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Investigation Report for Threemile Canyon Aggregate Area

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Prepared by the Environmental Programs Directorate

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June 2010

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EXECUTIVE SUMMARY

This investigation report presents the investigation activities at 40 solid waste management units and areas of concern in the Threemile Canyon Aggregate Area at Los Alamos National Laboratory (the Laboratory). The solid waste management units and areas of concern are located in former Technical Area 12 (TA-12), currently within the boundaries of TA-67 and TA-15, TA-14, TA-15, and TA-36. Ten of the 40 sites have been approved for no further action and are not addressed in this report. Investigation of four additional sites located in areas potentially impacted by active firing site operations has been deferred per Table IV-2 of the Compliance Order on Consent.

The objective of this investigation is to define the nature and extent of contamination and, if defined, to determine whether the sites pose a potential unacceptable risk to human health or the environment. This report presents the results of site characterization activities conducted during the 2009–2010 investigation, as directed by the investigation work plan for Threemile Canyon Aggregate Area, submitted to the New Mexico Environment Department (NMED) in July 2008. A revised work plan was submitted in October 2008 and approved by NMED in November 2008.

The 2009–2010 investigation activities included collecting 764 surface and shallow subsurface soil, sediment, and rock samples from 358 locations from the surface to a maximum depth of 182.5 ft below ground surface. Data from the samples collected during the 2009–2010 investigation were combined with data collected before 2009 that meet current Laboratory data-quality requirements.

The sampling data presented in this report indicate the extent of contamination has not been defined at the 26 sites investigated. Additional sampling is needed to define the vertical and/or lateral extent of one or more contaminants at each of the sites. Remediation is recommended for 6 of the 26 sites. The Laboratory will provide a Phase II investigation work plan to address the additional sampling required at the sites identified in this report. The Phase II work plan will also identify specific sampling and remediation locations, sampling depths, and analytical suites required to confirm the effectiveness of all remediation activities. When additional data are available and extent is defined, chemicals of potential concern will be identified, and human health and ecological risk-screening assessments will be conducted to determine if the sites pose a potential unacceptable risk to human health or the environment.

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1.0 INTRODUCTION

This investigation report discusses the 2009–2010 investigation of the Threemile Canyon Aggregate Area at Los Alamos National Laboratory (LANL or the Laboratory) and presents a comprehensive assessment of current site conditions based on the results of this and previous investigations. The location of Threemile Canyon Aggregate Area with respect to the Laboratory is shown in Figure 1.0-1.

The Laboratory is a multidisciplinary research facility owned by the U.S. Department of Energy (DOE) and managed by Los Alamos National Security, LLC. The Laboratory is located in north-central New Mexico, approximately 60 mi northeast of Albuquerque and 20 mi northwest of Santa Fe. The Laboratory site covers 40 mi^2 of the Pajarito Plateau, which consists of a series of fingerlike mesas separated by deep canyons that contain perennial and intermittent streams running from west to east. Mesa tops range in elevation from approximately 6200 to 7800 ft. The eastern portion of the plateau stands 300 to 1000 ft above the Rio Grande.

The Environmental Programs (EP) Directorate is leading the Laboratory's participation in a national DOE effort to clean up sites and facilities formerly involved in weapons research and development. The EP Directorate's goal is to ensure that past operations do not threaten human or environmental health and safety in and around Los Alamos County. To achieve this goal, the Laboratory is currently investigating sites potentially contaminated by past operations; the sites under investigation are designated as consolidated units, solid waste management units (SWMUs), or areas of concern (AOCs).

This investigation report describes the characterization activities conducted in 2009–2010 to complete the investigation of SWMUs, AOCs, and consolidated units in former Technical Area-12 (TA-12), currently located within the boundaries of TA-15 and TA-67, and in TA-14, TA-15, and TA-36. Figure 1.0-1 shows the locations of the TAs within the Threemile Canyon Aggregate Area. As a result of its operational history, the Threemile Canyon Aggregate Area contains both radioactive and hazardous components. Information on radioactive materials and radionuclides, including the results of sampling and analysis of radioactive constituents, is voluntarily provided to the New Mexico Environment Department (NMED) in accordance with DOE policy.

Corrective actions at the Laboratory are subject to a Compliance Order on Consent (the Consent Order). The Consent Order was issued pursuant to the New Mexico Hazardous Waste Act, New Mexico Statutes Annotated (NMSA) 1978 §74-4-10, and the New Mexico Solid Waste Act, NMSA 1978, §74 9 36(D).

The Threemile Canyon Aggregate Area consists of 40 SWMUs and AOCs. Table 1.0-1 provides a summary of the 40 sites within the Threemile Canyon Aggregate Area. Ten of the 40 sites have been approved for no further action and are not addressed in this report. Four additional sites have been deferred per Table IV-2 of the Consent Order; section 6.2 of this report gives a summary of these four sites. The remaining 26 sites are under investigation. Plate 1 shows the locations of the four deferred sites and the remaining 26 sites under investigation in the Threemile Canyon Aggregate Area, along with monitoring wells, surface water and stormwater runoff monitoring stations, canyon reaches, and springs.

1.1 Investigation Overview

The Threemile Canyon Aggregate Area investigation was conducted in accordance with the approved investigation work plan (LANL 2008, 105673; NMED 2008, 104256). The purpose of the 2009–2010 investigation was to complete the characterization of the nature and extent of contamination from historical facility operations at Threemile Canyon Aggregate Area sites and to support future corrective

actions for the sites. The approved Threemile Canyon Aggregate Area investigation work plan (LANL 2008, 105673; NMED 2008, 104256) identified the following activities:

- Collect samples to define the nature and extent of surface and subsurface contamination at 26 sites. Ten of these sites are associated with former TA-12, 1 site is associated with TA-14, 11 sites are associated with TA-15, and 4 sites are associated with TA-36.
- Remove septic tanks at SWMUs 15-009(b), 15-009(c), and 15-009(h) and a settling tank at SWMU 15-010(b). After excavation at each site, collect confirmation samples.

1.2 Data Usage and Data Review Methodology

The purpose of the data review is to identify chemicals of potential concern (COPCs) for each SWMU or AOC in the Threemile Canyon Aggregate Area for which the nature and extent of contamination have been defined. If the nature and extent of inorganic chemicals, organic chemicals, and/or radionuclides have been defined for a site, COPC identification is performed for that site. If nature and extent are not defined for a single analyte, COPCs are not identified for that site and further investigation, including Phase II sampling, is recommended.

Data evaluated in this investigation report include historical data from samples collected from 1994 and 1998 as well as the most recent investigation samples collected during the 2009–2010 investigation. Only decision-level data are presented in the tables and shown in the figures and on the plates in this investigation report.

Decision-level data for inorganic chemicals and radionuclides from previous investigations are compared with background values (BVs) and fallout values (FVs) as applicable (LANL 1998, 059730). The data tables for inorganic chemicals and radionuclides include only decision-level data where sample concentrations are above BVs/FVs or where analytes are detected if no BVs/FVs are available. Data tables for organic chemicals include all detected concentrations of organic chemicals.

Decision-level data are used to determine if the nature and extent of contamination are defined. Extent is determined for inorganic chemicals and radionuclides by spatial analysis of detections above BVs or FVs and by detection alone for organic chemicals. The extent of contamination is considered defined if for all analytes the concentration decreases with depth at each location and decreases laterally away from or downgradient of the contaminant source. In some cases, a clear trend in concentrations is not observed either with depth or laterally or concentrations may increase slightly. The extent of contamination may be considered defined for individual analytes in these cases if sample concentrations are above BVs but do not exceed the maximum concentration of the analyte in the background data set.

Inorganic chemicals and radionuclides whose concentrations across a site were below BVs/FVs or are not substantially different from background are considered to have extent defined. In addition, low detected concentrations of certain naturally occurring inorganic chemicals (e.g., nitrate) that do not have an established BV likely reflect naturally occurring concentrations, and the extent is considered defined unless concentrations increase substantially and exceed expected natural concentrations.

Organic chemicals detected at or near the estimated quantitation limit (EQL) for the analytical method are considered present at “trace” concentrations, and extent is defined.

Evaluations of the nature and extent of contamination for all inorganic chemicals detected above BVs or that were detected and do not have an established BVs, detected organic chemicals, and radionuclides detected above BVs/FVs or that were detected and do not have established BVs/FVs are presented in sections 4, 5, 6, and 7.

1.3 Document Organization

This investigation report is organized in 11 sections, including this introduction, with multiple supporting appendixes. The introduction presents an overview of the investigation and the organization of the document. Section 2 presents the scope of investigation activities, health and safety, waste management, and deviations from the approved investigation work plan (LANL 2008, 105673; NMED, 2008, 104256). Section 3 presents the regulatory criteria. Sections 4 through 7 present, by TA, an overview of the site characteristics, operational history, the results of previous investigations, the results of the field investigation, site contamination based on the analytical results, and the nature and extent of contamination. Section 8 presents conclusions based on applicable historical and 2009–2010 investigation data. Section 9 discusses recommendations for additional actions, where warranted, based on the data. Section 10 presents a schedule for recommended activities. Section 11 includes a list of references cited in this report and the map data sources.

Appendixes include acronyms, a metric conversion table, and definitions of data qualifiers (Appendix A); field methods (Appendix B); borehole logs (Appendix C, on CD); analytical program descriptions and summaries of data quality (Appendix D); analytical suites and results, analytical reports, and sample collection logs (Appendix E, on DVD); and investigation-derived waste (IDW) storage and disposal documentation (Appendix F).

2.0 SCOPE OF ACTIVITIES

This section presents an overview of preliminary activities and the field activities performed during the implementation of the Threemile Canyon Aggregate Area investigation work plan (LANL 2008, 105673; NMED, 2008, 104256). The scope of activities for the 2009–2010 Threemile Canyon Aggregate Area investigation included site access and premobilization activities, geodetic surveys, surface and shallow-subsurface sampling, borehole drilling, sampling, tank excavation, health and safety monitoring, and waste management activities.

2.1 Site Access and Pre-mobilization Activities

The Threemile Canyon Aggregate Area is closed to the public and is accessible only to Laboratory employees with a clearance or under supervision of an escort. Before field mobilization, the issue of public access was reviewed, and efforts were made to provide a secure and safe work area.

Premobilization activities included completing the permit requirements identification form, completing excavation permits, requesting sampling paperwork from the Laboratory's Sample Management Office (SMO), and conducting the readiness review. Additional premobilization activities included constructing the less-than-90-day waste storage areas and staging waste drums.

2.2 Field Activities

This section describes the field activities conducted during the 2009–2010 investigation. Additional details regarding the field methods and procedures used to perform these field activities are presented in Appendix B.

2.2.1 Geodetic Survey

Geodetic surveys were conducted during the Threemile Canyon Aggregate Area investigation to identify surface and subsurface sampling locations. The planned sampling locations for the 2009–2010

investigation are described in the approved work plan (LANL 2008, 105673; NMED 2008, 104256). An initial geodetic survey was performed to establish and mark the planned locations in the field.

Geodetic surveys were conducted in accordance with Standard Operating Procedure (SOP) 5028, Coordinating and Evaluating Geodetic Surveys, using a Trimble 5700 differential global positioning system unit. Horizontal accuracy of the Trimble GPS 5700 is within 0.1 ft. During sampling, if the planned location could not be sampled because of surface or subsurface obstruction or other unanticipated field conditions, the relocated sampling location was resurveyed.

The surveyed coordinates for all sampling locations are presented in Table 2.2-1. All coordinates are expressed as State Plane Coordinate System 83, New Mexico Central, U.S. All surveyed coordinates for sampling locations were submitted for upload to the Sample Management Database.

2.2.2 Field Screening

Core samples, cuttings, and excavated material were screened for gross-alpha and beta radioactivity by a Laboratory radiation control technician (RCT). Screening was performed using an Eberline E600 with either a 380AB or SHP360 probe (or equivalent) and an ESP-1 rate meter with a 210 probe (or equivalent) in accordance with the Laboratory's SOP 10.07, Field Monitoring for Surface and Volume Radioactivity Levels. The probe was held less than 1 in. away from the medium. Measurements were made by conducting a quick scan to find the location with the highest initial reading and then collecting a 1–min reading at that location to determine levels of gross-alpha and -beta radioactivity.

After field-screening measurements were established, appropriate precautions were taken before samples were collected. Samples from the soil and core material were collected and logged. The RCT collected and recorded background level measurements for gross-alpha and -beta radioactivity on a daily basis.

Before samples were collected, all surface sampling locations were screened for high explosives (HE) with a spot test for explosives developed by the Laboratory group Dynamic Experimentation (DE) 1. A small amount of soil was placed on a piece of filter paper, followed by a few drops of reagent 1 (sodium methoxide and dimethyl sulfoxide), a few drops of reagent 2 (hydrochloric acid and sulfanilamide), and a few drops of reagent 3 [1-N-(naphthyl)-ethylene diamine hydrochloride in water]. The detection limit (DL) of the test is approximately 100 to 200 parts per million. The test was used only qualitatively to determine 1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX); nitrocellulose; nitroglycerine; pentaerythritol tetranitrate (PETN); hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX); tetryl; triaminotrinitrobenzene (TATB); or 2,4,6-trinitrotoluene (TNT) contamination.

All samples were submitted to the American Radiation Services, Inc., laboratory in White Rock, NM, for gross-alpha, -beta, and -gamma analyses before shipment by the SMO to ensure compliance with U.S. Department of Transportation requirements.

Field-screening results were recorded on borehole logs and/or corresponding sample collection logs (SCLs). Borehole logs are presented in Appendix C and SCLs/chain of custody (COC) forms are included in Appendix E. Radiation screening results are presented in Table 2.2-2.

2.2.3 Surface and Shallow-Subsurface Soil Investigation

Samples were collected according to the approved investigation work plan (LANL 2008, 105673; NMED 2008, 104256). Table 2.2-1 shows the proposed sampling locations as listed in the investigation work plan, with the corresponding actual sampled location identifiers.

Surface samples were collected using the spade-and-scoop method in accordance with SOP-06.09, Spade and Scoop Method for Collection of Soil Samples, or with a hand auger in accordance with SOP-06.10, Hand Auger and Thin-Wall Tube Sampler. Shallow-subsurface samples were collected using the hand auger method in accordance with SOP-06.10, Hand Auger and Thin-Wall Tube Sampler. Before any other samples were collected and before core material was broken into smaller pieces for containerization, samples were collected for volatile organic compound (VOC) analysis. Samples were collected using stainless-steel shovels or spoons and placed in stainless-steel bowls and transferred to sterile sample collection jars or bags for transport to the SMO.

Quality assurance/quality control samples (field duplicates, field trip blanks, and rinsate blanks) were collected in accordance with SOP-5059, Field Quality Control Samples. Field duplicate samples were collected at a minimum rate of 1 per 10 investigation samples. Rinsate blanks were also collected at a minimum rate of 1 per 10 investigation samples to confirm decontamination of the sampling equipment. When VOC samples were collected, field trip blank samples were collected in conjunction with investigation samples at a minimum rate of 1 per day.

All sample collection activities were coordinated with the SMO. Upon collection, samples remained at all times in the controlled custody of the field team until they were delivered to the SMO. Sample custody was then relinquished to the SMO for delivery to a preapproved off-site contract analytical laboratory for the analyses specified by the approved work plan (LANL 2008, 105673; NMED 2008, 104256). The SCLs/COC forms for all samples are provided in Appendix E

2.2.4 Subsurface Investigation

2.2.4.1 Borehole Drilling and Subsurface Sampling

At locations where the required sample depths could not be reached by hand augers, a drill rig with a hollow-stem auger was used to collect subsurface samples. Samples were collected using stainless-steel core barrel samplers in accordance with SOP-06.26, Core Barrel Sampling for Subsurface Earth Materials, at depth intervals based on criteria established in the approved work plan (LANL 2008, 105673; NMED, 2008, 104256).

For the 2009–2010 investigation, nine boreholes were drilled to depths ranging from 10–182.5 ft below ground surface (bgs), and samples were collected to characterize the sites. The samples were extracted from the core barrels, placed in stainless-steel bowls, and handled the same way as the surface and shallow-subsurface samples were handled, as described in section 2.2.3. Samples were then submitted to the SMO under COC for laboratory analyses as specified by the approved work plan (LANL 2008, 105673; NMED, 2008, 104256).

2.2.4.2 Borehole Abandonment

Boreholes were abandoned in accordance with SOP-5034, Monitoring Well and Borehole Abandonment. Borehole abandonment is described in detail in Appendix B, Field Methods.

2.2.4.3 Excavation

Excavation was performed at two sites during the 2009–2010 investigation. The septic tanks at SWMUs 15-009(b) and 15-009(c) were removed.

Fill material was removed to the tops of the two tanks, approximately 3 ft bgs at SWMU 15-009(c) and approximately 6 ft bgs at SWMU 15-009(b). The septic tanks were removed and samples were collected

beneath each tank's inlet pipe, the inlet to the tank, the tank, and the outlet pipe from the tank. The inlet and outlet drainlines to each tank were plugged and left in place. Excavated tank material was placed in rolloff containers; the volume of excavated material was approximately 30 yd^3.

Because sample analysis results of the material removed from the SWMU 15-009(b) excavation indicated the material was nonhazardous and met residential soil screening levels (SSLs) and screening action levels (SALs), the excavation was backfilled with soil removed from the excavation. In addition, clean fill material from an off-site source was placed above the fill material to restore the area to its approximate original grade and condition.

Because sample results of the material from SWMU 15-009(c) indicated the material was nonhazardous and the radioactivity was below the residential SSLs, the excavation was backfilled with soil removed from the excavation. In addition, clean fill material from an off-site source was placed above the fill material to restore the area to its approximate original grade and condition.

2.2.4.4 Equipment Decontamination

Between collection of each sample and between sampling locations, all field equipment with the potential to contact sample material (e.g., hand augers, sampling scoops, bowls, and core barrel sections) was decontaminated to prevent cross-contamination of samples and locations. Dry decontamination was performed in accordance with SOP-5061, Field Decontamination of Equipment. The dry decontamination methods used are described in Appendix B. Rinsate blanks were used to check the effectiveness of decontamination.

At sites where a drill rig was used, an RCT field screened the drilling equipment for gross-alpha and -beta radioactivity after each borehole was drilled. A RCT also surveyed the drill rig before it was brought on site and before it was released back to the drilling contractor.

2.2.5 Health and Safety Measures

All 2009–2010 investigation activities were conducted in accordance with a site-specific health and safety plan, an integrated work document, and two radiological work permits that detailed work steps, potential hazards, hazard controls, and required training to conduct work. These health and safety measures included the use of modified level-D personal protective equipment (PPE) and field monitoring for VOCs and for gross-alpha and -beta radioactivity using portable air monitoring systems.

2.2.6 Waste Management

All IDW generated during the Threemile Canyon Aggregate Area investigation was managed in accordance with the IDW management plan in the approved work plan (LANL 2008, 105673; NMED 2008, 104256) and the approved project waste characterization strategy form (WCSF) (Appendix F). These documents incorporate the requirements of all applicable U.S. Environmental Protection Agency (EPA) and NMED regulations and DOE orders. Characterization and management of IDW was performed in accordance with SOP-5238, Characterization and Management of Environmental Program Waste.

The waste streams associated with the investigation included drill cuttings, septic tank debris, high explosives (HE) spot-test waste, metal pipe, returned rad van samples, water, asphalt, lead shot, and contact IDW.

Drill cuttings and discarded core from boreholes were collected and containerized in rolloff bins or 55-gal. drums in a fenced and locked less-than-90-day waste storage area pending characterization. This waste

stream was characterized in accordance with the approved WCSF (Appendix F). The drill cuttings and discarded core waste stream were initially classified as hazardous waste pending characterization results. The waste from the drilling at Consolidated Unit 15-007(c)-00 was determined to be low level radioactive waste (LLW). The waste from the drilling at SWMUs 36-002 and 36-003(a) was determined to be nonhazardous.

Contact IDW included PPE such as gloves, disposable sampling supplies, decontamination towels, and other solid waste that may have come in contact with potentially contaminated environmental media. Contact IDW was stored in 55-gal. drums placed on pallets in the fenced and locked less-than-90-day waste storage area pending characterization results. As described in the WCSF, the contact IDW was characterized using samples collected during the investigation. This waste was determined to be nonhazardous.

HE spot-test waste included filter paper, a small amount of soil, and chemicals from the HE spot-test kit. This waste was stored in a 5-gal. drum placed on a pallet in the fenced and locked less-than-90-day waste storage area pending characterization. As described in the WCSF, the HE spot-test waste was characterized using samples collected during the investigation and the Laboratory waste profile form. This waste was determined to be nonhazardous.

Tank debris was collected and containerized in locked rolloff bins in a less-than-90-day waste storage area pending characterization. This waste stream was characterized by collecting chip samples in accordance with the approved WCSF, which is included in Appendix F. The tank debris was initially classified as hazardous waste pending characterization results. This waste was determined to be nonhazardous.

The metal pipe from AOC 12-004(b) was collected and stored in an 85-gal. drum placed on pallets in the fenced and locked less-than-90-day waste storage area pending characterization. This waste stream was characterized by collecting smear samples in accordance with the approved WCSF, which is included in Appendix F. The pipe was initially classified as hazardous waste pending characterization results. This waste was determined to be nonhazardous.

Returned rad van samples were collected and containerized in a 55-gal. drum in a fenced and locked less-than-90-day waste storage area pending characterization. This waste stream was characterized in accordance with the approved WCSF, which is included in Appendix F. The rad van samples were initially classified as hazardous waste pending characterization results. This waste was determined to be mixed LLW.

Water from the inside of the HE settling tank at SWMU 15-010(b) was collected and containerized in 300-gal. drums in a fenced and locked less-than-90-day waste storage area pending characterization. This waste stream was characterized in accordance with the approved WCSF, which is included in Appendix F. The water was initially classified as hazardous waste pending characterization results. This waste was determined to be nonhazardous.

Asphalt from SWMU 15-009(h) was stored in 55-gal. drums placed on pallets in the fenced and locked less-than-90-day waste storage area pending characterization results. As described in the WCSF, the asphalt was characterized by collecting a sample. The asphalt was determined to be LLW.

The lead shot from Consolidated Unit 15-007(c)-00 was collected and containerized in two 5-gal. drums placed on a pallet in the fenced and locked less-than-90-day waste storage area pending characterization results. The lead shot was determined to be mixed LLW.

Each waste stream was containerized and managed in storage areas appropriate to the type of waste. The management of IDW is described in greater detail in Appendix F. All available waste documentation, including WCSFs, WCSF amendments, and waste profile forms are provided in Appendix F.

2.3 Sample Analyses

The SMO shipped all investigation samples to off-site contract analytical laboratories for the requested analyses. The analyses requested were specified in the approved work plan (LANL 2008, 105673; NMED 2008, 104256) and were analyzed for all or a subset of the following: target analyte list (TAL) metals, total cyanide, nitrate, perchlorate, total uranium, explosive compounds, polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs), VOCs, americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium.

Field duplicates of investigation samples were analyzed for the same analytical suites as the corresponding investigation samples. Equipment rinsate blanks were analyzed for the same inorganic suites as the related investigation samples. Field trip blanks were analyzed only for VOCs.

2.4 Deviations

Deviations from the scope of activities defined in the approved investigation work plan (LANL 2008, 105673; NMED 2008, 104256) occurred during the implementation of the Threemile Canyon Aggregate Area investigation. Specific deviations are described in greater detail in section B-8.0 of Appendix B.

Additional samples were collected for analysis of PCBs at each SWMU and AOC to aid in defining the nature and extent of PCBs.

Eighteen planned sampling locations in the investigation work plan were adjusted because of their proximity to active utilities or were moved to place them in a drainage channel, as was intended. An additional five locations at AOC C-12-003 were moved because ground-truthing of the planned locations determined they were not located within the AOC.

Auger refusal occurred at 12 locations because of subsurface obstructions. Samples were not collected from the second planned depth at those locations.

The septic tank associated with SWMU 15-009(h) was not removed because it was determined to be immediately adjacent to active utilities. As a consequence of not removing the tank, the proposed samples from below the tank could not be collected.

The SWMU 15-010(b) HE settling tank associated with former shop building 15-8 was not removed. The contents of the tank were removed on February 25 and 26, 2010. The tank could not be removed because of facility safety concerns until the analytical results were received and an HE expert verified no HE was present in the tank. In the interim, the tank refilled with water from snowmelt. At the time of this report, the facility had not approved the removal of the tank until the appropriate safety procedures are in place. The planned samples from under the inlet pipe, the tank inlet, the tank, and the tank outlet were not collected.

An additional five locations were not sampled because of refusal and/or active utilities.

3.0 REGULATORY CRITERIA

This section describes the criteria used for evaluating potential risk to ecological and human receptors. Regulatory criteria identified in the Consent Order include cleanup standards, risk-based screening levels, and risk-based cleanup goals. Applicable SSLs for inorganic and organic COPCs and SALs for radionuclide COPCs at Threemile Canyon Aggregate Area are included in the sample result tables for each site.

The purpose of sampling in the current investigation is to define the nature and extent of contamination from historical operations, to perform human health and ecological risk-screening assessments if nature and extent are defined, and to support any future corrective actions for the site. For each consolidated unit, SWMU, and AOC, the regulatory criteria and the data gathered during the investigation are used to identify COPCs, their distribution in the environment (nature and extent), and the resulting potential human and ecological risks. The results of the data assessment help to confirm the physical location and extent of specific sites, the nature and extent of contamination, and the need for additional sampling or corrective actions at the sites.

All analytical results obtained from samples collected during the 2009–2010 investigation as well as relevant historical investigations were reviewed for quality and provided in Appendix E. All data found to be validated to current standards for data usability are regarded as “decision-level data.” Only decision-level data are included in the final data set used to characterize the nature and extent and to evaluate potential risk associated with the consolidated units, SWMUs, or AOCs.

Risk screening evaluations were not conducted for the Threemile Canyon Aggregate Area because the nature and extent of contamination are not defined for any of the sites investigated.

3.1 Current and Future Land Use

Specific screening levels depend on current and reasonably foreseeable future land use. The current and reasonably foreseeable future land use for a site determines the receptors and exposure scenarios used to select screening and cleanup levels. The land use within and surrounding the Threemile Canyon Aggregate Area is currently industrial, and it is anticipated the area will remain industrial through continued use by the Laboratory and will not change in the foreseeable future.

Recreational use is listed in the approved work plan (LANL 2008, 105673; NMED 2008, 104256), but this scenario is not appropriate for these sites because all sites are located behind locked gates or, for SWMU 36-008, because no personnel work at TA-18, and therefore, no one currently uses the area for recreation. The residential scenario is also evaluated per the Consent Order to determine whether sites require future controls.

3.2 Screening Levels

Human health and ecological risk-screening evaluations were not conducted for the solid media at the Threemile Canyon Aggregate Area because nature and extent was not defined for any of the sites investigated.

3.3 Cleanup Goals

The cleanup goals specified in Section VIII of the Consent Order are a target risk of 10^{-5} for carcinogens or a hazard index of 1 for noncarcinogens. As specified in Section VIII.B.1 of the Consent Order, the screening levels will be used as cleanup levels unless determined to be impracticable or unless SSLs do not exist for current and reasonably foreseeable future land use.

4.0 FORMER TA-12 BACKGROUND AND FIELD INVESTIGATION RESULTS

4.1 Background of Former TA-12

Former TA-12, also known as L-Site, was constructed during World War II and used as an explosives testing facility. An open area was used as the firing site where a number of shots were detonated, including one 70-kg charge (LANL 1996, 054086, p. 1-1).

In 1950, a radiation test bunker was constructed at former TA-12 to conduct radiation experiments on animals using a radioactive lanthanum-140 source. Because of these radiation experiments, a section of the perimeter became contaminated. In 1951, DE-1 began using the area, firing several shots per month (LANL 1994, 034755). By 1953, the entire site was vacated. Activities at former TA-12 ceased in the early 1950s. In 1960, the structures were decontaminated, decommissioned, and intentionally burned (LANL 1996, 054086, p. 1-1). A Laboratory group used part of the site during the Vietnam War for "Mortar Locator" experiments, which involved using an acetylene gas gun. Former TA-12 is no longer used for Laboratory operations (LANL 1994, 034755, p. 1-8).

In 1989 the Laboratory redefined TA boundaries. Most of former TA-12 was incorporated inside the boundary of TA-67 and the remaining area was incorporated into TA-67, and the remaining area was incorporated into TA-15. Two former TA-12 sites in this investigation [AOCs 12-004(a) and 12-004(b)] are located in the northeast corner of TA-15. The other eight former TA-12 sites are located in the western portion of TA-67 (Plate 1). In 2000, the Cerro Grande fire moved through former TA-12, damaging or destroying vegetation and remaining surface debris (LANL 1994, 034755, p. 1-8).

The following three SWMUs and seven AOCs within the Threemile Canyon Aggregate Area are located at former TA-12 and are addressed in this investigation report.

- Consolidated Unit 12-001(a)-99
    - ❖ SWMU 12-001(a) is a belowground, steel-lined firing pit with an aboveground steel cover (structure 12-4).
    - ❖ SWMU 12-001(b) is a firing pit located approximately 175 ft east of SWMU 12-001(a).
    - ❖ SWMU 12-002 is an area approximately 3 ft^2 used on one occasion to burn scrap explosives.
    - ❖ AOC C-12-005 is the location of a former junction box (structure 12-6).
- AOC 12-004(a) is the location of a lanthanum radiation experiment and its surrounding area, including a drainage.
- AOC 12-004(b) is a belowground aluminum pipe about 78 ft north of a former radiation shelter (structure 12-8).
- AOC C-12-001 is an area of potential soil contamination associated with the former trim building 12-1.
- AOC C-12-002 is an area of potential soil contamination associated with the former control building 12-2.
- AOC C-12-003 is an area of potential soil contamination associated with a former HE-storage magazine (building 12-3).
- AOC C-12-004 is an area of potential soil contamination associated with a former generator building 12-5.

