rejected for decision-making.

For radionuclide analysis, a column labeled "MDA" appears. This column gives the "minimum detectable activity," as reported by the laboratory.

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TERMS USED IN APPENDIX B TABLES

NOTE: This is an approximate list of the terms used in Appendix B Tables B1-x, B2-x, B3-x, B4-x. Capitalization of the terms in this list follows what appears in the tables, not what is industry correct.

AM	americium
C14	carbon-14
CM	curium
COX	combustion oxidation
CR6	chromium-6
CVAA	cold vapor atomic absorption
D422	ASTM D422-63, *Standard Test Method for Particle-Size Analysis of Soils*
D2216	ASTM D2216-98, *Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass*
D2937	ASTM D2937-001e1, *Standard Test Method for Density of Soil in Place by the Drive-Cylinder Method*
EBRLNE or EBR	Eberline Services, Inc., Richmond, California
ETVDSK	Eichrome (Industries) TEVA (filter) disk separation[1]
GPC	gas proportional counting
GS	gamma spectroscopy
H3	tritium
HG	mercury
I129	iodine-129
ICP	inductively coupled plasma
ICPMS	inductively coupled plasma mass spectrometry
IE	ion exchange
ISO	isotopic
KPA	kinetic phosphorescence analysis
LEPS	low-energy photon spectroscopy
LS	liquid scintillation
LSC	liquid scintillation counting
MDA	minimum detectable activity
NI63	nickel-63
NP237	neptunium-237
pH	acidity or alkalinity of an aqueous solution
PLATE	electroplated
PRECIP	precipitated
PU	plutonium
Q	laboratory data qualifier
RLNP	term for Lionville Laboratory, Inc., Exton, Pennsylvania
SEP	separation

[1] TEVA (filter) is a trademark of Eichrome Industries, Inc., Deerfield, Illinois.

Shaw	Shaw Group, Inc., Geotechnical Laboratory, Oak Ridge, Tennessee
SR	strontium
STLRL	Severn Trent Laboratories, Inc., Richland, Washington
STLSL	Severn Trent Laboratories, Inc., St. Louis, Missouri
SW864	SW-846, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update III-A*
TC99	technetium-99
TH	thorium
TOT	total
TR	trace
U	uranium
VQ	validation qualifier
WSCF	Waste Sampling and Characterization Facility, Richland, Washington
WTPH	Washington total petroleum hydrocarbon (Ecology 97-602, *Analytical Methods for Petroleum Hydrocarbons*)

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Table B1-1. Radiochemical Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Americium-241									Antimony-125			Carbon-14		
		AMCMISO_IE_PLATE EBRLNE			AMCMISO_IE_PRECIP WSCF			GAMMA EBRLNE			GAMMA WSCF			C14_COX_LSC EBRLNE		
		pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
13–15.5	B1B3R1				2.3		0.061				-0.009	U	0.093			
13–15.5	B1B3R3													0.266	U	4.6
17–19.5	B19PM5				0.62		0.045									
17–19.5	B19PM6 (dup)				0.58		0.05									
17–19.5	B19PP8															
17–19.5	B19PP9 (dup)															
19.5–22	B19PM7				0.39		0.051									
19.5–22	B19PT4 (split)	0.821		0.31					U	0.66						
19.5–22	B19PR0															
19.5–22	B19PT3 (split)															
22–24.5	B19PM8				0.0035	U	0.056									
22–24.5	B19PR1															
27–29.5	B19PM9				0.0088	U	0.035									
27–29.5	B19PR2															
47–49.5	B19PN0				0.005	U	0.04									
47–49.5	B19PR3															
110–112.5	B19PN1				-0.003	U	0.034									
110–112.5	B19PR4															
130–132.5	B19PN2				0.014	U	0.039									
130–132.5	B19PR5															
equip blank tied to B1B3R1	B1B3T0															
Target Quantitation Limit		1						N/A			N/A			N/A		

Table B1-1. Radiochemical Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Cesium-134			Cesium-137			Cobalt-60				Europium-152			Europium-154		
		GAMMA			GAMMA			GAMMA				GAMMA			GAMMA		
		WSCF			WSCF/EBRLNE			WSCF/EBRLNE				WSCF/EBRLNE			WSCF/EBRLNE		
		pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	VQ	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
13–15.5	B1B3R1	0.024	U	0.03	33.1		0.021	0.18			0.009	2.64		0.089	0.317		0.031
13–15.5	B1B3R3																
17–19.5	B19PM5				6.84		0.04	0.0634		J	0.027	4.68		0.12	0.508		0.083
17–19.5	B19PM6 (dup)				4.96		0.04	0.06		J	0.027	4.25		0.12	0.471		0.091
17–19.5	B19PP8																
17–19.5	B19PP9 (dup)																
19.5–22	B19PM7				3.36		0.035	0.0265		J	0.022	3.32		0.12	0.31		0.12
19.5–22	B19PT4 (split)				3.1		0.15		U		0.096	4.15		0.26	0.458		0.31
19.5–22	B19PR0																
19.5–22	B19PT3 (split)																
22–24.5	B19PM8				0.00254	U	0.011	0.063		J	0.01	0.0128	U	0.031	-0.0119	U	0.031
22–24.5	B19PR1																
27–29.5	B19PM9				-0.0048	U	0.035	0.0146	U	J	0.038	-0.0184	U	0.092	-0.062	U	0.11
27–29.5	B19PR2																
47–49.5	B19PN0				-0.003	U	0.008	-0.003	U		0.008	0.011	U	0.026	-0.009	U	0.029
47–49.5	B19PR3																
110–112.5	B19PN1				-0.008	U	0.009	-0.002	U		0.009	0.001	U	0.029	0.002	U	0.028
110–112.5	B19PR4																
130–132.5	B19PN2				-0.001	U	0.01	0.001	U		0.011	0.008	U	0.032	0.024	U	0.033
130–132.5	B19PR5																
equip blank tied to B1B3R1	B1B3T0																
Target Quantitation Limit		N/A			0.1			0.05				0.1			0.1		

Table B1-1. Radiochemical Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Europium-155			Gross Alpha			Gross Beta			Iodine-129			Neptunium-237		
		GAMMA			ALPHA_GPC			BETA_GPC			I129_SEP_LEPS_GS			NP237_IE_PRECIP		
		WSCF/EBRLNE			WSCF			WSCF			EBRLNE/STLRL			WSCF		
		pCi/g	Q	MDA	pCi/L	Q	MDA	pCi/L	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
13–15.5	B1B3R1	0.054	U	0.11										0.002	U	0.01
13–15.5	B1B3R3										-0.397	U	1.3			
17–19.5	B19PM5	0.0394	U	0.19												
17–19.5	B19PM6 (dup)	0.0192	U	0.16												
17–19.5	B19PP8										-0.104	U	1.7			
17–19.5	B19PP9 (dup)										0.497	U	1.1			
19.5–22	B19PM7	0.064	U	0.21												
19.5–22	B19PT4 (split)		U	0.34												
19.5–22	B19PR0										-0.798	U	4.4			
19.5–22	B19PT3 (split)										0.05	U	0.264			
22–24.5	B19PM8	0.033	U	0.044												
22–24.5	B19PR1										-0.109	U	1.2			
27–29.5	B19PM9	0.0012	U	0.11												
27–29.5	B19PR2										-0.373	U	1.4			
47–49.5	B19PN0	0.027		0.037												
47–49.5	B19PR3										-0.473	U	3.1			
110–112.5	B19PN1	0.052		0.042												
110–112.5	B19PR4										-0.231	U	1.2			
130–132.5	B19PN2	0.038		0.046												
130–132.5	B19PR5										-0.764	U	3.3			
equip blank tied to B1B3R1	B1B3T0				-0.35 (pCi/L)	U	1.1 (pCi/L)	0 (pCi/L)	U	0.89 (pCi/L)						
Target Quantitation Limit		0.1			N/A			N/A			2			1		

Table B1-1. Radiochemical Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Nickel-63			Plutonium-238							Plutonium-239/240					
		NI63_LSC			PUISO_IE_PRECIP				PUISO_PLATE			PUISO_IE_PRECIP			PUISO_PLATE		
		EBRLNE			WSCF				EBRLNE			WSCF			EBRLNE		
		pCi/g	Q	MDA	pCi/g	Q	VQ	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
13–15.5	B1B3R1				0.34			0.067				63		0.005			
13–15.5	B1B3R3	34.9		3.2													
17–19.5	B19PM5				0.08		J	0.07				9.6		0.025			
17–19.5	B19PM6 (dup)				0.09		J	0.049				8		0.013			
17–19.5	B19PP8																
17–19.5	B19PP9 (dup)																
19.5–22	B19PM7				0.043	U	J	0.063				5.4		0.006			
19.5–22	B19PT4 (split)								0.07	U	0.27				10		0.27
19.5–22	B19PR0																
19.5–22	B19PT3 (split)																
22–24.5	B19PM8				0.0019	U	J	0.045				0.032		0.017			
22–24.5	B19PR1																
27–29.5	B19PM9				0.024	U	J	0.043				0.0048	U	0.017			
27–29.5	B19PR2																
47–49.5	B19PN0				-0.005	U		0.049				0.019		0.005			
47–49.5	B19PR3																
110–112.5	B19PN1				-0.004	U		0.063				0.012	U	0.019			
110–112.5	B19PR4																
130–132.5	B19PN2				-0.024	U		0.051				0.003	U	0.012			
130–132.5	B19PR5																
equip blank tied to B1B3R1	B1B3T0																
Target Quantitation Limit		30			1							1					

Table B1-1. Radiochemical Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Potassium-40 GAMMA EBRLNE			Radium-226 GAMMA WSCF/EBRLNE			Radium-228 GAMMA WSCF/EBRLNE			Technetium-99 TC99_TR_SEP EBRLNE		
		pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
13–15.5	B1B3R1				0.395		0.044	0.463		0.041			
13–15.5	B1B3R3										0.412	U	0.62
17–19.5	B19PM5												
17–19.5	B19PM6 (dup)												
17–19.5	B19PP8										0.096	U	0.55
17–19.5	B19PP9 (dup)										0.113	U	0.55
19.5–22	B19PM7												
19.5–22	B19PT4 (split)	9.78		0.85	0.382		0.2	0.587		0.44			
19.5–22	B19PR0										0.046	U	0.57
19.5–22	B19PT3 (split)										0.244	U	0.588
22–24.5	B19PM8												
22–24.5	B19PR1										0.065	U	0.57
27–29.5	B19PM9												
27–29.5	B19PR2										0.008	U	0.55
47–49.5	B19PN0												
47–49.5	B19PR3										0.078	U	0.55
110–112.5	B19PN1												
110–112.5	B19PR4										0.007	U	0.34
130–132.5	B19PN2												
130–132.5	B19PR5										0.156	U	0.56
equip blank tied to B1B3R1	B1B3T0												
Target Quantitation Limit		N/A			N/A			N/A			15		

Table B1-1. Radiochemical Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Thorium-228						Thorium-230			Thorium-232					
		GAMMA			THISO_IE_PLATE_AEA			THISO_IE_PLATE			GAMMA			THISO_IE_PLATE_A		
		EBRLNE			EBRLNE			EBRLNE			EBRLNE			EBRLNE		
		pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
13–15.5	B1B3R1															
13–15.5	B1B3R3				0.83		0.082	0.067	U	0.22				0.47		0.058
17–19.5	B19PM5															
17–19.5	B19PM6 (dup)															
17–19.5	B19PP8															
17–19.5	B19PP9 (dup)															
19.5–22	B19PM7															
19.5–22	B19PT4 (split)	0.539		0.13							0.587		0.44			
19.5–22	B19PR0															
19.5–22	B19PT3 (split)															
22–24.5	B19PM8															
22–24.5	B19PR1															
27–29.5	B19PM9															
27–29.5	B19PR2															
47–49.5	B19PN0															
47–49.5	B19PR3															
110–112.5	B19PN1															
110–112.5	B19PR4															
130–132.5	B19PN2															
130–132.5	B19PR5															
equip blank tied to B1B3R1	B1B3T0															
Target Quantitation Limit		N/A			N/A			N/A			N/A			1		

Table B1-1. Radiochemical Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Total beta radiostrontium			Tritium			Uranium			Uranium-233/234						
		SRTOT_SEP_PRECIP			906			UTOT_KPA			UISO_IE_PRECIP				UISO_PLATE		
		WSCF/EBRLNE			EBRLNE			EBRLNE			WSCF				EBRLNE		
		pCi/g	Q	MDA	pCi/g	Q	MDA	µg/kg	Q	MDA	pCi/g	Q	VQ	MDA	pCi/g	Q	MDA
13–15.5	B1B3R1	49		0.3							0.94			0.016			
13–15.5	B1B3R3				0.061	U	0.5										
17–19.5	B19PM5	18		0.3							0.78		J	0.019			
17–19.5	B19PM6 (dup)	17		0.3							0.4		J	0.004			
17–19.5	B19PP8				0.16	U	0.26										
17–19.5	B19PP9 (dup)				0.223	U	0.24										
19.5–22	B19PM7	9.7		0.3							0.39		J	0.014			
19.5–22	B19PT4 (split)	22.3		0.34				1700		7					1.03		0.13
19.5–22	B19PR0				0.109	U	0.26										
19.5–22	B19PT3 (split)				0.094		0.055										
22–24.5	B19PM8	1.6		0.4							0.23		J	0.013			
22–24.5	B19PR1				0.116	U	0.25										
27–29.5	B19PM9	-0.05	U	0.2							0.14		J	0.011			
27–29.5	B19PR2				0.03	U	0.25										
47–49.5	B19PN0	-0.13	U	0.25							0.13			0.005			
47–49.5	B19PR3				-0.029	U	0.24										
110–112.5	B19PN1	-0.056	U	0.2							0.17			0.005			
110–112.5	B19PR4				0.05	U	0.26										
130–132.5	B19PN2	-0.081	U	0.2							0.14			0.004			
130–132.5	B19PR5				0.019	U	0.25										
equip blank tied to B1B3R1	B1B3T0																
Target Quantitation Limit		1			400			N/A			1						

Table B1-1. Radiochemical Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Uranium-235										Uranium-238								
		GAMMA EBRLNE			UISO_IE_PRECIP WSCF				UISO_PLATE EBRLNE			GAMMA EBRLNE			UISO_IE_PRECIP WSCF			UISO_PLATE EBRLNE		
		pCi/g	Q	MDA	pCi/g	Q	VQ	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
13–15.5	B1B3R1				0.084			0.006							0.8		0.016			
13–15.5	B1B3R3																			
17–19.5	B19PM5				0.051		J	0.021							0.79		0.007			
17–19.5	B19PM6 (dup)				0.024		J	0.005							0.46		0.004			
17–19.5	B19PP8																			
17–19.5	B19PP9 (dup)																			
19.5–22	B19PM7				0.041		J	0.006							0.39		0.005			
19.5–22	B19PT4 (split)		U	0.42					0.085	U	0.16		U	14				0.682		0.13
19.5–22	B19PR0																			
19.5–22	B19PT3 (split)																			
22–24.5	B19PM8				0.016		J	0.006							0.21		0.005			
22–24.5	B19PR1																			
27–29.5	B19PM9				0.013		J	0.005							0.2		0.004			
27–29.5	B19PR2																			
47–49.5	B19PN0				0.023			0.006							0.16		0.005			
47–49.5	B19PR3																			
110–112.5	B19PN1				0.013			0.006							0.16		0.005			
110–112.5	B19PR4																			
130–132.5	B19PN2				0.015			0.005							0.12		0.011			
130–132.5	B19PR5																			
equip blank tied to B1B3R1	B1B3T0																			
Target Quantitation Limit		N/A			1							N/A			1					

Table B1-2. Metals Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Antimony		Arsenic		Barium		Beryllium		Bismuth		Boron		Cadmium			
		ICPMS		ICPMS		ICPMS		ICPMS		ICP		ICP		ICPMS		ICP	
		WSCF		WSCF		WSCF		WSCF		WSCF		WSCF		WSCF		RLNP	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
13–15.5	B1B3R1	7130	U	4630		90100		390		2150	U	2540	U	1630			
13–15.5	B1B3R3																
17–19.5	B19PM5													892			
17–19.5	B19PM6 (dup)													678			
17–19.5	B19PP8																
17–19.5	B19PP9 (dup)																
19.5–22	B19PM7													932			
19.5–22	B19PT4 (split)															630	
19.5–22	B19PR0																
19.5–22	B19PT3 (split)																
22–24.5	B19PM8													740			
22–24.5	B19PR1																
27–29.5	B19PM9													55			
27–29.5	B19PR2																
47–49.5	B19PN0													993	U		
47–49.5	B19PR3																
110–112.5	B19PN1													1000	U		
110–112.5	B19PR4																
130–132.5	B19PN2													991	U		
130–132.5	B19PR5																
equip blank tied to B1B3R1	B1B3T0													0.1 (µg/L)	U		
Target Quantitation Limit		6000		10000		20000		500		10000		N/A		500			

Table B1-2. Metals Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Chromium					Copper				Hexavalent Chromium		Lead				Mercury			
		ICPMS WSCF		ICP RLNP			ICPMS WSCF		ICP RNLP		7196_CR6 RNLP/STLSL		ICPMS WSCF		ICP RLNP		ICPMS WSCF		CVAA RLNP	
		µg/kg	Q	µg/L	Q	VQ	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/L	Q	µg/kg	Q	µg/kg	Q
13–15.5	B1B3R1	33700					21000						30700				1030			
13–15.5	B1B3R3										210	U								
17–19.5	B19PM5	17400					18000						19000				412			
17–19.5	B19PM6 (dup)	18500					16000						16200				525			
17–19.5	B19PP8										210	U							50	
17–19.5	B19PP9 (dup)										200	U								
19.5–22	B19PM7	20700					26300						19600				323			
19.5–22	B19PT4 (split)			24400		J			30800						17000					
19.5–22	B19PR0										210	U								
19.5–22	B19PT3 (split)										469									
22–24.5	B19PM8	12400					14700						3210				192			
22–24.5	B19PR1										210	U								
27–29.5	B19PM9	19000					10300						3480				171			
27–29.5	B19PR2										220									
47–49.5	B19PN0	14500					13100						11900	U			993	U		
47–49.5	B19PR3										210	U								
110–112.5	B19PN1	8250					12200						12000	U			1000	U		
110–112.5	B19PR4										210	U								
130–132.5	B19PN2	9240					11200						11900	U			991	U		
130–132.5	B19PR5										210	U								
equip blank tied to B1B3R1	B1B3T0	1.99 (µg/L)	C				1.69 (µg/L)						1.2 (µg/L)	U						
Target Quantitation Limit		1000					2500				500		10000				N/A		200	

Table B1-2. Metals Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Nickel ICPMS WSCF µg/kg	Q	Selenium ICPMS WSCF µg/kg	Q	Silver ICPMS WSCF µg/kg	Q	Silver ICP RLNP µg/kg	Q	Uranium ICPMS WSCF µg/kg	Q
13–15.5	B1B3R1	20600		933		341					
13–15.5	B1B3R3										
17–19.5	B19PM5					113				1600	
17–19.5	B19PM6 (dup)					203				1450	
17–19.5	B19PP8										
17–19.5	B19PP9 (dup)										
19.5–22	B19PM7					92.7				1550	
19.5–22	B19PT4 (split)							50	U		
19.5–22	B19PR0										
19.5–22	B19PT3 (split)										
22–24.5	B19PM8					10.1	U			625	
22–24.5	B19PR1										
27–29.5	B19PM9					71.4				592	
27–29.5	B19PR2										
47–49.5	B19PN0					1990	U			993	U
47–49.5	B19PR3										
110–112.5	B19PN1					2000	U			1000	U
110–112.5	B19PR4										
130–132.5	B19PN2					1980	U			991	U
130–132.5	B19PR5										
equip blank tied to B1B3R1	B1B3T0					0.2 (µg/L)	U				
Target Quantitation Limit		4000		10000		2000				1000	

Table B1-3. Wet Chemistry Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Ammonium Ion		Cyanide			Fluoride			Nitrate		Nitrite		Nitrogen in Nitrite and Nitrate		
		300.7		335.2			300			300		300		353.2		
		WSCF		WSCF			WSCF/RLNP			WSCF/RLNP		WSCF/RLNP		RLNP		
		µg/kg	Q	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	µg/kg	Q	µg/kg	Q	VQ
13–15.5	B1B3R1	3640		200	U		5990			254000	E	3120	U			
13–15.5	B1B3R3													66400		
17–19.5	B19PM5			200	U	J	5170	B		187000		3120	U			
17–19.5	B19PM6 (dup)			200	U	J	6460	B		191000		3120	U			
17–19.5	B19PP8													42700		J
17–19.5	B19PP9 (dup)													43200		J
19.5–22	B19PM7			200	U	J	4590	B		157000		3120	U			
19.5–22	B19PT3													27	U	
19.5–22	B19PT4 (split)			510	U		13000	U	J	187000		1300	U			
19.5–22	B19PR0													42900		J
22–24.5	B19PM8			200	U	J	1150	U		63700		3120	U			
22–24.5	B19PR1													19000		J
27–29.5	B19PM9			200	U	J	1150	U		19700	B	3120	U			
27–29.5	B19PR2													2600		J
47–49.5	B19PN0			200	U		1130	U		17500	B	3060	U			
47–49.5	B19PR3													2100		
110–112.5	B19PN1			200	U		1150	U		24800		3120	U			
110–112.5	B19PR4													4100		
130–132.5	B19PN2			200	U		1150	U		46900		3120	U			
130–132.5	B19PR5													8800		
equip blank tied to B1B3R1	B1B3T0						18 (µg/L)	U		97.4 (µg/L)	U	19.7 (µg/L)	U			
equip blank tied to B1B3R3	B1B3T1													100 (µg/L)	D	
Target Quantitation Limit		N/A		500			5000			2500		2500		N/A		

Table B1-3. Wet Chemistry Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	pH						Phosphate		Sulfate		
		4095			150.1			300		300		
		RLNP			WSCF			WSCF/RLNP		WSCF/RLNP		
		ph	Q	VQ	ph	Q	VQ	µg/kg	Q	µg/kg	Q	VQ
13–15.5	B1B3R1				7.92			31600	E	159000		
13–15.5	B1B3R3											
17–19.5	B19PM5				7.85		J	30700	B	135000		
17–19.5	B19PM6 (dup)				7.98		J	38300	B	143000		
17–19.5	B19PP8											
17–19.5	B19PP9 (dup)											
19.5–22	B19PM7				7.91		J	33100	B	118000		
19.5–22	B19PT3											
19.5–22	B19PT4 (split)	7.8		J				8300		145000		J
19.5–22	B19PR0											
22–24.5	B19PM8				8.95		J	28600	B	45200		
22–24.5	B19PR1											
27–29.5	B19PM9				9.22		J	8280	U	110000		
27–29.5	B19PR2											
47–49.5	B19PN0				8.94			8130	U	52000		
47–49.5	B19PR3											
110–112.5	B19PN1				8.66			8280	U	56700		
110–112.5	B19PR4											
130–132.5	B19PN2				8.96			8280	U	5000	U	
130–132.5	B19PR5											
equip blank tied to B1B3R1	B1B3T0							239 (µg/L)	U	150 (µg/L)	U	
equip blank tied to B1B3R3	B1B3T1											
Target Quantitation Limit		N/A						5000		5000		

Table B1-4. Volatile Organic Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	1,1,1-Trichloroethane		1,1,2,2-Tetrachloroethane		1,1,2-Trichloroethane		1,1-Dichloroethane		1,1-Dichloroethene		1,2-Dichloroethane		1,2-Dichloroethene (Total)	
		8260		8260		8260		8260		8260		8260		8260	
		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
13–15.5	B1B3R1	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
17–19.5	B19PM5	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
17–19.5	B19PM6 (dup)	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
19.5–22	B19PM7	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
19.5–22	B19PT4 (split)	6	U	6	U	6	U	6	U	6	U	6	U	6	U
22 – 24.5	B19PM8	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
27–29.5	B19PM9	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
47–49.5	B19PN0	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
110–112.5	B19PN1	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
130–132.5	B19PN2	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
equip blank tied to B1B3R1	B1B3T0	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
trip blank tied to B19PN2	B1B3T2	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
Target Quantitation Limit		5		N/A		5		10		N/A		5		10	

Table B1-4. Volatile Organic Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	1,2-Dichloropropane		1-Butanol					2-Butanone		2-Hexanone		4-Methyl-2-Pentanone		Acetone	
		8260		8015			8260		8260		8260		8260		8260	
		WSCF/RLNP		RLNP			WSCF		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	VQ	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
13–15.5	B1B3R1	2.1	U				42	U	2.1	U	2.1	U	2.1	U	2.1	U
17–19.5	B19PM5	2.1	U				42	U	2.1	U	2.1	U	2.1	U	2.1	U
17–19.5	B19PM6 (dup)	2.1	U				42	U	2.1	U	2.1	U	2.1	U	2.1	U
19.5–22	B19PM7	2.1	U				42	U	2.1	U	2.1	U	2.1	U	2.1	U
19.5–22	B19PT4 (split)	6	U	4800	U	J			11	U	11	U	11	U	10	J
22 – 24.5	B19PM8	2.1	U				42	U	2.1	U	2.1	U	2.1	U	2.1	U
27–29.5	B19PM9	2.1	U				42	U	2.1	U	2.1	U	2.1	U	2.1	U
47–49.5	B19PN0	2.1	U				42	U	2.1	U	2.1	U	2.1	U	2.1	U
110–112.5	B19PN1	2.1	U				43	U	2.1	U	2.1	U	2.1	U	2.1	U
130–132.5	B19PN2	2.1	U				42	U	2.1	U	2.1	U	2.1	U	2.1	U
equip blank tied to B1B3R1	B1B3T0	1 (µg/L)	U				20 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
trip blank tied to B19PN2	B1B3T2	1 (µg/L)	U				20 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	31 (µg/L)	
Target Quantitation Limit		N/A		5000			N/A		10		N/A		10		20	

Table B1-4. Volatile Organic Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Benzene		Bromodichloro-methane		Bromoform		Bromomethane		Carbon disulfide		Carbon tetrachloride		Chlorobenzene	
		8260		8260		8260		8260		8260		8260		8260	
		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
13–15.5	B1B3R1	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
17–19.5	B19PM5	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
17–19.5	B19PM6 (dup)	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
19.5–22	B19PM7	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
19.5–22	B19PT4 (split)	6	U	6	U	6	U	11	U	6	U	6	U	6	U
22 – 24.5	B19PM8	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
27–29.5	B19PM9	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
47–49.5	B19PN0	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
110–112.5	B19PN1	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
130–132.5	B19PN2	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
equip blank tied to B1B3R1	B1B3T0	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
trip blank tied to B19PN2	B1B3T2	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
Target Quantitation Limit		5		N/A		N/A		N/A		N/A		5		5	

Table B1-4. Volatile Organic Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Chloroethane		Chloroform		Chloromethane		cis-1,2-Dichloroethylene		cis-1,3-Dichloropropene		Dibromochloro-methane		Ethylbenzene	
		8260		8260		8260		8260		8260		8260		8260	
		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
13–15.5	B1B3R1	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
17–19.5	B19PM5	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
17–19.5	B19PM6 (dup)	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
19.5–22	B19PM7	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
19.5–22	B19PT4 (split)	11	U	6	U	11	U	6	U	6	U	6	U	6	U
22 – 24.5	B19PM8	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
27–29.5	B19PM9	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
47–49.5	B19PN0	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
110–112.5	B19PN1	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
130–132.5	B19PN2	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
equip blank tied to B1B3R1	B1B3T0	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
trip blank tied to B19PN2	B1B3T2	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
Target Quantitation Limit		N/A		5		N/A		1		N/A		N/A		5	

Table B1-4. Volatile Organic Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Methylene chloride 8260 WSCF/RLNP µg/kg	Q	VQ	n-Butylbenzene 8260 WSCF/RLNP µg/kg	Q	Styrene 8260 WSCF/RLNP µg/kg	Q	Tetrachloro-ethene 8260 WSCF/RLNP µg/kg	Q	Toluene 8260 WSCF/RLNP µg/kg	Q	trans-1,2-Dichloroethylene 8260 WSCF/RLNP µg/kg	Q	trans-1,3-Dichloropropene 8260 WSCF/RLNP µg/kg	Q
13–15.5	B1B3R1	2.1	U		2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
17–19.5	B19PM5	2.1	U		2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
17–19.5	B19PM6 (dup)	2.1	U		2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
19.5–22	B19PM7	2.1	U		2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
19.5–22	B19PT4 (split)	15	B	U	6	U	6	U	6	U	6	U	6	U	6	U
22 – 24.5	B19PM8	2.1	U		2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
27–29.5	B19PM9	2.1	U		2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
47–49.5	B19PN0	2.1	U		2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
110–112.5	B19PN1	2.1	U		2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
130–132.5	B19PN2	2.1	U		2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
equip blank tied to B1B3R1	B1B3T0	1 (µg/L)	U		1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
trip blank tied to B19PN2	B1B3T2	1 (µg/L)	U		1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
Target Quantitation Limit		5			5		N/A		5		5		1		N/A	