Figure 4.1-1 shows the site features of the SWMUs and AOCs at former TA-12.

4.1.1 Surface Conditions

Threemile Canyon Aggregate Area is located on the Pajarito Plateau and consists of roughly east-trending, flat-topped mesas that drain predominantly into Pajarito Canyon watershed. Surface drainage patterns on the mesa tops are generally oriented to the north, east, and south and feed into the small systems of Threemile Canyon (Plate 1). The drainage area for the canyon systems extends from the topographic divide on the Sierra de Los Valles to the west, eastward to the Rio Grande. During the summer, stormwater runoff occasionally reaches the Rio Grande via the canyon systems (LANL 1997, 055622, p. 3-1).

Threemile Canyon is the second largest tributary to Pajarito Canyon. Threemile Canyon joins Pajarito Canyon at TA-18, parallels Pajarito Canyon on the south, and extends approximately 3.3 mi. Threemile Canyon has several unnamed tributaries. The largest tributary, informally referred to as the south fork of Threemile Canyon, has a total drainage area of approximately 1.67 mi^2. Other tributaries to Threemile Canyon are informally referred to as the middle fork of Threemile Canyon and the west fork of Threemile Canyon (LANL 1998, 059577, p. 3-5).

All former TA-12 sites are located close to Redondo Road on Pajarito Mesa.

All aboveground structures at these former TA-12 sites are gone with the exception of the steel-lined firing pit associated with SWMU 12-001(a). The two sites currently located in TA-15 extend to the south-facing slope of the north fork of Threemile Canyon. The eight sites currently in TA-67 are on a relatively flat mesa top.

The vegetation communities are similar for all the areas comprising the Threemile Canyon Aggregate Area. The primary community on the mesa tops is piñon-juniper; on the slopes, it is mixed conifer. Vegetation also consists of various shrubs, forbs, and native grasses. Open areas without vegetation are also present.

4.1.2 Subsurface Conditions

The stratigraphy of the Threemile Canyon Aggregate Area is described in detail in section 3.2.1 in the approved investigation work plan (LANL 2008, 105673; NMED 2008, 104256). The stratigraphic unit encountered during investigation of former TA-12 is limited to unit Qbt 3 of the Tshirege Member of the Bandelier Tuff. Generalized stratigraphic units comprising the Bandelier Tuff are shown in Figure 4.1-2.

The rock unit encountered at and below the surface during investigation of the former TA-12 sites was unit Qbt 3 of the Tshirege Member of the Bandelier Tuff.

- The tuff unit at the surface is Unit 3 of the Tshirege Member of the Bandelier Tuff (Qbt 3). Unit Qbt 3, which is approximately 100 ft thick, is a nonwelded to partially welded vapor-phase-altered tuff that forms the upper cliff.
- Below unit Qbt 3 is unit 2 of the Tshirege Member (Qbt 2). Unit Qbt 2, which is approximately 65 ft thick, forms a distinctive medium-brown vertical cliff that shows the greatest degree of welding in the Tshirege Member.

The belowground features at former TA-12 include two firing pits [SWMUs 12-001(a) and 12-001(b)] as well as an aluminum pipe that protrudes aboveground [AOC 12-004(b)].

4.1.3 Groundwater Conditions

Groundwater occurs in the following three distinct types on the Pajarito Plateau (LANL 1998, 059599):

- the regional aquifer, whose upper surface is typically contained within the conglomerates and sandstones of the Puye Formation;
- perched intermediate-depth saturated horizons; and
- shallow alluvial groundwater found in the canyon-bottom alluvium.

Groundwater conditions of the Threemile Canyon Aggregate Area are described in detail in section 3.2.2.1 of the approved investigation work plan (LANL 2008, 105673; NMED 2008, 104256). The locations of existing wells within or in the vicinity of the Threemile Canyon Aggregate Area are shown on Plate 1.

Groundwater monitoring is currently performed in accordance with the Interim Facility-Wide Groundwater Monitoring Plan, which is updated annually per the Consent Order. The regional groundwater and the intermediate groundwater in the Threemile Canyon watershed are monitored at regional well R-19, located near the southern boundary of the Threemile Canyon Aggregate Area in TA-36 (Plate 1). Three alluvial groundwater observation wells—18-BG-4, 3MAO-2, and 18-MW-8—are located in TA-18 just east of the TA-36 boundary (Plate 1). These wells are used to characterize the potential impact of SWMUs and AOCs in Threemile Canyon.

No groundwater sampling or other groundwater investigations were included in the scope of this investigation.

The former TA-12 sites are located on the mesa top and the surface is separated from the regional aquifer by an unsaturated zone approximately 1000 to 1300 ft thick (Figure 4.1-3). No intermediate-depth saturated horizons or shallow alluvial groundwater are present in the immediate vicinity.

4.1.4 Surface Water Conditions

Most surface water in the Los Alamos area occurs as ephemeral, intermittent, or interrupted streams in canyons cut into the Pajarito Plateau. All surface water drainages and groundwater discharge from the plateau ultimately arrive at the Rio Grande.

No natural permanent surface water is present on the mesa-top of the Threemile Canyon Aggregate Area. During spring snowmelt and summer thunderstorms, runoff may flow from the mesa top onto the canyon slopes of Threemile Canyon. Three surface water and stormwater runoff monitoring stations—3M-SMA-0.5 and 3M-SMA-0.6 in TA-15 and 3M-SMA-3 E246 in TA-18—are located in the Threemile Canyon Aggregate Area (Plate 1).

Six reaches, consisting of 10 subreaches, are located in Threemile Canyon (Plate 1). These reaches have been investigated under Pajarito Canyon sediment investigations (LANL 1998, 059577, p. 7-10; LANL 2006, 091812; LANL 2007, 095408).

Springs discharging to Threemile Canyon include the Threemile Spring located in TA-36 and the TA-18 Spring (Plate 1). These springs are perennial and support short reaches of perennial flow in Threemile Canyon (LANL 1998, 059577, pp. 3-4–3-5). They are monitored in accordance with the most recent annual Interim Facility-Wide Groundwater Monitoring Plan (LANL 2009, 106115).

No surface water sampling or other surface water investigations are included in the scope of this investigation.

No permanent surface water is present at the former TA-12 sites. Sediment deposition and erosion occur episodically as a result of snowmelt and stormwater runoff. Surface water runoff and sediment transport are the primary pathways for transport of contaminants. Slopes on the mesa tops are flat and erosion occurs as sheet flow. The canyon walls have much steeper slopes, resulting in greater sediment transport and gully erosion.

4.2 Consolidated Unit 12-001(a)-99

Consolidated Unit 12-001(a)-99 consists of SWMUs 12-001(a), 12-001(b), and 12-002, and AOC C-12-005.

4.2.1 SWMU 12-001(a)—Firing Site Steel-Lined Pit

SWMU 12-001(a) is a belowground, steel-lined firing pit and aboveground steel cover (structure 12-4). The firing pit is located on the north side of Redondo Road (Plate 2). The firing pit began operation in 1944 (LANL 1994, 034755, p. 5-1-1). The hexagonal steel structure is 10.5 ft long × 10.5 ft wide × 11.5 ft deep. A steel cover, a large box filled with soil, is 20 ft long × 22 ft wide × 5 ft high. The base of the cover is at ground level and has 1-ft-high × 7-ft-long openings on four sides. The cover has a 5-ft × 5-ft hole in the center used to lower explosives into the firing area. Recovery shots, which used uranium, were conducted in the pit. Activities ceased in 1953, but the pit remains in place (LANL 1996, 055073, p. 1). SWMU 12-001(a) was evaluated with a drainage that is located within Consolidated Unit 12-001(a)-99 in the area below SWMU 12-001(a).

4.2.1.1 Historical Releases

Other than operational releases, no documented releases are associated with SWMU 12-001(a).

4.2.1.2 Summary of Previous Investigations

In 1993, a radiation survey was conducted outside the firing pit using a Geiger-Muller thin-window probe; no radionuclides were detected above background levels (Harris 1993, 055658, pp. 3–6; LANL 1994, 034755, p. 5-1-6). An internal survey of the firing pit was conducted in 1993; beta- and gamma-emitting radionuclides were detected above background levels. Small pieces of uranium and HE were observed in the firing pit (LANL 1994, 034755, pp. 5-1-6–5-1-7).

In 1995, Resource Conservation and Recovery Act (RCRA) facility investigation (RFI) activities were performed at SWMU 12-001(a) (LANL 1996, 054086, p. 5-1). One sample from each of two locations was collected at the bottom of the firing pit, and one sample from each of two locations was collected from the surrounding area. All samples were analyzed for inorganic chemicals, HE, and radionuclides (LANL 1996, 055073, pp. 5-2–5-4).

In 1996, a voluntary corrective action (VCA) was conducted. During the VCA, all soil within the firing pit was removed. No additional confirmatory samples were collected after soil removal (LANL 1996, 055073, pp.1–8; LANL 1996, 059535).

The locations of the two samples collected at the pit bottom during the 1994 RFI were removed during soil removal activities conducted as part of the 1996 VCA. Data from two samples collected in the

surrounding area during the 1994 RFI do not meet current data-validation standards and are not decision-level data. They were not used to evaluate the nature and extent of contamination and are not discussed further in this report.

4.2.1.3 Site Contamination at SWMU 12-001(a) and Drainage

Soil and Rock Sampling

A total of 46 samples were collected in 2009–2010 from 24 locations and analyzed for inorganic chemicals (TAL metals, total cyanide, total uranium, and perchlorate); organic chemicals (explosive compounds, PCBs); and radionuclides (americium-241, gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium) at SWMU 12-001(a) and the drainage. Table 4.2-1 presents the samples collected and the analyses requested. Plate 2 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

Soil and Rock Sample Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

Soil and Rock Sample Analytical Results

Inorganic Chemicals

All 46 samples collected at SWMU 12-001(a) and the drainage were analyzed for TAL metals, total cyanide, total uranium, and perchlorate. Aluminum, antimony, barium, cadmium, calcium, chromium, cobalt, copper, total cyanide, iron, lead, magnesium, manganese, nickel, perchlorate, selenium, uranium, vanadium, and zinc were detected or were detected above BVs in samples collected at SWMU 12-001(a) and the drainage. Table 4.2-2 presents the inorganic chemicals above BVs and detected inorganic chemicals that have no BVs. The sampling locations and concentrations detected or detected above BV are shown on Plate 3.

Because the extent of contamination is not defined for the site (section 4.2.1.4), COPCs have not been identified.

Organic Chemicals

All 46 samples collected at SWMU 12-001(a) and the drainage were analyzed for explosive compounds. Ten samples were also analyzed for PCBs. Organic chemicals were not detected at SWMU 12-001(a) and the drainage. Organic chemicals detected elsewhere in Consolidated Unit 12-001(a)-99 are presented in Table 4.2-3 and are shown on Plate 4.

Because the extent of contamination is not defined for the site (section 4.2.1.4), COPCs have not been identified.

Radionuclides

All 46 samples collected at SWMU 12-001(a) and the drainage were analyzed for americium-241, gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium. Americium-241, cesium-137,

plutonium-239/240, uranium-234, uranium-235/236, and uranium-238 were detected or detected above BVs/FVs at SWMU 12-001(a) and the drainage. Table 4.2-4 presents the radionuclides detected or detected above BVs/FVs. The sampling locations and detected concentrations are shown on Plate 5.

Because the extent of contamination is not defined for the site (section 4.2.1.4), COPCs have not been identified.

4.2.1.4 Nature and Extent of Soil and Rock Contamination

The nature and extent of soil and rock contamination for Consolidated Unit 12-001(a)-99 is discussed below. Consolidated Unit 12-001(a)-99 consists of SWMUs 12-001(a), 12-001(b), and 12-002 and AOC C-12-005. The extent of contamination is not defined.

Inorganic Chemicals

Aluminum was detected above the Qbt 3 BV (7340 mg/kg) in five subsurface samples. The concentration of aluminum increased with depth at locations 12-610670, 12-610671, 12-610701, and 12-610787. The vertical extent of aluminum is not defined at those locations. Aluminum was detected at its maximum concentration above BV at location 12-610787, associated with SWMU 12-002, and the concentration decreased downgradient to the south and southeast at locations 12-610649 and 12-610650 and to the northeast at location 12-610652. The lateral extent of aluminum is defined.

Antimony was detected above the soil BV (0.83 mg/kg) in one surface sample and one subsurface sample. Antimony also had DLs above BV in 81 samples. Antimony was detected above the maximum soil background concentration (1 mg/kg) in one surface sample and one subsurface sample. The concentration of antimony decreased with depth at location 12-610656. The concentration of antimony increased with depth at location 12-610694. The vertical extent of antimony is not defined at that location. Antimony was detected at its maximum concentration above BV at location 12-610656, associated with AOC C-12-005. Location 12-610656 is one of the farthest west locations in Consolidated Unit 12-001(a)-99. The lateral extent of antimony is not defined to the west.

Barium was detected above the soil or Qbt 3 BVs (295 mg/kg and 46 mg/kg, respectively) in three surface samples and nine subsurface samples. The concentration of barium increased with depth at locations 12-610670, 12-610701, and 12-610787. The vertical extent of barium is not defined at those locations. The lateral extent of barium is not defined because its concentration increased to the west. Barium was not detected above BV in the drainage sampling locations. The lateral extent of barium is defined in the drainage.

Cadmium was detected above the soil BV (0.4 mg/kg) in one surface sample at location 12-610658 and was not detected above BV in the deeper sample. The concentration of cadmium decreased laterally. The vertical and lateral extent of cadmium are defined.

Calcium was detected above the Qbt 3 BV (2200 mg/kg) in four subsurface samples. The concentration of calcium increased with depth at locations 12-610671, 12-610701, and 12-610787. The vertical extent of calcium is not defined at those locations. The lateral extent of calcium is defined because the concentration of calcium decreased in the perimeter sampling locations and downgradient.

Chromium was detected above the soil or Qbt 3 BVs (19.3 mg/kg and 7.14 mg/kg, respectively) in 18 surface samples and 14 subsurface samples. The concentration of chromium increased with depth at locations 12-610676, 12-610694, and 12-610787. The vertical extent of chromium is not defined at those locations. Chromium was detected at its maximum concentration above BV at location 12-610656,

associated with AOC C-12-005. The concentration of chromium decreased laterally. Within the drainage, the concentration of chromium decreased downgradient. The lateral extent of chromium is defined.

Cobalt was detected above the soil or Qbt 3 BVs (8.64 mg/kg and 3.14 mg/kg, respectively) in two surface samples and eight subsurface samples. The concentration of cobalt increased with depth at locations 12-610647, 12-610694, 12-610701, and 12-610787. The vertical extent of cobalt is not defined at those locations. Cobalt was detected at its maximum concentration above BVs at location 12-610694, associated with SWMU 12-001(a). Location 12-610694 is one of the farthest western locations in Consolidated Unit 12-001(a)-99. Therefore, the lateral extent of cobalt is not defined to the west. The concentration of cobalt decreased downgradient in the drainage sampling locations. The lateral extent of cobalt is defined in the drainage.

Copper was detected above the soil or Qbt 3 BVs (14.7 mg/kg and 4.66 mg/kg, respectively) in three surface samples and five subsurface samples. The concentration of copper increased with depth at location 12-610787. The vertical extent of copper is not defined at that location. The lateral extent of copper is defined because the concentration of copper decreased in the perimeter sampling locations and downgradient.

Total cyanide was detected above the soil BV (0.5 mg/kg) in one subsurface sample. The concentration of total cyanide increased with depth at location 12-610672. The vertical extent of total cyanide is not defined at that location. Total cyanide was detected at its maximum concentration above BV in the drainage sampling location downgradient of Consolidated Unit 12-001(a)-99. The concentration of total cyanide decreased down the drainage. The lateral extent of total cyanide is defined.

Iron was detected above the soil or Qbt 3 BVs (21,500 mg/kg and 14,500 mg/kg, respectively) in four subsurface samples at four locations. The concentration of iron increased with depth at locations 12-610670, 12-610675, and 12-610787. The vertical extent of iron is not defined at those locations. The concentration of iron decreased downgradient. The lateral extent of iron is defined.

Lead was detected above the soil or Qbt 3 BVs (22.3 mg/kg and 11.2 mg/kg, respectively) in two surface samples and four subsurface samples. The concentration of lead decreased with depth. The vertical extent of lead is defined. Lead was detected at its maximum concentration above BV at location 12-610656, associated with AOC C-12-005 but decreased to the west at location 12-610659, to the north at location 12-610694, and to the south at location 12-610658. The concentration of lead decreased down the drainage. The lateral extent of lead is defined.

Magnesium was detected above the Qbt 3 BV (1690 mg/kg) in five subsurface samples at five locations. All concentrations were below the maximum Qbt 3 background concentration (2820 mg/kg). The vertical and lateral extent of magnesium are defined.

Manganese was detected above the soil BV (671 mg/kg) in one surface sample and two subsurface samples. The concentration of manganese increased with depth at locations 12-610647 and 12-610694. The vertical extent of manganese is not defined at those locations. Manganese was detected at its maximum concentration above BV at location 12-610694, associated with SWMU 12-001(a), but decreased to the south and southwest at locations 12-610656 and 12-610659 and to the north at location 12-610695. The concentration of manganese decreased downgradient in the drainage sampling locations. The lateral extent of manganese is defined.

Nickel was detected above the Qbt 3 BV (6.58 mg/kg) in four subsurface samples. The concentration of nickel increased with depth at locations 12-610701 and 12-610787. The vertical extent of nickel is not defined at those locations. Nickel was detected at its maximum concentration above BV at location

12-610787, associated with SWMU 12-002. Location 12-610787 is one of the easternmost locations in Consolidated Unit 12-001(a)-99. The lateral extent of nickel is not defined to the east. The concentration of nickel decreased downgradient in the drainage sampling locations. The lateral extent of nickel is defined in the drainage.

Perchlorate was detected in nine surface samples and five subsurface samples at 13 locations, but all concentrations were below the EQL. The vertical and lateral extent of perchlorate are defined.

Silver was detected above the soil BV (1 mg/kg) in one subsurface sample. The concentration of silver increased with depth at location 12-610647. The vertical extent of silver is not defined at that location. The lateral extent of silver is defined because its concentration of decreased in the perimeter sampling locations and downgradient.

Uranium was detected above the soil, sediment, or Qbt 3 BVs (1.82 mg/kg, 2.22 mg/kg, and 2.4 mg/kg, respectively) in 31 surface samples and 1 subsurface sample. The concentrations of uranium decreased to below BVs in the subsurface samples. The vertical extent of uranium is defined. The concentration of uranium decreased downgradient. The lateral extent of uranium is defined.

Vanadium was detected above the Qbt 3 BV (17 mg/kg) in five subsurface samples. The concentration of vanadium increased with depth at locations 12-610671 and 12-610787. The vertical extent of vanadium is not defined at those locations. Vanadium was detected at its maximum concentrations above BV at location 12-610701, associated with SWMU 12-001(a), but was not detected above BV at location 12-610697, which is north and downgradient of location 12-610701. The lateral extent of vanadium is defined to the north. The concentration of vanadium decreased downgradient in the drainage sampling locations. The lateral extent of vanadium is defined in the drainage.

Zinc was detected above the soil BV (48.8 mg/kg) in one surface sample and one subsurface sample. The concentration of zinc increased with depth at location 12-610675. The vertical extent of zinc is not defined at that location. Zinc was detected at its maximum concentration above BV at location 12-610675 in the drainage downgradient of Consolidated Unit 12-001(a)-99, but the concentration decreased downgradient. The lateral extent of zinc is defined because the concentration of zinc decreased in the perimeter sampling locations and downgradient.

Organic Chemicals

Amino-2,6-dinitrotoluene[4-] was detected in one surface sample at location 12-610641 and was not detected in the subsurface sample. Amino-2,6-dinitrotoluene[4-] was not detected in lateral and downgradient samples. The vertical and lateral extent of 4-amino-2,6-dinitrotoluene are defined.

HMX was detected in three surface and three subsurface samples at locations 12-610640, 12-610641, and 12-610642. HMX concentrations increased with depth at locations 12-610640 and 12-610642 and decreased with depth at location 12-610641. The vertical extent of HMX is not defined. HMX was not detected in lateral and downgradient samples. The lateral extent of HMX is defined.

PETN was detected in one surface sample at location 12-610641 and was not detected in the subsurface sample. PETN was not detected in lateral and downgradient samples. The vertical and lateral extent of PETN are defined.

RDX was detected in five surface and three subsurface samples at locations 12-610640, 12-610641, 12-610642, 12-610643, and 12-610646. RDX concentrations increased with depth at locations 12-610640

and 12-610642. The vertical extent of RDX is not defined at those locations. RDX was not detected in lateral and downgradient samples. The lateral extent of RDX is defined.

Tetryl was detected in one surface sample at location 12-610641 and was not detected in the subsurface sample. Tetryl was not detected in lateral and downgradient samples. The vertical and lateral extent of tetryl are defined.

Radionuclides

Americum-241 was detected above the soil FV (0.013 pCi/g) in one surface sample at location 12-610672 but was not detected in the subsurface sample. Americium-241 was not detected or detected above FV in downgradient samples. The vertical and lateral extent of americium-241 are defined.

Cesium-137 was detected in four subsurface samples at locations 12-610639, 12-610676, 12-610679, and 12-610680. The vertical extent of cesium-137 is not defined at those locations. Cesium-137 was detected at location 12-610680, within approximately 50 ft of the Threemile Canyon drainage. In downgradient reach TH-1C, however, the detected concentration of cesium-137 is higher than in any samples in Consolidated Unit 12-001(a)-99. The lateral extent of cesium-137 is defined to the toe of the slope in Threemile Canyon.

Plutonium-239/240 was detected above the soil FV (0.054 pCi/g) in one surface sample at location 12-610675 but was not detected in the subsurface sample. Plutonium-239/240 was detected in one subsurface sample at location 12-610639. The vertical extent of plutonium-239/240 is not defined at that location. Plutonium-239/240 was not detected above FV/BV in downgradient samples. The lateral extent of plutonium-239/240 is defined.

Uranium-234 was detected above the soil BV (2.59 pCi/g) in three surface samples at locations 12-610649, 12-610671, and 12-610675 but was not detected above BV in the subsurface samples. Uranium-234 was not detected above BV in downgradient samples, and concentrations decreased laterally from location 12-610649 and 12-610650. The vertical and lateral extent of uranium-234 are defined.

Uranium-235/236 was detected above the soil BV (0.20 pCi/g) in two surface samples at locations 12-610673 and 12-610675, but was not detected above BV in the subsurface samples. Uranium-235/236 was not detected above BV in lateral and downgradient samples. The vertical and lateral extent of uranium-235/236 are defined.

Uranium-238 was detected above the soil, sediment, or Qbt 3 BVs (2.29 pCi/g, 2.29 pCi/g, and 1.93 pCi/g, respectively) in 11 surface samples and in 1 subsurface sample at 12 locations. The vertical extent of uranium-238 is not defined at location 12-610676. Uranium-238 was not detected above BV at locations farther down the drainage, decreased laterally from location 12-610657 to locations 12-610653 and 12-610652 and from location 12-610649 to location 12-610650. The lateral extent of uranium-238 is defined.

4.2.1.5 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at Consolidated Unit 12-001(a)-99, no human health risk-screening assessment was conducted for this site.

4.2.1.6 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at Consolidated Unit 12-001(a)-99, no ecological risk risk-screening assessment was conducted for this site.

4.2.2 SWMU 12-001(b)—Former Firing Pit

SWMU 12-001(b) is a firing pit located on the north side of Redondo Road, shown on Plate 2. The open pit was 21 ft long × 17 ft wide × 3 ft deep, and the pit was used for calorimetric experiments but only for a short period in 1945. Following World War II, the pit was used to fire HE shots using lead and uranium. This site ceased operations in the 1950s (LANL 1994, 034755, p. 5-1-5).

4.2.2.1 Historical Releases

Other than operational releases, no documented releases are associated with SWMU 12-001(b).

4.2.2.2 Summary of Previous Investigations

In 1993, a radiological survey detected beta- and gamma-emitting radionuclides at approximately twice background levels in the open firing pit (LANL 1994, 034755, p. 5-1-6; LANL 1997, 055675, p. 1). Small fragments of uranium and pink material were observed in the firing pit. Field HE spot-tests were conducted and fragments of pink material tested positive for RDX (Harris 1993, 055658).

In 1995, RFI activities were performed at SWMU 12-001(b) (LANL 1996, 054086, p. 5-1). Four soil samples were collected from three locations and analyzed for inorganic chemicals, HE, and radionuclides (LANL 1996, 054086, p. 5-1; LANL 1997, 055675, pp. 2–4).

Data from four samples collected during the 1994 RFI do not meet current data-validation standards and are not decision-level data. They were not used to evaluate the nature and extent of contamination and are not discussed further in this report.

4.2.2.3 Site Contamination

Soil and Rock Sampling

A total of 34 samples were collected in 2009–2010 from 17 locations at SWMU 12-001(b) and analyzed for inorganic chemicals (TAL metals, total cyanide, total uranium, and perchlorate); organic chemicals (explosive compounds and PCBs); and radionuclides (americium-241, gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium). Table 4.2-1 presents the samples collected and the analyses requested. Plate 2 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

Soil and Rock Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

Soil and Rock Sample Analytical Results

Inorganic Chemicals

All 34 samples collected at SWMU 12-001(b) were analyzed for TAL metals, total cyanide, total uranium, and perchlorate. Aluminum, antimony, barium, cadmium, calcium, chromium, cobalt, copper, iron, magnesium, manganese, nickel, perchlorate, selenium, silver, uranium, and vanadium were detected or were detected above BVs in samples collected at SWMU 12-001(b). Table 4.2-2 presents the inorganic chemicals above BVs and detected inorganic chemicals that have no BVs. The sampling locations and detected concentrations are shown on Plate 3.

Because the extent of contamination is not defined for the site (section 4.2.1.4), COPCs have not been identified.

Organic Chemicals

All 34 samples collected at SWMU 12-001(b) were analyzed for explosive compounds. Eight samples were also analyzed for PCBs. Amino-2,6-dinitrotoluene[4-], HMX, PETN, RDX, and tetryl were detected in samples collected at SWMU 12-001(b). Table 4.2-3 presents the detected organic chemicals at SWMU 12-001(b). The sampling locations and detected concentrations are shown on Plate 4.

Because the extent of contamination is not defined for the site (section 4.2.1.4), COPCs have not been identified.

Radionuclides

All 34 samples collected at SWMU 12-001(b) were analyzed for americium-241, gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium. Cesium-137, plutonium-239/240, uranium-234, and uranium-238 were detected or detected above BVs/FVs at SWMU 12-001(b). Table 4.2-4 presents the radionuclides detected or detected above BVs/FVs. The sampling locations and detected concentrations are shown on Plate 5.

Because the extent of contamination is not defined for the site (section 4.2.1.4), COPCs have not been identified.

4.2.2.4 Nature and Extent of Soil and Rock Contamination

Section 4.2.1.4 discusses the nature and extent of contamination for Consolidated Unit 12-001(a)-99. The nature and extent of contamination are not defined.

4.2.2.5 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at Consolidated Unit 12-001(a)-99, no human health risk-screening assessment was conducted for this site.

4.2.2.6 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at Consolidated Unit 12-001(a)-99, no ecological risk-screening assessment was conducted for this site.

4.2.3 SWMU 12-002—Potential Soil Contamination

SWMU 12-002 is a small area approximately 3 ft^2, shown on Plate 2, that was used on one occasion to burn scrap HE. In 1962, a can containing approximately 0.5 lb of HE was discovered during a property survey and burned to destroy the HE (Anderson 1962, 004860; LANL 1994, 034755, p. 6-3). The location of SWMU 12-002 now lies beneath the asphalt pavement of Redondo Road.

4.2.3.1 Historical Releases

Other than operational releases, no documented releases are associated with SWMU 12-002.

4.2.3.2 Summary of Previous Investigations

No sampling was conducted at SWMU 12-002 before the 2009–2010 investigation.

4.2.3.3 Site Contamination

Soil and Rock Sampling

Two samples were collected in 2009–2010 from one location at SWMU 12-002 and analyzed for inorganic chemicals (TAL metals, total cyanide, and perchlorate); organic chemicals (explosive compounds and PCBs); and radionuclides (americium-241, gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium). Table 4.2-1 presents the samples collected and the analyses requested. Plate 2 shows the sampling location. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

Soil and Rock Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

Soil and Rock Sample Analytical Results

Inorganic Chemicals

Both samples collected at SWMU 12-002 were analyzed for TAL metals, total cyanide, and perchlorate. Aluminum, antimony, barium, calcium, chromium, cobalt, copper, iron, lead, magnesium, nickel, selenium, and vanadium were detected above BVs in samples collected at SWMU 12-002. Table 4.2-2 presents the inorganic chemicals above BVs and the detected inorganic chemicals that have no BVs. The sampling locations and detected concentrations above BVs are shown on Plate 3.

Because the extent of contamination is not defined for the site (section 4.2.1.4), COPCs have not been identified.

Organic Chemicals

Both samples collected at SWMU 12-002 were analyzed for explosive compounds and PCBs. Organic chemicals were not detected at SWMU 12-002.

Radionuclides

Both samples collected at SWMU 12-002 were analyzed for americium-241, gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium. Radionuclides were not detected or detected above BVs/FVs.

4.2.3.4 Nature and Extent of Soil and Rock Contamination

Section 4.2.1.4 discusses the nature and extent of contamination for Consolidated Unit 12-001(a)-99. The nature and extent of contamination are not defined.

4.2.3.5 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at Consolidated Unit 12-001(a)-99, no human health risk-screening assessment was conducted for this site.

4.2.3.6 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at Consolidated Unit 12-001(a)-99, no ecological risk-screening assessment was conducted for this site.

4.2.4 AOC C-12-005—Potential Soil Contamination Associated with Former Junction Box

AOC C-12-005 is the location of a former junction box (structure 12-6) at former TA-12. The junction box was used to support experiments at the SWMU 12-001(a) and 12-001(b) firing sites (Plate 2). The junction box was 3 ft long × 3 ft wide × 4 ft high and was surrounded on three sides by a soil berm. The junction box served as a relay between former control building 12-2 and the two firing sites and housed diagnostic equipment, signal cables, and electrical power equipment. Approximately 750 ft of detonation wire connected the junction box to building 12-2. The junction box, constructed in 1945, was not used after 1953; it was intentionally burned in 1960 (LANL 1994, 034755, p. 5-1-5).

4.2.4.1 Historical Releases

Other than operational releases, no documented releases are associated with AOC C-12-005.

4.2.4.2 Summary of Previous Investigations

In 1995, RFI activities were performed at AOC C-12-005 (LANL 1996, 054086, p. 5-1–5-13). Two surface samples were collected from two locations and analyzed for total uranium (LANL 1996, 054086 p. 5-15).

Data from two samples collected during the 1994 RFI do not meet current data-validation standards and are not decision-level data. They were not used to evaluate the nature and extent of contamination and are not discussed further in this report.

4.2.4.3 Site Contamination

Soil and Rock Sampling

A total of 10 samples were collected in 2009–2010 from five locations at AOC C-12-005 and analyzed for inorganic chemicals (TAL metals, total cyanide, and perchlorate); organic chemicals (explosive

compounds and PCBs); and radionuclides (americium-241, gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium). Table 4.2-1 presents the samples collected and the analyses requested. Plate 2 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

Soil and Rock Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

Soil and Rock Sample Analytical Results

Inorganic Chemicals

All 10 samples collected at AOC C-12-005 were analyzed for TAL metals, total cyanide, and perchlorate. Antimony, cadmium, chromium, lead, perchlorate, and uranium were detected above BV in samples collected at AOC C-12-005. Table 4.2-2 presents the inorganic chemicals above BV and detected inorganic chemicals that have no BVs. The sampling locations and detected concentrations above BV are shown on Plate 3.

Because the extent of contamination is not defined for the site (section 4.2.1.4), COPCs have not been identified.

Organic Chemicals

All 10 samples collected at AOC C-12-005 were analyzed for explosive compounds. Two samples were also analyzed for PCBs. No organic chemicals were detected at AOC C-12-005.

Radionuclides

All 10 samples collected at AOC C-12-005 were analyzed for americium-241, gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium. Radionuclides were not detected or detected above BVs/FVs.

4.2.4.4 Nature and Extent of Soil and Rock Contamination

Section 4.2.1.4 describes the nature and extent of contamination for Consolidated Unit 12-001(a)-99. The nature and extent of contamination are not defined at Consolidated Unit 12-001(a)-99.

4.2.4.5 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at Consolidated Unit 12-001(a)-99, no human health risk-screening assessment was conducted for this site.

4.2.4.6 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at Consolidated Unit 12-001(a)-99, no ecological risk-screening assessment was conducted for this site.

4.3 AOC 12-004(a)—Radiation Test Site

AOC 12-004(a) consists of the lanthanum radiation experiment site at former TA-12 and the surrounding area, including a drainage (Figure 4.3-1) (LANL 1994, 034755, p. 5.2-1). The site contains a soil-bermed radiation shelter (structure 12-8) and three vertical poles. The shelter and poles are constructed in a line parallel to a drainage channel that flows southwest from Redondo Road into Threemile Canyon. The northernmost pole is located in a drainage 30 ft south of Redondo Road. The second pole is located 58 ft south of the first pole. The radiation shelter and the third pole are located 40 ft south of the second pole (LANL 1996, 054086, pp. 5-18–5-24).

Operations at the site consisted of deploying a lanthanum source from the radiation shelter by raising it with a wire strung over the three poles. The radiation source was stored in a lead container at the base of the first pole and could be deployed at various heights by raising it inside a guide tube attached to the pole. The site was constructed in March 1950, and experiments were conducted over a 3-wk period in the same year. At an unspecified date between 1962 and 1966, the lead container and the plastic guide tube were removed (Blackwell 1962, 005011). One pole was removed in 1966 (Blackwell 1966, 005012). The shelter and two poles remain in place.

4.3.1 Historical Releases

During the experiments, the lead container, the Lucite pipe, and the area around the base of one pole were contaminated with barium-140, lanthanum-140, and strontium-90.

4.3.2 Summary of Previous Investigations

A 1959 survey reported the shelter and telephone pole closest to the road were contaminated with HE and strontium-90 (Blackwell 1959, 005773; LANL 1994, 034755, pp. 5-2-1–5-2-2).

A 1966 survey showed all structures were contaminated with beta- and gamma-emitting radionuclides (Blackwell 1966, 005012; LANL 1994, 034755, pp. 5-2-1–5-2-2). The structures were subsequently decontaminated and one pole was removed.

A 1993 radiation screening survey inside the shelter showed a cardboard box with beta- and gamma-emitting radionuclides at 10 times background levels. No other readings above instrument background levels were observed (LANL 1994, 034755, pp. 5-2-1–5-2-2).

In 1995, RFI activities were performed at AOC 12-004(a). Six surface soil samples were collected from six locations and analyzed for inorganic chemicals, HE, and radionuclides (LANL 1996, 054086, p. 5-20).

Data from six samples collected during the 1994 RFI do not meet current data-validation standards and are not decision-level data. They were not used to evaluate the nature and extent of contamination and are not discussed further in this report.

4.3.3 Site Contamination

4.3.3.1 Soil and Rock Sampling

A total of 31 samples were collected in 2009–2010 from 16 locations at AOC 12-004(a) and analyzed for inorganic chemicals (TAL metals, total cyanide, and perchlorate); explosive compounds, organic chemicals (explosive compounds, SVOCs, and PCBs); and radionuclides (americium-241, gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium). Table 4.3-1 presents the samples

collected and the analyses requested. Figure 4.3-1 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

4.3.3.2 Soil and Rock Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. The field-screening results are presented in Table 2.2-2.

4.3.3.3 Soil and Rock Sample Analytical Results

Inorganic Chemicals

All 31 samples collected at SWMU 12-004(a) were analyzed for TAL metals, total cyanide, and perchlorate. Aluminum, antimony, arsenic, barium, cadmium, calcium, chromium, cobalt, copper, lead, magnesium, nickel, perchlorate, selenium, uranium, vanadium, and zinc were detected or detected above BVs in samples collected at SWMU 12-004(a). Table 4.3-2 presents the inorganic chemicals detected above BVs and detected inorganic chemicals that have no BVs. The sampling locations and detected concentrations above BVs are shown in Figure 4.3-2.

Because the extent of contamination is not defined for the site (section 4.3.3.4), COPCs have not been identified.

Organic Chemicals

All 31 samples collected at SWMU 12-004(a) were analyzed for explosive compounds and SVOCs. Eight of the 31 samples were also analyzed for PCBs. Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzoic acid, chrysene, di-n-butylphthalate, fluoranthene, phenanthrene, and pyrene were detected in samples collected at SWMU 12-004(a). Table 4.3-3 presents the detected organic chemicals. The sampling locations and detected concentrations are shown in Figure 4.3-3.

Because the extent of contamination is not defined for the site (section 4.3.3.4), COPCs have not been identified.

Radionuclides

All 31 samples collected at SWMU 12-004(a) were analyzed for americium-241, gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium. Cesium-137, uranium-234, uranium-235/236, and uranium-238 were detected or detected above BVs/FVs at SWMU 12-004(a). Table 4.3-4 presents the radionuclides detected or detected above BVs/FVs. The sampling locations and detected concentrations are shown in Figure 4.3-4.

Because the extent of contamination is not defined for the site (section 4.3.3.4), COPCs have not been identified.

4.3.3.4 Nature and Extent of Soil and Rock Contamination

The extent of contamination is not defined at SWMU 12-004(a).

Inorganic Chemicals

Aluminum was detected above the Qbt 3 BV (7340 mg/kg) in three subsurface samples at three locations. The concentration of aluminum increased with depth at locations 12-610528 and 12-610529. The vertical extent of aluminum is not defined at those locations. The concentration of aluminum decreased laterally from location 12-610528 to location 12-610529 and decreased down the drainage. The lateral extent of aluminum is defined.

Antimony was detected above the sediment or Qbt 3 BV (0.83 mg/kg and 0.5 mg/kg, respectively) in two surface samples at locations 12-610542 and 12-610546 and one subsurface sample at location 12-610543. The vertical extent of antimony is not defined at location 12-610543 because the concentration of antimony increased with depth. The lateral extent of antimony is defined because the concentration decreased at downgradient sampling locations.

Arsenic was detected above the Qbt 3 BV (2.79 mg/kg) in one sample but was not detected above the maximum Qbt 3 background concentration (5 mg/kg). The vertical and lateral extent of arsenic are defined.

Barium was detected above the Qbt 3 BV (46 mg/kg) in two surface samples and seven subsurface samples. The concentration of barium increased with depth at locations 12-610528 and 12-610529. The vertical extent of barium is not defined at those locations. The two highest concentrations of barium above BV were detected in the easternmost sampling locations (12-610528 and 12-610529), and no downgradient samples were collected to the east and north. The concentration of barium decreased downgradient to the southwest. The lateral extent of barium is not defined.

Cadmium and selenium were not detected above BVs but had DLs above their soil and sediment BVs. The vertical and lateral extent of cadmium and selenium are defined.

Calcium was detected above the Qbt 3 BV (2200 mg/kg) in one surface sample and three subsurface samples at four locations. The concentration of calcium increased with depth at locations 12-610528, 12-610529, and 12-610543. The vertical extent of calcium is not defined at those locations. The lateral extent of calcium is not defined because the highest detected concentration of calcium above BV was in the easternmost sampling location, 12-610529. The lateral extent of calcium is defined to the southwest because it was not detected above the BV.

Chromium was detected above the soil, sediment, or Qbt 3 BVs (19.3 mg/kg, 10.5 mg/kg, and 7.14 mg/kg, respectively) in 7 surface samples and 13 subsurface samples. The concentration of chromium increased with depth at locations 12-610529, 12-610539, 12-610540, 12-610543, and 12-610549. The vertical extent of chromium is not defined at those locations. Chromium concentrations on the mesa top increased to the west, and therefore, the lateral extent of chromium is not defined on the mesa top. Chromium was not detected above BV in the farthest downgradient location, 12-610550. The lateral extent of chromium is defined in the drainage.

Cobalt was detected above the Qbt 3 BV (3.14 mg/kg) in two surface samples and five subsurface samples. The concentration of cobalt increased with depth at locations 12-610527 and 12-610530. The vertical extent of cobalt is not defined at those locations. The lateral extent of cobalt is defined to the south in the drainage but is not defined to the north, east, or west.

Copper was detected above the Qbt 3 BV (4.66 mg/kg) in one surface sample and five subsurface samples. The concentration of copper increased with depth at location 12-610548. The vertical extent of

copper is not defined at that location. Copper was not detected above BV at lateral and downgradient sampling locations. The lateral extent of copper is defined.

Lead was detected above the Qbt 3 BV (11.2 mg/kg) in one surface sample and one subsurface sample. The concentration of lead increased with depth at location 12-610527. The vertical extent of lead is not defined at that location. Lead was not detected above BV at downgradient sampling locations. The lateral extent of lead is defined.

Magnesium was detected above the Qbt 3 BV (1690 mg/kg) in two subsurface samples at concentrations below the maximum Qbt 3 background concentration (2820 mg/kg). The vertical and lateral extent of magnesium are defined.

Nickel was detected above the Qbt 3 BV (6.58 mg/kg) in four subsurface samples at locations 12-610528, 12-610529, 12-610541, and 12-610543. The concentration of nickel increased with depth at locations 12-610529 and 12-610543. The vertical extent of nickel is not defined at those locations. The lateral extent of nickel is not defined to the east because the highest concentration of nickel above BV was detected at location 12-610529. The lateral extent of nickel is defined to the north, south, and west.

Perchlorate was detected in one surface sample and one subsurface sample, but the concentrations were below the EQL, decreased with depth at location 12-610541, and decreased down the drainage. The vertical and lateral extent of perchlorate are defined.

Uranium was detected above the soil, sediment, or Qbt 3 BVs (1.82 mg/kg, 2.22 mg/kg, and 2.4 mg/kg, respectively) in 11 surface samples and 1 subsurface sample. The concentration of uranium increased with depth at location 12-610540; the vertical extent of uranium is not defined at that location. The lateral extent of uranium is defined to the north, east, and west but is not defined to the south because it was detected above BV in the drainage sampling locations, and no clear decreasing trend was evident.

Vanadium was detected above the Qbt 3 BV (17 mg/kg) in one surface sample and two subsurface samples. The vertical extent of vanadium is not defined at location 12-610529. The lateral extent of vanadium is not defined because it was detected at its maximum concentration above BV at the easternmost sampling location (12-610529).

Zinc was detected above the soil BV (48.8 mg/kg) in one surface sample. The concentration decreased laterally and with depth at location 12-610541, and the detected concentration was below the maximum soil background concentration (75.5 mg/kg). The vertical and lateral extent of zinc are defined.

Organic Chemicals

Polycyclic aromatic hydrocarbons (PAHs) were detected above their EQL in two surface samples at locations 12-610530 and 12-610541. The vertical extent of PAHs is defined because they were not detected in the subsurface sample. The lateral extent of PAHs is defined because they were not detected above EQLs at lateral and downgradient sampling locations.

Benzoic acid and di-n-butylphthalate were each detected in one sample, but all concentrations were below EQLs and decreased down the drainage. The vertical and lateral extent of benzoic acid and di-n-butylphthalate are defined.

Radionuclides

Cesium-137 was detected in one surface sample and four subsurface samples at four locations. The concentration of cesium-137 increased with depth at locations 12-610540, 12-610543, 12-610547, and 12-610549. The vertical extent of cesium-137 is not defined. The lateral extent of cesium-137 is not defined to the west because its concentration increased to the west. The concentration of cesium-137 decreased at the most downgradient drainage sampling location. The lateral extent of cesium-137 is defined down the drainage.

Uranium-234 was detected above the sediment BV (2.59 pCi/g) in the surface sample at location 12-610550, which is the most downgradient location within the drainage. A deeper sample was not collected at that location. The vertical extent of uranium-234 is not defined at location 12-610550. The lateral extent of uranium-234 is not defined down the drainage.

Uranium-235/236 was detected above the Qbt 3 BV (0.09 pCi/g) in four subsurface samples in the drainage below AOC 12-004(a). The concentration of uranium-235/236 increased with depth at location 12-610549. The vertical extent of uranium-235/236 is not defined at that location. Uranium-235/236 was detected above the sediment BV (0.20 pCi/g) in the surface sample at location 12-610550, which is the most downgradient location within the drainage. A deeper sample was not collected at that location. The lateral extent of uranium-235/236 is not defined for the drainage.

Uranium-238 was detected above the soil or sediment BV (both 2.29 pCi/g) in seven surface samples and was detected above the Qbt 3 BV (1.93 pCi/g) in one subsurface sample. The concentration of uranium-238 increased with depth at location 12-610548. The vertical extent of uranium-238 is not defined at that location. Uranium-238 was detected above the sediment BV in the surface sample at location 12-610550, which is the most downgradient location within the drainage. A deeper sample was not collected at that location. The lateral extent of uranium-238 is not defined down the drainage.

4.3.4 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at AOC 12-004(a), no human health risk-screening assessment was conducted for this site.

4.3.5 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at AOC 12-004(a), no ecological risk-screening assessment was conducted for this site.

4.4 AOC 12-004(b)—Pipe

AOC 12-004(b) was an aluminum pipe at the edge of Redondo Road (Figure 4.3-1), about 78 ft north of a radiation shelter (structure 12-8). The pipe was set vertically in the ground and protruded 8 in. aboveground without a cover. The pipe's outer opening diameter was 25.5 in., its inner diameter was 18 in., and its length was 3 ft. The inside of the pipe was filled with soil. Remnant fragments of HE were observed at the site in 1959 (Blackwell 1959, 005773). The pipe was removed during the 2009–2010 investigation.

4.4.1 Historical Releases

No documented releases are associated with AOC 12-004(b).

4.4.2 Summary of Previous Investigations

A 1993 radiation survey was conducted, and no radionuclides were detected above background levels (LANL 1994, 034755, p. 5-2-2).

In 1995, RFI activities were performed at AOC 12-004(b). Two samples were collected from one location next to the aluminum pipe and analyzed for inorganic chemicals, SVOCs, HE, and radionuclides (LANL 1996, 054086, p. 5-25).

Data from two samples collected during the 1994 RFI do not meet current data-validation standards and are not decision-level data. They were not used to evaluate the nature and extent of contamination and are not discussed further in this report.

4.4.3 Site Contamination

4.4.3.1 Soil and Rock Sampling

A total of 12 soil and tuff samples were collected in 2009–2010 from four locations at AOC 12-004(b) and analyzed for inorganic chemicals (TAL metals, total cyanide, and perchlorate); organic chemicals (explosive compounds, SVOCs, and PCBs); and radionuclides (americium-241, gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium). Two swipe samples also were collected from the pipe when it was removed. Table 4.4-1 presents the samples collected and the analyses requested. Figure 4.3-1 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

4.4.3.2 Soil and Rock Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

4.4.3.3 Soil and Rock Sample Analytical Results

Inorganic Chemicals

All 12 samples collected at AOC 12-004(b) were analyzed for TAL metals, total cyanide, and perchlorate. Aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, total cyanide, iron, lead, magnesium, nickel, perchlorate, selenium, uranium, and vanadium were detected or were above BVs in samples collected at AOC 12-004(b). Table 4.4-2 presents the inorganic chemicals above BVs and the detected inorganic chemicals that have no BVs. The sampling locations and detected concentrations above BVs are shown in Figure 4.3-2.

Because the extent of contamination is not defined for the site (section 4.4.3.3), COPCs have not been identified.

Organic Chemicals

All 12 samples collected at AOC 12-004(b) were analyzed for explosive compounds and SVOCs. Six samples were also analyzed for PCBs. Aroclor-1254, Aroclor-1260, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, and indeno(1,2,3-cd)pyrene were detected in

samples collected at AOC 12-004(b). Table 4.4-3 presents the detected organic chemicals at AOC 12-004(b). The sampling locations and detected concentrations are shown in Figure 4.3-3.

Because the extent of contamination is not defined for the site (section 4.4.3.3), COPCs have not been identified.

Radionuclides

All 12 samples collected at AOC 12-004(b) were analyzed for americium-241, gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium. Plutonium-238 was detected above FV at AOC 12-004(b). Table 4.4-4 presents the radionuclides detected or detected above BVs/FVs. The sampling locations and detected concentrations above BVs/FVs are shown in Figure 4.3-4.

Because the extent of contamination is not defined for the site (section 4.4.3.3), COPCs have not been identified.

4.4.3.3 Nature and Extent of Soil and Rock Contamination

The extent of contamination is not defined at AOC 12-004(b).

Inorganic Chemicals

Aluminum was detected above the Qbt 3 BV (7340 mg/kg) in three subsurface samples at locations 12-610533 and 12-611939. The concentration of aluminum decreased with depth at each location. The road located to the north of location 12-610553 is a barrier to contamination on the north, and the samples from AOC 12-004(a) bound the extent of aluminum to the south. The vertical and lateral extent of aluminum are defined.

Antimony, cadmium, and total cyanide were not detected above BVs but had DLs above their soil or Qbt 3 BVs. The vertical and lateral extent of antimony, cadmium, and total cyanide are defined.

Arsenic and beryllium were detected above their Qbt 3 BVs (2.79 mg/kg and 1.21 mg/kg, respectively) but were not detected above the maximum background concentrations (5 mg/kg and 1.8 mg/kg). The vertical and lateral extent of arsenic and beryllium are defined.

Barium was detected above the Qbt 3 BV (46 mg/kg) in five subsurface samples at four locations. The concentration of barium decreased with depth at three locations. The road is a barrier to contamination on the north, and the samples from AOC 12-004(a) bound the extent of barium to the south. The vertical and lateral extent of barium are defined.

Calcium was detected above the Qbt 3 BV (2200 mg/kg) in five subsurface samples at four locations. The concentration of calcium decreased with depth at three locations. The concentration of calcium increased with depth at location 12-611939. The vertical extent of calcium is not defined at that location. The road is a barrier to contamination on the north, and the samples from AOC 12-004(a) bound the extent of calcium to the south. The lateral extent of calcium is defined.

Chromium was detected above the Qbt 3 BV (7.14 mg/kg) in seven subsurface samples at four locations. The concentration of chromium increased with depth at locations 12-610553, 12-611939, and 12-611940. The vertical extent of chromium is not defined at those locations. The road is a barrier to contamination on the north, and the samples from AOC 12-004(a) bound the extent of chromium to the south. The lateral extent of chromium is defined.

Cobalt was detected above the soil or Qbt 3 BVs (8.64 mg/kg and 3.14 mg/kg, respectively) in one surface sample and seven subsurface samples at five locations. At each location the concentration of cobalt decreased with depth. The vertical extent of cobalt is defined. The road is a barrier to contamination on the north, and the samples from AOC 12-004(a) bound the extent of cobalt to the south. The lateral extent of cobalt is defined.

Copper was detected above the Qbt 3 BV (4.66 mg/kg) in five subsurface samples. The concentration of copper increased with depth at locations 12-611939 and 12-611940. The vertical extent of copper is not defined at those locations. The road is a barrier to contamination on the north, and the samples from AOC 12-004(a) bound the extent of copper to the south. The lateral extent of copper is defined.

Total cyanide was not detected above BVs but had DLs above the soil or Qbt 3 BVs in two surface samples and four subsurface samples at three locations. The vertical and lateral extent of total cyanide are defined.

Iron was detected above the soil BV (21,500 mg/kg) in one surface sample but was not detected above the maximum soil background concentration (36,000 mg/kg). The concentration of iron decreased with depth and laterally. The vertical and lateral extent of iron are defined.

Lead was detected above the soil or Qbt 3 BVs (22.3 mg/kg and 11.2 mg/kg, respectively) in two surface samples and three subsurface samples at two locations. The concentration of lead decreased with depth at both locations. The vertical extent of lead is defined. The road is a barrier to contamination on the north, and the samples from AOC 12-004(a) bound the extent of lead to the south. The lateral extent of lead is defined.

Magnesium was detected above the Qbt 3 BV (1690 mg/kg) in three subsurface samples at two locations. The concentration of magnesium increased with depth at location 12-611939. The vertical extent of magnesium is not defined at that location. The road is a barrier to contamination on the north, and the samples from AOC 12-004(a) bound the extent of magnesium to the south. The lateral extent of magnesium is defined.

Nickel was detected above the Qbt 3 BV (6.58 mg/kg) in four subsurface samples. The concentration of nickel increased with depth at location 12-611939. The vertical extent of nickel is not defined at that location. The road is a barrier to contamination on the north, and the samples from AOC 12-004(a) bound the extent of nickel to the south. The lateral extent of nickel is defined.

Perchlorate was detected in one subsurface sample at location 12-610553. The concentration decreased laterally, downgradient, and with depth at location 12-610553. The vertical and lateral extent of perchlorate are defined.

Selenium was detected above the Qbt 3 BV (0.3 mg/kg) in four subsurface samples at locations 12-611939 and 12-611940. The concentration of selenium increased with depth at those locations. The vertical extent of selenium is not defined. The road is a barrier to contamination on the north, and the samples from AOC 12-004(a) bound the extent of selenium to the south. The lateral extent of selenium is defined.

Uranium was detected above the soil BV (1.82 mg/kg) in two surface samples. The concentration of uranium decreased with depth at both locations. The vertical extent of uranium is defined. The road is a barrier to contamination on the north, and the samples from AOC 12-004(a) bound the extent of uranium to the south. The lateral extent of uranium is defined.

Vanadium was detected above the soil or Qbt 3 BVs (39.6 mg/kg and 17 mg/kg, respectively) in one surface sample and four subsurface samples at three locations. The concentration of vanadium decreased with depth at each location. The vertical extent of vanadium is defined. The road is a barrier to contamination on the north, and the samples from AOC 12-004(a) bound the extent of vanadium to the south. The lateral extent of vanadium is defined.

Organic Chemicals

Aroclor-1254 and Aroclor-1260 were each detected in one sample at location 12-610939. The concentrations were below EQLs. The vertical and lateral extent of Aroclor-1254 and Aroclor-1260 are defined.

Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, and indeno(1,2,3-cd)pyrene were each detected in one or two samples. Concentrations decreased with depth and all were below EQLs. The vertical and lateral extent of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, and indeno(1,2,3-cd)pyrene are defined.

Radionuclides

Plutonium-238 was detected above the soil FV (0.023 pCi/g) in the surface sample at location 12-611940 but was not detected in the deeper samples. The vertical extent of plutonium-238 is defined. The lateral extent of plutonium-238 is defined because it was not detected or detected above FV in the other samples.

4.4.4 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at AOC 12-004(b), no human health risk-screening assessment was conducted for this site.

4.4.5 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at AOC 12-004(b), no ecological risk-screening assessment was conducted for this site.

4.5 AOC C-12-001—Potential Soil Contamination Associated with Former Building 12-1

AOC C-12-001 is an area of potential soil contamination at former TA-12 (Plate 6), associated with the former trim building 12-1. The trim building was built in 1944 and was used to prepare HE for detonation. The building was 16 ft long × 16 ft wide × 9 ft high and of wood-frame construction with soil on three sides and on top. Activities at former TA-12 ceased in the early 1950s. Building 12-1 was destroyed in 1960 by intentional burning. Some noncombustible debris was in place when the Operable Unit 1085 work plan was written (LANL 1994, 034755) but has since been removed.

4.5.1 Historical Releases

Other than operational releases and when the building was destroyed by burning, no documented releases are associated with AOC C-12-001.

4.5.2 Summary of Previous Investigations

A 1959 inspection reported that building 12-1 was contaminated with HE (Blackwell 1959, 005773).

In 1995, RFI activities were performed at AOC C-12-001. One sample was collected from one location and analyzed for inorganic chemicals and radionuclides (LANL 1996, 054086, pp. 5-1–5-5).

Data from the sample collected during the 1994 RFI do not meet current data-validation standards and are not decision-level data. They were not used to evaluate the nature and extent of contamination and are not discussed further in this report.

4.5.3 Site Contamination

4.5.3.1 Soil and Rock Sampling

A total of 10 samples were collected in 2009–2010 from five locations at AOC C-12-001 and analyzed for inorganic chemicals (TAL metals, total cyanide, total uranium, and perchlorate); organic chemicals (explosive compounds, SVOCs, and PCBs); and radionuclides (americium-241, gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium). Table 4.5-1 presents the samples collected and the analyses requested. Plate 6 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

4.5.3.2 Soil and Rock Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

4.5.3.3 Soil and Rock Sample Analytical Results

Inorganic Chemicals

All 10 samples collected at AOC C-12-001 were analyzed for TAL metals, total cyanide, total uranium, and perchlorate. Aluminum, antimony, barium, cadmium, calcium, chromium, cobalt, copper, magnesium, nickel, perchlorate, selenium, and uranium were detected or were detected above BVs in samples collected at AOC C-12-001. Table 4.5-2 presents the inorganic chemicals above BVs and the detected inorganic chemicals that have no BVs. The sampling locations and detected concentrations above BVs are shown on Plate 7.

Because the extent of contamination is not defined for the site (section 4.5.3.4), COPCs have not been identified.

Organic Chemicals

All 10 samples collected at AOC C-12-001 were analyzed for explosive compounds and SVOCs. Four samples were also analyzed for PCBs. Aroclor-1242, Aroclor-1254, and Aroclor-1260 were detected in samples collected at AOC C-12-001. Table 4.5-3 presents the detected organic chemicals at AOC C-12-001. The sampling locations and detected concentrations are shown on Plate 8.

Because the extent of contamination is not defined for the site (section 4.5.3.4), COPCs have not been identified.

Radionuclides

All 10 samples collected at AOC C-12-001 were analyzed for americium-241, gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium.

Radionuclides were not detected or detected above BVs/FVs.

4.5.3.4 Nature and Extent of Soil and Rock Contamination

The extent of contamination is not defined at AOC C-12-001.

Inorganic Chemicals

Aluminum was detected above the Qbt 3 BV (7340 mg/kg) in four subsurface samples at four locations. The concentration of aluminum increased with depth at locations 12-610627 and 12-610628. The vertical extent of aluminum is not defined at those locations. The concentration of aluminum increased downgradient. The lateral extent of aluminum is not defined.

Antimony, cadmium, and selenium were not detected above BVs but had DLs above the soil and Qbt 3 BVs. The vertical and lateral extent of antimony, cadmium, and selenium are defined.

Barium was detected above the Qbt 3 BV (46 mg/kg) in five subsurface samples at five locations. The concentration of barium increased with depth at locations 12-610627 and 12-610628. The vertical extent of barium is not defined at those locations. The concentration of barium increased downgradient of the center of the site to locations 12-610627 and 12-610628. The lateral extent of barium is not defined.