Table B1-4. Volatile Organic Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Trichloro-ethene		Vinyl chloride		Xylenes (total)	
		8260		8260		8260	
		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	µg/kg	Q
13–15.5	B1B3R1	2.1	U	2.1	U	2.1	U
17–19.5	B19PM5	2.1	U	2.1	U	2.1	U
17–19.5	B19PM6 (dup)	2.1	U	2.1	U	2.1	U
19.5–22	B19PM7	2.1	U	2.1	U	2.1	U
19.5–22	B19PT4 (split)	6	U	11	U	6	U
22 – 24.5	B19PM8	2.1	U	2.1	U	2.1	U
27–29.5	B19PM9	2.1	U	2.1	U	2.1	U
47–49.5	B19PN0	2.1	U	2.1	U	2.1	U
110–112.5	B19PN1	2.1	U	2.1	U	2.1	U
130–132.5	B19PN2	2.1	U	2.1	U	2.1	U
equip blank tied to B1B3R1	B1B3T0	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
trip blank tied to B19PN2	B1B3T2	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
Target Quantitation Limit		5		N/A		5	

Table B1-5. Semivolatile Organic Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	1,2,4-Trichlorobenzene		1,4-Dichlorobenzene		2,4-Dinitrotoluene		2-Chlorophenol		4-Chloro-3-methylphenol		4-Nitrophenol	
		8270		8270		8270		8270		8270		8270	
		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
13–15.5	B1B3R1	310	U	330	U	70	U	150	U	70	U	1100	J
17–19.5	B19PM5	310	U	330	U	69	U	150	U	69	U	670	U
17–19.5	B19PM6 (dup)	300	U	330	U	69	U	150	U	69	U	670	U
19.5–22	B19PM7	310	U	330	U	69	U	150	U	69	U	670	U
19.5–22	B19PT4 (split)	350	U	350	U	350	U	350	U	350	U	860	U
22 – 24.5	B19PM8	310	U	330	U	70	U	150	U	70	U	680	U
27–29.5	B19PM9	310	U	330	U	70	U	150	U	70	U	680	U
47–49.5	B19PN0	190	U	280	U	110	U	160	U	97	U	180	U
110–112.5	B19PN1	190	U	280	U	110	U	160	U	99	U	180	U
130 – 132.5	B19PN2	190	U	280	U	110	U	160	U	97	U	180	U
equip blank tied to B1B3R1	B1B3T0	2.9 (µg/L)	U	4.8 (µg/L)	U	1.7 (µg/L)	U	1.6 (µg/L)	U	1.2 (µg/L)	U	1.3 (µg/L)	U
Target Quantitation Limit		N/A		N/A		N/A		N/A		N/A		N/A	

Table B1-5. Semivolatile Organic Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Acenaphthene		Diethylphthalate		bis (2-ethylhexyl) phthalate			Di-n-butylphthalate			N-Nitrosodi-n-dipropylamine		Penta-chlorophenol	
		8270		8270		8270			8270			8270		8270	
		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP			WSCF/RLNP			WSCF/RLNP		WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	µg/kg	Q
13–15.5	B1B3R1	70	U						110			70	U	320	U
17–19.5	B19PM5	69	U	200					280			69	U	310	U
17–19.5	B19PM6 (dup)	69	U	320					340			69	U	310	U
19.5–22	B19PM7	69	U	370					180			69	U	310	U
19.5–22	B19PT4 (split)	350	U	350	U	76	JB	J	20	JB	J	350	U	860	U
22 – 24.5	B19PM8	70	U	310					160			70	U	320	U
27–29.5	B19PM9	70	U	200					210			70	U	320	U
47–49.5	B19PN0	140	U						360			160	U	150	U
110–112.5	B19PN1	150	U									160	U	150	U
130 – 132.5	B19PN2	140	U									150	U	150	U
equip blank tied to B1B3R1	B1B3T0	2.3 (µg/L)	U	2.9 (µg/L)	J							1.6 (µg/L)	U	1.6 (µg/L)	U
Target Quantitation Limit		N/A		N/A		N/A			N/A			N/A		N/A	

Table B1-5. Semivolatile Organic Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Phenol		Pyrene		Tributyl phosphate	
		8270		8270		8270	
		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	µg/kg	Q
13–15.5	B1B3R1	110	U	70	U	70	U
17–19.5	B19PM5	100	U	69	U	69	U
17–19.5	B19PM6 (dup)	100	U	69	U	69	U
19.5–22	B19PM7	100	U	69	U	69	U
19.5–22	B19PT4 (split)	350	U	350	U	350	U
22 – 24.5	B19PM8	110	U	70	U	70	U
27–29.5	B19PM9	110	U	70	U	70	U
47–49.5	B19PN0	140	U	160	U	150	U
110–112.5	B19PN1	150	U	170	U	150	U
130 – 132.5	B19PN2	140	U	160	U	150	U
equip blank tied to B1B3R1	B1B3T0	1.6 (µg/L)	U	2 (µg/L)	U	2.4 (µg/L)	U
Target Quantitation Limit		330		N/A		3300	

Table B1-6. Miscellaneous Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Aroclor-1016			Aroclor-1221			Aroclor-1232			Aroclor-1242			Aroclor-1248			Aroclor-1254		
		8082			8082			8082			8082			8082			8082		
		WSCF/RLNP			WSCF/RLNP			WSCF/RLNP			WSCF/RLNP			WSCF/RLNP			WSCF/RLNP		
		µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ
13–15.5	B1B3R1	510	U		1000	U		510	U		510	U		510	U		9400		
13–15.5	B1B3R3																		
17–19.5	B19PM5	260	U		510	U		260	U		260	U		260	U		2800		
17–19.5	B19PM6 (dup)	200	U		410	U		200	U		200	U		200	U		3000		
17–19.5	B19PP8																		
17–19.5	B19PP9 (dup)																		
19.5–22	B19PT3																		
19.5–22	B19PM7	200	U		400	U		200	U		200	U		200	U	J	2800		J
19.5–22	B19PT4 (split)	280	U	J	280	U	J	280	U	J	280	U	J	280	U	J	1100		J
19.5–22	B19PR0																		
22–24.5	B19PM8	52	U		100	U		52	U		52	U		52	U		410		
22–24.5	B19PR1																		
27–29.5	B19PM9	52	U		100	U		52	U		52	U		52	U		52	U	
27–29.5	B19PR2																		
47–49.5	B19PN0	50	U		100	U		50	U		50	U		50	U		50	U	
47–49.5	B19PR3																		
110–112.5	B19PN1	53	U		110	U		53	U		53	U		53	U		53	U	
110–112.5	B19PR4																		
130–132.5	B19PN2	50	U		100	U		50	U		50	U		50	U		50	U	
130–132.5	B19PR5																		
Target Quantitation Limit		16.5			16.5			16.5			16.5			16.5			16.5		

Table B1-6. Miscellaneous Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Aroclor-1260			Aroclor-1262			Aroclor-1268		
		8082			8082			8082		
		WSCF/RLNP			WSCF			WSCF		
		µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ
13–15.5	B1B3R1	3900			510	U		510	U	
13–15.5	B1B3R3									
17–19.5	B19PM5	1200			260	U		260	U	
17–19.5	B19PM6 (dup)	1100			200	U		200	U	
17–19.5	B19PP8									
17–19.5	B19PP9 (dup)									
19.5–22	B19PT3									
19.5–22	B19PM7	1100			200	U		200	U	
19.5–22	B19PT4 (split)	280	U	J						
19.5–22	B19PR0									
22–24.5	B19PM8	160			52	U		52	U	
22–24.5	B19PR1									
27–29.5	B19PM9	52	U		52	U		52	U	
27–29.5	B19PR2									
47–49.5	B19PN0	50	U		50	U		50	U	
47–49.5	B19PR3									
110–112.5	B19PN1	53	U		53	U		53	U	
110–112.5	B19PR4									
130–132.5	B19PN2	50	U		50	U		50	U	
130–132.5	B19PR5									
Target Quantitation Limit		16.5			16.5			16.5		

Table B1-6. Miscellaneous Analysis Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Oil and Grease		Total petroleum hydrocarbons– diesel range			gasoline range		kerosene range			motor oil (high boiling)	
		413.1		WTPH_DIESEL			WTPH_GASOLINE		WTPH_DIESEL			WTPH_DIESEL	
		RLNP		WSCF/RLNP			WSCF/RLNP		WSCF/RLNP			WSCF	
		µg/kg	Q	µg/kg	Q	VQ	µg/kg	Q	µg/kg	Q	VQ	µg/kg	Q
13–15.5	B1B3R1			6600	U		250	U	6600	U		570000	
13–15.5	B1B3R3	842000											
17–19.5	B19PM5			3900	U		250	U	3900	U		230000	
17–19.5	B19PM6 (dup)			3900	U		250	U	3900	U		180000	
17–19.5	B19PP8	689000	U										
17–19.5	B19PP9 (dup)	678000	U										
19.5–22	B19PT3	101000	B										
19.5–22	B19PM7			4000	U		250	U	4000	U		160000	
19.5–22	B19PT4 (split)			130	U	J	28	U	76	U	J		
19.5–22	B19PR0	688000	U										
22–24.5	B19PM8			4000	U		250	U	4000	U			
22–24.5	B19PR1	688000	U										
27–29.5	B19PM9			4000	U		250	U	4000	U			
27–29.5	B19PR2	689000	U										
47–49.5	B19PN0			3900	U		250	U	3900	U			
47–49.5	B19PR3	691000	U										
110–112.5	B19PN1			4000	U		250	U	4000	U			
110–112.5	B19PR4	712000	U										
130–132.5	B19PN2			3900	U		250	U	3900	U			
130–132.5	B19PR5	694000	U										
Target Quantitation Limit		200000		5000			5000		5000			5000	

Table B1-7. Physical Properties Results for Borehole C4738 (216-T-33 Crib) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Density		% Moisture		Particle Size											
		Shaw		Shaw		Shaw											
		D2937_DENSITY		D2216_%	SW846	D422_PARTCLE SIZE											
		kg/m^3		moisture	moisture	Percent passing sieve sized											
		Dry	Wet	dry sample	wet sample	3 in	1.5 in	3/4 in	3/8 in	No.4	No.10	No.20	No.40	No.60	No.100	No.140	No.200
22–24.5	B19PR9	2276	2369	5.5	5.2	100.0	91.0	80.1	68.8	44.3	30.8	18.6	10.2	6.8	4.8	4.0	3.2
110–112.5	B19PT0	1568	1689	6.8	6.4	100.0	100.0	100.0	99.4	98.6	97.6	95.8	91.6	87.5	79.5	73.8	62.3
130–132.5	B19PT1	1664	1742	4.1	3.9	100.0	100.0	100.0	100.0	100.0	100.0	99.5	76.5	50.8	37.0	27.1	13.4

Table B2-1. Radiochemical Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Americium-241										Antimony-125			Carbon-14		
		AMCMISO_IE_PLATE			AMCMISO_IE_PRECIP				GAMMA			GAMMA			C14_COX_LSC		
		EBRLNE			WSCF				EBRLNE			WSCF			EBRLNE		
		pCi/g	Q	MDA	pCi/g	Q	VQ	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
13–15.5	B19974				0.016	U		0.018				0.001	U	0.024			
13–15.5	B19976														-0.412	U	2.3
17–19.5	B19939				0.036		J	0.013									
17–19.5	B19940 (dup)				0.028		J	0.013									
17–19.5	B19960																
17–19.5	B19961 (dup)																
22–24.5	B19941				0.048			0.013									
22–24.5	B19PT5 (split)	0	U	0.21						U	0.12						
22–24.5	B19962																
22–24.5	B19969 (split)																
35–37.5	B19942				0.043			0.015									
35–37.5	B19963																
47–49.5	B19943				0.033			0.016									
47–49.5	B19964																
97–99.5	B19944				0.032			0.02									
97–99.5	B19965																
127–129.5	B19945				0.02	U		0.032									
127–129.5	B19966																
equip blank tied to B19974	B19935																
Target Quantitation Limit		1							N/A			N/A			50		

Table B2-1. Radiochemical Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Cesium-134 GAMMA WSCF			Cesium-137 GAMMA WSCF/EBRLNE			Cobalt-60 GAMMA WSCF/EBRLNE			Europium-152 GAMMA WSCF/EBRLNE			Europium-154 GAMMA WSCF/EBRLNE			Europium-155 GAMMA WSCF/EBRLNE		
		pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
13–15.5	B19974	0.02	U	0.02	-0.001	U	0.009	0	U	0.009	-0.028	U	0.026	-0.016	U	0.028	0.005	U	0.041
13–15.5	B19976																		
17–19.5	B19939				0.0003	U	0.008	0.001	U	0.008	-0.01	U	0.025	0.003	U	0.026	0.024		0.036
17–19.5	B19940 (dup)				0.004	U	0.016	0.003	U	0.015	9E-05	U	0.042	0.024	U	0.051	0.034	U	0.05
17–19.5	B19960																		
17–19.5	B19961 (dup)																		
22–24.5	B19941				0.003	U	0.012	0.002	U	0.012	-0.03	U	0.032	-0.022	U	0.038	0.021	U	0.05
22–24.5	B19PT5 (split)					U	0.026		U	0.027		U	0.068		U	0.083		U	0.075
22–24.5	B19962																		
22–24.5	B19969 (split)																		
35–37.5	B19942				-0.001	U	0.011	0.011		0.012	-0.022	U	0.03	-0.006	U	0.036	0.034	U	0.04
35–37.5	B19963																		
47–49.5	B19943				0.007	U	0.01	0.005	U	0.01	0.01	U	0.029	0.002	U	0.031	0.033	U	0.042
47–49.5	B19964																		
97–99.5	B19944				0.004	U	0.014	0.001	U	0.014	-0.047	U	0.038	-0.001	U	0.045	0.011	U	0.058
97–99.5	B19965																		
127–129.5	B19945				0	U	0.012	-0.006	U	0.011	-0.008	U	0.035	-0.029	U	0.038	0.052		0.052
127–129.5	B19966																		
equip blank tied to B19974	B19935																		
Target Quantitation Limit		N/A			0.1			0.05			0.1			0.1			0.1		

Table B2-1. Radiochemical Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Gross Alpha			Gross Beta			Iodine-129			Neptunium-237			Nickel-63		
		ALPHA_GPC			BETA_GPC			I129_SEP_LEPS_GS			NP237_IE_PRECIP			NI63_LSC		
		WSCF			WSCF			EBRLNE/STLSL			WSCF			EBRLNE		
		pCi/L	Q	MDA	pCi/L	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
13–15.5	B19974										-0.003	U	0.012			
13–15.5	B19976							-0.172	U	1.2				1.16	U	3.8
17–19.5	B19939															
17–19.5	B19940 (dup)															
17–19.5	B19960							-0.336	U	1.9						
17–19.5	B19961 (dup)							0.527	U	1.2						
22–24.5	B19941															
22–24.5	B19PT5 (split)															
22–24.5	B19962							-0.258	U	1.4						
22–24.5	B19969 (split)							0.197	U	0.811						
35–37.5	B19942															
35–37.5	B19963							0.034	U	1						
47–49.5	B19943															
47–49.5	B19964							0.533	U	3.3						
97–99.5	B19944															
97–99.5	B19965							-0.146	U	2.3						
127–129.5	B19945															
127–129.5	B19966							-0.099	U	1.1						
equip blank tied to B19974	B19935	0.09 (pCi/L)	U	0.9 (pCi/L)	1.5 (pCi/L)		0.86 (pCi/L)									
Target Quantitation Limit		N/A			N/A			2			1			30		