Calcium was detected above the Qbt 3 BV (2200 mg/kg) in three subsurface samples at three locations. The concentration of calcium increased with depth at locations 12-610625 and 12-610628. The vertical extent of calcium is not defined at those locations. The concentration of calcium decreased downgradient to location 12-610628. The lateral extent of calcium is defined.

Chromium was detected above the Qbt 3 BV (7.14 mg/kg) in three subsurface samples at three locations. The concentration of chromium increased with depth at locations 12-610624 and 12-610625 and decreased with depth at location 12-610628. The vertical extent of chromium is not defined at locations 12-610624 and 12-610625. The lateral extent of chromium is defined because the concentration of chromium decreased downgradient at location 12-610628.

Cobalt was detected above the Qbt 3 BV (3.14 mg/kg) in three subsurface samples at locations 12-610624, 12-610626, and 12-610628. The concentration of cobalt decreased with depth at each location. The vertical extent of cobalt is defined. The lateral extent of cobalt is defined to the east and west because cobalt was not detected above BV at locations 12-610625 and 12-610627. The lateral extent of cobalt is not defined downgradient because the concentration increased from the center of the site to location 12-610628.

Copper and magnesium were detected above the Qbt 3 BV in one and three subsurface samples, respectively. The concentration of copper decreased with depth, but the concentration of magnesium increased with depth at all three locations. Concentrations of both increased slightly downgradient to

location 12-610628, but all concentrations of copper and magnesium were below the maximum background concentrations. The vertical and lateral extent of copper and magnesium are defined.

Nickel was detected above the Qbt 3 BV (6.58 mg/kg) in two subsurface samples at locations 12-610625 and 12-610628. The concentration of nickel increased with depth at both locations. The vertical extent of nickel is not defined. The concentration of nickel increased downgradient to location 12-610628. The lateral extent of nickel is not defined.

Perchlorate was detected in two subsurface samples at locations 12-610625 and 12-610627. Both concentrations were at or below the EQL. The concentration of perchlorate decreased with depth at location 12-610625 and did not change substantially with depth at location 12-610627. Perchlorate was not detected at downgradient location 12-610628. The vertical and lateral extent of perchlorate are defined.

Uranium was detected above the Qbt 3 BV (2.4 mg/kg) in two surface samples at locations 12-610625 and 12-610628 but was not detected above BV in the deeper samples. The vertical extent of uranium is defined. The concentration of uranium decreased downgradient from location 12-610625 to location 12-610628. The lateral extent of uranium is defined.

Organic Chemicals

Aroclor-1242, Aroclor-1254, and Aroclor-1260 were detected in the surface sample at location 12-610628. Aroclor-1242, Aroclor-1254, and Aroclor-1260 were not detected in the subsurface samples. The vertical extent of Aroclor-1242, Aroclor-1254, and Aroclor-1260 is defined. Because location 12-610628 is on the downgradient side of AOC C-12-001, the lateral extent of Aroclor-1242, Aroclor-1254, and Aroclor-1260 is not defined.

Radionuclides

Radionuclides were not detected or were detected at concentrations below BVs/FVs.

4.5.4 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at AOC C-12-001, no human health risk-screening assessment was conducted for this site.

4.5.5 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at AOC C-12-001, no ecological risk-screening assessment was conducted for this site.

4.6 AOC C-12-002—Potential Soil Contamination Associated with Former Building 12-2

AOC C-12-002 is an area of potential soil contamination associated with former control building 12-2 (Plate 6). Built in 1945 of wood-frame construction, the building measured 8 ft long × 8 ft wide × 8 ft high, with soil on three sides and on top. The structure was located south of Redondo Road. Activities at former TA-12 ceased in the early 1950s, and the control building was destroyed in 1960 by intentional burning.

4.6.1 Historical Releases

Other than operational releases and when the building was destroyed by burning, no documented releases are associated with AOC C-12-002.

4.6.2 Summary of Previous Investigations

A 1959 inspection reported that building 12-2 was contaminated with HE (Blackwell 1959, 005773).

In 1995, RFI activities were performed at AOC C-12-002. One sample was collected from one location and analyzed for total uranium (LANL 1996, 054086, pp. 5-5–5-8).

Data from the sample collected during the 1994 RFI do not meet current data-validation standards and are not decision-level data. They were not used to evaluate the nature and extent of contamination and are not discussed further in this report.

4.6.3 Site Contamination

4.6.3.1 Soil and Rock Sampling

A total of 10 samples were collected in 2009–2010 from five locations at AOC C-12-002 and analyzed for inorganic chemicals (TAL metals, total cyanide, total uranium, and perchlorate); organic chemicals (explosive compounds and PCBs); and radionuclides (americium-241, gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium). Table 4.6-1 presents the samples collected and the analyses requested. Plate 6 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

4.6.3.2 Soil and Rock Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

4.6.3.3 Soil and Rock Sample Analytical Results

Inorganic Chemicals

All 10 samples collected at AOC C-12-002 were analyzed for TAL metals, total cyanide, total uranium, and perchlorate. Aluminum, antimony, barium, cadmium, calcium, chromium, cobalt, copper, magnesium, manganese, nickel, perchlorate, selenium, uranium, and vanadium were detected or were detected above BVs in samples collected at AOC C-12-002. Table 4.6-2 presents the inorganic chemicals above BVs and the detected inorganic chemicals that have no BVs. The sampling locations and detected concentrations are shown on Plate 7.

Because the extent of contamination is not defined for the site (section 4.6.3.4), COPCs have not been identified.

Organic Chemicals

All 10 samples collected at AOC C-12-002 were analyzed for explosive compounds and PCBs. Organic chemicals were not detected at AOC C-12-002.

Radionuclides

All 10 samples collected at AOC C-12-002 were analyzed for americium-241, gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium. Radionuclides were not detected or detected above BVs/FVs.

4.6.3.4 Nature and Extent of Soil and Rock Contamination

The extent of contamination is not defined at AOC C-12-002.

Inorganic Chemicals

Aluminum was detected above the Qbt 3 BV (7340 mg/kg) in two subsurface samples. The concentration of aluminum increased with depth at locations 12-610631 and 12-610632. The vertical extent of aluminum is not defined at those locations. The concentration of aluminum increased downgradient. The lateral extent of aluminum is not defined.

Antimony, cadmium, and selenium were not detected above BVs but had DLs above the soil and Qbt 3 BVs. The vertical and lateral extent of antimony, cadmium, and selenium are defined.

Barium was detected above the Qbt 3 BV (46 mg/kg) in two subsurface samples. The concentration of barium increased with depth at location 12-610632. The vertical extent of barium is not defined at that location. The concentration of barium increased downgradient from location 12-610633 to location 12-610631. The lateral extent of barium is not defined.

Calcium was detected above the Qbt 3 BV (2200 mg/kg) in one subsurface sample. The concentration of calcium increased with depth at location 12-610632. The vertical extent of calcium is not defined at that location. The lateral extent of calcium is defined because the concentration of calcium decreased downgradient.

Chromium was detected above the soil or Qbt 3 BVs (19.3 mg/kg and 7.14 mg/kg, respectively) in three subsurface samples at three locations but was not detected above the maximum soil and Qbt 3 background concentrations. The concentration of chromium decreased with depth at location 12-610632. The vertical and lateral extent of chromium are defined.

Cobalt was detected above the soil or Qbt 3 BVs (8.64 mg/kg and 3.14 mg/kg, respectively) in one surface sample and two subsurface samples at three locations. The concentration of cobalt increased with depth at locations 12-310631 and 12-610632. The vertical extent of cobalt is not defined at those locations. The lateral extent of cobalt is defined because the concentration of cobalt decreased downgradient.

Copper was detected above the Qbt 3 BV (4.66 mg/kg) in two subsurface samples. The concentration of copper increased with depth at location 12-610632. The vertical extent of copper is not defined at that location. The concentrations of copper increased downgradient. The lateral extent of copper is not defined.

Magnesium was detected above the Qbt 3 BV (1690 mg/kg) in two subsurface samples at two locations, but both concentrations were below the maximum Qbt 3 background concentration (2820 mg/kg). The concentration of magnesium decreased with depth at location 12-610631 and decreased downgradient. The vertical and lateral extent of magnesium are defined.

Manganese was detected above the soil BV (671 mg/kg) in one surface sample, but the concentration was below the maximum soil background concentrations (1100 mg/kg). The concentration of manganese decreased with depth and downgradient. The vertical and lateral extent of manganese is defined.

Nickel was detected above the Qbt 3 BV (6.58 mg/kg) in one subsurface sample at location 12-610632. The concentration of nickel increased with depth at that location. The vertical extent of nickel is not defined. The concentration of nickel increased downgradient to the west. The lateral extent of nickel is not defined.

Perchlorate was detected in two subsurface samples but was not detected above the EQL. The vertical and lateral extent of perchlorate are defined.

Uranium was detected above the soil BV (1.82 mg/kg) in two surface samples, but both concentrations were below the maximum soil background concentration (3.6 mg/kg). The concentration of uranium decreased with depth at both locations and decreased downgradient. The vertical and lateral extent of uranium is defined.

Vanadium was detected above the Qbt 3 BV (17 mg/kg) in two subsurface samples at locations 12-610631 and 12-610632. The concentration of vanadium decreased with depth at both locations. The vertical extent of vanadium is defined. The concentration of vanadium increased downgradient from location 12-610633 to location 12-610631. The lateral extent of vanadium is not defined.

Organic Chemicals

Organic chemicals were not detected at AOC C-12-002.

Radionuclides

Radionuclides were not detected or were detected at concentrations below BVs/FVs.

4.6.4 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at AOC C-12-002, no human health risk-screening assessment was conducted for this site.

4.6.5 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at AOC C-12-002, no ecological risk-screening assessment was conducted for this site.

4.7 AOC C-12-003—Potential Soil Contamination Associated with Former Building 12-3

AOC C-12-003 is an area of potential soil contamination at former TA-12 associated with a former HE-storage magazine (building 12-3) for the former TA-12 firing sites (Plate 6). The magazine, built in 1944 of wood-frame construction, was 6 ft long × 6 ft wide × 7 ft high, with soil on three sides and on top. The

building was located north of Redondo Road. Activities at former TA-12 ceased in the early 1950s. In 1960, building 12-3 was destroyed by intentional burning.

4.7.1 Historical Releases

Other than operational releases and when the building was destroyed by burning, no documented releases are associated with AOC C-12-003.

4.7.2 Summary of Previous Investigations

A 1959 inspection reported that building 12-3 was contaminated with HE (Blackwell 1959, 005773).

No sampling was conducted at this AOC before 2009.

4.7.3 Site Contamination

4.7.3.1 Soil and Rock Sampling

A total of 10 samples were collected in 2009–2010 from five locations at AOC C-12-003 and analyzed for inorganic chemicals (TAL metals, total cyanide, total uranium, and perchlorate); organic chemicals (explosive compounds and PCBs); and radionuclides (americium-241, gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium). Table 4.7-1 presents the samples collected and the analyses requested. Plate 6 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

4.7.3.2 Soil and Rock Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

4.7.3.3 Soil and Rock Sample Analytical Results

Inorganic Chemicals

All 10 samples collected at AOC C-12-003 were analyzed for TAL metals, total cyanide, total uranium, and perchlorate. Antimony, barium, cadmium, chromium, cobalt, perchlorate, selenium, and uranium were detected or were detected above BVs in samples collected at AOC C-12-003. Table 4.7-2 presents the inorganic chemicals above BVs and the detected inorganic chemicals that have no BVs. The sampling locations and detected concentrations are shown on Plate 7.

Because the extent of contamination is not defined for the site (section 4.7.3.4), COPCs have not been identified.

Organic Chemicals

All 10 samples collected at AOC C-12-003 were analyzed for explosive compounds. Four of the 10 samples were also analyzed for PCBs. Organic chemicals were not detected at AOC C-12-003.

Radionuclides

All 10 samples collected at AOC C-12-003 were analyzed for americium-241, gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium. Radionuclides were not detected or detected above BVs/FVs.

4.7.3.4 Nature and Extent of Soil and Rock Contamination

The extent of contamination is not defined at AOC C-12-003.

Inorganic Chemicals

Antimony was detected above the soil BV (0.83 mg/kg) in one subsurface sample at location 12-610634. The concentration of antimony increased with depth. The vertical extent of antimony is not defined at location 12-610634. The lateral extent of antimony is defined because the concentration decreased downgradient to location 12-610637.

Barium was detected above the Qbt 3 BV (46 mg/kg) in three subsurface samples at three locations. The concentration of barium decreased with depth at all three locations. The vertical extent of barium is defined. The concentration of barium decreased downgradient to location 12-610637. The lateral extent of barium is defined.

Cadmium was not detected above BVs but had DLs above the soil BV (0.4 mg/kg). The vertical and lateral extent of cadmium are defined.

Chromium was detected above the soil or Qbt 3 BVs (0.4 mg/kg and 7.14mg/kg, respectively) in two surface samples and two subsurface samples at four locations. The concentration of chromium increased with depth at locations 12-610637 and 12-610638. The vertical extent of chromium is not defined at those locations. The lateral extent of chromium is defined because the concentration decreased downgradient to location 12-610637.

Cobalt was detected slightly above the Qbt 3 BV (3.14 mg/kg) in one subsurface sample. The concentration of cobalt decreased with depth at location 12-610638. The vertical extent of cobalt is defined. The lateral extent of cobalt is defined because it was not detected above BV at downgradient location 12-610637.

Perchlorate was detected in one subsurface sample at location 12-610634 at a concentration below the EQL. The vertical and lateral extent of perchlorate are defined.

Selenium was not detected above BVs but had DLs above the Qbt 3 BV (0.3 mg/kg). The vertical and lateral extent of selenium are defined.

Uranium was detected above the soil BV (1.82 mg/kg) in one surface sample, but the concentration was below the maximum soil background concentration (3.6 mg/kg). The concentration of uranium decreased with depth and downgradient. The vertical and lateral extent of uranium are defined.

Organic Chemicals

Organic chemicals were not detected at AOC C-12-003.

Radionuclides

Radionuclides were not detected or detected above BVs/FVs.

4.7.4 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at AOC C-12-003, no human health risk-screening assessment was conducted for this site.

4.7.5 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at AOC C-12-003, no ecological risk-screening assessment was conducted for this site.

4.8 AOC C-12-004—Potential Soil Contamination Associated with Former Building 12-5

AOC C-12-004 is an area of potential soil contamination at former TA-12 associated with former generator building 12-5 (Plate 6). The generator building was built of wood-frame construction and originally located next to a former junction box (structure 12-6). In 1952, the generator building was relocated 10 ft north of the former control building 12-2. Activities at former TA-12 ceased in the early 1950s. The building was destroyed in 1960 by intentional burning (LANL 1996, 054086, pp. 5-12–5-15).

4.8.1 Historical Releases

Other than operational releases and when the building was destroyed by burning, no documented releases are associated with AOC C-12-004.

4.8.2 Summary of Previous Investigations

A 1959 survey showed that building 12-5 was free of radioactive and HE contamination (Blackwell 1959, 005773).

In 1995, RFI activities were conducted at AOC C-12-004. One sample was collected from one location and analyzed for SVOCs (LANL 1996, 054086, p. 5-12).

Data from the sample collected during the 1994 RFI do not meet current data-validation standards and are not decision-level data. They were not used to evaluate the nature and extent of contamination and are not discussed further in this report.

4.8.3 Site Contamination

4.8.3.1 Soil and Rock Sampling

A total of 10 samples were collected in 2009–2010 from five locations at AOC C-12-004 and analyzed for inorganic chemicals (TAL metals, total cyanide, and perchlorate); organic chemicals (explosive compounds and PCBs); and radionuclides (americium-241, gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium). Table 4.8-1 presents the samples collected and the analyses requested. Plate 6 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

4.8.3.2 Soil and Rock Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

4.8.3.3 Soil and Rock Sample Analytical Results

Inorganic Chemicals

All 10 samples collected at AOC C-12-004 were analyzed for TAL metals, total cyanide, and perchlorate. Aluminum, antimony, barium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, nickel, perchlorate, selenium, silver, uranium, vanadium, and zinc were detected or were above BVs in samples collected at AOC C-12-004. Table 4.8-2 presents the inorganic chemicals above BVs and the detected inorganic chemicals that have no BVs. The sampling locations and detected concentrations are shown on Plate 7.

Because the extent of contamination is not defined for the site (section 4.8.3.4), COPCs have not been identified.

Organic Chemicals

All 10 samples collected at AOC C-12-004 were analyzed for explosive compounds. Two of the 10 samples were also analyzed for PCBs. Organic chemicals were not detected at AOC C-12-004.

Radionuclides

All 10 samples collected at AOC C-12-004 were analyzed for americium-241, gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium. Radionuclides were not detected or detected above BVs/FVs.

4.8.3.4 Nature and Extent of Soil and Rock Contamination

The extent of contamination is not defined at AOC C-12-004.

Inorganic Chemicals

Aluminum was detected above the Qbt 3 BV (7340 mg/kg) in three subsurface samples at three locations. The concentration of aluminum increased with depth at locations 12-610570, 12-610571, and 12-610573. The vertical extent of aluminum is not defined at those locations. The lateral extent of aluminum is not defined because the concentration of aluminum increased to the west.

Antimony and selenium were not detected above BVs but had DLs above the soil and Qbt 3 BVs. The vertical and lateral extent of antimony and selenium are defined because they were not detected.

Barium was detected above the Qbt 3 BV (46 mg/kg) in three subsurface samples at three locations. The concentration of barium increased with depth at location 12-610571 but decreased with depth at the other two locations. The vertical extent of barium is not defined at location 12-610571. The lateral extent of barium is defined for AOC C-12-004 because its concentrations decreased laterally, and samples associated with AOC C-12-002 bound the extent downgradient.

Cadmium was detected above the soil BV (0.4 mg/kg) in only one sample, the surface sample at location 12-610569, the northernmost sampling location at AOC C-12-004. The lateral extent of cadmium is defined because concentrations decreased downgradient. The vertical extent of cadmium is defined because it was not detected above BV in any subsurface samples.

Calcium was detected above the Qbt 3 BV (2200 mg/kg) in two subsurface samples at two locations. The concentration of calcium increased with depth at location 12-610571. The vertical extent of calcium is not defined at that location. The concentration of calcium increased to the west. The lateral extent of calcium is not defined to the west. Samples associated with AOC C-12-002 bound the lateral extent of calcium to the south.

Chromium was detected above the soil or Qbt 3 BVs (19.3 mg/kg and 7.14 mg/kg, respectively) in one surface sample and three subsurface samples. The concentration of chromium increased slightly with depth at locations 12-610571 and 12-610573 but decreased with depth at location 12-610570. Concentrations of chromium in the deeper samples at each location were at or below the maximum Qbt 3 background concentration (13 mg/kg). The vertical extent of chromium is defined. The maximum concentration of chromium was detected at location 12-610570. The concentration of chromium decreased downgradient to the west at location 12-610573, to the north at location 12-610569, and to the east at location 12-610572. The lateral extent of chromium is defined to the south by the samples associated with AOC C-12-002, which had lower concentrations of chromium. The lateral extent of chromium is defined.

Cobalt was detected above the Qbt 3 BV (3.14 mg/kg) in three subsurface samples at three locations. The concentration of cobalt increased with depth at locations 12-610570 and 12-610573. The vertical extent of cobalt is not defined at those locations. The concentration of cobalt decreased downgradient but increased to the west at location 12-610632. The lateral extent of cobalt is not defined to the west.

Copper was detected above the soil or Qbt 3 BVs (14.7 mg/kg and 4.66 mg/kg, respectively) in one surface sample and in three subsurface samples at four locations. The concentration of copper increased with depth at locations 12-610570 and 12-610573. The vertical extent of copper is not defined at those locations. The lateral extent of copper is not defined because the concentration of copper decreased downgradient but increased to the west at location 12-610632. The lateral extent of copper is not defined to the west.

Iron and magnesium were detected above their Qbt 3 BVs, but all concentrations were below the maximum Qbt 3 background concentrations (19,500 mg/kg and 2820 mg/kg, respectively). The vertical and lateral extent of iron and magnesium are defined.

Lead was detected above the soil or Qbt 3 BVs (22.3 mg/kg and 11.2 mg/kg, respectively) in one surface sample and two subsurface samples at two locations. The concentration of lead decreased with depth at both locations. The vertical extent of lead is defined. The lateral extent of lead is defined downgradient by the samples associated with AOC C-12-002, where lead was not detected above BV. The lateral concentration of lead is not defined to the east because the highest concentrations were detected at location 12-610572 on the eastern side of the site.

Nickel was detected above the Qbt 3 BV (6.58 mg/kg) in two subsurface samples at two locations. The concentration of nickel increased with depth at locations 12-610571 and 12-610573. The vertical extent of nickel is not defined at those locations. The lateral extent of nickel is not defined because the concentration increased to the west.

Perchlorate was detected in three subsurface samples at concentrations below the EQL. The vertical and lateral extent of perchlorate are defined.

Silver was detected above the soil BV (1 mg/kg) in one sample at location 12-610569 and was not detected above BV in the deeper sample. The vertical extent of silver is defined. Silver was not detected above BV at locations downgradient of location 12-610569. The lateral extent of silver is defined.

Uranium was detected above the soil BV (1.82 mg/kg) in one surface sample at location 12-610569 and was not detected above BV in the deeper sample. The vertical extent of uranium is defined. Uranium was not detected above BV at locations downgradient of location 12-610569. The lateral extent of uranium is defined.

Vanadium was detected above the Qbt 3 BV (17 mg/kg) in three subsurface samples at three locations. The concentration of vanadium decreased with depth at each location. The vertical extent of vanadium is defined. The concentration of vanadium decreased downgradient. The concentration of vanadium decreased downgradient, and samples associated with AOC C-12-002 bound the extent to the south. The lateral extent of vanadium is defined.

Zinc was detected above the soil BV (48.8 mg/kg) in one surface sample at a concentration below the maximum soil background concentration (75.5 mg/kg). The concentration of zinc decreased with depth, laterally, and downgradient. The vertical and lateral extent of zinc are defined.

Organic Chemicals

Organic chemicals were not detected at AOC C-12-004.

Radionuclides

Radionuclides were not detected or detected at concentrations above BVs/FVs.

4.8.4 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at AOC C-12-004, no human health risk-screening assessment was conducted for this site.

4.8.5 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at AOC C-12-004, no ecological risk-screening assessment was conducted for this site.

5.0 TA-14 BACKGROUND AND FIELD INVESTIGATION RESULTS

5.1 Background of TA-14

TA-14 was established during World War II and used by X Division to test explosives beginning in 1944 (LANL 1996, 054086, p. 1-1). This site was used primarily for close-observation work on small explosive charges. Tests were conducted in open and closed firing chambers (LANL 1996, 054086, p. 1-1). Some of these tests used radioactive materials (LANL 1994, 034755). In 1994, experimental HE was subjected to performance testing. TA-14 remains active with scheduled tests at the firing area and bullet test facility

(LANL 1994, 034755, p. 1-11). In May 2000, the Cerro Grande fire moved through this area, and surface structures were damaged or destroyed, along with surface and over-story vegetation.

One AOC within the Threemile Canyon Aggregate Area is located at TA-14 and is addressed in this investigation report.

- AOC C-14-006 is an area of potential soil contamination associated with an HE-storage magazine, former building 14-9.

5.1.1 Surface Conditions

Surface conditions on the Pajarito Plateau and within the Threemile Canyon Aggregate Area are described in detail in section 4.1.1.

AOC C-14-006 is located on the mesa top of Threemile Mesa on the southwest boundary of the Threemile Canyon Aggregate Area, shown on Plate 1. The structure associated with this AOC has been removed. The only current structure nearby is building 14-22, approximately 60 ft southeast of AOC C-14-006.

5.1.2 Subsurface Conditions

The rock unit encountered at and below the surface during investigation of AOC C-14-006 was unit Qbt 3 of the Tshirege Member of the Bandelier Tuff.

- The tuff unit at the surface is unit 3 of the Tshirege Member of the Bandelier Tuff (Qbt 3). Unit Qbt 3, approximately 100 ft thick, is a nonwelded to partially welded vapor-phase-altered tuff that forms the upper cliff.
- Below unit Qbt 3 is Unit 2 of the Tshirege Member (Qbt 2). Unit Qbt 2, approximately 65 ft thick, forms a distinctive, medium-brown vertical cliff that shows the greatest degree of welding in the Tshirege Member.

No belowground features are associated with AOC C-14-006.

5.1.3 Groundwater Conditions

Groundwater conditions on the Pajarito Plateau and within the Threemile Canyon Aggregate Area are described in more detail in section 4.1.3.

TA-14 is located on a mesa top (Plate 1), and the surface is separated from the regional aquifer by an unsaturated zone that is approximately 1000 to 1300 ft thick. No intermediate-depth saturated horizons or shallow alluvial groundwater are present in the immediate vicinity.

No groundwater sampling or other groundwater investigations were included in the scope of this investigation.

5.1.4 Surface-Water Conditions

Surface-water conditions on the Pajarito Plateau and within the Threemile Canyon Aggregate Area are described in more detail in section 4.1.4.

No permanent surface water is present at TA-14. During spring snowmelt and summer thunderstorms, runoff may flow from the mesa top onto the canyon slopes of Threemile Canyon. Sediment deposition and erosion occur episodically as a result of snowmelt and stormwater runoff. Surface water runoff and sediment transport are the primary pathways for transport of contaminants. Slopes on the mesa tops are flat, and erosion occurs as sheet flow. The canyon walls have much steeper slopes, resulting in greater sediment transport and gully erosion.

5.2 AOC C-14-006—Potential Soil Contamination Associated with Former Building 14-9

AOC C-14-006 is an area of potential soil contamination at TA-14 associated with an HE-storage magazine, former building 14-9 (Figure 5.2-1), located 60 ft northwest of building 14-22. The magazine, which was constructed of wood, was 6 ft long × 6 ft wide × 6 ft high. A soil berm surrounded three sides, and soil covered the top of the structure. The magazine was built in 1945 and removed in 1952. The former magazine location is covered with loose fill. An asphalt road that circled the magazine is still visible (LANL 1996, 054086, pp. 5-61–5-64).

5.2.1 Historical Releases

No documented releases are associated with AOC C-14-006.

5.2.2 Summary of Previous Investigations

No sampling was conducted at this AOC before 2009.

5.2.3 Site Contamination

5.2.3.1 Soil and Rock Sampling

A total of 10 samples were collected in 2009–2010 from five locations at AOC C-14-006 and analyzed for inorganic chemicals (TAL metals, total cyanide, nitrate, total uranium, and perchlorate); organic chemicals (explosive compounds, SVOCs, and VOCs); and radionuclides (americium-241 gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium). Table 5.2-1 presents the samples collected and the analyses requested. Figure 5.2-1 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

5.2.3.2 Soil and Rock Sample Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

5.2.3.3 Soil and Rock Sample Analytical Results

Inorganic Chemicals

All 10 samples collected at AOC C-14-006 were analyzed for TAL metals, total cyanide, total uranium, nitrate, and perchlorate. Antimony, cadmium, chromium, nitrate, perchlorate, and uranium were detected or were above BVs in samples collected at AOC C-14-006. Table 5.2-2 presents the inorganic chemicals above BVs and the detected inorganic chemicals that have no BVs. The sampling locations and detected concentrations above BVs are shown in Figure 5.2-2.

Because the extent of contamination is not defined for the site (section 5.2.3.4), COPCs have not been identified.

Organic Chemicals

All 10 samples collected at AOC C-14-006 were analyzed for explosive compounds, SVOCs, and VOCs. Two samples were also analyzed for PCBs. Acetone, 4-isopropyltoluene, TATB, and toluene were detected in samples collected at C-14-006. Table 5.2-3 presents the detected organic chemicals at AOC C-14-006. The sampling locations and detected concentrations are shown in Figure 5.2-3.

Because the extent of contamination is not defined for the site (section 5.2.3.4), COPCs have not been identified.

Radionuclides

All 10 samples collected at AOC C-14-006 were analyzed for americium-241 gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium. Radionuclides were not detected or detected above BVs/FVs.

5.2.3.4 Nature and Extent of Soil and Rock Contamination

The extent of contamination is not defined at AOC C-14-006.

Inorganic Chemicals

Antimony was detected above the soil BV (0.83 mg/kg) in four surface samples and two subsurface samples at three locations. The concentration of antimony decreased with depth at each location and decreased downgradient. The vertical and lateral extent of antimony are defined.

Cadmium was not detected above BV but had DLs above the soil BV (0.4 mg/kg). The vertical and lateral extent of cadmium are defined.

Chromium and uranium were each detected above their soil BVs (19.3 mg/kg and 1.82 mg/kg, respectively) in one surface sample, but the concentrations were below their maximum soil background concentrations (36.5 mg/kg and 3.6 mg/kg, respectively). Concentrations decreased with depth. The vertical and lateral extent of chromium and uranium are defined.

Nitrate was detected in two surface and five subsurface samples. All concentrations are consistent with naturally occurring nitrate levels. The vertical and lateral extent of nitrate are defined.

Perchlorate was detected in one surface sample and three subsurface samples at concentrations below the EQL. The vertical and lateral extent of perchlorate are defined.

Organic Chemicals

Acetone, 4-isopropyltoluene, and toluene were detected in two surface samples at locations 14-610663 and 14-610665 and were not detected in the subsurface samples. The vertical extent of acetone, 4-isopropyltoluene, and toluene is defined. Acetone, 4-isopropyltoluene, and toluene were detected at concentrations below the EQLs in the most downgradient location. The lateral extent of acetone, 4-isopropyltoluene, and toluene is defined.