Table B2-1. Radiochemical Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Plutonium-238							Plutonium-239/240						Potassium-40		
		PUISO_IE_PRECIP				PUISO_PLATE			PUISO_IE_PRECIP			PUISO_PLATE			GAMMA		
		WSCF				EBRLNE			WSCF			EBRLNE			EBRLNE		
		pCi/g	Q	VQ	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
13–15.5	B19974	-0.004	U		0.046				0.004	U	0.015						
13–15.5	B19976																
17–19.5	B19939	-0.011	U	J	0.065				0.009	U	0.02						
17–19.5	B19940 (dup)	-0.006	U	J	0.043				0.002	U	0.015						
17–19.5	B19960																
17–19.5	B19961 (dup)																
22–24.5	B19941	0.042	U		0.045				0.013	U	0.016						
22–24.5	B19PT5 (split)					0	U	0.27				0.035	U	0.27	10.4		0.25
22–24.5	B19962																
22–24.5	B19969 (split)																
35–37.5	B19942	-0.008	U		0.061				-0.002	U	0.018						
35–37.5	B19963																
47–49.5	B19943	-0.005	U		0.026				0.005	U	0.013						
47–49.5	B19964																
97–99.5	B19944	-0.007	U		0.036				0.016	U	0.019						
97–99.5	B19965																
127–129.5	B19945	-0.013	U		0.056				0.005	U	0.017						
127–129.5	B19966																
equip blank tied to B19974	B19935																
Target Quantitation Limit		1							1						N/A		

Table B2-1. Radiochemical Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Radium-226			Radium-228			Technetium-99			Thorium-228						Thorium-230		
		GAMMA			GAMMA			TC99_TR_SEP			GAMMA			THISO_IE_PLATE			THISO_IE_PLATE		
		WSCF/EBRLNE			WSCF/EBRLNE			EBRLNE/STLSL			EBRLNE			EBRLNE			EBRLNE		
		pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
13–15.5	B19974	0.345		0.017	0.42		0.03												
13–15.5	B19976							0.068	U	0.71				0.488		0.082	0.433		0.21
17–19.5	B19939																		
17–19.5	B19940 (dup)																		
17–19.5	B19960							0.08	U	0.47									
17–19.5	B19961 (dup)							0.126	U	0.56									
22–24.5	B19941																		
22–24.5	B19PT5 (split)	0.43		0.053	0.634		0.098				0.553		0.03						
22–24.5	B19962							0.115	U	0.52									
22–24.5	B19969 (split)							-0.141	U	0.688									
35–37.5	B19942																		
35–37.5	B19963							0.252	U	1									
47–49.5	B19943																		
47–49.5	B19964							-0.183	U	0.85									
97–99.5	B19944																		
97–99.5	B19965							-0.119	U	0.67									
127–129.5	B19945																		
127–129.5	B19966							0.09	U	0.55									
equip blank tied to B19974	B19935																		
Target Quantitation Limit		N/A			N/A			15			N/A						N/A		

Table B2-1. Radiochemical Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Thorium-232						Total beta radiostrontium			Tritium			Uranium		
		GAMMA			THISO_IE_PLATE			SRTOT_SEP_PRECIP			906			UTOT_KPA		
		EBRLNE			EBRLNE			WSCF/EBRLNE			EBRLNE/STLRL			EBRLNE		
		pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	µg/kg	Q	MDA
13–15.5	B19974							0.054	U	0.2						
13–15.5	B19976				0.486		0.064				0.164	U	0.35			
17–19.5	B19939							0.016	U	0.2						
17–19.5	B19940 (dup)							0.13	U	0.2						
17–19.5	B19960										0.362		0.23			
17–19.5	B19961 (dup)										0.417		0.23			
22–24.5	B19941							0.26		0.2						
22–24.5	B19PT5 (split)	0.634		0.098				0.017	U	0.24				1470		8
22–24.5	B19962										0.955		0.33			
22–24.5	B19969 (split)										1.19		0.291			
35–37.5	B19942							0.23		0.21						
35–37.5	B19963										0.105	U	0.22			
47–49.5	B19943							-0.16	U	0.2						
47–49.5	B19964										0.175	U	0.22			
97–99.5	B19944							-0.49	U	0.2						
97–99.5	B19965										1.78		0.23			
127–129.5	B19945							-0.055	U	0.22						
127–129.5	B19966										0.142	U	0.26			
equip blank tied to B19974	B19935															
Target Quantitation Limit		1						1			400			N/A		

Table B2-1. Radiochemical Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Uranium-233/234							Uranium-235									
		UISO_IE_PRECIP				UISO_PLATE			GAMMA			UISO_IE_PRECIP				UISO_PLATE		
		WSCF				EBRLNE			EBRLNE			WSCF				EBRLNE		
		pCi/g	Q	VQ	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	VQ	MDA	pCi/g	Q	MDA
13–15.5	B19974	0.16			0.018							0.009	U		0.017			
13–15.5	B19976																	
17–19.5	B19939	0.12		J	0.017							0.016		J	0.005			
17–19.5	B19940 (dup)	0.13		J	0.005							0.011	U	J	0.014			
17–19.5	B19960																	
17–19.5	B19961 (dup)																	
22–24.5	B19941	0.16			0.012							0.004	U		0.005			
22–24.5	B19PT5 (split)					0.592		0.16		U	0.1					0.025	U	0.19
22–24.5	B19962																	
22–24.5	B19969 (split)																	
35–37.5	B19942	0.17			0.005							0.01			0.006			
35–37.5	B19963																	
47–49.5	B19943	0.13			0.017							0.018			0.006			
47–49.5	B19964																	
97–99.5	B19944	0.16			0.019							0.014	U		0.014			
97–99.5	B19965																	
127–129.5	B19945	0.28			0.021							0.02			0.007			
127–129.5	B19966																	
equip blank tied to B19974	B19935																	
Target Quantitation Limit		1							N/A			1						

Table B2-1. Radiochemical Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Uranium-238									
		GAMMA EBRLNE			UISO_IE_PRECIP WSCF				UISO_PLATE EBRLNE		
		pCi/g	Q	MDA	pCi/g	Q	VQ	MDA	pCi/g	Q	MDA
13–15.5	B19974				0.13			0.012			
13–15.5	B19976										
17–19.5	B19939				0.14		J	0.005			
17–19.5	B19940 (dup)				0.12		J	0.005			
17–19.5	B19960										
17–19.5	B19961 (dup)										
22–24.5	B19941				0.16			0.005			
22–24.5	B19PT5 (split)		U	3.3					0.551		0.16
22–24.5	B19962										
22–24.5	B19969 (split)										
35–37.5	B19942				0.14			0.005			
35–37.5	B19963										
47–49.5	B19943				0.14			0.017			
47–49.5	B19964										
97–99.5	B19944				0.16			0.013			
97–99.5	B19965										
127–129.5	B19945				0.27			0.024			
127–129.5	B19966										
equip blank tied to B19974	B19935										
Target Quantitation Limit		N/A			1						

Table B2-2. Metals Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Antimony		Arsenic		Barium		Beryllium		Bismuth		Boron		Cadmium			
		ICPMS WSCF		ICPMS WSCF		ICPMS WSCF		ICPMS WSCF		ICP WSCF		ICP WSCF		ICPMS WSCF		ICP RLNP	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
13–15.5	B19974	6890	U	2320	U	20400		289		2140	U	28100		19	U		
13–15.5	B19976																
17–19.5	B19939													20	U		
17–19.5	B19940 (dup)													20	U		
17–19.5	B19960																
17–19.5	B19961 (dup)																
22–24.5	B19941													947	U		
22–24.5	B19PT5 (split)															30	U
22–24.5	B19962																
22–24.5	B19969 (split)																
35–37.5	B19942													986	U		
35–37.5	B19963																
47–49.5	B19943													960	U		
47–49.5	B19964																
97–99.5	B19944													991	U		
97–99.5	B19965																
127–129.5	B19945													998	U		
127–129.5	B19966																
equip blank tied to B19974	B19935													0.1 (µg/L)	U		
Target Quantitation Limit		6000		10000		20000		500		10000		N/A		500			

Table B2-2. Metals Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Chromium				Copper				Hexavalent Chromium		Lead				Mercury			
		ICPMS WSCF		ICP RLNP		ICPMS WSCF		ICP RNLP		7196_CR6 RNLP/STLSL		ICPMS WSCF		ICP RLNP		ICPMS WSCF		CVAA RLNP	
		µg/kg	Q	µg/L	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/L	Q	µg/kg	Q	µg/kg	Q
13–15.5	B19974	3240	U			2540						251	U			622			
13–15.5	B19976									210	U								
17–19.5	B19939	5680				11400						255	U			586			
17–19.5	B19940 (dup)	7590				12700						263	U			713			
17–19.5	B19960									210	U								
17–19.5	B19961 (dup)									210	U								
22–24.5	B19941	2840	U			11500						11400	U			947	U		
22–24.5	B19PT5 (split)			5400				10400						3600				10	U
22–24.5	B19962									210	U								
22–24.5	B19969 (split)									400	U								
35–37.5	B19942	52100				20500						11800	U			986	U		
35–37.5	B19963									230									
47–49.5	B19943	2880	U			13900						11500	U			1250	E		
47–49.5	B19964									210	U								
97–99.5	B19944	12800				20800						11900	U			991	U		
97–99.5	B19965									220	U								
127–129.5	B19945	15100				21900						12000	U			998	U		
127–129.5	B19966									240									
equip blank tied to B19974	B19935	3.3 (µg/L)	U			1.3 (µg/L)	U					0.2 (µg/L)	U						
Target Quantitation Limit		1000				2500				500		10000				N/A		200	

Table B2-2. Metals Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Nickel		Selenium		Silver				Uranium	
		ICPMS		ICPMS		ICPMS		ICP_TR		ICPMS	
		WSCF		WSCF		WSCF		RLNP		WSCF	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
13–15.5	B19974	2930		1290		170					
13–15.5	B19976										
17–19.5	B19939					10	U			331	
17–19.5	B19940 (dup)					10	U			320	
17–19.5	B19960										
17–19.5	B19961 (dup)										
22–24.5	B19941					1890	U			947	U
22–24.5	B19PT5 (split)							90	U		
22–24.5	B19962										
22–24.5	B19969 (split)										
35–37.5	B19942					1970	U			986	U
35–37.5	B19963										
47–49.5	B19943					1980				960	U
47–49.5	B19964										
97–99.5	B19944					1980	U			991	U
97–99.5	B19965										
127–129.5	B19945					2640				1250	
127–129.5	B19966										
equip blank tied to B19974	B19935					0.1 (µg/L)	U				
Target Quantitation Limit		4000		10000		2000		500		1000	

Table B2-3. Wet Chemistry Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Ammonium ion		Cyanide				Fluoride		Nitrate		Nitrite		Nitrogen in Nitrite and Nitrate		
		300.7		335.2		9010		300		300		300		353.2		
		WSCF		WSCF		RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		RLNP/STLSL		
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	VQ
13–15.5	B19974	258	U	200	U			1150	U	8150	B	3120	U			
13–15.5	B19976													330		
17–19.5	B19939			200	U			1150	U	10500	B	3120	U			
17–19.5	B19940 (dup)			200	U			1150	U	10400	B	3120	U			
17–19.5	B19960													330		J
17–19.5	B19961 (dup)													340		J
22–24.5	B19941			200	U			1150	U	5670	B	3120	U			
22–24.5	B19PT5 (split)					500	U	1000	U	2550		1040	U			
22–24.5	B19962													410		J
22–24.5	B19969 (split)													850		
35–37.5	B19942			200	U			1150	U	7570	B	3120	U			
35–37.5	B19963													210	U	J
47–49.5	B19943			200	U			1150	U	7080	B	3120	U			
47–49.5	B19964													210	U	J
97–99.5	B19944			200	U			1150	U	8590	B	3120	U			
97–99.5	B19965													700		J
127–129.5	B19945			200	U			1150	U	8540	B	3120	U			
127–129.5	B19966													940		J
equip blank tied to B19974	B19935							18 (µg/L)	U	102 (µg/L)	B	19.7 (µg/L)	U			
equip blank tied to B19976	B19936													20 (µg/L)	U	
Target Quantitation Limit		N/A		N/A		500		5000		2500		2500		N/A		

Table B2-3. Wet Chemistry Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	ph						Phosphate		Sulfate	
		9045			150.1			300		300	
		RLNP			WSCF			WSCF/RLNP		WSCF/RLNP	
		ph	Q	VQ	ph	Q	VQ	µg/kg	Q	µg/kg	Q
13–15.5	B19974				9.51			8280	U	20100	B
13–15.5	B19976										
17–19.5	B19939				9.14			8280	U	11400	B
17–19.5	B19940 (dup)				9.18			8280	U	15000	B
17–19.5	B19960										
17–19.5	B19961 (dup)										
22–24.5	B19941				8.9			8280	U	5000	U
22–24.5	B19PT5 (split)	9		J				1000	U	11500	
22–24.5	B19962										
22–24.5	B19969 (split)										
35–37.5	B19942				8.85			8280	U	21700	B
35–37.5	B19963										
47–49.5	B19943				9			8280	U	17000	B
47–49.5	B19964										
97–99.5	B19944				8.75			8280	U	5000	U
97–99.5	B19965										
127–129.5	B19945				8.51			8280	U	9960	B
127–129.5	B19966										
equip blank tied to B19974	B19935							239 (µg/L)	U	150 (µg/L)	U
equip blank tied to B19976	B19936										
Target Quantitation Limit		N/A						5000		5000	

Table B2-4. Volatile Organic Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	1,1,1-Trichloroethane		1,1,2,2-Tetrachloroethane		1,1,2-Trichloroethane		1,1-Dichloroethane		1,1-Dichloroethene		1,2-Dichloroethane		1,2-Dichloroethene (Total)	
		8260		8260		8260		8260		8260		8260		8260	
		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
13–15.5	B19974	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
17–19.5	B19939	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U
17–19.5	B19940 (dup)	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
22–24.5	B19941	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
22–24.5	B19PT5 (split)	6	U	6	U	6	U	6	U	6	U	6	U	6	U
35–37.5	B19942	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
47–49.5	B19943	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
97–99.5	B19944	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U
127–129.5	B19945	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U
equip blank tied to B19974	B19935	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
trip blank tied to B19941	B19937	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
Target Quantitation Limit		5		N/A		5		10		N/A		5		N/A	

Table B2-4. Volatile Organic Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	1,2-Dichloropropane		1-Butanol					2-Butanone		2-Hexanone		4-Methyl-2-Pentanone		Acetone	
		8260		8015			8260		8260		8260		8260		8260	
		WSCF/RLNP		RLNP			WSCF		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	VQ	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
13–15.5	B19974	2.1	U				41	U	2.1	U	2.1	U	2.1	U	2.1	U
17–19.5	B19939	2.2	U				44	U	2.2	U	2.2	U	2.2	U	2.2	U
17–19.5	B19940 (dup)	2.1	U				42	U	2.1	U	2.1	U	2.1	U	2.1	U
22–24.5	B19941	2.1	U				42	U	2.1	U	2.1	U	2.1	U	2.1	U
22–24.5	B19PT5 (split)	6	U	5000	U	J			11	U	11	U	11	U	11	U
35–37.5	B19942	2.1	U				42	U	2.1	U	2.1	U	2.1	U	2.1	U
47–49.5	B19943	2.1	U				41	U	2.1	U	2.1	U	2.1	U	2.1	U
97–99.5	B19944	1.7	U				34	U	1.7	U	1.7	U	1.7	U	1.7	U
127–129.5	B19945	2.2	U				44	U	2.2	U	2.2	U	2.2	U	2.2	U
equip blank tied to B19974	B19935	1 (µg/L)	U				20 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
trip blank tied to B19941	B19937	1 (µg/L)	U				20 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
Target Quantitation Limit		N/A		5000			N/A		10		N/A		10		20	

Table B2-4. Volatile Organic Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Benzene		Bromodichloro-methane		Bromoform		Bromomethane		Carbon disulfide		Carbon tetrachloride		Chlorobenzene	
		8260		8260		8260		8260		8260		8260		8260	
		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
13–15.5	B19974	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
17–19.5	B19939	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U
17–19.5	B19940 (dup)	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
22–24.5	B19941	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
22–24.5	B19PT5 (split)	6	U	6	U	6	U	11	U	6	U	6	U	6	U
35–37.5	B19942	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
47–49.5	B19943	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
97–99.5	B19944	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U
127–129.5	B19945	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U
equip blank tied to B19974	B19935	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
trip blank tied to B19941	B19937	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
Target Quantitation Limit		5		N/A		N/A		N/A		N/A		5		5	

Table B2-4. Volatile Organic Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Chloroethane		Chloroform		Chloromethane		cis-1,2-Dichloroethylene		cis-1,3-Dichloropropene		Dibromochloro-methane		Ethylbenzene	
		8260		8260		8260		8260		8260		8260		8260	
		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
13–15.5	B19974	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
17–19.5	B19939	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U
17–19.5	B19940 (dup)	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
22–24.5	B19941	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
22–24.5	B19PT5 (split)	11	U	6	U	11	U	6	U	6	U	6	U	6	U
35–37.5	B19942	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
47–49.5	B19943	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
97–99.5	B19944	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U
127–129.5	B19945	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U
equip blank tied to B19974	B19935	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
trip blank tied to B19941	B19937	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
Target Quantitation Limit		N/A		5		N/A		1		N/A		N/A		5	

Table B2-4. Volatile Organic Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Methylene chloride			n-Butylbenzene		Styrene		Tetrachloro-ethene		Toluene		trans-1,2-Dichloroethylene		trans-1,3-Dichloropropene	
		8260			8260		8260		8260		8260		8260		8260	
		WSCF/RLNP			WSCF/RLNP		WSCF/RLN		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP	
		µg/kg	Q	VQ	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
13–15.5	B19974	2.1	U		2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
17–19.5	B19939	2.2	U		2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U
17–19.5	B19940 (dup)	2.1	U		2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
22–24.5	B19941	2.1	U		2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
22–24.5	B19PT5 (split)	15	B	U	6	U	6	U	6	U	6	U	6	U	6	U
35–37.5	B19942	2.1	U		2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
47–49.5	B19943	2.1	U		2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
97–99.5	B19944	1.7	U		1.7	U	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U
127–129.5	B19945	2.2	U		2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U
equip blank tied to B19974	B19935	1 (µg/L)	U		1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
trip blank tied to B19941	B19937	1 (µg/L)	U		1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
Target Quantitation Limit		5			5		N/A		5		5		1		N/A	

Table B2-4. Volatile Organic Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Trichloro-ethene		Vinyl chloride		Xylenes (total)	
		8260		8260		8260	
		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	µg/kg	Q
13–15.5	B19974	2.1	U	2.1	U	2.1	U
17–19.5	B19939	2.2	U	2.2	U	2.2	U
17–19.5	B19940 (dup)	2.1	U	2.1	U	2.1	U
22–24.5	B19941	2.1	U	2.1	U	2.1	U
22–24.5	B19PT5 (split)	6	U	11	U	6	U
35–37.5	B19942	2.1	U	2.1	U	2.1	U
47–49.5	B19943	2.1	U	2.1	U	2.1	U
97–99.5	B19944	1.7	U	1.7	U	1.7	U
127–129.5	B19945	2.2	U	2.2	U	2.2	U
equip blank tied to B19974	B19935	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
trip blank tied to B19941	B19937	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
Target Quantitation Limit		5		N/A		5	

Table B2-5. Semivolatile Organic Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	1,2,4-Trichlorobenzene		1,4-Dichlorobenzene		2,4-Dinitrotoluene		2-Chlorophenol		4-Chloro-3-methylphenol		4-Nitrophenol	
		8270		8270		8270		8270		8270		8270	
		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
13–15.5	B19974	300	U	320	U	69	U	150	U	69	U	670	U
17–19.5	B19939	320	U	340	U	73	U	160	U	73	U	710	U
17–19.5	B19940 (dup)	310	U	330	U	70	U	150	U	70	U	680	U
22–24.5	B19941	310	U	330	U	70	U	150	U	70	U	680	U
22–24.5	B19PT5 (split)	350	U	350	U	350	U	350	U	350	U	870	U
35–37.5	B19942	310	U	330	U	70	U	150	U	70	U	680	U
47–49.5	B19943	300	U	320	U	69	U	150	U	69	U	670	U
97–99.5	B19944	320	U	340	U	72	U	160	U	72	U	700	U
127–129.5	B19945	320	U	340	U	73	U	160	U	73	U	710	U
equip blank tied to B19974	B19935	3.7 (µg/L)	U	6.1 (µg/L)	U	2.2 (µg/L)	U	2.1 (µg/L)	U	1.6 (µg/L)	U	1.7 (µg/L)	U
Target Quantitation Limit		N/A		N/A		N/A		N/A		N/A		N/A	

Table B2-5. Semivolatile Organic Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Acenaphthene		Diethylphthalate		bis (2-ethylhexyl) phthalate			Di-n-butylphthalate			N-Nitrosodi-n-dipropylamine	
		8270		8270		8270			8270			8270	
		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP			WSCF/RLNP			WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q
13–15.5	B19974	69	U	530					200			69	U
17–19.5	B19939	73	U						140			73	U
17–19.5	B19940 (dup)	70	U						250			70	U
22–24.5	B19941	70	U	540					210			70	U
22–24.5	B19PT5 (split)	350	U	350	U	51	JB	J	52	JB	J	350	U
35–37.5	B19942	70	U						240			70	U
47–49.5	B19943	69	U						240			69	U
97–99.5	B19944	72	U	280					1100			72	U
127–129.5	B19945	73	U	510					350			73	U
equip blank tied to B19974	B19935	2.9 (µg/L)	U									2.1 (µg/L)	U
Target Quantitation Limit		N/A		N/A		N/A			N/A			N/A	

Table B2-5. Semivolatile Organic Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Penta-chlorophenol		Phenol		Pyrene		Tributyl phosphate	
		8270		8270		8270		8270	
		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
13–15.5	B19974	310	U	100	U	69	U	69	U
17–19.5	B19939	330	U	110	U	73	U	73	U
17–19.5	B19940 (dup)	310	U	100	U	70	U	70	U
22–24.5	B19941	320	U	110	U	70	U	70	U
22–24.5	B19PT5 (split)	870	U	350	U	350	U	350	U
35–37.5	B19942	320	U	110	U	70	U	70	U
47–49.5	B19943	310	U	100	U	69	U	69	U
97–99.5	B19944	320	U	110	U	72	U	72	U
127–129.5	B19945	330	U	110	U	73	U	73	U
equip blank tied to B19974	B19935	2.1 (µg/L)	U	2.1 (µg/L)	U	2.6 (µg/L)	U	3 (µg/L)	U
Target Quantitation Limit		N/A		330		N/A		3300	

Table B2-6. Miscellaneous Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Aroclor-1016		Aroclor-1221		Aroclor-1232		Aroclor-1242		Aroclor-1248	
		8082		8082		8082		8082		8082	
		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
13–15.5	B19974	50	U	100	U	50	U	50	U	50	U
13–15.5	B19976										
17–19.5	B19939	66	U	130	U	66	U	66	U	66	U
17–19.5	B19940 (dup)	62	U	120	U	62	U	62	U	62	U
17–19.5	B19960										
17–19.5	B19961 (dup)										
22–24.5	B19941	51	U	100	U	51	U	51	U	51	U
22–24.5	B19PT5 (split)	13	U	13	U	13	U	13	U	13	U
22–24.5	B19962										
22–24.5	B19969 (split)										
35–37.5	B19942	52	U	100	U	52	U	52	U	52	U
35–37.5	B19963										
47–49.5	B19943	52	U	100	U	52	U	52	U	52	U
47–49.5	B19964										
97–99.5	B19944	54	U	110	U	54	U	54	U	54	U
97–99.5	B19965										
127–129.5	B19945	55	U	110	U	55	U	55	U	55	U
127–129.5	B19966										
Target Quantitation Limit		16.5		16.5		16.5		16.5		16.5	

Table B2-6. Miscellaneous Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Aroclor-1254		Aroclor-1260		Aroclor-1262		Aroclor-1268		Oil and Grease		
		8082		8082		8082		8082		9071		
		WSCF/RLNP		WSCF/RLNP		WSCF		WSCF		RLNP/STLSL		
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	VQ
13–15.5	B19974	50	U	50	U	50	U	50	U			
13–15.5	B19976									689000	U	
17–19.5	B19939	66	U	66	U	66	U	66	U			
17–19.5	B19940 (dup)	62	U	62	U	62	U	62	U			
17–19.5	B19960									689000	U	
17–19.5	B19961 (dup)									694000	U	
22–24.5	B19941	51	U	51	U	51	U	51	U			
22–24.5	B19PT5 (split)	13	U	13	U							
22–24.5	B19962									710000	U	
22–24.5	B19969 (split)									87300	U	
35–37.5	B19942	52	U	52	U	52	U	52	U			
35–37.5	B19963									864000		J
47–49.5	B19943	52	U	52	U	52	U	52	U			
47–49.5	B19964									693000	U	
97–99.5	B19944	54	U	54	U	54	U	54	U			
97–99.5	B19965									731000	U	
127–129.5	B19945	55	U	55	U	55	U	55	U			
127–129.5	B19966									731000	U	
Target Quantitation Limit		16.5		16.5		16.5		16.5		200000		

Table B2-6. Miscellaneous Analysis Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Total petroleum hydrocarbons– diesel range WTPH_DIESEL WSCF/RLNP µg/kg	Q	Q	gasoline range WTPH_GASOLINE WSCF µg/kg	Q	VQ	gasoline range 8015M_TPH_GC RLNP µg/kg	Q	kerosene range WTPH_DIESEL WSCF µg/kg	Q	Q	motor oil (high boiling) WTPH_DIESEL WSCF µg/kg	Q	VQ
13–15.5	B19974	3900	U		250	U				3900	U				
13–15.5	B19976														
17–19.5	B19939	4100	U		250	U	J			4100	U				
17–19.5	B19940 (dup)	3900	U		250	U	J			3900	U				
17–19.5	B19960														
17–19.5	B19961 (dup)														
22–24.5	B19941	3900	U		250	U				3900	U				
22–24.5	B19PT5 (split)	12500	U	J				30	U	12,500	U	J	15000		J
22–24.5	B19962														
22–24.5	B19969 (split)														
35–37.5	B19942	3900	U		250	U				3900	U				
35–37.5	B19963														
47–49.5	B19943	3900	U		250	U				3900	U				
47–49.5	B19964														
97–99.5	B19944	4100	U		250	U				4100	U				
97–99.5	B19965														
127–129.5	B19945	4100	U		250	U				4100	U				
127–129.5	B19966														
Target Quantitation Limit		5000			5000			N/A		5000			5000		

Table B2-7. Physical Properties Results for Borehole C4559 (216-U-3 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Density		% Moisture		Particle Size											
		Shaw		Shaw		Shaw											
		D2937_DENSITY		D2216_%	SW846	D422_PARTCLE SIZE											
		kg/m^3		moisture	moisture	Percent passing sieve sized											
		Dry	Wet	dry sample	wet	3 in	1.5 in	3/4 in	3/8 in	No.4	No.10	No.20	No.40	No.60	No.100	No.140	No.200
35–37.5	B19970	1555	1600	4.5	4.3	100	100	64.5	43.2	28.7	20	12.4	7.3	5.2	3.9	3.4	2.8
97–99.5	B19971	1677	1901	7.9	7.3	100	100	100	100	100	100	99.9	99.1	92.9	80.2	54.7	29.1
127–129.5	B19972	1662	1840	11.6	10.4	100	100	100	100	100	100	99.9	99.0	97.0	92.1	84.3	66.0

Table B3-1. Radiochemical Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Americium-241									Antimony			Cesium-134		
		AMCMISO_IE_PLATE			AMCMISO_IE_PRECIP			GAMMA			GAMMA			GAMMA		
		EBRLNE			WSCF			EBRLNE			WSCF			WSCF		
		pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
8-11	B1C7C2				0.2		0.086				-0.009	U	0.028	0.018	U	0.02
11-14	B1C7D2															
14-20.5	B1C7D4															
14-20.5	B1C7D5 (split)	0.119	U	0.23					U	0.21						
equip blank tied to B1C7D2	B1C7C6															
Target Quantitation Limit		1						N/A			0.1			0.1		