TATB was detected in all five surface samples but was not detected in the subsurface samples; the vertical extent of TATB is defined. The concentration of TATB increased downgradient; the lateral extent of TATB is not defined.

5.2.4 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at AOC C-14-006, no human health risk-screening assessment was conducted for this site.

5.2.5 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at AOC C-14-006, no ecological risk-screening assessment was conducted for this site.

6.0 TA-15 BACKGROUND AND FIELD INVESTIGATION RESULTS

6.1 Background of TA-15

TA-15 was established in 1945 as a firing site area. Current activities at TA-15 consist of HE research, development, and testing, mainly through hydrodynamic testing and dynamic experimentation. Many large explosive tests have taken place with the concurrent scattering of large amounts of natural uranium or depleted uranium (DU) and, to a lesser extent, beryllium and lead (LANL 1994, 040595).

Eleven SWMUs and four AOCs within the Threemile Canyon Aggregate Area are located at TA-15 and are addressed in this investigation report (Table 1.0-1).

- AOC 15-004(d) is the location of two former 12-ft-long × 12-ft-wide × 2-ft-high concrete firing platforms (former structures 15-176 and 15-177).
- AOC 15-005(c) is an outdoor container storage area located near storage building 15-41.
- SWMU 15-008(b) [part of Consolidated Unit 15-006(c)-99] is a surface disposal area located north of Firing Site R-44 [SWMU 15-006(c)] and extending along the edge of the mesa and downslope into Threemile Canyon.
- AOC 15-008(g) [part of Consolidated Unit 15-006(d)-99] is the location of a former pile of broken sandbags located at Firing Site R-45 [SWMU 15-006(d)].
- SWMU 15-007(c) [part of Consolidated Unit 15-007(c)-00] is the location of a shaft (structure 15-264) that was used to conduct a single test involving approximately 2 tons of HE.
- SWMU 15-007(d) [also part of Consolidated Unit 15-007(c)-00] is the location of a shaft (structure 15-265) used to conduct a single test involving beryllium, HE, and tritium.
- SWMU 15-009(b) is a septic system located at Firing Site R-45 that consists of a tank (structure 15-61), a seepage pit, associated drainlines, and a former outfall.
- SWMU 15-009(c) is a septic system located at Firing Site R-44 that consists of a tank (structure 15-62), associated drainlines, and an outfall.
- SWMU 15-009(h) is a septic system located near the Ector firing site [SWMU 15-006(b)] that consists of a tank (structure 15-282), associated drainlines, and a drain field.

- SWMU 15-010(b) is a settling tank (structure 15-147) located near shop building 15-8.
- AOC 15-014(h) consists of three outfalls that served a laboratory and an office (building 15-40).

Additionally, the investigation of four SWMUs is deferred per Table IV-2 of the Consent Order. Figure 6.1-1 shows the site features of the SWMUs and AOCs at TA-15.

6.1.1 Surface Conditions

Surface conditions on the Pajarito Plateau and within the Threemile Canyon Aggregate Area are described in more detail in section 4.1.1.

All TA-15 sites are located on the mesa top of Threemile Mesa, except for SWMU 15-008(b), which is located on the canyon slope of the middle fork of Threemile Canyon. A few sites—SMWUs 15-009(b), 15-009(c), 15-009(h), and 15-010(b) and AOC 15-014(h)—drain onto the canyon slopes of the tributaries of Threemile Canyon (Figure 6.1-1).

Several structures are associated with the TA-15 sites under investigation (Figure 6.1-1). Buildings 15-41, 15-44, 15-45, and 15-280 are active.

6.1.2 Subsurface Conditions

The stratigraphic units encountered during investigation of the Threemile Canyon Aggregate Area are limited to the upper units—Qbt 3, Qbt 2, Qbt 1v, and Qbt 1g—of the Tshirege Member of the Bandelier Tuff.

- The predominant tuff unit at the surface is unit 3 of the Tshirege Member of the Bandelier Tuff (Qbt 3). Unit Qbt 3, approximately 100 ft thick, is a nonwelded to partially welded vapor-phase-altered tuff that forms the upper cliff.
- Below unit Qbt 3 is Unit 2 of the Tshirege Member (Qbt 2). Unit Qbt 2, approximately 65 ft thick, forms a distinctive medium-brown vertical cliff that shows the greatest degree of welding in the Tshirege Member.
- Below unit Qbt 2 is Unit 1v of the Tshirege Member (Qbt 1v). Unit Qbt 1v, approximately 75 ft thick, forms alternating cliff-like and sloping outcrops composed of porous nonwelded, crystallized tuff.
- Below unit Qbt 1v is Unit 1g of the Tshirege Member (Qbt 1g). Unit Qbt 1g, approximately 75 ft thick, is the lowermost tuff unit of the Tshirege Member and consists of porous, nonwelded, and poorly sorted ash-flow tuff.

The belowground features at TA-15 include two 130-ft-deep shafts (structures 15-264 and 15-265) and four septic/settling tanks (structures 15-61, 15-62, 15-147, and 15-282). These six structures are shown in Figure 6.1-1. Structures 15-61 and 15-62 were removed during this investigation.

6.1.3 Groundwater Conditions

Groundwater conditions at the Pajarito Plateau and at the Threemile Canyon Aggregate Area are described in more detail in section 4.1.3.

The TA-15 sites, either on the mesa top or the canyon slope, are separated from the regional aquifer by an unsaturated zone (Figure 4.1-3), that is at least 700 ft thick. Groundwater monitoring is currently

performed in accordance with the Interim Facility-Wide Groundwater Monitoring Plan, which is updated annually per the Consent Order.

No groundwater sampling or other groundwater investigations were included in the scope of this investigation.

6.1.4 Surface Water Conditions

Surface water conditions on the Pajarito Plateau and within the Threemile Canyon Aggregate Area are described in more detail in section 4.1.4.

No permanent surface water is present at the mesa top sites at TA-15. During spring snowmelt and summer thunderstorms, runoff may flow from the mesa-top onto the canyon slopes of Threemile Canyon. Two reaches—THM-1 and THS-1 West (Plate 1)—are located immediately downslope from SWMUs 15-008(b) and 15-009(c), respectively. Two surface water and stormwater runoff monitoring stations—3M-SMA-0.6 and 3M-SMA-0.5 (Plate 1)—are also located downslope from SWMUs 15-008(b) and 15-009(c), respectively. These reaches were sampled under Pajarito Canyon sediment investigations (LANL 1998, 059577; LANL 2006, 091812; LANL 2007, 095408).

Sediment deposition and erosion occur episodically as a result of snowmelt and stormwater runoff. Surface water runoff and sediment transport are the primary pathways for transport of contaminants. Slopes on the mesa tops are flat, and erosion may occur as a result of sheet flow. The canyon walls have much steeper slopes, resulting in greater sediment transport and gully erosion in some areas (LANL 2009, 106939).

6.2 Sites Deferred per Table IV-2 of the Consent Order

6.2.1 SWMU 15-004(a)—Firing Site C

SWMU 15-004(a) is Firing Site C, shown in Figure 6.1-1, located near the center of TA-15. Firing Site C began operations in 1944 and was used until 1948 or 1949. Concrete slabs [AOC 15-004(d)] were used as firing platforms at this site but were removed in 1947. Additional structures associated with Firing Site C included a former control building (structure 15-7) and a former x-unit (structure 15-35) that contained a firing voltage distribution system used for the remote detonation of test firings. The explosive tests at Firing Site C were conducted within 25 ft of the x-unit, which indicates the explosions were small (LANL 1993, 020946).

Investigation of SWMU 15-004(a) is deferred per Table IV-2 of the Consent Order. The NMED-approved investigation work plan proposed no investigation activities for this site (LANL 2008, 105673; NMED 2008, 104256).

6.2.2 SWMU 15-006(b)—Ector Firing Site

SWMU 15-006(b) is the Ector firing site (Figure 6.1-1), located along the eastern side of TA-15. The firing site was used for dynamic radiography of explosion-driven weapons components. It was originally established in 1973 and was used periodically until 1982. The Ector radiography machine was constructed at this site, and the site has operated with this machine from the mid-1980s to the present. Structures associated with the firing site are the firing point chamber (structure 15-276), the multidiagnostic hydrotest (building 15-306), and the blast-protection structure (15-319). Materials used in the tests included uranium, beryllium, lead, and HE (LANL 1993, 020946, p. 6-9).

Investigation of SWMU 15-006(b) is deferred per Table IV-2 of the Consent Order. The NMED-approved investigation work plan proposed no investigation activities for this site (LANL 2008, 105673; NMED 2008, 104256).

6.2.3 SWMU 15-006(c)—Firing Site R-44

SWMU 15-006(c) is Firing Site R-44 (Figure 6.1-1). This firing site, located along the eastern side of TA-15, was originally constructed in 1951 and was used extensively from 1956 to 1978 for diagnostic tests of weapons components. After the PHERMEX and Ector firing sites became operational, Firing Site R-44 was used only for small experiments. Firing Site R-44 was last used in 1992. Materials used in the tests included uranium, tritium, beryllium, lead, and HE. This firing site is located on a flat open area on a narrow mesa that overlooks Threemile Canyon. Debris from explosives tests has been scattered onto the slope and into the canyon (LANL 1993, 020946, p. 6-8).

Investigation of SWMU 15-006(c) is deferred per Table IV-2 of the Consent Order. The NMED-approved investigation work plan proposed no investigation activities for this site (LANL 2008, 105673; NMED 2008, 104256).

6.2.4 SWMU 15-006(d)—Firing Site R-45

SWMU 15-006(d) is Firing Site R-45 (Figure 6.1-1), located near the center of TA-15. Constructed in 1951 and used until 1992, Firing Site R-45 was the least used of the TA-15 firing sites. Firing Site R-45 had two firing points and was used for experiments involving small amounts of explosives, such as testing shock-wave phenomena and optical diagnostics. Materials used in the tests at this site include uranium, beryllium, lead, and HE (LANL 1996, 054977, pp. 5-94–5-97).

Investigation of SWMU 15-006(d) is deferred per Table IV-2 of the Consent Order. The NMED-approved investigation work plan proposed no investigation activities for this site (LANL 2008, 105673; NMED 2008, 104256).

6.3 AOC 15-004(d)—Firing Platforms

AOC 15-004(d) (Figure 6.3-1) is located within an inactive firing site in central TA-15 and consisted of two 12-ft-long × 12-ft-wide × 2-ft-high concrete firing platforms (former structures 15-176 and 15-177) that were built in 1944 and removed in 1947. Engineering drawings show that the firing platforms were collocated with Firing Site C [SWMU 15-004(a)] (LASL 1944, 072795; LASL 1948, 023958; LASL 1971, 024036) and demonstrate that AOC 15-004(d) is a duplicate of SWMU 15-004(a), which is deferred per Table IV-2 of the Consent Order.

6.3.1 Historical Releases

Other than operational releases, no documented releases are associated with AOC C-15-004(d).

6.3.2 Summary of Previous Investigations

In 1991, one surface soil sample was collected from one location near the former x-unit site during the 1991 Sanitary Wastewater Systems Consolidation (SWSC) project and analyzed for inorganic chemicals and radionuclides.

In 1994, RFI activities were performed at SWMU 15-004(a). Fourteen samples from nine locations were analyzed for inorganic chemicals and radionuclides (LANL 1995, 050294).

Because AOC 15-004(d) lies entirely within the boundaries of SWMU 15-004(a), the SWSC project sampling event and the 1994 RFI activities conducted at SWMU 15-004(a) are applicable to AOC 15-004(d). Data from two samples collected from two locations during the 1994 RFI meet current data-validation standards and are decision-level data included in this report. However, data from all other samples collected in 1991 and 1994 are screening-level data. They were not used to evaluate the nature and extent of contamination and are not discussed further in this report.

6.3.3 Site Contamination

6.3.3.1 Soil and Rock Sampling

Because AOC 15-004(d) lies entirely within the boundary of SWMU 15-004(a), which is deferred per Table IV-2 of the Consent Order, the approved work plan (LANL 2008, 105673; NMED 2008, 104256) proposed limited sampling of AOC 15-004(d) to determine whether contaminants have moved off-site. It was proposed that full characterization of AOC 15-004(d) be delayed until characterization of the deferred site is conducted.

A total of eight samples were collected in 2009–2010 from four locations at AOC 15-004(d) and analyzed for inorganic chemicals (TAL metals, total cyanide, total uranium, and perchlorate); organic chemicals (explosive compounds and PCBs); and radionuclides (americium-241, gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium). Two additional samples were collected from two locations in 1994 and analyzed for TAL metals, total uranium, and gamma-emitting radionuclides. Table 6.3-1 presents the samples collected and the analyses requested. Figure 6.3-1 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

6.3.3.2 Soil and Rock Sample Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

6.3.3.3 Soil and Rock Sample Analytical Results

Inorganic Chemicals

All 10 samples collected at AOC 15-004(d) were analyzed for TAL metals. Also, eight samples were analyzed for total cyanide and perchlorate, and two samples were analyzed for total uranium. Antimony, barium, cadmium, calcium, chromium, copper, lead, manganese, mercury, perchlorate, and uranium were detected or were detected above BVs in samples collected at AOC 15-004(d). Table 6.3-2 presents the inorganic chemicals above BVs and the detected inorganic chemicals that have no BVs. The sampling locations and detected concentrations above BVs are shown in Figure 6.3-2.

Because the extent of contamination is not defined for the site (section 6.3.3.4), COPCs have not been identified.

Organic Chemicals

Eight samples collected at AOC 15-004(d) were analyzed for explosive compounds. Two of the eight samples were also analyzed for PCBs.

Organic chemicals were not detected at AOC 15-004(d).

Radionuclides

All 10 samples collected at AOC 15-004(d) were analyzed for gamma-emitting radionuclides. Eight samples were analyzed for americium-241, isotopic plutonium, and isotopic uranium. Cesium-137, uranium-234, uranium-235/236, and uranium-238 were detected above BVs/FVs, were detected or detected above BVs/FVs at AOC 15-004(d). Table 6.3-3 presents the radionuclides detected or detected above BVs/FVs. The sampling locations and detected concentrations above BVs/FVs are shown in Figure 6.3-3.

Because the extent of contamination is not defined for the site (section 6.3.3.4), COPCs have not been identified.

6.3.3.4 Nature and Extent of Soil and Rock Contamination

The analytical data indicate a release from the operations associated with SWMU 15-004(a) and AOC 15-004(d). Per the approved work plan (LANL 2008, 105673; NMED 2008, 104256), four locations were sampled in 2009–2010 beyond the historical sampling locations within the firing radius of SWMU 15-004(a). The analytical results from those locations is associated with the contamination from firing site activities.

Inorganic Chemicals

Antimony was detected above the soil BV (0.83 mg/kg) in two subsurface samples at two locations. The concentration of antimony increased with depth at location 15-610791 but decreased with depth at location 15-610789. The vertical extent of antimony is not defined at location 15-610791. The concentration of antimony increased at downgradient sampling locations. The lateral extent of antimony is not defined.

Barium, calcium, chromium, and manganese were each detected above soil BVs in one surface or subsurface sample. All concentrations were below the maximum soil background concentrations. The vertical and lateral extent of barium, calcium, chromium, and manganese are defined.

Cadmium was not detected but had DLs above the soil BV (0.4 mg/kg). The vertical and lateral extent of cadmium are defined.

Copper was detected above the soil BV (14.7 mg/kg) in two surface samples. The vertical extent of copper is defined at location 15-610789 because copper was not detected above BV in the subsurface sample. A subsurface sample was not collected at location 15-02112, but location 15-610789 is within 50 ft of location 15-02112, and the concentration of copper decreased with depth at location 15-610789. The concentration of copper decreased in downgradient sampling locations. The vertical and lateral extent of copper are defined.

Lead was detected above the soil BV (22.3 mg/kg) in two surface samples. The vertical extent of lead is defined at location 15-610789 because it was not detected above BV in the subsurface sample. A

subsurface sample was not collected at location 15-02112, but location 15-610789 is within 50 ft of location 15-02112, and concentration of lead decreased with depth at location 15-610789. The concentration of lead also decreased at downgradient sampling locations. The vertical and lateral extent of lead are defined.

Mercury was detected above the soil BV (0.1 mg/kg) in one surface sample collected in 1994. A subsurface sample was not collected at location 15-02112, but location 15-610789 is within 50 ft of location 15-02112, and mercury was not detected above BV in the deeper sample. The concentration of mercury decreased downgradient. The vertical and lateral extent of mercury are defined.

Perchlorate was detected in two subsurfaces samples at concentrations below the EQL. The vertical and lateral extent of perchlorate are defined.

Uranium was detected above the soil BV (1.82 mg/kg) in five surface samples and two subsurface samples at six locations. The uranium concentration increased with depth at location 15-610790. The vertical extent of uranium is not defined at that location. At locations 15-02100 and 15-02112, subsurface samples were not collected. At three other locations, uranium was not detected above BV in the subsurface samples. The concentration of uranium decreased in downgradient sampling locations. The lateral extent of uranium is defined.

Organic Chemicals

Organic chemicals were not detected at AOC 15-004(d).

Radionuclides

Cesium-137 was detected in the subsurface sample at location 15-610790 but was not detected in the surface sample. The vertical extent of cesium-137 is not defined at location 15-610790. Cesium-137 was not detected at downgradient sampling locations. The lateral extent of cesium-137 is defined.

Uranium-234 was detected above the soil BV (2.59 pCi/g) in three surface samples and one subsurface sample at three locations. The concentrations of uranium-234 decreased with depth at all three locations. The vertical extent of uranium-234 is defined. The maximum concentration of uranium-234 was detected at the upgradient location 15-610790, and the concentrations of uranium-234 decreased downgradient. The lateral extent of uranium-234 is defined.

Uranium-235/236 was detected above the soil BV (0.20 pCi/g) in three surface samples. The concentration of uranium-235/236 decreased with depth at all locations. The vertical extent of uranium-235/236 is defined. The maximum concentration of uranium-235/236 was detected at the upgradient location 15-610790, and the concentrations of uranium-235/236 decreased downgradient. The lateral extent of uranium-235/236 is defined.

Uranium-238 was detected above the soil BV (2.29 pCi/g) in four surface samples and one subsurface sample at four locations. The concentration of uranium-238 decreased with depth at all four locations. The vertical extent of uranium-238 is defined. The maximum concentration of uranium-238 was detected at the downgradient location 15-610789. The lateral extent of uranium-238 is not defined.

6.3.4 Summary of Human Health Risk Screening

Because the extent of contamination at AOC 15-004(d) is not defined, no human health risk-screening assessment was conducted for this site.

6.3.5 Summary of Ecological Risk Screening

Because the extent of contamination at AOC 15-004(d) is not defined, no ecological risk-screening assessment was conducted for this site

6.4 AOC 15-005(c)—Container Storage Area (R-41)

AOC 15-005(c) consists of an outdoor container storage area for explosives, located near storage building 15-41 in the central portion of TA-15 near Firing Site C (Figure 6.4-1). The ground surface on the northern, western, and eastern sides of the building is unpaved, and an asphalt road (Priscilla Road) runs along the southern side. The operational period of this site is not known (LANL 1993, 020946, p. 10-18).

6.4.1 Historical Releases

No documented releases are associated with AOC 15-005(c).

6.4.2 Summary of Previous Investigations

RFI activities were performed at AOC 15-005(c) in 1995 and reported in November 1995 (LANL 1995, 050294). Four samples were collected from two locations and analyzed for inorganic chemicals.

Data from four samples collected during the 1994 RFI do not meet current data-validation standards and are not decision-level data. They were not used to evaluate the nature and extent of contamination and are not discussed further in this report.

6.4.3 Site Contamination

6.4.3.1 Soil and Rock Sampling

A total of 20 samples were collected in 2009–2010 from 10 locations at AOC 15-005(c) and analyzed for inorganic chemicals (TAL metals, total cyanide, total uranium, and perchlorate); organic chemicals (explosive compounds, SVOCs, VOCs, and PCBs); and radionuclides (americium-241, gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium). Table 6.4-1 presents the samples collected and the analyses requested. Figure 6.4-1 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

6.4.3.2 Soil and Rock Sample Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

6.4.3.3 Soil and Rock Sample Analytical Results

Inorganic Chemicals

All 20 samples collected at AOC 15-005(c) were analyzed for TAL metals, total cyanide, total uranium, and perchlorate. Antimony, barium, cadmium, chromium, cobalt, copper, iron, lead, manganese, perchlorate, selenium, uranium, and vanadium were detected or were above BVs in samples collected at

AOC 15-005(c). Table 6.4-2 presents the inorganic chemicals above BVs and the detected inorganic chemicals that have no BVs. The sampling locations and detected concentrations above BVs are shown in Figure 6.4-2.

Because the extent of contamination is not defined for the site (section 6.4.3.4), COPCs have not been identified.

Organic Chemicals

All 20 samples collected at AOC 15-005(c) were analyzed for explosive compounds, SVOCs, and VOCs. Ten of the 20 samples were also analyzed for PCBs. Acetone, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, bis(2-ethylhexyl)phthalate, chrysene, ethylbenzene, fluoranthene, indeno(1,2,3-cd)pyrene, 4-isopropyltoluene, 2-methlynaphthalene, naphthalene, phenanthrene, pyrene, toluene, and 1,3-xylene+1,4-xylene were detected in samples collected at AOC 15-005(c). Table 6.4-3 presents the detected organic chemicals at AOC 15-005(c). The sampling locations and detected concentrations are shown in Figure 6.4-3.

Because the extent of contamination is not defined for the site (section 6.4.3.4), COPCs have not been identified.

Radionuclides

All 20 samples collected AOC 15-005(c) were analyzed for americium-241, gamma-emitting radionuclides, isotopic plutonium, and isotopic uranium. Uranium-234, uranium-235/236, and uranium-238 were detected above BVs/FVs, were detected, or were detected where FVs do not apply at AOC 15-005(c). Table 6.4-4 presents the radionuclides detected or detected above BVs/FVs. The sampling locations and detected concentrations above BVs/FVs are shown in Figure 6.4-4.

Because the extent of contamination is not defined for the site (section 6.4.3.4), COPCs have not been identified.

6.4.3.4 Nature and Extent of Soil and Rock Contamination

The extent of contamination is not defined at AOC 15-005(c).

Inorganic Chemicals

Antimony was detected above the soil BV (0.83 mg/kg) in two surface samples and two subsurface samples at three locations. The concentration of antimony increased with depth at location 15-610562, was not detected in the deeper sample at location 15-610563, and was below the maximum soil background concentration in both samples at location 15-610564. The vertical extent of antimony is not defined at location 15-610562. The concentration of antimony decreased downgradient from location 15-610562 to location 15-610563. The lateral extent of antimony is defined.

Barium was detected above the sediment BV (127 mg/kg) in three surface samples and three subsurface samples at three locations. The concentration of barium increased with depth at locations 15-610556 and 15-610557. The vertical extent of barium is not defined at those locations. The lateral extent of barium is not defined in the drainage because the concentration of barium did not decrease substantially downgradient.

Cadmium and selenium were not detected above BVs but had DLs above their soil or sediment BVs. The vertical and lateral extent of cadmium and selenium are defined.

Chromium was detected above the sediment BV (10.5 mg/kg) in one surface sample and two subsurface samples at two locations. The concentration of chromium increased with depth at location 15-610556. The vertical extent of chromium is not defined at that location. The lateral extent of chromium is not defined in the drainage because the concentration of chromium increased downgradient.

Cobalt was detected above the soil or sediment BV (8.64 mg/kg and 4.73 mg/kg, respectively) in four surface samples and two subsurface samples at four locations. The concentration of cobalt increased with depth at location 15-610556; the vertical extent of cobalt is not defined at that location. The lateral extent of cobalt is not defined because the concentration of cobalt increased downgradient in the drainage.

Copper was detected above the sediment BV (11.2 mg/kg) in two surface samples and one subsurface sample at two locations. The concentration of copper decreased with depth at both locations. The vertical extent of copper is defined. The lateral extent of copper is not defined because the concentration of copper increased downgradient in the drainage.

Iron was detected above the sediment BV (13,800 mg/kg) in one surface sample and one subsurface sample at two locations. The concentration of iron increased with depth at location 15-610556. The vertical extent of iron is not defined at that location. The lateral extent of iron is not defined because the concentration of iron increased downgradient in the drainage.

Lead was detected above the soil BV (22.3 mg/kg) in two surface samples. The concentration of lead decreased with depth at both locations. The vertical extent of lead is defined. The lateral extent of lead is defined because lead was not detected above BV at downgradient sampling locations or in the drainage.

Manganese was detected above the soil BV (671 mg/kg) in one surface sample. The concentration in the surface sample was below the maximum soil background concentration (1100 mg/kg), and the concentration decreased with depth. The concentration of manganese decreased downgradient. The vertical and lateral extent of manganese are defined.

Perchlorate was detected in one surface sample and three subsurface samples, at concentrations below the EQL. The vertical and lateral extent of perchlorate are defined.

Uranium was detected above the soil or sediment BV (1.82 mg/kg and 2.22 mg/kg, respectively) in 10 surface samples and 1 subsurface sample at 10 locations. The concentration of uranium decreased with depth at all locations. The vertical extent of uranium is defined. The lateral extent of uranium is not defined in the drainage because concentrations of uranium increased downgradient. The lateral extent of uranium is defined because the concentration of uranium decreased downgradient to locations 15-610562 and 15-610563 and decreased down the drainage from location 15-610564.

Vanadium was detected above the sediment BV (19.7 mg/kg) in three surface samples and three subsurface samples at three locations. The concentration of vanadium increased with depth at location 15-610556 but decreased with depth at the other two locations. The vertical extent of vanadium is not defined at location 15-610556. The lateral extent of vanadium is not defined because the concentration of vanadium increased down the drainage.

Organic Chemicals

Acetone was detected above the EQL in the surface samples at locations 15-610558 and 15-610561 and was not detected in the subsurface samples. The vertical extent of acetone is defined. The lateral extent of acetone is defined because it was not detected in downgradient sampling locations or in the drainage.

Benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, indeno(1,2,3-cd)pyrene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene were detected in the surface sample at location 15-610562, and concentrations decreased with depth. Fluoranthene was detected in both the surface and subsurface samples but decreased with depth. The vertical extent of benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, indeno(1,2,3-cd)pyrene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene is defined. The lateral extent of benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, indeno(1,2,3-cd)pyrene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene is defined because they were not detected at downgradient location 15-610563.

Bis(2-ethylhexyl)phthalate and toluene were detected in one or two surface samples, and the concentrations decreased with depth. Ethylbenzene and 1,3-xylene+1,4-xylene were detected in two and four samples, respectively, at concentrations below the EQLs. Concentrations decreased downgradient and down the drainage. The vertical and lateral extent of bis(2-ethylhexyl)phthalate, ethylbenzene, toluene, and 1,3-xylene+1,4-xylene are defined.

Isopropyltoluene[4-] was detected in two surface samples at locations 15-610558 and 15-610561, and concentrations decreased with depth at both locations. The vertical extent of 4-isopropyltoluene is defined. The lateral extent of 4-isopropyltoluene is defined because it was not detected at downgradient locations or in the drainage.

Radionuclides

Uranium-234 was detected above the sediment or soil BV (2.59 pCi/g) in seven surface samples. Uranium-234 was not detected above BV in the subsurface samples. The vertical extent of uranium-234 is defined. The lateral extent of uranium-234 is defined because the concentration of uranium-234 decreased downgradient and in the drainage.

Uranium-235 was detected above the sediment or soil BV (0.2 pCi/g) in five surface samples. Uranium-235 was not detected above BV in the subsurface samples. The vertical extent of uranium-235 is defined. The lateral extent of uranium-235 is defined because the concentration of uranium-235 decreased downgradient and in the drainage.

Uranium-238 was detected above the sediment or soil BV (2.259 pCi/g) in 10 surface samples. Uranium-238 was not detected above BV in the subsurface samples. The vertical extent of uranium-238 is defined. The lateral extent of uranium-238 is defined because the concentration of uranium-238 decreased downgradient and in the drainage.

6.4.4 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at AOC 15-005(c), no human health risk-screening assessment was conducted for this site.

6.4.5 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at AOC 15-005(c), no ecological risk-screening assessment was conducted for this site.

6.5 Consolidated Unit 15-006(c)-99

Consolidated Unit 15-006(c)-99 consists of SWMU 15-006(c) (deferred per Table IV-2 of the Consent Order) and SWMU 15-008(b).

6.5.1 SWMU 15-008(b)—Surface Disposal Area

SWMU 15-008(b) is a surface disposal area at TA-15, located north of Firing Site R-44 [SWMU 15-006(c)] and extending along the edge of the mesa and downslope into Threemile Canyon (Plate 9). The surface disposal area covers approximately 8.5 acres. Firing Site R-44 was built in 1951 for diagnostic tests of weapons components and used extensively until 1978 and sporadically until 1992 (LANL 1993, 020946, p. 6-8; LANL 1995, 050294, p. 4-73). Soil and debris from the firing site activities were disposed of at SWMU 15-008(b).

6.5.1.1 Historical Releases

Other than operational releases, no documented releases are associated with SWMU 15-008(b).

6.5.1.2 Summary of Previous Investigations

During 1994 RFI activities, 24 samples were collected from 18 locations and analyzed for inorganic chemicals, HE, and radionuclides (LANL 1995, 050294).