Table B3-1. Radiochemical Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Cesium-137 GAMMA WSCF/EBRLNE			Cobalt-60 GAMMA WSCF/EBRLNE			Europium-152 GAMMA WSCF/EBRLNE			Europium-154 GAMMA WSCF/EBRLNE			Europium-155 GAMMA WSCF/EBRLNE		
		pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
8-11	B1C7C2	0.003	U	0.011	-0.005	U	0.009	-0.011	U	0.03	-0.001	U	0.031	0.028		0.042
11-14	B1C7D2															
14-20.5	B1C7D4															
14-20.5	B1C7D5 (split)		U	0.082		U	0.088		U	0.2		U	0.27		U	0.18
equip blank tied to B1C7D2	B1C7C6															
Target Quantitation Limit		0.1			0.05			0.1			0.1			0.1		

Table B3-1. Radiochemical Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Gross Alpha			Gross Beta			Neptunium-237			Plutonium-238					
		ALPHA_GPC			BETA_GPC			NP237_IE_PRECIP_AEA			PUISO_IE_PRECIP			PUISO_PLATE		
		WSCF			WSCF			WSCF			WSCF			EBRLNE		
		pCi/L	Q	MDA	pCi/L	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
8-11	B1C7C2							0.001	U	0.009	-0.012	U	0.047			
11-14	B1C7D2															
14-20.5	B1C7D4															
14-20.5	B1C7D5 (split)													0.025	U	0.19
equip blank tied to B1C7D2	B1C7C6	0.43	U	0.73	0.88		0.76									
Target Quantitation Limit		N/A			N/A			N/A			1					

Table B3-1. Radiochemical Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Plutonium-239/240						Potassium-40			Radium-226			Radium-228		
		PUISO_IE_PRECIP			PUISO_PLATE			GAMMA			GAMMA			GAMMA		
		WSCF			EBRLNE			EBRLNE			WSCF/EBRLNE			WSCF/EBRLNE		
		pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
8-11	B1C7C2	0.013	U	0.014							0.377		0.02	0.464		0.033
11-14	B1C7D2															
14-20.5	B1C7D4															
14-20.5	B1C7D5 (split)				0	U	0.19	14.9		0.73	0.407		0.15	0.742		0.33
equip blank tied to B1C7D2	B1C7C6															
Target Quantitation Limit		1						N/A			N/A			N/A		

Table B3-1. Radiochemical Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Technetium-99						Thorium-228						Thorium-232			Total beta radiostrontium		
		TC99_TR_SEP_LSC			TC99_SEP_LSC			GAMMA			THISO_IE_PLATE			GAMMA			SRTOT_SEP_PRECIP		
		EBRLNE			STLRL			EBRLNE			EBRLNE			EBRLNE			WSCF/EBRLNE		
		pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
8-11	B1C7C2																0.52		0.4
11-14	B1C7D2	0.111	U	0.48															
14-20.5	B1C7D4	0.082	U	0.41															
14-20.5	B1C7D5 (split)				0.184	U		0.644		0.093				0.742		0.33	0.04	U	0.33
equip blank tied to B1C7D2	B1C7C6																		
Target Quantitation Limit		15						N/A						1			1		

Table B3-1. Radiochemical Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Tritium						Uranium			Uranium-233/234					
		906.0_H3_LSC			TRITIUM_DIST_LSC			UTOT_KPA			UISO_IE_PRECIP			UISO_PLATE		
		EBRLNE			STLRL			EBRLNE			WSCF			EBRLNE		
		pCi/g	Q	MDA	pCi/g	Q	MDA	ug/kg	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
8-11	B1C7C2										0.38		0.006			
11-14	B1C7D2	0.087	U	0.33												
14-20.5	B1C7D4	0.11	U	0.25												
14-20.5	B1C7D5 (split)				0.00023	U		1210		10				0.697		0.23
equip blank tied to B1C7D2	B1C7C6															
Target Quantitation Limit		400			400			1000			1					

Table B3-1. Radiochemical Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Uranium-235									Uranium-238								
		GAMMA EBRLNE			UISO_IE_PRECIP WSCF			UISO_PLATE EBRLNE			GAMMA EBRLNE			UISO_IE_PRECIP WSCF			UISO_PLATE EBRLNE		
		pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
8-11	B1C7C2				0.023		0.006							0.32		0.006			
11-14	B1C7D2																		
14-20.5	B1C7D4																		
14-20.5	B1C7D5 (split)		U	0.27				0.037	U	0.28		U	10				0.455		0.23
equip blank tied to B1C7D2	B1C7C6																		
Target Quantitation Limit		N/A			1						N/A			1					

Table B3-2. Metals Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Antimony		Arsenic		Barium		Beryllium		Bismuth		Boron		Cadmium			
		ICPMS		ICPMS		ICPMS		ICPMS		ICP		ICP		ICPMS		ICP	
		WSCF		WSCF		WSCF		WSCF		WSCF		WSCF		WSCF		RLNP	
		ug/kg	Q	ug/kg	Q	ug/kg	Q	ug/kg	Q	ug/kg	Q	ug/kg	Q	ug/kg	Q	ug/kg	Q
8-11	B1C7C2	989	U	1130		202000		578		2110	U	2490	U	1080			
11-14	B1C7D2													688			
14-20.5	B1C7D4													303			
14-20.5	B1C7D5 (split)															160	
equip blank tied to B1C7D2	B1C7C6													0.1 (ug/L)	U		
Target Quantitation Limit		6000		10000		20000		500		10000		N/A		500			

Table B3-2. Metals Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Chromium					Copper						Lead			
		ICPMS WSCF		ICP RLNP			ICPMS WSCF			ICP RLNP			ICPMS WSCF		ICP RLNP	
		ug/kg	Q	ug/kg	Q	VQ	ug/kg	Q	VQ	ug/kg	Q	VQ	ug/kg	Q	ug/kg	Q
8-11	B1C7C2	7090					4080000						25400			
11-14	B1C7D2	7260					621000		J				6950			
14-20.5	B1C7D4	4710					23500		J				3560			
14-20.5	B1C7D5 (split)			7400		J				36500		J			3200	
equip blank tied to B1C7D2	B1C7C6	4 (ug/L)	U				2 (ug/L)	U					0.2 (ug/L)	U		
Target Quantitation Limit		1000					2500						10000			

Table B3-2. Metals Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Mercury					Nickel		Selenium		Silver				Uranium	
		ICPMS		7471_HG_CVAA			ICPMS		ICPMS		ICPMS		ICP		ICPMS	
		WSCF		RLNP			WSCF		WSCF		WSCF		RLNP		WSCF	
		ug/kg	Q	ug/kg	Q	VQ	ug/kg	Q	ug/kg	Q	ug/kg	Q	ug/kg	Q	ug/kg	Q
8-11	B1C7C2	99	U				15200		396	U	884					
11-14	B1C7D2										1360				628	
14-20.5	B1C7D4										418				530	
14-20.5	B1C7D5 (split)			20	U	J							190			
equip blank tied to B1C7D2	B1C7C6										0.1 (ug/L)	U				
Target Quantitation Limit		N/A		200			4000		10000		2000		500		1000	

Table B3-3. Wet Chemistry Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Cyanide					Nitrate		Nitrite		pH						Phosphate		Sulfate		
		335.2		9010			300		300		150.1_PH			9045_PH			300		300		
		WSCF		RLNP			WSCF/RLNP		WSCF/RLNP		WSCF			RLNP			WSCF/RLNP		WSCF/RLNP		
		ug/kg	Q	ug/kg	Q	VQ	ug/kg	Q	ug/kg	Q	ph	Q	VQ	ph	Q	VQ	ug/kg	Q	ug/kg	Q	VQ
11-14	B1C7D2	200	U				7260	B	3120	U	7.81		J				8280	U	17200	B	
14-20.5	B1C7D4	200	U								8.69		J				8280	U	14200	B	
14-20.5	B1C7D5 (split)			490	U	J	2950		1030	U				8.6		J	1000	U	18100		J
equip blank tied to B1C7D2	B1C7C6						425 (ug/L)	B	19.7 (ug/L)	U							239 (ug/L)	U	150 (ug/L)	U	
Target Quantitation Limit		N/A		500			2500		2500		N/A			N/A			5000		5000		

Table B3-4. Volatile Organic Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	1,1,1-Trichloroethane			1,1,2,2-Tetrachloroethane			1,1,2-Trichloroethane			1,1-Dichloroethane			1,1-Dichloroethene		
		8260			8260			8260			8260			8260		
		WSCF			WSCF			WSCF			WSCF			WSCF		
		µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ
11-14	B1C7D2	2.1	U		2.1	U		2.1	U		2.1	U		2.1	U	
11-14	B1C7D3 (dup)	2.1	U		2.1	U		2.1	U		2.1	U		2.1	U	
14-20.5	B1C7D4	2.1	U		2.1	U		2.1	U		2.1	U		2.1	U	
14-20.5	B1C7D5 (split)	6	U	J	6	U	J	6	U	J	6	U	J	6	U	J
trip blank tied to B1C7D2 & B1C7D3	B1C7C5	1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U	
equip blank tied to B1C7D2 & B1C7D3	B1C7C6	1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U	
Target Quantitation Limit		5			N/A			5			10			N/A		

Table B3-4. Volatile Organic Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	1,2-Dichloroethane			1,2-Dichloroethene (Total)			1,2-Dichloropropane			1-Butanol		2-Butanone		
		8260			8260			8260			8260		8260		
		WSCF			WSCF			WSCF			WSCF		WSCF		
		µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	VQ	µg/kg	Q	VQ
11-14	B1C7D2	2.1	U		2.1	U		2.1	U		42	U	2.1	U	
11-14	B1C7D3 (dup)	2.1	U		2.1	U		2.1	U		42	U	2.1	U	
14-20.5	B1C7D4	2.1	U		2.1	U		2.1	U		41	U	2.1	U	
14-20.5	B1C7D5 (split)	6	U	J	6	U	J	6	U	J			11	U	J
trip blank tied to B1C7D2 & B1C7D3	B1C7C5	1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		20 (µg/L)	U	1 (µg/L)	U	
equip blank tied to B1C7D2 & B1C7D3	B1C7C6	1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		20 (µg/L)	U	1 (µg/L)	U	
Target Quantitation Limit		5			10			N/A			5000		10		

Table B3-4. Volatile Organic Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	2-Hexanone			4-Methyl-2-Pentanone			Acetone			Benzene			Bromodichloro-methane		
		8260			8260			8260			8260			8260		
		WSCF			WSCF			WSCF			WSCF			WSCF		
		µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ
11-14	B1C7D2	2.1	U		2.1	U		2.1	U		2.1	U		2.1	U	
11-14	B1C7D3 (dup)	2.1	U		2.1	U		2.1	U		2.1	U		2.1	U	
14-20.5	B1C7D4	2.1	U		2.1	U		2.1	U		2.1	U		2.1	U	
14-20.5	B1C7D5 (split)	11	U	J	11	U	J	4	J	J	6	U	J	6	U	J
trip blank tied to B1C7D2 & B1C7D3	B1C7C5	1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U	
equip blank tied to B1C7D2 & B1C7D3	B1C7C6	1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U	
Target Quantitation Limit		N/A			10			20			5			N/A		

Table B3-4. Volatile Organic Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Bromoform			Bromomethane			Carbon disulfide			Carbon tetrachloride			Chlorobenzene		
		8260			8260			8260			8260			8260		
		WSCF			WSCF			WSCF			WSCF			WSCF		
		µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ
11-14	B1C7D2	2.1	U		2.1	U		2.1	U		2.1	U		2.1	U	
11-14	B1C7D3 (dup)	2.1	U		2.1	U		2.1	U		2.1	U		2.1	U	
14-20.5	B1C7D4	2.1	U		2.1	U		2.1	U		2.1	U		2.1	U	
14-20.5	B1C7D5 (split)	6	U	J	11	U	J	6	U	J	6	U	J	6	U	J
trip blank tied to B1C7D2 & B1C7D3	B1C7C5	1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U	
equip blank tied to B1C7D2 & B1C7D3	B1C7C6	1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U	
Target Quantitation Limit		N/A			N/A			N/A			5			5		

Table B3-4. Volatile Organic Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Chloroethane			Chloroform			Chloromethane			cis-1,2-Dichloroethylene			cis-1,3-Dichloropropene		
		8260			8260			8260			8260			8260		
		WSCF			WSCF			WSCF			WSCF			WSCF		
		µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ
11-14	B1C7D2	2.1	U		2.1	U		2.1	U		2.1	U		2.1	U	
11-14	B1C7D3 (dup)	2.1	U		2.1	U		2.1	U		2.1	U		2.1	U	
14-20.5	B1C7D4	2.1	U		2.1	U		2.1	U		2.1	U		2.1	U	
14-20.5	B1C7D5 (split)	11	U	J	6	U	J	11	U	J	6	U	J	6	U	J
trip blank tied to B1C7D2 & B1C7D3	B1C7C5	1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U	
equip blank tied to B1C7D2 & B1C7D3	B1C7C6	1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U	
Target Quantitation Limit		N/A			5			N/A			1			N/A		

Table B3-4. Volatile Organic Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Dibromochloro-methane			Ethylbenzene			Methylene chloride			Styrene			Tetrachloro-ethene			Toluene		
		8260			8260			8260			8260			8260			8260		
		WSCF			WSCF			WSCF			WSCF			WSCF			WSCF		
		µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ
11-14	B1C7D2	2.1	U		2.1	U		2.1	U		2.1	U		2.1	U		2.1	U	
11-14	B1C7D3 (dup)	2.1	U		2.1	U		2.1	U		2.1	U		2.1	U		2.1	U	
14-20.5	B1C7D4	2.1	U		2.1	U		2.1	U		2.1	U		2.1	U		2.1	U	
14-20.5	B1C7D5 (split)	6	U	J	6	U	J	5	JB	UJ	6	U	J	6	U	J	6	U	J
trip blank tied to B1C7D2 & B1C7D3	B1C7C5	1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U	
equip blank tied to B1C7D2 & B1C7D3	B1C7C6	1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U	
Target Quantitation Limit		N/A			5			5			N/A			5			5		

Table B3-4. Volatile Organic Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	trans-1,2-Dichloroethylene			trans-1,3-Dichloropropene			Trichloro-ethene			Vinyl chloride			Xylenes (total)		
		8260			8260			8260			8260			8260		
		WSCF			WSCF			WSCF			WSCF			WSCF		
		µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ
11-14	B1C7D2	2.1	U		2.1	U		2.1	U		2.1	U		2.1	U	
11-14	B1C7D3 (dup)	2.1	U		2.1	U		2.1	U		2.1	U		2.1	U	
14-20.5	B1C7D4	2.1	U		2.1	U		2.1	U		2.1	U		2.1	U	
14-20.5	B1C7D5 (split)	6	U	J	6	U	J	6	U	J	11	U	J	6	U	J
trip blank tied to B1C7D2 & B1C7D3	B1C7C5	1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U	
equip blank tied to B1C7D2 & B1C7D3	B1C7C6	1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U		1 (µg/L)	U	
Target Quantitation Limit		1			N/A			5			N/A			5		