An expedited cleanup (EC) was performed in July, 2000 following the Cerro Grande fire. The EC activities included removing 20 yd^3 of firing site debris from the SWMU and surrounding area and emplacing erosion-control features, such as straw wattles, rock check dams, and silt fencing (LANL 2001, 071342, pp. 22–23). No sampling was conducted as part of this EC.

Data from eight samples collected from four locations during the 1994 RFI meet current data-validation standards and are decision-level data included in this report. However, data from all other samples collected in 1994 are screening-level data. They were not used to evaluate the nature and extent of contamination and are not discussed further in this report.

6.5.1.3 Site Contamination

Soil and Rock Sampling

A total of 171 samples were collected in 1994 and 2009–2010 from 86 locations at SWMU 15-008(b) and analyzed for inorganic chemicals (TAL metals, total cyanide, and perchlorate); organic chemicals (explosive compounds and PCBs); and radionuclides (americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium). Table 6.5-1 presents the samples collected and the analyses requested. Plate 9 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

Soil and Rock Sample Field-Screening Results

Some radiological field-screening results exceeded twice the daily site background levels. A few locations were moved slightly so samples could be collected without exceeding the limits of the radiation work permit. No other changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

Soil and Rock Sample Analytical Results

Inorganic Chemicals

All 171 samples collected at SWMU 15-008(b) were analyzed for TAL metals. Of the 171 samples, 163 samples were analyzed for total cyanide and perchlorate. The eight samples collected in 1995 were analyzed for total uranium. Aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, total cyanide, iron, lead, magnesium, manganese, mercury, nickel, perchlorate, selenium, silver, uranium, vanadium, and zinc were detected or were above BVs in samples collected at SWMU 15-008(b). Table 6.5-2 presents the inorganic chemicals above BVs and the detected inorganic chemicals that have no BVs. The sampling locations and detected concentrations above BVs are shown on Plate 10.

Because the extent of contamination is not defined for the site (section 6.5.1.4), COPCs have not been identified.

Organic Chemicals

Of the 171 samples collected at SWMU 15-008(b), 163 samples were analyzed for explosive compounds. In addition, 40 of the 163 samples were analyzed for PCBs. Aroclor-1242, Aroclor-1254, Aroclor-1260, Aroclor-1268, HMX, RDX, TATB, and TNT were detected in samples collected at SWMU 15-008(b). Table 6.5-3 presents the detected organic chemicals at SWMU 15-008(b). The sampling locations and detected concentrations are shown on Plate 11.

Because the extent of contamination is not defined for the site (section 6.5.1.4), COPCs have not been identified.

Radionuclides

Of the 171 samples collected at SWMU 15-008(b), 163 samples were analyzed for americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium. Americum-241, cesium-137, plutonium-239/240, tritium, uranium-234, uranium-235/236, and uranium-238 were detected or detected above BVs/FVs at SWMU 15-008(b). Table 6.5-4 presents the radionuclides detected or detected above BVs/FVs. The sampling locations and detected concentrations above BVs/FVs are shown on Plate 12.

Because the extent of contamination is not defined for the site (section 6.5.1.4), COPCs have not been identified.

6.5.1.4 Nature and Extent of Soil and Rock Contamination

The extent of contamination is not defined at SWMU 15-008(b).

Inorganic Chemicals

Aluminum was detected above the Qbt 3 BV (7340 mg/kg) in five subsurface samples. The concentration of aluminum increased with depth at locations 15-610713, 15-610730, 15-610736, 15-610751, and 15-610760. The vertical extent of aluminum is not defined at those locations. The lateral extent of aluminum is defined because the concentration decreased downgradient of the maximum detected concentration at location 15-610760.

Antimony was detected above the soil, sediment, or Qbt 3 BVs (0.83 mg/kg, 0.83 mg/kg, and 0.5 mg/kg, respectively) in 24 surface samples and 12 subsurface samples. The concentration of antimony increased with depth at locations 15-610723 and 15-610724. The vertical extent of antimony is not defined at those locations. The lateral extent of antimony is defined because the concentration decreased downgradient of the maximum detected concentration at location 15-610746.

Arsenic was detected above the sediment or Qbt 3 BV (3.98 mg/kg and 2.79 mg/kg, respectively) in four subsurface samples. The concentration of arsenic increased with depth at locations 15-610718, 15-610723, 15-610747, and 15-610760. The vertical extent of arsenic is not defined at those locations. The lateral extent of arsenic is not defined to the west because the maximum concentration was detected at location 15-610723. The lateral extent of arsenic is defined to the north.

Barium was detected above the Qbt 3 BV (46 mg/kg) in 1 surface sample and 27 subsurface samples. The concentration of barium increased with depth at 12 locations. The vertical extent of barium is not defined at those locations. The lateral extent of barium is defined because the concentration decreased downgradient of the maximum detected concentration at location 15-610781.

Beryllium was detected above the soil, sediment, or Qbt 3 BVs (1.83 mg/kg, 1.31 mg/kg, and 1.21 mg/kg, respectively) in 42 surface samples and 20 subsurface samples. The concentration of beryllium increased with depth at locations 15-610705, 15-610718, and 15-610747. The vertical extent of beryllium is not defined at those locations. The lateral extent of beryllium is defined because the concentration decreased downgradient of the maximum detected concentration at location 15-610732.

Cadmium was detected above the soil or Qbt 3 BVs (0.4 mg/kg and 1.63 mg/kg, respectively) in 15 surface samples. The concentration decreased with depth at all locations, and concentrations decreased laterally and downgradient. The vertical and lateral extent of cadmium are defined.

Calcium was detected above the soil or Qbt 3 BVs (6120 mg/kg and 2200 mg/kg, respectively) in three surface samples and nine subsurface samples at 11 locations. The concentration of calcium increased with depth at locations 15-610713, 15-610725, 15-610728, 15-610736, 15-610739, 15-610748, and 15-610760. The vertical extent of calcium is not defined at those locations. The lateral extent of calcium is defined because the concentration decreased downgradient of the maximum detected concentration at location 15-610715.

Chromium was detected above the soil, sediment, or Qbt 3 BVs (19.3 mg/kg, 10.5 mg/kg, and 7.14 mg/kg, respectively) in 17 surface samples and 51 subsurface samples. The concentration of chromium increased with depth at 29 locations. The vertical extent of chromium is not defined. The lateral extent of chromium is defined because the concentration decreased laterally or downgradient of all locations where chromium was detected above BV.

Cobalt was detected above the soil, sediment, or Qbt 3 BVs (8.64 mg/kg, 4.73 mg/kg, and 3.14 mg/kg, respectively) in 7 surface samples and 40 subsurface samples. The concentration of cobalt increased with depth at 25 locations. The vertical extent of cobalt is not defined at those locations. The lateral extent

of cobalt is not defined because the maximum detected concentration (17.1 mg/kg) was at location 15-610742, located on the eastern side of SWMU 15-008(b).

Copper was detected above the soil, sediment, or Qbt 3 BVs (14.7 mg/kg, 11.2 mg/kg, and 4.66 mg/kg, respectively) in 54 surface samples and 41 subsurface samples. The concentrations of copper increased with depth at locations 15-02502, 15-610719, 15-610730, 15-610741, 15-610752, and 15-610781. The vertical extent of copper is not defined at these locations. The concentration of copper decreased with depth at location 15-610748, but the subsurface sample concentration was 622 mg/kg. The vertical extent of copper is not defined at location 15-610748. The lateral extent of copper is defined because the concentration decreased downgradient of the maximum detected concentration at location 15-610748.

Total cyanide was detected above the soil BV (0.5 mg/kg) in only one sample, the surface sample at location 15-610762. The concentration of total cyanide decreased with depth at that location. The vertical extent of total cyanide is defined. Location 15-610762 is the westernmost location. The lateral extent of total cyanide is not defined at the western end of the site but is defined in all other directions.

Iron was detected above the sediment or Qbt 3 BV (13,800 mg/kg and 14,500 mg/kg, respectively) in three surface samples and five subsurfaces samples at six locations. The concentration of iron increased with depth at locations 15-610718, 15-610730, and 15-610734. The vertical extent of iron is not defined at those locations. The lateral extent of iron is not defined because the maximum detected concentration is at location 15-610619, one of the most downgradient locations.

Lead was detected above the soil, sediment, or Qbt 3 BVs (22.3 mg/kg, 19.7 mg/kg, and 11.2 mg/kg, respectively) in 54 surface samples and 23 subsurface samples. The concentration of lead increased with depth at location 15-610705 but decreased with depth at all other locations. The concentration of lead in the deeper sample is more than 10 times the BV at locations 15-610746 (578 mg/kg), 15-610748 (283 mg/kg), 15-610749 (257 mg/kg) 15-610723 (170 mg/kg), and 15-610705 (157 mg/kg). The vertical extent of lead is not defined at these locations. The concentration of lead decreased laterally and downgradient. The lateral extent of lead is defined.

Magnesium was detected above the sediment or Qbt 3 BV (2370 mg/kg and 1690 mg/kg) in one surface and three subsurface samples at four locations. The concentration of magnesium decreased with depth at location 15-610719. The concentration of magnesium increased at the other three locations, but the detected concentrations were below the maximum Qbt 3 background concentration (2820 mg/kg). The concentration of magnesium decreased from location 15-610719 to downgradient location 15-610784. The vertical and lateral extent of magnesium are defined.

Manganese was detected above the soil or sediment BV (671 mg/kg and 543 mg/kg, respectively) in two surface samples at locations 15-610773 and 15-610738. The concentration of manganese decreased with depth at both locations. The vertical extent of manganese is defined. The concentration decreased from location 15-610773 to downgradient locations 15-610771 and 15-610716 and from location 15-610738 to downgradient locations 15-610745 and 15-610736. The lateral extent of manganese is defined.

Mercury was detected above the soil BV (0.1 mg/kg) in one surface sample and one subsurface sample at two locations. The concentration of mercury increased with depth at location 15-02502, but mercury was not detected above BV in the second depth at location 15-02503. The vertical extent of mercury is not defined at location 15-02502. Mercury was not detected above BV in any lateral or downgradient sampling locations. The lateral extent of mercury is defined.

Nickel was detected above the soil or Qbt 3 BVs (15.4 mg/kg and 6.58 mg/kg, respectively) in 5 surface samples and 16 subsurface samples at 20 locations. The concentration of nickel increased with depth at 12 locations. The vertical extent of nickel is not defined at those locations. The lateral extent of nickel is defined because the maximum concentration was detected at location 15-610705, and the concentration of nickel decreased laterally and downgradient.

Perchlorate was detected in one surface sample and 14 subsurface samples at 14 locations. The concentration of perchlorate decreased with depth at location 15-610779, and all detected concentrations were at or below EQLs. The vertical and lateral extent of perchlorate are defined.

Selenium was detected above the Qbt 3 BV (0.3 mg/kg) in three subsurface samples. The concentration of selenium increased with depth at all three locations. The vertical extent of selenium is not defined at locations 15-610713, 15-610714, and 15-610747. Concentrations of selenium decreased laterally from all three locations. The lateral extent of selenium is defined.

Silver was detected above the soil, sediment, or Qbt 3 BV (all 1 mg/kg) in nine surface samples and two subsurface samples at eleven locations. The concentrations of silver decreased with depth at nine locations. The concentrations of silver in the subsurface samples at the other two locations were below the maximum Qbt 3 background concentration of silver (1.9 mg/kg). The vertical extent of silver is defined. The concentration of silver decreased laterally in all directions or downgradient of all locations where silver was detected above BV. The lateral extent of silver is defined.

Uranium was detected above soil, sediment, or Qbt 3 BVs (1.82 mg/kg, 2.22 mg/kg, and 2.4 mg/kg, respectively) in 83 surface samples and 43 subsurface samples. The concentrations of uranium increased with depth at locations 15-610705, 15-610723, 15-610748, 15-610778, and 15-610784. The vertical extent of uranium is not defined at those locations. The lateral extent of uranium is defined because the concentration decreased downgradient of the maximum detected concentration at location 15-02502.

Vanadium was detected above the sediment or Qbt 3 BV (19.7 mg/kg and 17.0 mg/kg, respectively) in three surface samples and three subsurface samples at four locations. Vanadium was detected above BV in both samples at locations 15-610718 and 15-610719; its concentrations increased with depth at location 15-610718 but decreased with depth at location 15-610719. The vertical extent of vanadium is not defined at location 15-610718. At location 15-610751, vanadium was above BV only in the subsurface sample, but the concentration was below the maximum Qbt 3 background concentration (21 mg/kg). The concentration of vanadium decreased with depth at location 15-610773. The concentration of vanadium decreased laterally in all directions or downgradient of all four locations. The lateral extent of vanadium is defined.

Zinc was detected above the soil or sediment BV (48.8 mg/kg and 60.2 mg/kg respectively) in 26 surface samples and 3 subsurface samples at 27 locations. The concentration of zinc increased with depth at location 15-610754, but the deeper sample concentration was below the maximum background concentration of zinc in soil (75.5 mg/kg). The concentration of zinc decreased with depth at all other locations. The vertical extent of zinc is defined. Concentrations of zinc decreased laterally and downgradient. The lateral extent of zinc is defined.

Organic Chemicals

PCBs (Aroclor-1242, Aroclor-1254, Aroclor-1260, and Aroclor-1268) were detected in 13 surface samples and 7 subsurface samples. Concentrations of PCBs decreased with depth at all locations, except at location 15-610720. At location 15-610720, Aroclor-1254 and Aroclor-1260 were detected only in the

subsurface sample but at low concentrations (0.0083 mg/kg and 0.0053 mg/kg, respectively). The vertical extent of PCBs is defined. The lateral extent of PCBs is defined because concentrations decreased laterally and downgradient.

HMX was detected in 13 surface samples and 4 subsurface samples at 13 locations. The concentration of HMX decreased with depth at all locations and decreased downgradient. The vertical and lateral extent of HMX are defined.

RDX was detected in four surface samples and two subsurface samples at four locations. The concentration of RDX decreased with depth at all four locations. The vertical extent of RDX is defined. The lateral extent of RDX is defined because concentrations decreased laterally and downgradient.

TATB was detected in nine surface samples and three subsurface samples at 10 locations. The concentration of TATB decreased with depth at all locations. The vertical extent of TATB is defined. The lateral extent of TATB is defined because concentrations decreased laterally and downgradient.

TNT was detected in two surface samples at concentrations below the EQLs. The concentration of TNT decreased with depth at both locations and decreased laterally and downgradient. The vertical and lateral extent of TNT are defined.

Radionuclides

Americium-241 was detected above the soil FV (0.013 pCi/g) in six surface samples and was detected in one subsurface sample. The concentration of americium-241 increased with depth at location 15-610749; the vertical extent of americium-241 is not defined at that location. The maximum detected concentration of americium-241 occurs on the mesa top at location 15-610748. The concentration of americium-241 decreased downgradient. The lateral extent of americium-241 is defined.

Cesium-137 was detected above the soil FV (1.65 pCi/g) in three surface samples and seven subsurface samples at 10 locations. The concentration of cesium-137 increased with depth at locations 15-610730, 15-610748, and 15-610784. The vertical extent of cesium-137 is not defined at those locations. The maximum concentration of cesium-137 was detected at the western side of SWMU 15-008(b) on the mesa top at location 15-610762. Concentrations decreased downgradient. The lateral downgradient extent of cesium-137 is defined, but the lateral extent of cesium-137 to the west is not defined.

Plutonium-239/240 was detected above the soil FV (0.054 pCi/g) in 10 surface samples and 2 subsurface samples. The concentration of plutonium-239/240 increased with depth at location 15-610749. The vertical extent of plutonium-239/240 is not defined at that location. The maximum concentration of plutonium-239/240 was detected on the mesa top at location 15-610748. The concentration of plutonium-239/240 decreased downgradient. The lateral extent of plutonium-239/240 is defined.

Tritium was detected in 72 surface samples and 70 subsurface samples. The concentration of tritium increased with depth at locations 15-610710, 15-610713, 15-610728, 15-610739, 15-610741, 15-610748, 15-610749, 15-610765, and 15-610784. The vertical extent of tritium is not defined at those locations. The maximum concentration of tritium was detected on the mesa top at location 15-610748. The concentration of tritium decreased downgradient. The lateral extent of tritium is defined.

Uranium-234 was detected above the soil, sediment, or Qbt 3 BVs (2.59 pCi/g, 2.59 pCi/g, and 1.98 pCi/g, respectively) in 50 surface samples and 14 subsurface samples. The concentration of uranium-234 increased with depth at locations 15-610723, 15-610747, and 15-610784. The vertical extent of uranium-234 is not defined at those locations. The maximum concentration of uranium-234 was

detected on the mesa top at location 15-610746. The concentration of uranium-234 decreased laterally and downgradient. The lateral extent of uranium-234 is defined.

Uranium-235/236 was detected above the soil, sediment, or Qbt 3 BVs (0.2 pCi/g, 0.2 pCi/g, and 0.09 pCi/g, respectively) in 50 surface samples and 22 subsurface samples. The concentration of uranium-235/236 increased with depth at location 15-610723. The vertical extent of uranium-235/236 is not defined at that location. The maximum concentration of uranium-235/236 was detected on the mesa top at location 15-610746. The concentration of uranium-234 decreased laterally and downgradient. The lateral extent of uranium-235/236 is defined.

Uranium-238 was detected above the soil, sediment, or Qbt 3 BVs (2.29 pCi/g, 2.29 pCi/g, and 1.93 pCi/g, respectively) in 70 surface samples and 30 subsurface samples. The concentration of uranium-238 increased with depth at locations 15-610723, 15-610726, 15-610747, and 15-610784. The vertical extent of uranium-238 is not defined at those locations. The maximum concentration of uranium-238 was detected on the mesa top at location 15-610746. The concentration of uranium-238 decreased laterally and downgradient. The lateral extent of uranium-238 is defined.

6.5.1.5 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at SWMU 15-008(b), no human health risk-screening assessment was conducted for this site.

6.5.1.6 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at SWMU 15-008(b), no ecological risk-screening assessment was conducted for this site.

6.6 Consolidated Unit 15-006(d)-99

Consolidated Unit 15-006(d)-99 consists of SWMU 15-006(d) (deferred per Table IV-2 of the Consent Order) and AOC 15-008(g).

6.6.1 AOC 15-008(g)—Surface Disposal Associated with Firing Site R-45

AOC 15-008(g) is the location of a former pile of broken sandbags located in TA-15 at Firing Site R-45 [SWMU 15-006(d)] (Figure 6.6-1). The sandbags were used as shielding for the explosives tests carried out at the firing site (LANL 1996, 054977, p. 5-103). Firing Site R-45 was constructed in 1951 and used until 1992 for experiments involving small amounts of explosives. A site visit in 2008 determined the sandbags had been removed.

6.6.1.1 Historical Releases

Other than operational releases, no documented releases are associated with AOC 15-008(g).

6.6.1.2 Summary of Previous Investigations

As part of RFI activities in 1995, a radiological survey of the site was conducted, and one surface sample was collected from one location. The sample was submitted for analyses of inorganic chemicals and HE (LANL 1996, 054977, p. 5-104).

Data from the sample collected during the 1994 RFI do not meet current data-validation standards and are not decision-level data. They were not used to evaluate the nature and extent of contamination and are not discussed further in this report.

6.6.1.3 Site Contamination

Soil and Rock Sampling

A total of eight samples were collected in 2009–2010 from four locations at AOC 15-008(g) and analyzed for inorganic chemicals (TAL metals, total cyanide, total uranium, and perchlorate); organic chemicals (explosive compounds and PCBs); and radionuclides (americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium). Table 6.6-1 presents the samples collected and the analyses requested. Figure 6.6-1 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

Soil and Rock Sample Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

Soil and Rock Sample Analytical Results

Inorganic Chemicals

All eight samples collected at AOC 15-008(g) were analyzed for TAL metals, total cyanide, total uranium, and perchlorate. Antimony, cadmium, calcium, chromium, cobalt, copper, lead, selenium, and uranium were detected or were above BVs in samples collected at AOC 15-008(g). Table 6.6-2 presents the inorganic chemicals above BVs and the detected inorganic chemicals that have no BVs. The sampling locations and detected concentrations above BVs are shown in Figure 6.6-2.

Because the extent of contamination is not defined for the site (section 6.6.1.4), COPCs have not been identified.

Organic Chemicals

All eight samples collected at AOC 15-008(g) were analyzed for explosive compounds. Two of the eight samples were also analyzed for PCBs. TATB was detected in samples collected at AOC 15-008(g). Table 6.6-3 presents the organic chemicals detected. The sampling locations and detected concentrations are shown in Figure 6.6-3.

Because the extent of contamination is not defined for the site (section 6.6.1.4), COPCs have not been identified.

Radionuclides

All eight samples collected at AOC 15-008(g) were analyzed for americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium. Tritium and uranium-238 were detected above BVs/FVs or were detected at AOC 15-008(g). Table 6.6-4 presents the radionuclides detected or

detected above BVs/FVs. The sampling locations and detected concentrations above BVs/FVs are shown in Figure 6.6-4.

Because the extent of contamination is not defined for the site (section 6.6.1.4), COPCs have not been identified.

6.6.1.4 Nature and Extent of Soil and Rock Contamination

The extent of contamination is not defined at AOC 15-008(g).

Inorganic Chemicals

Antimony was detected above the soil or Qbt 3 BVs (0.83 mg/kg and 0.5 mg/kg, respectively) in one surface sample and one subsurface sample at two locations. The concentration of antimony increased with depth at location 15-610566. The vertical extent of antimony is not defined at that location. The concentration of antimony increased downgradient of the center of AOC 15-008(g) to the south. The lateral extent of antimony is not defined.

Cadmium and selenium were not detected above BVs but had DLs above their BVs. The vertical and lateral extent of cadmium and selenium are defined.

Calcium was detected above the Qbt 3 BV (2200 mg/kg) in one subsurface sample at location 15-610566. The concentration of calcium decreased with depth. The vertical extent of calcium is defined. The lateral extent of calcium is defined because it was not detected above BV at the downgradient sampling locations.

Chromium was detected above the soil BV (19.3 mg/kg) in one surface sample. The concentration of chromium decreased with depth and decreased laterally and downgradient. The vertical and lateral extent of chromium are defined.

Cobalt was detected above the soil BV (8.64 mg/kg) in one surface sample at location 15-610568 but was not detected above BV in the subsurface sample. The vertical extent of cobalt is defined. The lateral extent of cobalt is not defined because the concentration of cobalt increased downgradient.

Copper was detected above the soil BV (14.7 mg/kg) in three surface samples. The concentration of copper decreased with depth at each location. The vertical extent of copper is defined. The lateral extent of copper is defined because the concentration of copper decreased at the downgradient sampling locations.

Lead was detected above the soil BV (22.3 mg/kg) in two surface samples. The concentration of lead decreased with depth at each location. The vertical extent of lead is defined. The lateral extent of lead is not defined because the concentration of lead increased at the downgradient sampling locations.

Uranium was detected above the soil or Qbt 3 BVs (1.82 mg/kg and 2.4 mg/kg, respectively) in three surface samples and three subsurface samples at four locations. The concentration of uranium increased with depth at locations 15-610565, 15-610566, and 15-610568; the vertical extent of uranium is not defined. The lateral extent of uranium is not defined because the concentration of uranium increased at the downgradient sampling locations.

Organic Chemicals

TATB was detected in six samples, and the concentration increased with depth at locations 15-610566, 15-610567, and 15-610568. The vertical extent of TATB is not defined. The lateral extent of TATB is not defined because the concentration of TATB increased at the downgradient sampling locations.

Radionuclides

Tritium was detected in two subsurface samples and in one surface sample. The concentration of tritium increased with depth at locations 15-610566 and 15-610568. The vertical extent of tritium is not defined. The lateral extent of tritium is defined because it was detected at its highest concentration in the center of the site (location 15-610566) and decreased outward to the other sampling locations.

Uranium-238 was detected above the soil BV (2.29 pCi/g) in two surface samples and one subsurface sample. The concentration of uranium-238 increased with depth at location 15-610565; the vertical extent of uranium-238 is not defined at that location. The lateral extent of uranium-238 is defined because concentrations decreased at the downgradient sampling locations.

6.6.1.5 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at AOC 15-008(g), no human health risk-screening assessment was conducted for this site.

6.6.1.6 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at AOC 15-008(g), no ecological risk-screening assessment was conducted for this site.

6.7 Consolidated Unit 15-007(c)-00

Consolidated Unit 15-007(c)-00 consists of SWMU 15-007(c) and SWMU 15-007(d).

6.7.1 SWMU 15-007(c)—Shaft

SWMU 15-007(c) is an underground shaft (structure 15-264) at TA-15 (Plate 13) that was used to conduct a single test involving approximately 2 tons of HE in 1972. This test was designed to determine the ability of tuff to absorb the explosion. The explosion was confined to the bottom of the shaft, which was filled with layers of magnetite, cement, sand grout, bentonite, sand, and gravel. HE was the only material used in the underground test (LANL 1993, 020946, p. 5-9). Pieces of 0.25-in.-diameter lead shot were scattered on the concrete pad at the surface of the shaft. The source of this lead was probably the bags of lead shot used for instrument shielding during the experiment. Lead shot is also present on the soil on three sides of the pad (LANL 1997, 056562, p. 1).

6.7.1.1 Historical Releases

Other than operational releases, no documented releases are associated with SWMU 15-008(b).

6.7.1.2 Summary of Previous Investigations

No sampling was conducted at this SWMU before 2009.

6.7.1.3 Site Contamination

Soil and Rock Sampling

A total of 83 samples were collected in 2009–2010 from 25 locations at SWMU 15-007(c) and analyzed for inorganic chemicals (TAL metals, total cyanide, and perchlorate); organic chemicals (explosive compounds and PCBs); and radionuclides (tritium only). Table 6.7-1 presents the samples collected and the analyses requested. Plate 13 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

Soil and Rock Sample Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

Soil and Rock Sample Analytical Results

Inorganic Chemicals

All 83 samples collected at SWMU 15-007(c) were analyzed for TAL metals, total cyanide, and perchlorate. Aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, perchlorate, selenium, silver, vanadium, and zinc were detected or were above BVs in samples collected at SWMU 15-007(c). Table 6.7-2 presents the inorganic chemicals above BVs and the detected inorganic chemicals that have no BVs. The sampling locations and detected concentrations above BV are shown on Plate 14.

Because the extent of contamination is not defined for the site (section 6.7.1.4), COPCs have not been identified.

Organic Chemicals

All 83 samples collected at SWMU 15-007(c) were analyzed for explosive compounds. Thirty-three of the 83 samples were also analyzed for PCBs. Aroclor-1242, Aroclor-1254, and TATB were detected in samples collected at SWMU 15-007(c). Table 6.7-3 presents the organic chemicals detected. The sampling locations and detected concentrations are shown on Plate 15.

Because the extent of contamination is not defined for the site (section 6.7.1.4), COPCs have not been identified.

Radionuclides

From the boreholes at SWMU 15-007(c), 39 samples were collected and analyzed for tritium. Tritium was detected at SWMU 15-007(c). Table 6.7-4 presents the radionuclides detected or detected above BVs/FVs. The sampling locations and detected concentrations above BVs/FVs are shown on Plate 16.

Because the extent of contamination is not defined for the site (section 6.7.1.4), COPCs have not been identified.

6.7.1.4 Nature and Extent of Soil and Rock Contamination

The extent of contamination is not defined at SWMU 15-007(c).

Inorganic Chemicals

Aluminum was detected above the Qbt 3 or Qbt 1g BVs (7340 mg/kg and 3560 mg/kg, respectively) in eight subsurface samples at seven locations. The concentration of aluminum increased with depth at locations 15-610798, 15-610807, and 15-610814. The vertical extent of aluminum is not defined at those locations. At location 15-610816, aluminum was only slightly above the Qbt 1g BV in the two deepest samples, decreased with depth, and was not detected above BV in any samples above 169–170 ft bgs. These concentrations likely are indicative of natural variability. The vertical extent of aluminum is defined at location 15-610816. The lateral extent of aluminum is defined because concentrations decreased laterally and downgradient.

Antimony was detected above the soil BV (0.83 mg/kg) in one surface sample at location 15-610814 and one subsurface sample at location 15-610813. The concentration of antimony increased with depth at location 15-610813 and decreased with depth at location 15-610814. The vertical extent of antimony is not defined at location 15-610813. The lateral extent of antimony is defined because concentrations decreased laterally and downgradient.

Arsenic was detected above the Qbt 2/3 or Qbt 1g BVs (2.79 mg/kg and 0.56 mg/kg, respectively) in four subsurface samples at three locations. The concentration of arsenic increased with depth at location 15-610794. The concentration of arsenic in the deeper sample was below the maximum background concentration of arsenic in Qbt 3. Concentrations decreased with depth at the other two locations. The vertical extent of arsenic is defined. The lateral extent of arsenic is defined because concentrations decreased laterally and downgradient.

Barium was detected above the Qbt 3 BV (46 mg/kg) in eight subsurface samples at eight locations. The concentration of barium increased with depth at locations 15-610798, 15-610807, and 15-610814; the vertical extent of barium is not defined at those locations. The concentration of barium decreased with depth at the other five locations. The lateral extent of barium is defined because concentrations decreased laterally and downgradient.

Beryllium was detected above the Qbt 2/3 or Qbt 1g BVs (1.21 mg/kg and 1.44 mg/kg, respectively) in six subsurface samples at location 15-610816. The concentration of beryllium decreased with depth in the three deepest samples. The vertical extent of beryllium is defined. The lateral extent of beryllium is defined because it was not detected above BV at downgradient sampling locations.

Cadmium was detected above the soil BV (0.4 mg/kg) in only one sample, the surface sample at location 15-610806. Concentrations of cadmium decreased with depth. The vertical extent of cadmium is defined. The lateral extent of cadmium is defined because cadmium was not detected above BV at any other sampling locations.

Calcium was detected above the Qbt 3 BV (2200 mg/kg) in six subsurface samples at six locations. The concentration of calcium increased with depth at locations 15-610807, 15-610809, and 15-610814. The vertical extent of calcium is not defined at those locations. Calcium concentrations decreased with depth at the other three locations. The lateral extent of calcium is defined because concentrations decreased laterally and downgradient.

Chromium was detected above the soil, Qbt 2/3, or Qbt 1g BV (19.3 mg/kg, 7.14 mg/kg, and 2.6 mg/kg, respectively) in 5 surface and 18 subsurface samples at 17 locations. The concentrations of chromium increased with depth at locations 15-610797, 15-610798, 15-610803, 15-610807, and 15-610814. Concentrations of chromium decreased with depth at all other locations. The vertical extent of chromium is not defined at locations 15-610797, 15-610798, 15-610803, 15-610807, and 15-610814. The lateral extent of chromium is defined because concentrations decreased laterally and downgradient.

Cobalt was detected above the Qbt 3 BV (3.14 mg/kg) in eight subsurface samples at eight locations. The concentrations of cobalt increased with depth at locations 15-610798, 15-610801, 15-610807, and 15-610814. The vertical extent of cobalt is not defined at those locations. The concentrations of cobalt decreased with depth at the other four locations. The lateral extent of cobalt is defined because concentrations decreased laterally and downgradient.

Copper was detected above the Qbt 2/3 BV (4.66 mg/kg) in nine subsurface samples at nine locations. The concentration of copper increased with depth at locations 15-610798, 15-610807, 15-610809, and 15-610814. The vertical extent of copper is not defined at those locations. The concentration of copper decreased with depth at the other five locations. The lateral extent of copper is defined because concentrations decreased laterally and downgradient.

Iron was detected above the Qbt 3 or Qbt 1g BV (14,500 mg/kg and 3700 mg/kg, respectively) in nine subsurface samples at six locations. The concentration of iron increased with depth at locations 15-610807 and 15-610814. At deep borehole locations 15-610816, 15-610817, and 15-610818, the concentrations of iron remained relatively constant with depth and likely reflect natural variability in the tuff rather than a release. The vertical extent of iron is defined. The lateral extent of iron is defined because it concentrations decreased laterally and downgradient.

Lead was detected above the soil or Qbt 3 BVs (22.3 mg/kg and 11.2 mg/kg, respectively) in 6 surface samples and 10 subsurface samples at 11 locations. The concentration of lead increased with depth at locations 15-610798, 15-610802, and 15-610813. The concentration of lead decreased with depth at location 15-610814, but the concentration in the deeper sample (90.6 mg/kg) is more than 8 times the BV. The vertical extent of lead is not defined at locations 15-610798, 15-610802, 15-610813, and 15-610814. The concentration of lead decreased with depth at the other seven locations. The lateral extent of lead is defined because concentrations decreased laterally and downgradient.

Magnesium was detected above the Qbt 3 or Qbt 1g BV (1690 mg/kg and 739 mg/kg, respectively) in eight subsurface samples at eight locations. The concentration of magnesium increased with depth at locations 15-610807 and 15-610814. At location 15-610816, the concentration decreased with depth compared with the surface sample but increased and was above the Qbt 1g BV in the deepest sample. The concentrations at location 15-610816 likely reflect natural variability in the tuff. The vertical extent of magnesium is not defined at locations 15-610807 and 15-610814. The lateral extent of magnesium is defined because concentrations decreased laterally and downgradient.

Manganese was detected above the Qbt 3 or Qbt 1g BV (482 mg/kg and 189 mg/kg, respectively) in seven subsurface samples at locations 15-610816, 15-610817, and 15-610818. The concentration of manganese decreased with depth at location 15-610816. At locations 15-610817 and 15-610818, concentrations of manganese did not change substantially with depth but were slightly above the Qbt 1g BV in the deepest samples; no shallower samples had manganese concentrations above BV. The concentrations at locations 15-610817 and 15-610818 likely reflect natural variability in the tuff units. The vertical extent of manganese is defined. The lateral extent of manganese is defined because concentrations decreased laterally and downgradient.

Nickel was detected above the Qbt 3 or Qbt 1g BV (6.58 mg/kg and 2 mg/kg, respectively) in nine subsurface samples at eight locations. The concentration of nickel increased with depth at locations 15-610798, 15-610807, and 15-610814; the vertical extent of nickel is not defined at those locations. The concentration of nickel decreased with depth at the other five locations. The lateral extent of nickel is defined because concentrations decreased laterally and downgradient.

Perchlorate was detected in 1 surface sample and 10 subsurface samples. The concentration of perchlorate increased with depth at location 15-610814. The concentrations of perchlorate at that location were below the EQLs. The concentration of perchlorate decreased with depth at all other locations. The vertical extent of perchlorate is defined. The lateral extent of perchlorate is defined because concentrations decreased laterally and downgradient.

Selenium was not detected above BVs but had DLs above BV in 47 surface and subsurface samples. The vertical and lateral extent of selenium are defined.

Silver was detected above the soil BV (1 mg/kg) in one sample at location 15-610794. The concentration of silver decreased with depth. The vertical extent of silver is defined. The lateral extent of silver is defined because concentrations decreased laterally and downgradient.

Vanadium was detected above the Qbt 3 or Qbt 1g BV (17 mg/kg and 4.59 mg/kg) in eight subsurface samples at seven locations. The concentrations of vanadium increased with depth at locations 15-610798, 15-610801, 15-610807, 15-610808, and 15-610814. The vertical extent of vanadium is not defined at those locations. At location 15-610816, the concentration of vanadium is above the Qbt 1g BV only in the two deepest samples and is not above BV in any shallower samples. The concentrations at that location likely reflect natural variability in the tuff units. The vertical extent of vanadium is defined at location 15-610816. The lateral extent of vanadium is defined because concentrations decreased laterally and downgradient.

Zinc was detected above the soil or Qbt 1g BV (48.8 mg/kg and 40 mg/kg, respectively) in two surface samples and nine subsurface samples at seven locations. The concentration of zinc increased with depth at locations 15-610792 and 15-610797, but the concentrations at those locations were below the maximum soil background concentration (75.5 mg/kg). Zinc was detected above the Qbt 1g BV in the deepest samples at locations 15-610816, 15-610817, and 15-610818 but was not above BV in any of the shallower samples. The concentrations likely reflect natural variability in the tuff units. The vertical extent of zinc is defined. The lateral extent of zinc is defined because concentrations decreased laterally and downgradient.

Organic Chemicals

Aroclor-1242 was detected in one subsurface sample at location 15-610818. Because it was not detected in the deeper samples at location 15-610818, the vertical extent of Aroclor-1242 is defined. The lateral extent of Aroclor-1242 is defined because it was not detected laterally and downgradient.

Aroclor-1254 was detected in one surface sample at location 15-610794. Because it was not detected in the deeper sample at location 15-610794, the vertical extent of Aroclor-1254 is defined. The lateral extent of Aroclor-1254 is defined because it was not detected laterally and downgradient.

TATB was detected in three surface samples at locations 15-610793, 15-610794, and 15-610813 but was not detected in the depth samples. The vertical extent of TATB is defined. The lateral extent of TATB is defined because concentrations decreased laterally and downgradient.

Radionuclides

Tritium was detected in the three boreholes at locations 15-610816, 15-610817, and 15-610818. Concentrations decreased with depth. The vertical extent of tritium is defined. The lateral extent of tritium is defined because concentrations decreased downgradient.

6.7.1.5 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at SWMU 15-007(c), no human health risk-screening assessment was conducted for this site.

6.7.1.6 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at SWMU 15-007(c), no ecological risk-screening assessment was conducted for this site.

6.7.2 SWMU 15-007(d)—Shaft

The SWMU 15-007(d) shaft (structure 15-265) (Plate 13), was used in 1972 to conduct a single test involving beryllium, HE, and tritium. This test was designed to determine the ability of tuff to absorb the explosion. The explosion was confined to the bottom of the shaft, which was filled with layers of magnetite, cement, sand grout, bentonite, sand, and gravel. HE was the only material used in the underground test (LANL 1993, 020946, p. 5-9). Pieces of 0.25-in.-diameter lead shot were scattered on the concrete pad at the surface of the shaft. The source of this lead was probably the bags of lead shot used for instrument shielding during the experiment. Lead shot is also present on the soil on three sides of the pad (LANL 1997, 056562, p. 1).

6.7.2.1 Historical Releases

Approximately 500 lb explosives, 400 Ci of tritium, and less than 200 g beryllium were used for the explosion test (LANL 1993, 020946, p. 5-9). The explosion was confined to the bottom of the 130-ft-deep shaft. Because tritium has a half-life of 12.33 yr, after almost 40 yr, the current quantity of tritium is approximately 50 Ci.

6.7.2.2 Summary of Previous Investigations

No sampling was conducted at this SWMU before 2009.

6.7.2.3 Site Contamination

Soil and Rock Sampling

A total of 26 samples were collected in 2009–2010 from two locations at SWMU 15-007(d) and analyzed for inorganic chemicals (TAL metals, total cyanide, and perchlorate); organic chemicals (explosive compounds and PCBs); and radionuclides (tritium only). Table 6.7-5 presents the samples collected and the analyses requested. Plate 13 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

Soil and Rock Sample Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

Soil and Rock Sample Analytical Results

Inorganic Chemicals

All 26 samples collected at SWMU 15-007(d) were analyzed for TAL metals, total cyanide, and perchlorate. Antimony, beryllium, cadmium, chromium, iron, manganese, perchlorate, selenium, and zinc were detected or were above BV in samples collected at SWMU 15-007(d). Table 6.7-6 presents the inorganic chemicals above BV and the detected inorganic chemicals that have no BVs. The sampling locations and detected concentrations above BVs are shown on Plate 14.

Because the extent of contamination is not defined for the site (section 6.7.2.4), COPCs have not been identified.

Organic Chemicals

All 26 samples collected SWMU 15-007(d) were analyzed for explosive compounds and PCBs. Aroclor-1242 and Aroclor-1254 were detected in samples collected at SWMU 15-007(d). Table 6.7-7 presents the organic chemicals detected. The sampling locations and detected concentrations are shown on Plate 15.

Because the extent of contamination is not defined for the site (section 6.7.2.4), COPCs have not been identified.

Radionuclides

All 26 samples collected SWMU 15-007(d) were analyzed for tritium. Tritium was detected at SWMU 15-007(d). Table 6.7-8 presents the radionuclides detected or detected above BVs/FVs. The sampling locations and detected concentrations above BVs/FVs are shown on Plate 16.

Because the extent of contamination is not defined for the site (section 6.7.2.4), COPCs have not been identified.

6.7.2.4 Nature and Extent of Soil and Rock Contamination

The extent of contamination is not defined at SWMU 15-007(d).

Inorganic Chemicals

Antimony and cadmium were not detected above BVs but had DLs above their BVs. The vertical and lateral extent of antimony and cadmium are defined.

Beryllium was detected above the Qbt 3 BV (1.21 mg/kg) in one subsurface sample at location 15-610820, and the concentration decreased with depth. The vertical extent of beryllium is defined. The lateral extent of beryllium is defined because beryllium was not detected above BV at lateral and downgradient sampling locations.

Chromium was detected above the Qbt 2 or Qbt 1v BV (7.14 mg/kg and 2.24 mg/kg, respectively) in four subsurface samples at locations 15-610819 and 15-610820. The concentration of chromium decreased with depth at both locations. The vertical extent of chromium is defined. The lateral extent of chromium is defined because concentrations of chromium downgradient relative to sampling locations in SWMU 15-007(c), and only one sample had a chromium concentration above the maximum background concentration (13 mg/kg).

Iron was detected above the Qbt 1g BV (3700 mg/kg) in the two deepest samples at location 15-610819, and the concentration decreased with depth. The vertical extent of iron is defined. The lateral extent of iron is defined because iron was detected above BV only in two samples in Qbt 1g at concentrations that likely reflect natural variability in the tuff units.

Manganese was detected above the Qbt 1g BV (189 mg/kg) in the two deepest samples at location 15-610819. The concentrations at that location did not change substantially with depth, and manganese was not detected above BV in any shallower samples. The concentrations likely reflect natural variability in the tuff. Manganese was not detected above BV at other sampling locations. The vertical and lateral extent of manganese are defined.

Perchlorate was detected at low concentrations in two subsurface samples at location 15-610820. Perchlorate was not detected in the deeper samples or at location 15-610819. All sample concentrations at both locations were at the EQL. The vertical and lateral extent of perchlorate are defined.

Selenium was detected above the Qbt 1g BV (0.3 mg/kg) only in the deepest sample at location 15-610819 at a concentration below the EQL. The concentration decreased with depth. The vertical and lateral extent of selenium are defined.

Zinc was detected above the Qbt 1g BV (40.0 mg/kg) in two subsurface samples at location 15-610819. The concentrations decreased with depth and were below the maximum Qbt 1g background concentration (46 mg/kg). The vertical and lateral extent of zinc are defined.

Organic Chemicals

Aroclor-1242 and Aroclor-1254 were detected in one subsurface sample at location 15-610819. The concentrations decreased with depth and were below the EQLs. The vertical and lateral extent of Aroclor-1242 and Aroclor-1254 are defined.

Radionuclides

Tritium was detected in 26 subsurface samples at locations 15-610819 and 15-610820. The concentrations of tritium decreased with depth at both boreholes. The vertical extent of tritium is not defined. The lateral extent of tritium is defined because the concentrations of tritium increased laterally from location 15-610818 at SWMU 15-007(c).

6.7.2.5 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at SWMU 15-007(d), no human health risk-screening assessment was conducted for this site.

6.7.2.6 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at SWMU 15-007(d), no ecological risk-screening assessment was conducted for this site.

6.8 SWMU 15-009(b)—Septic System

SWMU 15-009(b) is a septic system located at TA-15 Firing Site R-45. The septic system consists of a tank (structure 15-61), a seepage pit, associated drainlines, and a former outfall (Figure 6.8-1) (LANL 2003, 102118). The septic tank was constructed in 1951 of reinforced concrete with a 540-gal. capacity (LANL 1990, 007512). This septic system received effluent from restroom facilities in the firing site control building 15-45 (LANL 1990, 007512). The septic tank originally discharged to an outfall. In the 1970s, a 4-ft-diameter × 50-ft-deep seepage pit was constructed to receive effluent from the tank, and the outfall pipe was plugged (LANL 2003, 102118).

The septic tank (structure 15-61) was removed in 2010 during the 2009–2010 investigation.

6.8.1 Historical Releases

No documented releases are associated with SWMU 15-009(b).

6.8.2 Summary of Previous Investigations

No sampling was conducted at this SWMU before 2009.

6.8.3 Site Contamination

6.8.3.1 Soil and Rock Sampling

A total of 20 samples were collected in 2009–2010 from nine locations at SWMU 15-009(b) and analyzed for inorganic chemicals (TAL metals, total cyanide, nitrate, total uranium, and perchlorate); organic chemicals (explosive compounds, SVOCs, VOCs, and PCBs); and radionuclides (americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium). Table 6.8-1 presents the samples collected and the analyses requested. Figure 6.8-1 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

6.8.3.2 Soil and Rock Sample Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

6.8.3.3 Soil and Rock Sample Analytical Results

Inorganic Chemicals

All 20 samples collected at SWMU 15-009(b) were analyzed for TAL metals, total cyanide, total uranium, nitrate, and perchlorate. Antimony, barium, cadmium, calcium, chromium, copper, total cyanide, lead, nitrate, perchlorate, selenium, uranium, and zinc were detected or were above BVs in samples collected

at SWMU 15-009(b). Table 6.8-2 presents the inorganic chemicals above BV and the detected inorganic chemicals that have no BVs. The sampling locations and detected concentrations above BVs are shown in Figure 6.8-2.

Because the extent of contamination is not defined for the site (section 6.8.3.4), COPCs have not been identified.

Organic Chemicals

All 20 samples collected at SWMU 15-009(b) were analyzed for explosive compounds, SVOCs, and VOCs. Eight samples were also analyzed for PCBs. Acenaphthene, acenaphthylene, acetone, anthracene, Aroclor-1242, Aroclor-1254, Aroclor-1260, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, 2-butanone, chrysene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 4-isopropyltoluene, methylene chloride, 2-methlynaphthalene, naphthalene, phenanthrene, pyrene, toluene, 1,2,4-trimethylbenzene, 1,2-xylene, and 1,3-xylene+1,4-xylene were detected in samples collected at SWMU 15-009(b). Table 6.8-3 presents the organic chemicals detected. The sampling locations and detected concentrations are shown in Figure 6.8-3.

Because the extent of contamination is not defined for the site (section 6.8.3.4), COPCs have not been identified.

Radionuclides

All 20 samples collected at SWMU 15-009(b) were analyzed for americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium. Cesium-137, plutonium-239/240, tritium, uranium-234, uranium-235/236, and uranium-238 were detected or detected above BVs/FVs, were detected, or were detected where FVs do not apply at SWMU 15-009(b). Table 6.8-4 presents the radionuclides detected or detected above BVs/FVs. The sampling locations and detected concentrations above BVs/FVs are shown in Figure 6.8-4.

Because the extent of contamination is not defined for the site (section 6.8.3.4), COPCs have not been identified.

6.8.3.4 Nature and Extent of Soil and Rock Contamination

The extent of contamination is not defined at SWMU 15-009(b).

Inorganic Chemicals

Antimony, cadmium, and selenium were not detected above BVs but had DLs above their BVs. The vertical and lateral extent of antimony, cadmium, and selenium are defined.

Barium was detected above the sediment or Qbt 3 BV (127 mg/kg and46 mg/kg, respectively) in one surface sample and one subsurface sample at two locations. The concentration of barium increased with depth at location 15-610833 but decreased with depth at location 15-610831. The vertical extent of barium is not defined at location 15-610833. Barium was detected above the sediment BV (127 mg/kg) at its maximum concentration in the surface sample at location 15-610831, the most downgradient sampling location, and decreased with depth. The lateral extent of barium is not defined.

Calcium was detected above the fill BV (6120 mg/kg) in one surface sample at location 15-610830. The concentration of calcium decreased with depth and decreased downgradient. The vertical and lateral extent of calcium are defined.

Chromium was detected above the sediment or Qbt 3 BV (10.5 mg/kg and 7.14 mg/kg, respectively) in one surface and two subsurface samples at two locations. The concentration of chromium increased with depth at locations 15-610829 and 15-610833. The vertical extent of chromium is not defined at those locations. The lateral extent of chromium is defined because the concentration of chromium decreased at the downgradient sampling locations.

Copper was detected above its sediment or Qbt 3 BV (11.2 mg/kg and 4.66 mg/kg, respectively) in one surface sample and one subsurface sample at two locations. The concentration of copper decreased with depth at location 15-610831. The concentration increased with depth at location 15-610833, but the concentration was below the maximum Qbt 3 background concentration (6.2 mg/kg). The vertical extent of copper is defined. Copper was detected at its maximum concentrations at location 15-610831, the most downgradient sampling location. The lateral extent of copper is not defined.

Total cyanide was detected above the sediment BV (0.82 mg/kg) in one surface sample at location 15-610831. The concentration decreased with depth. The vertical extent of total cyanide is defined. The lateral extent of total cyanide is not defined because it was detected at its maximum concentration at location 15-610831, the most downgradient sampling location.

Lead was detected above the sediment BV (19.7 mg/kg) in one surface sample at location 15-610831, and the concentration decreased with depth. The vertical extent of lead is defined. The lateral extent of lead is not defined because it was detected at its maximum concentration at the most downgradient location (15-610831).

Nitrate was detected in one surface sample and two subsurface samples at locations 15-610829, 15-610831, and 15-610832. The detected concentrations of nitrate (maximum 2.76 mg/kg) likely reflect naturally occurring levels. The vertical and lateral extent of nitrate are defined.

Perchlorate was detected in four subsurface samples at three locations. The concentration of perchlorate decreased with depth at all three locations. The vertical extent of perchlorate is defined. The lateral extent of perchlorate is defined because it was not detected at downgradient sampling locations.

Uranium was detected above the soil, sediment, or Qbt 3 BVs (1.82 mg/kg, 2.22 mg/kg, and 2.4 mg/kg, respectively) in three surface samples and eight subsurface samples at seven locations. The concentration increased with depth at locations 15-610829 and 15-610835. The vertical extent of uranium is not defined at those locations. Concentrations decreased with depth at the other five locations. The lateral extent of uranium is not defined because the concentration of uranium increased downgradient.

Zinc was detected above the fill BV (48.8 mg/kg) in four subsurface samples at three locations. The concentration decreased with depth at all three locations. The vertical extent of zinc is defined. The lateral extent of zinc is defined because the concentration of zinc decreased at downgradient sampling locations.

Organic Chemicals

PAHs [acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 2-methylnaphthalene, napthalene, phenanthrene, and pyrene] were detected in the samples beneath the inlet pipe (location 15-610835), the septic tank inlet (location 15-610830), the septic tank (location

15-610834), and the septic tank outlet (location 15-610836). Concentrations of PAHs decreased with depth at locations 15-610830, 15-610834, and 15-610835. At location 15-610836, benzo(b)fluoranthene and fluoranthene were not detected in the 7–8-ft-bgs sample but were detected above EQLs in the 12–13-ft-bgs sample. The vertical extent of benzo(b)fluoranthene and fluoranthene are not defined at that location. The lateral extent of PAHs is defined because PAHs were not detected in the most downgradient sampling location.

PCBs (Aroclor-1242, Aroclor-1254, and Aroclor-1260) were detected in the 7–8-ft-bgs sample at location 15-610830 but were not detected in the deeper sample. The vertical extent of PCBs is defined. The lateral extent of PCBs is defined because they were not detected in downgradient sampling locations.

VOCs (acetone, 2-butanone, 4-isopropyltoluene, methylene chloride, and toluene) were detected above their EQLs in the samples collected beneath the inlet pipe (location 15-610835), the septic tank inlet (location 15-610830), the septic tank (location 15-610834), and the septic tank outlet (location 15-610836) and in the surface samples at locations 15-610829 and 15-610831. The vertical extent of VOCs is defined because concentrations of VOCs decreased with depth at all locations. The lateral extent of VOCs is defined because VOC concentrations decreased downgradient.

Radionuclides

Cesium-137 was detected above the sediment FV (0.9 pCi/g) in the surface sample at location 15-610831, and the concentration decreased with depth. The vertical extent of cesium-137 is defined. The lateral extent of cesium-137 is not defined because it was detected at its maximum concentration at the most downgradient sampling location.

Plutonium-239/240 was detected above the sediment FV (0.006 pCi/g) in the surface sample at location 15-610831, and the concentration decreased with depth. The vertical extent of plutonium-239/240 is defined. The lateral extent of plutonium-239/240 is not defined because it was detected at its maximum concentration in the most downgradient sampling location.

Tritium was detected in one surface sample and 15 subsurface samples at eight locations. At borehole location 15-610837, the concentration of tritium decreased with depth. In the samples collected beneath the inlet pipe (location 15-610835), the septic tank inlet (location 15-610830), the septic tank (location 15-610834), and the septic tank outlet (location 15-610836), the concentration of tritium decreased with depth. The vertical extent of tritium is defined. Tritium was not detected in the most downgradient sampling location. The lateral extent of tritium is defined.

Uranium-234 was detected above the sediment or soil BV (both 2.59 pCi/g) in three surface samples and two subsurface samples at locations 15-610831, 15-610832, and 15-610833. Concentrations of uranium-234 decreased with depth at each location. The vertical extent of uranium-234 is not defined at location 15-610831 because the concentration in the deepest sample was higher than the BV. The lateral extent of uranium-234 is not defined because it was detected at its maximum concentration in the most downgradient sampling location.

Uranium-235/236 was detected above the sediment or soil BV (both 0.20 pCi/g) in three surface samples and one subsurface sample at locations 15-610831, 15-610832, and 15-610833. Although the concentration of uranium-235/236 decreased with depth at each location, the vertical extent of uranium-235/236 is not defined at location 15-610831 because the concentration in the deepest sample was higher than the BV. The lateral extent of uranium-235/236 is not defined because it was detected at its maximum concentration in the most downgradient sampling location.

Uranium-238 was detected above the sediment or soil BV (both 2.29 pCi/g) in three surface samples and two subsurface samples at locations 15-610831, 15-610832, and 15-610833. Although the concentration of uranium-238 decreased with depth at each location, the vertical extent of uranium-238 is not defined at location 15-610831 because the concentration in the deepest sample was higher than the BV. The lateral extent of uranium-238 is not defined because it was detected at its maximum concentration in the most downgradient sampling location.

6.8.4 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at SWMU 15-009(b), no human health risk-screening assessment was conducted for this site.

6.8.5 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at SWMU 15-009(b), no ecological risk-screening assessment was conducted for this site.

6.9 SWMU 15-009(c)—Septic System

SWMU 15-009(c) is a septic system located at TA-15 Firing Site R-44. The septic system consists of a tank (structure 15-62), its associated drainlines, and an outfall (Plate 17) (LANL 2003, 102119). The septic tank was constructed in 1951 of reinforced concrete with a 540-gal. capacity (LANL 1990, 007512). The septic system received effluent from restroom facilities in the firing site control building 15-44 (LANL 1994, 040595, p. 7). The drainlines were constructed of cast iron and discharged to an outfall into the south fork of Threemile Canyon. The outfall is located approximately 25 ft downgradient of the tank (LANL 2003, 102119). An engineering drawing shows the outfall has been plugged (LANL 2003, 102119).

The septic tank (structure 15-62) was removed during the 2009–2010 investigation.

6.9.1 Historical Releases

Other than operational releases, no documented releases are associated with SWMU 15-009(c).

6.9.2 Summary of Previous Investigations

In 1998, interim action RFI activities were performed at SWMU 15-009(c). Nine samples were collected from four locations and analyzed for inorganic chemicals and radionuclides. Data from these samples meet the current data-validation standards and are decision-level data included in this report.

6.9.3 Site Contamination

6.9.3.1 Soil and Rock Sampling

Thirty-three samples were collected in 2009–2010 from 17 locations at SWMU 15-009(c) and analyzed for inorganic chemicals (TAL metals, total cyanide, total uranium, nitrate, and perchlorate); organic chemicals (explosive compounds, SVOCs, VOCs, and PCBs); and radionuclides (americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium). In 1998, nine samples were collected from four locations at SWMU 15-009(c) and analyzed for inorganic chemicals, HE, organic chemicals, and radionuclides. Table 6.9-1 presents the samples collected and the analyses requested.

Plate 17 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

6.9.3.2 Soil and Rock Sample Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

6.9.3.3 Soil and Rock Sample Analytical Results

Inorganic Chemicals

All 42 samples collected at SWMU 15-009(c) were analyzed for TAL metals and total uranium. Thirty-three samples were also analyzed for total cyanide, nitrate, and perchlorate. Antimony, beryllium, cadmium, calcium, chromium, total cyanide, lead, mercury, nitrate, perchlorate, selenium, silver, uranium, and zinc were detected or were above BVs in samples collected at SWMU 15-009(c). Table 6.9-2 presents the inorganic chemicals above BVs and the detected inorganic chemicals that have no BVs. The sampling locations and detected concentrations above BVs are shown on Plate 18.

Because the extent of contamination is not defined for the site (section 6.9.3.4), COPCs have not been identified.

Organic Chemicals

All 42 samples collected at SWMU 15-009(c) were analyzed for explosive compounds (9 of which were analyzed for HE only), SVOCs, and VOCs. Also, 17 samples were also analyzed for PCBs, and 9 samples were analyzed for pesticides. Acetone, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, bis(2-ethylhexyl)phthalate, chrysene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 4-isopropyltoluene, phenanthrene, pyrene, toluene, 1,2,4-trimethylbenzene, and 1,3-xylene+1,4-xylene were detected in samples collected at SWMU 15-009(c). Table 6.9-3 presents the organic chemicals detected. The sampling locations and detected concentrations are shown on Plate 19.

Because the extent of contamination is not defined for the site (section 6.9.3.4), COPCs have not been identified.

Radionuclides

All 42 samples collected SWMU 15-009(c) were analyzed for gamma-emitting radionuclides, isotopic uranium, and tritium. Thirty-three samples were also analyzed for americium-241 and isotopic plutonium. Tritium, uranium-234, uranium-235/236, and uranium-238 were detected or detected above BVs/FVs at SWMU 15-009(c). Table 6.9-4 presents the radionuclides detected or detected above BVs/FVs. The sampling locations and detected concentrations above BVs/FVs are shown on Plate 20.

Because the extent of contamination is not defined for the site (section 6.9.3.4), COPCs have not been identified.

6.9.3.4 Nature and Extent of Soil and Rock Contamination

The extent of contamination is not defined at SWMU 15-009(c).

Inorganic Chemicals

Antimony was detected above the Qbt 3 BV (0.5 mg/kg) in one subsurface sample beneath the inlet pipe at location 15-610844. Antimony was not detected above BV in deeper samples below the tank (location 15-610843) or at similar depths beneath the tank inlet (location 15-610841). The vertical extent of antimony is defined. The lateral extent of antimony is defined because it was not detected in any other sampling locations.

Beryllium was detected above the soil BV (1.83 mg/kg) in one surface sample at location 15-03471.The concentration of beryllium decreased with depth. Beryllium was not detected above BV at lateral or downgradient locations. The vertical and lateral extent of beryllium are defined.