Table B3-5. Semivolatile Organic Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	1,2,4-Trichlorobenzene			1,4-Dichlorobenzene			2,4-Dinitrotoluene			2-Chlorophenol			4-Chloro-3-methylphenol			4-Nitrophenol		
		8270			8270			8270			8270			8270			8270		
		WSCF			WSCF			WSCF			WSCF			WSCF			WSCF		
		µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ
11-14	B1C7D2	85	U	J	150	U	J	64	U	J	130	U	J	77	U	J	160	U	J
14-20.5	B1C7D4	83	U	J	140	U	J	63	U	J	130	U	J	75	U	J	160	U	J
14-20.5	B1C7D5 (split)																		
equip blank tied to B1C7D2	B1C7C6	2.3 (µg/L)	U		1.2 (µg/L)	U		0.34 (µg/L)	U		0.28 (µg/L)	U		0.27 (µg/L)	U		0.84 (µg/L)	U	
Target Quantitation Limit		N/A			N/A			N/A			N/A			N/A			N/A		

Table B3-5. Semivolatile Organic Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Acenaphthene			Benzothiazole		Diethylphthalate		Di-n-butylphthalate		N-Nitrosodi-n-dipropylamine			Octadecanoic acid	
		8270			8270		8270		8270		8270			8270	
		WSCF			WSCF		WSCF		WSCF		WSCF			WSCF	
		µg/kg	Q	VQ	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	VQ	µg/kg	Q
11-14	B1C7D2	56	U	J			790		250		74	U	J	160	J
14-20.5	B1C7D4	55	U	J			410		370		73	U	J		
14-20.5	B1C7D5 (split)														
equip blank tied to B1C7D2	B1C7C6	3.1 (µg/L)	U		4.9 (µg/L)	J	1.7 (µg/L)		0.52 (µg/L)		0.35 (µg/L)	U			
Target Quantitation Limit		N/A			N/A		N/A		N/A		N/A			N/A	

Table B3-5. Semivolatile Organic Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Pentachlorophenol			Phenol			Pyrene			Tributyl phosphate		
		8270			8270			8270			8270		
		WSCF			WSCF			WSCF			WSCF/RLNP		
		µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ
11-14	B1C7D2	75	U	J	88	U	J	51	U	J	33	U	J
14-20.5	B1C7D4	74	U	J	87	U	J	50	U	J	33	U	J
14-20.5	B1C7D5 (split)										340	U	J
equip blank tied to B1C7D2	B1C7C6	0.5 (µg/L)	U		0.65 (µg/L)	U		0.32 (µg/L)	U		0.3 (µg/L)	U	
Target Quantitation Limit		N/A			330			N/A			3300		

Table B3-6. Miscellaneous Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Aroclor-1016			Aroclor-1221			Aroclor-1232			Aroclor-1242			Aroclor-1248			Aroclor-1254		
		8082			8082			8082			8082			8082			8082		
		WSCF/RLNP			WSCF/RLNP			WSCF/RLNP			WSCF/RLNP			WSCF/RLNP			WSCF/RLNP		
		µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ
8-11	B1C7C2	16	U		32	U		16	U		16	U		16	U		16	U	
11-14	B1C7D2	52	U		100	U		52	U		52	U		52	U		52	U	
14-20.5	B1C7D4	51	U		100	U		51	U		51	U		51	U		51	U	
14-20.5	B1C7D5 (split)	14	U	J	14	U	J	14	U	J	14	U	J	14	U	J	14	U	J
Target Quantitation Limit		16.5			16.5			16.5			16.5			16.5			16.5		

Table B3-6. Miscellaneous Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Aroclor-1260			Aroclor-1262			Aroclor-1268			Oil and Grease				
		8082			8082			8082			413.1			9071	
		WSCF/RLNP			WSCF/RLNP			WSCF/RLNP			RLNP			STLSL	
		µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q
8-11	B1C7C2	16	U		16	U		16	U						
11-14	B1C7D2	52	U		52	U		52	U		702000	U	J		
14-20.5	B1C7D4	51	U		51	U		51	U		691000	U	J		
14-20.5	B1C7D5 (split)	14	U	J										207000	U
Target Quantitation Limit		16.5			16.5			100			200000			N/A	

Table B3-6. Miscellaneous Analysis Results for Borehole C4854 (200-E-4 French Drain) Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Total petroleum hydrocarbons - diesel range WTPH_DIESEL WSCF/RLNP			Total petroleum hydrocarbons - gasoline range WTPH_GASOLINE WSCF/RLNP			Total petroleum hydrocarbons - kerosene range WTPH_DIESEL WSCF/RLNP		
		µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	VQ
8-11	B1C7C2									
11-14	B1C7D2	3900	U		250	U		3900	U	
14-20.5	B1C7D4	120000			250	U		100000		
14-20.5	B1C7D5 (split)	12400	U	J	29	U	R	12400	U	J
Target Quantitation Limit		5000			5000			5000		

Table B4-1. Radiochemical Analysis Results for Test Pit T-13A and T-13B Samples (216-T-13 Trench).

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Americium-241									Antimony-125			Carbon-14		
		AMCMISO_IE_PLATE			AMCMISO_IE_PRECIP			GAMMA			GAMMA			C14_COX_LSC		
		EBRLNE			WSCF			EBRLNE			WSCF			EBRLNE		
		pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
8–9	B1C784				0.021	U	0.048				-0.006	U	0.027	1.76	U	4.2
8–9	B1CY50				0.028	U	0.05				0	U	0.033	0.835	U	3.8
10–11	B1C769				0.017	U	0.041									
10–11	B1C771 (dup)				0.033	U	0.037									
12–13	B1C774				0.009	U	0.049									
12–13	B1C778 (split)	0.028	U	0.21					U	0.066						
14–15	B1C775				0.012	U	0.053									
19–20	B1C776				0.033	U	0.045									
24–25	B1C777				0.003	U	0.046									
equip blank tied to B1C784	B1C766															
Target Quantitation Limit		1						N/A			N/A			50		

Table B4-1. Radiochemical Analysis Results for Test Pit T-13A and T-13B Samples (216-T-13 Trench).

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Cesium-134			Cesium-137			Cobalt-60			Europium-152			Europium-154			Europium-155		
		GAMMA			GAMMA			GAMMA			GAMMA			GAMMA			GAMMA		
		WSCF			WSCF/EBRLNE			WSCF/EBRLNE			WSCF/EBRLNE			WSCF/EBRLNE			WSCF/EBRLNE		
		pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
8–9	B1C784	0.032	U	0.04	0.373		0.011	0.003	U	0.01	-0.005	U	0.03	0.006	U	0.029	0.052		0.045
8–9	B1CY50	0.034	U	0.04	1.21		0.011	-0.004	U	0.01	-0.01	U	0.034	0.004	U	0.031	0.037	U	0.049
10–11	B1C769				0.611		0.014	-0.007	U	0.014	0.006	U	0.043	0.014	U	0.044	-0.009	U	0.059
10–11	B1C771 (dup)				0.548		0.015	-0.003	U	0.015	0.018	U	0.041	-0.026	U	0.047	0.087		0.055
12–13	B1C774				0.31		0.012	0.001	U	0.01	-0.001	U	0.037	-0.022	U	0.034	0.011	U	0.063
12–13	B1C778 (split)				0.324		0.022		U	0.027		U	0.063		U	0.085		U	0.072
14–15	B1C775				0.221		0.02	-0.01	U	0.016	0.037	U	0.049	-0.036	U	0.05	0.051	U	0.058
19–20	B1C776				0.003	U	0.008	0.003	U	0.008	-0.014	U	0.023	-0.006	U	0.023	0.002	U	0.035
24–25	B1C777				0.012		0.008	-0.002	U	0.008	0.003	U	0.027	0.002	U	0.027	0.013	U	0.038
equip blank tied to B1C784	B1C766																		
Target Quantitation Limit		N/A			0.1			0.05			0.1			0.1			0.1		

Table B4-1. Radiochemical Analysis Results for Test Pit T-13A and T-13B Samples (216-T-13 Trench).

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Gross Alpha			Gross Beta			Iodine-129			Neptunium-237			Nickel-63		
		ALPHA_GPC			BETA_GPC			I129_SEP_LEPS_GS			NP237_IE_PRECIP			NI63_LSC		
		WSCF			WSCF			EBRLNE			WSCF			EBRLNE		
		pCi/L	Q	MDA	pCi/L	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
8–9	B1C784										0.001	U	0.007	2.25	U	3
8–9	B1CY50							-0.203	U	1.3	0.004	U	0.009	0.803	U	3.6
10–11	B1C769															
10–11	B1C771 (dup)															
12–13	B1C774															
12–13	B1C778 (split)															
14–15	B1C775															
19–20	B1C776															
24–25	B1C777															
equip blank tied to B1C784	B1C766	1 (pCi/L)	U	1.1 (pCi/L)	1.3 (pCi/L)		1.1 (pCi/L)									
Target Quantitation Limit		N/A			N/A			2			1			30		

Table B4-1. Radiochemical Analysis Results for Test Pit T-13A and T-13B Samples (216-T-13 Trench).

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Plutonium-238							Plutonium-239/240						Potassium-40		
		PUISO_IE_PRECIP				PUISO_PLATE			PUISO_IE_PRECIP			PUISO_PLATE			GAMMA		
		WSCF				EBRLNE			WSCF			EBRLNE			EBRLNE		
		pCi/g	Q	VQ	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
8–9	B1C784	0.009	U		0.064				0.01	U	0.013						
8–9	B1CY50	0.007	U		0.061				0.02		0.019						
10–11	B1C769	-0.012	U	J	0.055				0.022		0.016						
10–11	B1C771 (dup)	0.017	U	J	0.04				0.028		0.005						
12–13	B1C774	-0.009	U	J	0.045				0.055		0.005						
12–13	B1C778 (split)					0	U	0.15				0.06	U	0.15	9.42		0.27
14–15	B1C775	0.005	U	J	0.055				0.008	U	0.015						
19–20	B1C776	0.015	U	J	0.052				-0.006	U	0.026						
24–25	B1C777	0.018	U	J	0.057				0.013		0.005						
equip blank tied to B1C784	B1C766																
Target Quantitation Limit		1							1						N/A		

Table B4-1. Radiochemical Analysis Results for Test Pit T-13A and T-13B Samples (216-T-13 Trench).

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Radium-226			Radium-228			Technetium-99						Thorium-228					
		GAMMA			GAMMA			TC99_TR_SEP			TC99_ETVDSK_LS			GAMMA			THISO_IE_PLATE		
		WSCF/EBRLNE			WSCF/EBRLNE			EBRLNE			STLSL			EBRLNE			EBRLNE		
		pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
8–9	B1C784	0.517		0.019	0.697		0.03	0.198	U	0.71							0.777		0.079
8–9	B1CY50	0.657		0.02	0.694		0.033	0.116	U	0.57							0.766		0.064
10–11	B1C769							0.125	U	0.54									
10–11	B1C771 (dup)							0.145	U	0.55									
12–13	B1C774							0.068	U	0.56									
12–13	B1C778 (split)	0.38		0.058	0.426		0.12				0.527	U	0.616	0.444		0.031			
14–15	B1C775							0.081	U	0.56									
19–20	B1C776							0.313	U	0.56									
24–25	B1C777							0.248	U	0.55									
equip blank tied to B1C784	B1C766																		
Target Quantitation Limit		N/A			N/A			15						N/A					

Table B4-1. Radiochemical Analysis Results for Test Pit T-13A and T-13B Samples (216-T-13 Trench).

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Thorium-230			Thorium-232						Total beta radiostrontium			Tritium		
		THISO_IE_PLATE			GAMMA			THISO_IE_PLATE			SRTOT_SEP_PRECIP			TRITIUM_COX_LSC		
		EBRLNE			EBRLNE			EBRLNE			WSCF/EBRLNE			EBRLNE		
		pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
8–9	B1C784	0.634		0.21				0.741		0.073	0.17	U	0.22	2.99	U	3.4
8–9	B1CY50	0.442		0.19				0.765		0.07	0.78		0.32	1.34	U	3.2
10–11	B1C769										0.52		0.3			
10–11	B1C771 (dup)										0.33		0.3			
12–13	B1C774										-0.1	U	0.3			
12–13	B1C778 (split)				0.426		0.12				0.304		0.23			
14–15	B1C775										0.032	U	0.3			
19–20	B1C776										1.1		0.3			
24–25	B1C777										0.3	U	0.3			
equip blank tied to B1C784	B1C766															
Target Quantitation Limit		N/A			1						1			400		

Table B4-1. Radiochemical Analysis Results for Test Pit T-13A and T-13B Samples (216-T-13 Trench).

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Uranium			Uranium-233/234						
		UTOT_KPA			UISO_IE_PRECIP				UISO_PLATE		
		EBRLNE			WSCF				EBRLNE		
		µg/kg	Q	MDA	pCi/g	Q	VQ	MDA	pCi/g	Q	MDA
8–9	B1C784				0.32			0.005			
8–9	B1CY50				0.48			0.02			
10–11	B1C769				0.31		J	0.016			
10–11	B1C771 (dup)				0.23		J	0.013			
12–13	B1C774				0.27		J	0.018			
12–13	B1C778 (split)	2060		9					0.996		0.24
14–15	B1C775				0.26		J	0.019			
19–20	B1C776				0.18		J	0.013			
24–25	B1C777				0.11		J	0.022			
equip blank tied to B1C784	B1C766										
Target Quantitation Limit		1000			1						

Table B4-1. Radiochemical Analysis Results for Test Pit T-13A and T-13B Samples (216-T-13 Trench).

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Uranium-235										Uranium-238								
		GAMMA EBRLNE			UISO_IE_PRECIP WSCF				UISO_PLATE EBRLNE			GAMMA EBRLNE			UISO_IE_PRECIP WSCF			UISO_PLATE EBRLNE		
		pCi/g	Q	MDA	pCi/g	Q	VQ	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA	pCi/g	Q	MDA
8–9	B1C784				0.027			0.014							0.31		0.005			
8–9	B1CY50				0.02			0.005							0.47		0.014			
10–11	B1C769				0.027		J	0.005							0.32		0.005			
10–11	B1C771 (dup)				0.023		J	0.005							0.32		0.013			
12–13	B1C774				0.03		J	0.005							0.32		0.005			
12–13	B1C778 (split)		U	0.092					0	U	0.29		U	3				0.622		0.24
14–15	B1C775				0.015		J	0.014							0.3		0.005			
19–20	B1C776				0.01		J	0.005							0.16		0.013			
24–25	B1C777				0.02		J	0.005							0.15		0.005			
equip blank tied to B1C784	B1C766																			
Target Quantitation Limit		N/A			1							N/A			1					

Table B4-2. Metals Analysis Results for the 216-T-13 Trench Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Antimony		Arsenic		Barium		Beryllium		Bismuth		Boron		Cadmium			
		ICPMS		ICPMS		ICPMS		ICPMS		ICP		ICP		ICPMS		ICP	
		WSCF		WSCF		WSCF		WSCF		WSCF		WSCF		WSCF		RLNP	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
8–9	B1C784	1010	U	2950		79200		282		2160	U	2550	U	138			
8–9	B1CY50	909	U	2780		82100		289		2200	U	2600	U	397			
10–11	B1C769													159			
10–11	B1C771 (dup)													246			
12–13	B1C774													306			
12–13	B1C778 (split)															130	
14–15	B1C775													167			
19–20	B1C776													141			
24–25	B1C777													99	U		
equip blank tied to B1C784	B1C766													0.1 (µg/L)	U		
Target Quantitation Limit		6000		10000		20000		500		10000		N/A		500			

Table B4-2. Metals Analysis Results for the 216-T-13 Trench Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Chromium				Lead				Mercury				Nickel		Selenium		Silver		Uranium	
		ICPMS WSCF		ICP RLNP		ICPMS WSCF		ICP RLNP		ICPMS WSCF		CVAA RLNP		ICPMS WSCF		ICPMS WSCF		ICPMS WSCF		ICPMS WSCF	
		µg/kg	Q	µg/L	Q	µg/kg	Q	µg/L	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
8–9	B1C784	8680				11300				101	U			9960		404	U	101	U		
8–9	B1CY50	9340				24100				13300						364	U	91	U		
10–11	B1C769	7260				10900														901	
10–11	B1C771 (dup)	6070				8180														1030	
12–13	B1C774	6920				13400														1010	
12–13	B1C778 (split)			3500				10900				40									
14–15	B1C775	6450				7450														928	
19–20	B1C776	4220				3020														544	
24–25	B1C777	3970	U			3110														459	
equip blank tied to B1C784	B1C766	4 (µg/L)	U			0.214 (µg/L)												0.1 (µg/L)	U		
Target Quantitation Limit		1000				10000				N/A		200		4000		10000		2000		1000	

Table B4-3. Wet Chemistry Analysis Results for the 216-T-13 Trench Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Ammonium ion		Cyanide		ph					Phosphate		Sulfate	
		300.7		335.2		9045		150.1			300		300	
		WSCF		WSCF		RLNP		WSCF			WSCF/RLNP		WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	ph	Q	ph	Q	VQ	µg/kg	Q	µg/kg	Q
8–9	B1C784	252	U	200	U			9.57			8280	U	18300	
8–9	B1CY50	307	B					9.49			8130	U	66600	
10–11	B1C769							9.52		J	8280	U	12000	B
10–11	B1C771 (dup)							9.57		J	8130	U	4900	U
12–13	B1C774							9.58		J	8280	U	16700	B
12–13	B1C778 (split)					9.6					7900		23200	
14–15	B1C775							9.7		J	8130	U	18500	B
19–20	B1C776							9.69		J	8280	U	7320	B
24–25	B1C777							9.44		J	8280	U	25000	B
equip blank tied to B1C784	B1C766										239 (µg/L)	U	208 (µg/L)	B
Target Quantitation Limit		N/A		N/A		N/A					5000		5000	

Table B4-4. Volatile Organic Analysis Results for the 216-T-13 Trench Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	1,1,1-Trichloroethane		1,1,2,2-Tetrachloroethane		1,1,2-Trichloroethane		1,1-Dichloroethane		1,1-Dichloroethene		1,2-Dichloroethane		1,2-Dichloroethene (Total)	
		8260		8260		8260		8260		8260		8260		8260	
		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
8–9	B1C784	2	U	2	U	2	U	2	U	2	U	2	U	2	U
8–9	B1CY50	2	U	2	U	2	U	2	U	2	U	2	U	2	U
10–11	B1C769	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U
10–11	B1C771 (dup)	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U
12–13	B1C774	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
12–13	B1C778 (split)	5	U	5	U	5	U	5	U	5	U	5	U	5	U
14–15	B1C775	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
19–20	B1C776	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
24–25	B1C777	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
equip blank tied to B1C784	B1C766	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
trip blank tied to B1C784	B1C768	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
Target Quantitation Limit		5		N/A		5		10		N/A		5		N/A	

Table B4-4. Volatile Organic Analysis Results for the 216-T-13 Trench Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	1,2-Dichloropropane		1-Butanol		2-Butanone		2-Hexanone		4-Methyl-2-Pentanone		Acetone		Benzene	
		8260		8260		8260		8260		8260		8260		8260	
		WSCF/RLNP		WSCF		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
8–9	B1C784	2	U	41	U	2	U	2	U	2	U	2	U	2	U
8–9	B1CY50	2	U	41	U	2	U	2	U	2	U	2	U	2	U
10–11	B1C769	2.2	U	44	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U
10–11	B1C771 (dup)	2.2	U	44	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U
12–13	B1C774	2.1	U	42	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
12–13	B1C778 (split)	5	U			10	U	10	U	10	U	10	U	5	U
14–15	B1C775	2.1	U	42	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
19–20	B1C776	2.1	U	41	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
24–25	B1C777	2.1	U	41	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
equip blank tied to B1C784	B1C766	1 (µg/L)	U	20 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
trip blank tied to B1C784	B1C768	1 (µg/L)	U	20 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
Target Quantitation Limit		N/A		N/A		10		N/A		10		20		5	

Table B4-4. Volatile Organic Analysis Results for the 216-T-13 Trench Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Bromodichloro-methane		Bromoform		Bromomethane		Carbon disulfide		Carbon tetrachloride		Chlorobenzene		Chloroethane		Chloroform	
		8260		8260		8260		8260		8260		8260		8260		8260	
		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
8–9	B1C784	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
8–9	B1CY50	2	U	2	U	2	U	2	U	2	U	2	U	2	U	2	U
10–11	B1C769	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U
10–11	B1C771 (dup)	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U
12–13	B1C774	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
12–13	B1C778 (split)	5	U	5	U	10	U	5	U	5	U	5	U	10	U	5	U
14–15	B1C775	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
19–20	B1C776	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
24–25	B1C777	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
equip blank tied to B1C784	B1C766	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
trip blank tied to B1C784	B1C768	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
Target Quantitation Limit		N/A		N/A		N/A		N/A		5		5		N/A		5	

Table B4-4. Volatile Organic Analysis Results for the 216-T-13 Trench Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Chloromethane		cis-1,2-Dichloroethylene		cis-1,3-Dichloropropene		Dibromochloro-methane		Ethylbenzene		Methylene chloride			Styrene	
		8260		8260		8260		8260		8260		8260			8260	
		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP			WSCF/RLN	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	VQ	µg/kg	Q
8–9	B1C784	2	U	2	U	2	U	2	U	2	U	2	U		2	U
8–9	B1CY50	2	U	2	U	2	U	2	U	2	U	2	U		2	U
10–11	B1C769	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U		2.2	U
10–11	B1C771 (dup)	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U		2.2	U
12–13	B1C774	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U		2.1	U
12–13	B1C778 (split)	10	U	5	U	5	U	5	U	5	U	3.5	JB		5	U
14–15	B1C775	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U		2.1	U
19–20	B1C776	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U		2.1	U
24–25	B1C777	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U		2.1	U
equip blank tied to B1C784	B1C766	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U		1 (µg/L)	U
trip blank tied to B1C784	B1C768	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U		1 (µg/L)	U
Target Quantitation Limit		N/A		1		N/A		N/A		5		5			N/A	

Table B4-4. Volatile Organic Analysis Results for the 216-T-13 Trench Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Tetrachloro-ethene		Toluene		trans-1,2-Dichloroethylene		trans-1,3-Dichloropropene		Trichloro-ethene		Vinyl chloride		Xylenes (total)	
		8260		8260		8260		8260		8260		8260		8260	
		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
8–9	B1C784	2	U	2	U	2	U	2	U	2	U	2	U	2	U
8–9	B1CY50	2	U	2	U	2	U	2	U	2	U	2	U	2	U
10–11	B1C769	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U
10–11	B1C771 (dup)	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U
12–13	B1C774	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
12–13	B1C778 (split)	5	U	5	U	5	U	5	U	5	U	10	U	5	U
14–15	B1C775	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
19–20	B1C776	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
24–25	B1C777	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U	2.1	U
equip blank tied to B1C784	B1C766	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
trip blank tied to B1C784	B1C768	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U	1 (µg/L)	U
Target Quantitation Limit		5		5		1		N/A		5		N/A		5	

Table B4-5. Semivolatile Organic Analysis Results for the 216-T-13 Trench Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	1,2,4-Trichlorobenzene		1,4-Dichlorobenzene		2,4-Dinitrotoluene		2-Chlorophenol		4-Chloro-3-methylphenol		4-Nitrophenol		Acenaphthene		Di-n-butylphthalate	
		8270		8270		8270		8270		8270		8270		8270		8270	
		WSCF		WSCF		WSCF		WSCF		WSCF		WSCF		WSCF		WSCF	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
8–9	B1C784	190	U	270	U	110	U	150	U	95	U	170	U	140	U		
8–9	B1CY50	180	U	270	U	110	U	150	U	94	U	170	U	140	U	620	
10–11	B1C769	200	U	290	U	120	U	170	U	100	U	190	U	150	U	710	
10–11	B1C771 (dup)	200	U	290	U	120	U	170	U	100	U	190	U	150	U	500	
12–13	B1C774	190	U	280	U	110	U	160	U	99	U	180	U	150	U	430	
12–13	B1C778 (split)																
14–15	B1C775	190	U	280	U	110	U	160	U	97	U	180	U	140	U		
19–20	B1C776	190	U	270	U	110	U	160	U	96	U	180	U	140	U		
24–25	B1C777	190	U	270	U	110	U	160	U	96	U	180	U	140	U	480	
equip blank tied to B1C784	B1C766	2.6 (µg/L)	U	1.3 (µg/L)	U	0.38 (µg/L)	U	0.31 (µg/L)	U	0.3 (µg/L)	U	0.93 (µg/L)	U	3.5 (µg/L)	U		
Target Quantitation Limit		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A	

Table B4-5. Semivolatile Organic Analysis Results for the 216-T-13 Trench Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	N-Nitrosodi-n-dipropylamine		Penta-chlorophenol			Phenol			Pyrene		Tributyl phosphate	
		8270		8270			8270			8270		8270	
		WSCF		WSCF			WSCF			WSCF		WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	VQ	µg/kg	Q	VQ	µg/kg	Q	µg/kg	Q
8–9	B1C784	150	U	150	U		140	U		160	U	140	U
8–9	B1CY50	150	U	150	U		140	U		160	U	140	U
10–11	B1C769	160	U	160	U	J	150	U	J	170	U	150	U
10–11	B1C771 (dup)	160	U	160	U	J	150	U	J	170	U	160	U
12–13	B1C774	160	U	150	U	J	150	U	J	160	U	150	U
12–13	B1C778 (split)											360	U
14–15	B1C775	160	U	150	U	J	140	U	J	160	U	150	U
19–20	B1C776	150	U	150	U	J	140	U	J	160	U	150	U
24–25	B1C777	150	U	150	U	J	140	U	J	160	U	150	U
equip blank tied to B1C784	B1C766	0.39 (µg/L)	U	0.55 (µg/L)	U		0.72 (µg/L)	U		0.35 (µg/L)	U	0.33 (µg/L)	U
Target Quantitation Limit		N/A		N/A			330			N/A		3300	

Table B4-6. Miscellaneous Analysis Results for the 216-T-13 Trench Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Aroclor-1016		Aroclor-1221		Aroclor-1232		Aroclor-1242		Aroclor-1248		Aroclor-1254		Aroclor-1260		Aroclor-1262	
		8082		8082		8082		8082		8082		8082		8082		8082	
		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP		WSCF	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
8–9	B1C784	50	U	100	U	50	U	50	U	50	U	50	U	50	U	50	U
8–9	B1CY50	49	U	98	U	49	U	49	U	49	U	49	U	49	U	49	U
10–11	B1C769	54	U	110	U	54	U	54	U	54	U	54	U	54	U	54	U
10–11	B1C771 (dup)	55	U	110	U	55	U	55	U	55	U	55	U	55	U	55	U
12–13	B1C774	52	U	100	U	52	U	52	U	52	U	52	U	52	U	52	U
12–13	B1C778 (split)	14	U	14	U	14	U	14	U	14	U	14	U	14	U		
14–15	B1C775	51	U	100	U	51	U	51	U	51	U	51	U	51	U	51	U
19–20	B1C776	51	U	100	U	51	U	51	U	51	U	51	U	51	U	51	U
24–25	B1C777	51	U	100	U	51	U	51	U	51	U	51	U	51	U	51	U
Target Quantitation Limit		16.5		16.5		16.5		16.5		16.5		16.5		16.5		16.5	

Table B4-6. Miscellaneous Analysis Results for the 216-T-13 Trench Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Aroclor-1268		Oil and Grease		Total petroleum hydrocarbons–					
						diesel range		gasoline range		kerosene range	
		8082		413.1_OILGREASE		WTPH_DIESEL		WTPH_GASOLINE		WTPH_DIESEL	
		WSCF		RLNP		WSCF/RLNP		WSCF/RLNP		WSCF/RLNP	
		µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q	µg/kg	Q
8–9	B1C784	50	U	677000	U	3800	U	250	U	3800	U
8–9	B1CY50	49	U	678000	U	3800	U	250	U	3800	U
10–11	B1C769	54	U	734000	U	4100	U	250	U	4100	U
10–11	B1C771 (dup)	55	U	738000	U	4100	U	250	U	4100	U
12–13	B1C774	52	U	730000	U	4000	U	250	U	4000	U
12–13	B1C778 (split)					21000		30	U	13000	U
14–15	B1C775	51	U	693000	U	3900	U	250	U	3900	U
19–20	B1C776	51	U	688000	U	3900	U	250	U	3900	U
24–25	B1C777	51	U	687000	U	3900	U	250	U	3900	U
Target Quantitation Limit		16.5		200000		5000		5000		5000	

Table B4-7. Physical Properties Results for the 216-T-13 Trench Samples.

SAMPLE INTERVAL DEPTH (ft bgs)	SAMPLE NUMBER	Density		% Moisture		Particle Size											
		Shaw		Shaw		Shaw											
		D2937_DENSITY		D2216_%	SW846	D422_PARTCLE SIZE											
		kg/m^3		moisture	moisture	Percent passing sieve sized											
		Dry	Wet	dry sample	wet	3 in	1.5 in	3/4 in	3/8 in	No.4	No.10	No.20	No.40	No.60	No.100	No.140	No.200
10–11	B1C773	N/A	N/A	9.6	8.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
24–25	B1C779	N/A	N/A	3.2	3.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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