Cadmium, mercury, selenium, and silver were not detected above BVs but had DLs above their BVs. The vertical and lateral extent of cadmium, mercury, selenium, and silver are defined.

Calcium was detected above the fill BV (6120 mg/kg) in one sample at location 15-610842, and the concentration decreased with depth. Calcium was not detected above BV at any other sampling locations. The vertical and lateral extent of calcium are defined.

Chromium was detected above the sediment or Qbt 3 BV (10.5 mg/kg and 7.14 mg/kg, respectively) in six surface samples and eight subsurface samples at nine locations. The concentrations of chromium increased with depth at locations 15-610838, 15-610845, and 15-610852. The vertical extent of chromium is not defined at those locations. No clear decreasing trend in chromium concentrations downgradient to location 15-610854 is evident. However, location 15-610854 is at the western end of canyon reach THS-1W, where chromium was not detected above BV, as reported in the Pajarito Canyon investigation report (LANL 2008, 104909, p. 149). The lateral extent of chromium is defined.

Total cyanide was detected above the soil BV (0.5 mg/kg) in one subsurface sample at location 15-610842 (below the septic tank) but was not detected above BV in the deeper sample. Therefore, the vertical extent of total cyanide is defined. The lateral extent of total cyanide is defined because the concentration of total cyanide decreased downgradient.

Lead was detected above the fill BV (22.3 mg/kg) in one subsurface sample at location 15-610843 (below the septic tank outlet). The concentration of lead decreased with depth. The vertical extent of lead is defined. The lateral extent of lead is defined because the concentration decreased downgradient.

Nitrate was detected in seven subsurface samples at five locations. The concentrations of nitrate (maximum 2.24 mg/kg) likely reflect naturally occurring levels. The vertical and lateral extent of nitrate are defined.

Perchlorate was detected in seven subsurface samples at five locations at concentrations below the EQL (0.002 mg/kg). The vertical and lateral extent of perchlorate are defined.

Uranium was detected above the fill, sediment, or Qbt 3 BVs (1.82 mg/kg, 2.22 mg/kg, and 2.4 mg/kg, respectively) in eight surface samples and nine subsurface samples at 13 locations. The concentration of uranium increased or did not change with depth at locations 15-610850, 15-610838, 15-610845, and 15-610846. At locations 15-610838, 15-610845, and 15-610846, concentrations of uranium were below the maximum background concentration of uranium in fill (3.6 mg/kg). At location 15-610854 only one depth was sampled, and uranium was detected above BV. The vertical extent of uranium is not defined at locations 15-610850 and 15-610854. The maximum detected concentration above BV was in the location farthest downgradient, but the concentration of total uranium detected in reach THS-1W was higher

(LANL 2008, 104909, p. 194). The lateral extent of uranium is defined to the toe of the slope above reach THS-1W.

Zinc was detected above the fill BV (48.8 mg/kg) in three subsurface samples at two locations. The concentration of zinc decreased with depth at both locations, and decreased downgradient. The vertical and lateral extent of zinc are defined.

Organic Chemicals

PAHs [anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene] were detected above their EQLs in the sampling locations below the inlet line (location 15-610844), the septic tank inlet (location 15-610841), the septic tank (location 15-610843), and the septic tank outlet (location 15-610842). The concentrations decreased with depth at all locations. The vertical extent of PAHs is defined. PAHs were not detected in downgradient sampling locations. The lateral extent of PAHs is defined.

Acetone was detected at concentrations above EQLs in the subsurface samples at locations 15-610839 and 15-610840 and in the surface sample at location 15-610851. The vertical extent of acetone is not defined at locations 15-610839 and 15-610840. The lateral extent of acetone is defined because concentrations decreased downgradient.

Bis(2-ethylhexyl)phthalate, 1,2,4-trimethylbenzene, and 1,3-xylene+1,4-xylene were detected in one or two surface samples at concentrations below their EQLs. Concentrations decreased with depth and downgradient. The vertical and lateral extent of bis(2-ethylhexyl)phthalate, 1,2,4-trimethylbenzene, and 1,3-xylene+1,4-xylene are defined.

Isopropyltoluene[4-] and toluene were detected in the surface samples at locations 15-610848 and 15-610851 and in the subsurface sample at location 15-610851. Concentrations decreased with depth at both locations. The vertical extent of 4-isopropyltoluene and toluene are defined. The lateral extent of 4-isopropyltoluene and toluene are defined because concentrations decreased downgradient.

Radionuclides

Tritium was detected in three surface samples and 15 subsurface samples at 13 locations. The lowest detected concentration was in the deepest sample (15.5–16 ft bgs) beneath the septic tank (location 15-610843). Concentrations decreased with depth in the area around the septic tank and lines. Concentrations of tritium in the drainage were low and decreased downgradient. The vertical and lateral extent of tritium are defined.

Uranium-234 was detected above the sediment or Qbt 3 BV (2.59 pCi/g and 1.98 pCi/g, respectively) in one surface sample and two subsurface samples at three locations. The concentration of uranium-234 increased with depth at locations 15-610846 and 15-610850. The vertical extent of uranium-234 is not defined at those locations. The concentration decreased with depth at location 15-610853. The lateral extent of uranium-234 is defined because concentrations decreased downgradient.

Uranium-235/236 was detected above the sediment or Qbt 3 BV (0.2 pCi/g and 0.09 pCi/g, respectively) in two subsurface samples. The concentration of uranium-235/236 increased with depth at locations 15-610846 and 15-610850. The vertical extent of uranium-235/236 is not defined at those locations. The lateral extent of uranium-235/236 is defined because the concentration decreased downgradient.

Uranium-238 was detected above the soil, sediment, or Qbt 3 BVs (2.29 pCi/g, 2.29 pCi/g, and 1.93 pCi/g, respectively) in six surface and four subsurface samples at nine locations. The concentrations of uranium-238 increased with depth at locations 15-610839, 15-610846, and 15-610850. The vertical extent of uranium-238 is not defined at those locations. At location 15-610854, a deeper sample was not collected. The vertical extent of uranium-238 is not defined at that location. The lateral extent of uranium-238 is defined because the concentration of uranium-238 decreased downgradient of location 15-610850.

6.9.4 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at SWMU 15-009(c), no human health risk-screening assessment was conducted for this site.

6.9.5 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at SWMU 15-009(c), no ecological risk-screening assessment was conducted for this site.

6.10 SWMU 15-009(h)—Septic System

SWMU 15-009(h) is a septic system located at the Ector firing site on the eastern side of TA-15 (LANL 2003, 102117). The septic system consists of a tank (structure 15-282), associated drainlines, and a drain field (Figure 6.10-1). The septic tank was constructed in the late 1970s of reinforced concrete with a 905-gal. capacity and flowed to a drain field (LANL 1990, 007512; LANL 1994, 040595, p. 8). The septic system received effluent from restroom facilities in the Ector firing site control building 15-280 (LANL 1990, 007512). In the 1990s, the sanitary waste drainlines that served this septic system were rerouted to the SWSC plant and are currently active (LANL 2003, 102117).

6.10.1 Historical Releases

Other than operational releases, no documented releases are associated with SWMU 15-009(h).

6.10.2 Summary of Previous Investigations

No sampling was conducted at this SWMU before 2009.

6.10.3 Site Contamination

6.10.3.1 Soil and Rock Sampling

A total of 14 samples were collected in 2009–2010 from seven locations at SWMU 15-009(h) and analyzed for inorganic chemicals (TAL metals, total cyanide, total uranium, nitrate, and perchlorate); organic chemicals (explosive compounds, SVOCs, VOCs, and PCBs); and radionuclides (americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium). Table 6.10-1 presents the samples collected and the analyses requested. Figure 6.10-1 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

6.10.3.2 Soil and Rock Sample Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

6.10.3.3 Soil and Rock Sample Analytical Results

Inorganic Chemicals

All 14 samples collected at SWMU 15-009(h) were analyzed for TAL metals, total cyanide, total uranium, nitrate, and perchlorate. Antimony, barium, cadmium, calcium, chromium, mercury, nickel, nitrate, perchlorate, selenium, uranium, and zinc were detected or were above BVs in samples collected at SWMU 15-009(h). Table 6.10-2 presents the inorganic chemicals above BVs and the detected inorganic chemicals that have no BVs. The sampling locations and detected concentrations above BVs are shown in Figure 6.10-2.

Because the extent of contamination is not defined for the site (section 6.10.3.4), COPCs have not been identified.

Organic Chemicals

All 14 samples collected at SWMU 15-009(h) were analyzed for explosive compounds, SVOCs, and VOCs. Four samples were also analyzed for PCBs. Acetone, ethylbenzene, and 2-hexanone were detected in samples collected at SWMU 15-009(h). Table 6.10-3 presents the detected organic chemicals at SWMU 15-009(h). The sampling locations and detected concentrations are shown in Figure 6.10-3.

Because the extent of contamination is not defined for the site (section 6.10.3.4), COPCs have not been identified.

Radionuclides

All 14 samples collected at SWMU 15-009(h) were analyzed for americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium. Plutonium-239/240, tritium, uranium-234, uranium-235/236, and uranium-238 were detected or detected above BVs/FVs at SWMU 15-009(h). Table 6.10-4 presents the radionuclides detected or detected above BVs/FVs. The sampling locations and detected concentrations above BVs/FVs are shown in Figure 6.10-4.

Because the extent of contamination is not defined for the site (section 6.10.3.4), COPCs have not been identified.

6.10.3.4 Nature and Extent of Soil and Rock Contamination

The extent of contamination is not defined at SMWU 15-009(h).

Inorganic Chemicals

Antimony, cadmium, and selenium were not detected above BVs but had DLs above their BVs. The vertical and lateral extent of antimony, cadmium, and selenium are defined.

Barium was detected above the Qbt 3 BV (46 mg/kg) in two subsurface samples. The concentration of barium increased with depth at location 15-610855. The vertical extent of barium is not defined at that location. The lateral extent of barium is defined because the concentration of barium decreased downgradient.

Calcium was detected above the soil BV (6120 mg/kg) in one subsurface sample. The concentration of calcium increased with depth at location 15-610860. The vertical extent of calcium is not defined at that location. The lateral extent of calcium is defined because the concentration decreased downgradient.

Chromium was detected above the fill or Qbt 3 BV (19.3 mg/kg and 7.14 mg/kg, respectively) in five subsurface samples at four locations. The concentration of chromium increased with depth at all four locations. The concentration in the deeper sample at location 15-610861 was below the maximum soil background concentration (36.5 mg/kg). The vertical extent of chromium is not defined at locations 15-610855, 15-610858, and 15-610859. The lateral extent of chromium is defined because the concentration of chromium decreased downgradient.

Mercury was detected above the fill BV (0.1 mg/kg) in one subsurface sample at location 15-610857. The concentration of mercury decreased with depth. The vertical extent of mercury is defined. The lateral extent of mercury is defined because it was not detected in downgradient sampling locations.

Nickel was detected above the Qbt 3 BV (7 mg/kg) in one subsurface sample, at location 15-610858. The concentration of nickel decreased with depth. The vertical extent of nickel is defined. The lateral extent of nickel is defined because it was not detected above BV at downgradient sampling locations.

Nitrate was detected in eight subsurface samples at four locations. The concentrations of nitrate (maximum 10.2 mg/kg) likely reflect naturally occurring levels. The vertical and lateral extent of nitrate are defined.

Perchlorate was detected in six subsurface samples at three locations. Concentrations of perchlorate decreased with depth at locations 15-610859 and 15-610860, and all detected concentrations were below the EQL. The vertical and lateral extent of perchlorate are defined.

Uranium was detected above the soil BV (1.82 mg/kg) in eight subsurface samples at five locations. The concentration of uranium increased with depth at location 15-610860. The vertical extent of uranium is not defined at that location. The concentration decreased with depth at the other four locations. The lateral extent of uranium is defined because the concentration of uranium decreased downgradient.

Zinc was detected above the fill BV (48.8 mg/kg) in one subsurface sample. The concentration of zinc increased with depth at location 15-610857. The vertical extent of zinc is not defined at that location. The lateral extent of zinc is defined because zinc was not detected above BV at the downgradient sampling locations.

Organic Chemicals

Acetone was detected in two subsurface samples at locations 15-610859 and 15-610861. The concentration decreased with depth at both locations. Concentrations of acetone decreased laterally and downgradient. The vertical and lateral extent of acetone are defined.

Ethylbenzene was detected in one subsurface sample at location 15-610861. The concentration of ethylbenzene was at the EQL (0.0011 mg/kg). The vertical extent of ethylbenzene is defined. The lateral extent of ethylbenzene is defined because it was not detected at downgradient sampling locations.

Hexanone[2-] was detected in one subsurface sample at location 15-610859. The concentration of 2-hexanone decreased with depth, and 2-hexanone was not detected at any other locations. The vertical and lateral extent of 2-hexanone are defined.

Radionuclides

Plutonium-239/240 was detected in one subsurface sample at location 15-610861. The concentration increased with depth. The vertical extent of plutonium-239/240 is not defined at location15-610861. The lateral extent of plutonium-239/240 is defined because it was not detected at downgradient sampling locations.

Tritium was detected in six subsurface samples at four locations. The concentration of tritium increased with depth at location 15-610861. Tritium was not detected at similar depths at locations 15-610858 (within 10 ft laterally) and 15-610860 (within 15 ft laterally). The vertical extent of tritium is defined. The lateral extent of tritium is defined because the concentration decreased at downgradient sampling locations.

Uranium-234 and uranium-235/236 were detected above the soil BV (2.59 pCi/g and 0.2 pCi/g, respectively) in one subsurface sample at location 15-610857 but were not detected in the deeper sample at that location. The vertical extent of uranium-234 and uranium-235/236 are defined. The lateral extent of uranium-234 and uranium-235/236 are defined because they were not detected at downgradient sampling locations.

Uranium-238 was detected above the soil BV (2.29 pCi/g) in four subsurface samples at locations 15-610856, 15-610857, and 15-610860. The concentration of uranium-238 increased with depth at location 15-610860. The vertical extent of uranium-238 is not defined at that location. The concentration of uranium-238 decreased with depth at the other two locations. The lateral extent of uranium-238 is defined because the concentration of uranium-238 decreased downgradient.

6.10.4 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at SWMU 15-009(h), no human health risk-screening assessment was conducted for this site.

6.10.5 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at SWMU 15-009(h), no ecological risk-screening assessment was conducted for this site.

6.11 SWMU 15-010(b)—Settling Tank

SWMU 15-010(b) is a settling tank (structure 15-147) (LANL 2004, 102120) located in the northwest corner of TA-15 near former shop building 15-8 (Figure 6.11-1). The tank is constructed of concrete and measures 5 ft long × 5 ft wide × 5.5 ft deep with an approximate 900-gal. capacity (LANL 1990, 007512). The settling tank served former building 15-8, which housed HE-machining operations during the 1950s, and discharged to an outfall at the edge of Threemile Canyon (LANL 1993, 020946, p. 10-25). The tank was constructed in 1947 and originally designed to be a septic tank; however, subsequent engineering records confirm the tank was also used as an HE settling tank.

The investigation work plan proposed removing the tank. However, facility restrictions on the handling of HE prevented removing the tank, which was found to contain liquid, until the contents were characterized. The liquid contents were sampled for waste characterization purposes, and found to be nonhazardous and nonradioactive (Appendix F). In the interim, the tank refilled with water, and approval has not been received from the facility to remove the tank. At the time of this report, the tank had not been removed and restrictions on mechanized work for threatened or endangered species were likely to prevent its removal until after September 1, 2010.

6.11.1 Historical Releases

Other than operational releases, no documented releases are associated with SWMU 15-010(b).

6.11.2 Summary of Previous Investigations

In 1995, RFI activities were performed at SWMU 15-010(b) (LANL 1996, 054977). Four samples were collected from three locations and analyzed for HE.

Data from four samples collected in the 1995 RFI do not meet current data-validation standards and are not decision-level data. They were not used to evaluate the nature and extent of contamination and are not discussed further in this report.

6.11.3 Site Contamination

6.11.3.1 Soil and Rock Sampling

A total of 17 samples were collected in 2009–2010 from nine locations at SWMU 15-010(b) and analyzed for inorganic chemicals (TAL metals, total cyanide, total uranium, nitrate, and perchlorate), organic chemicals (explosive compounds, SVOCs, VOCs, and PCBs), and radionuclides (americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium). Table 6.11-1 presents the samples collected and the analyses requested. Figure 6.11-1 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

6.11.3.2 Soil and Rock Sample Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

6.11.3.3 Soil and Rock Sample Analytical Results

Inorganic Chemicals

All 17 samples collected at SWMU 15-010(b) were analyzed for TAL metals, total cyanide, total uranium, nitrate, and perchlorate. Antimony, barium, cadmium, calcium, chromium, copper, iron, manganese, mercury, nitrate, perchlorate, selenium, uranium, vanadium, and zinc were detected or were detected or detected above BVs in samples collected at SWMU 15-010(b). Table 6.11-2 presents the inorganic chemicals above BVs and the detected inorganic chemicals that have no BVs. The sampling locations and detected concentrations above BVs are shown in Figure 6.11-2.

Because the extent of contamination is not defined for the site (section 6.11.3.4), COPCs have not been identified.

Organic Chemicals

All 17 samples collected at SWMU 15-010(b) were analyzed for explosive compounds, SVOCs, and VOCs. Four samples were also analyzed for PCBs. Acetone, Aroclor-1254, Aroclor-1260, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, bis(2-ethylhexyl)phthalate, chrysene, 1,1-dichloroethene, di-n-butylphthalate, fluoranthene, methylene chloride, phenanthrene, pyrene, styrene, tetrachloroethene, toluene, and 1,3-xylene+1,4-xylene were detected in samples collected at SWMU 15-010(b). Table 6.11-3 presents the organic chemicals detected. The sampling locations and detected concentrations are shown in Figure 6.11-3.

Because the extent of contamination is not defined for the site (section 6.11.3.4), COPCs have not been identified.

Radionuclides

All 17 samples collected at SWMU 15-010(b) were analyzed for americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium. Cesium-137, plutonium-239/240, uranium-234, uranium-235/236, and uranium-238 were detected or detected above BVs/FVs at SWMU 15-010(b). Table 6.11-4 presents the radionuclides detected or detected above BVs/FVs. The sampling locations and detected concentrations above BVs/FVs are shown in Figure 6.11-4.

Because the extent of contamination is not defined for the site (section 6.11.3.4), COPCs have not been identified.

6.11.3.4 Nature and Extent of Soil and Rock Contamination

The extent of contamination is not defined at SWMU 15-010(b).

Inorganic Chemicals

Antimony and cadmium were not detected above BVs but had DLs above their BVs. The vertical and lateral extent of antimony and cadmium are defined.

Barium was detected above the sediment BV (127 mg/kg) in one surface sample at location 15-610863. The concentration of barium decreased with depth. The vertical extent of barium is defined. The lateral extent of barium is defined because barium was not detected above BV at downgradient sampling location 15-610866.

Calcium was detected above the sediment BV (4420 mg/kg) in one sample at location 15-610863 but was not detected in the subsurface sample. The vertical extent of calcium is defined. The lateral extent of calcium is defined because calcium was not detected above BV at downgradient sampling location 15-610866.

Chromium was detected above the sediment or Qbt 3 BV (10.5 mg/kg and 7.14 mg/kg, respectively) in two surface samples and two subsurface samples at four locations. The concentration of chromium increased with depth at location 15-610863. The vertical extent of chromium is not defined at that location. The lateral extent of chromium is defined because chromium was not detected above BV at downgradient sampling location 15-610866.

Copper was detected above the sediment BV (11.2 mg/kg) in one surface sample and one subsurface sample at location 15-610869. The concentration of copper decreased with depth. The vertical extent of copper is defined. The lateral extent of copper is defined because the concentration of copper decreased at the downgradient sampling locations.

Iron was detected above the sediment BV (13,800 mg/kg) in one surface sample and two subsurface samples at three locations. The concentration of iron increased with depth at locations 15-610866 and 15-610868. The vertical extent of iron is not defined at those locations. The lateral extent of iron is not defined because the highest concentration of iron was detected at location 15-610866, the farthest downgradient sampling location.

Manganese was detected above the sediment BV (543 mg/kg) in one surface sample at location 15-610863 but was not detected in the subsurface sample. The vertical extent of manganese is defined. The lateral extent of manganese is defined because manganese was not detected above BV at downgradient location 15-610866.

Mercury was detected above the sediment BV (0.1 mg/kg) three surface samples and two subsurface samples at three locations. The concentration of mercury increased with depth at location 15-610864. The vertical extent of mercury is not defined at that location. The concentration of mercury decreased with depth at the two other locations. The lateral extent of mercury is defined because the concentration of mercury decreased at the downgradient sampling locations.

Nitrate was detected in two surface samples and one subsurface sample at three locations. The detected concentrations of nitrate (maximum 1.65 mg/kg) likely reflect naturally occurring levels. The vertical and lateral extent of nitrate are defined.

Perchlorate was detected in one surface sample and one subsurface sample at two locations. Both concentrations were below the EQL (0.002 mg/kg). The vertical and lateral extent of perchlorate are defined.

Selenium was detected above the sediment or Qbt 3 BV (both 0.3 mg/kg) in one surface sample and one subsurface sample at location 15-610871. The concentration of selenium decreased with depth. The vertical extent of selenium is defined. The lateral extent of selenium is defined because it was not detected above BV in the downgradient sampling locations.

Uranium was detected above the sediment BV (2.22 mg/kg) in four surface samples and one subsurface sample at four locations. The uranium concentration increased with depth at location 15-610864. The vertical extent of uranium is not defined at that location. The lateral extent of uranium is defined because uranium was not detected above BV at downgradient sampling location 15-610866.

Vanadium was detected above the sediment BV (19.7 mg/kg) in two subsurface samples at two locations. The concentration of vanadium increased with depth at locations 15-610866 and 15-610868. The vertical extent of vanadium is not defined at those locations. The lateral extent of vanadium is not defined because the highest concentration of vanadium above BV was detected at location 15-610866, the farthest downgradient sampling location.

Zinc was detected above the sediment BV (60.2 mg/kg) in two subsurface samples at two locations. The concentration of zinc increased with depth at locations 15-610866 and 15-610868. The vertical extent of zinc is not defined at those locations. The lateral extent of zinc is defined because the concentration of zinc decreased at the farthest downgradient location.

Organic Chemicals

Acetone was detected in three surface samples and four subsurface samples at five locations. The concentration of acetone increased with depth at locations 15-610863 and 15-610864. The vertical extent of acetone is not defined at those locations. The lateral extent of acetone is defined because it was not detected at the downgradient sampling locations.

Aroclor-1254 was detected in two samples at location 15-610864, and the concentration increased slightly with depth. The vertical extent of Aroclor-1254 is not defined at location 15-610864. The lateral extent of Aroclor-1254 is defined because Aroclor-1254 was not detected at downgradient sampling locations.

Aroclor-1260, benzo(a)anthracene, benzo(a)pyrene, benzo(k)fluoranthene, bis(2-ethylhexyl)phthalate, 1,1-dichloroethene, methylene chloride, styrene, tetrachloroethene, and 1,3-xylene+1,4-xylene were each detected in one to five samples, at concentrations below EQLs. Concentrations decreased with depth and downgradient. The vertical and lateral extent of Aroclor-1260, benzo(a)anthracene, benzo(a)pyrene, benzo(k)fluoranthene, bis(2-ethylhexyl)phthalate, 1,1-dichloroethene, methylene chloride, styrene, tetrachloroethene, and 1,3-xylene+1,4-xylene are defined.

Benzo(b)fluoranthene, chrysene, fluoranthene, phenanthrene, and pyrene were detected in one to five samples. Concentrations decreased with depth at all locations. The vertical extent of benzo(b)fluoranthene, chrysene, fluoranthene, phenanthrene, and pyrene are defined. The lateral extent of benzo(b)fluoranthene, chrysene, fluoranthene, phenanthrene, and pyrene are defined because they were not detected at downgradient sampling locations.

Di-n-butylphthalate was detected in three surface samples and two subsurface samples at three locations. Concentrations increased slightly with depth at location 15-610869, but both concentrations were below the EQL. Concentrations decreased with depth at locations 15-610864 and 15-610872. The vertical extent of di-n-butylphthalate is defined. Di-n-butylphthalate was not detected at the downgradient drainage locations. The lateral extent of di-n-butylphthalate is defined.

Toluene was detected in three surface samples and three subsurface samples at six locations. The concentrations of toluene increased with depth at locations 15-610863, 15-610864, and 15-610871. The vertical extent of toluene is not defined at those locations. The lateral extent of toluene is defined because toluene was not detected at the farthest downgradient location.

Radionuclides

Cesium-137 was detected above the sediment FV (0.9 pCi/g) in two surface samples. The vertical extent of cesium-137 is defined because it was not detected in any subsurface samples. The lateral extent of cesium-137 is defined because it was not detected at downgradient location 15-610866.

Plutonium-239/240 was detected above the sediment FV (0.068 pCi/g) in one surface sample at location 15-610863. The vertical extent of plutonium-239/240 is defined because it was not detected in any subsurface samples. The lateral extent of plutonium-239/240 is defined because it was not detected at downgradient location 15-610866.

Uranium-234 was detected above the sediment BV (2.59 pCi/g) in one surface sample at location 15-610863. The vertical extent of uranium-234 is defined because it was not detected above BV in any subsurface samples. The lateral extent of uranium-234 is defined because it was not detected above BV at downgradient location 15-610866.

Uranium-235/236 was detected above the sediment BV (0.20 pCi/g) in one surface sample at location 15-610863. The vertical extent of uranium-235/236 is defined because it was not detected above BV in any subsurface samples. The lateral extent of uranium-235/236 is defined because it was not detected above BV at downgradient location 15-610866.

Uranium-238 was detected above the sediment BV (2.59 pCi/g) in two surface samples and one subsurface sample at locations 15-610863, 15-610864, and 15-610872. The concentration of uranium-238 increased with depth at location 15-610864. The vertical extent of uranium-238 is not defined at that location. The lateral extent of uranium-238 is defined because it was not detected above BV at downgradient location 15-610866.

6.11.4 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at AOC 15-010(b), no human health risk-screening assessment was conducted for this site.

6.11.5 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at AOC 15-010(b), no ecological risk-screening assessment was conducted for this site.

6.12 AOC 15-014(h)—Outfalls from Building 15-40

AOC 15-014(h) consists of three outfalls located in the northwest corner of TA-15 (Plate 21). The outfalls served a former laboratory and office (former building 15-40). All three outfalls daylight north of former building 15-40 and discharge to Threemile Canyon (LANL 1990, 007512; LANL 1993, 020946, p. 10-22).

The western-most outfall is a former National Pollutant Discharge Elimination System– (NPDES-) permitted outfall that received industrial effluent, including wastewater from a photographic laboratory from former building 15-40. This outfall consists of an 8-in.-diameter vitrified-clay pipe (VCP) that daylights approximately 75 ft north of the northwest corner of former building 15-40 (LANL 1990, 007512; LANL 1993, 020946, p. 10-22). The outfall was removed from the NPDES permit in 1994 (Dale 1998, 057524).

The middle outfall is a former NPDES-permitted outfall that received noncontact cooling water, roof runoff, and floor-drain effluent from former building 15-40. The floor drains received water from drain valves in a potable water system. This outfall consists of an 8-in.-diameter VCP that daylights approximately 100 ft north of the northeast corner of former building 15-40 (LANL 1990, 007512; LANL 1993, 020946, p. 10-22). The outfall was removed from the NPDES permit in 1990 (EPA 1990, 012454).

The eastern-most outfall receives stormwater from yard drains and is located north and east of former building 15-40. This outfall consists of a 12-in.-diameter corrugated metal pipe that daylights approximately 75 ft northeast of the northeast corner of former building 15-40 (LANL 1990, 007512; LANL 1993, 020946, p. 10-22). From the outfall, an approximately 60-ft-long ditch connects to a 30-ft-long, 12-in.-diameter corrugated metal pipe that accommodates drainage beneath a security fence.

6.12.1 Historical Releases

Two of the outfalls operated as NPDES-permitted outfalls. No documented releases are associated with the third outfall, which received only stormwater.

6.12.2 Summary of Previous Investigations

In 1995, RFI activities were performed at AOC 15-014(h) (LANL 1996, 054977). Four samples were collected from two locations and analyzed for inorganic chemicals, SVOCs, and VOCs.

Data from four samples collected during the 1994 RFI do not meet current data-validation standards and are not decision-level data. They were not used to evaluate the nature and extent of contamination and are not discussed further in this report.

6.12.3 Site Contamination

6.12.3.1 Soil and Rock Sampling

A total of 52 samples were collected in 2009–2010 from 26 locations at AOC 15-014(h) and analyzed for inorganic chemicals (TAL metals, total cyanide, total uranium, and perchlorate); organic chemicals (explosive compounds, SVOCs, VOCs, and PCBs); and radionuclides (americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium). Table 6.12-1 presents the samples collected and the analyses requested. Plate 21 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

6.12.3.2 Soil and Rock Sample Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

6.12.3.3 Soil and Rock Sample Analytical Results

Inorganic Chemicals

All 52 samples collected at AOC 15-014(h) were analyzed for TAL metals, total cyanide, total uranium, and perchlorate. Aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, total cyanide, iron, lead, magnesium, manganese, mercury, nickel, perchlorate, selenium, silver, uranium, vanadium, and zinc were detected or were above BVs in samples collected at AOC 15-014(h). Table 6.12-2 presents the inorganic chemicals above BVs and the detected inorganic chemicals that have no BVs. The sampling locations and detected concentrations above BVs are shown on Plate 22.

Because the extent of contamination is not defined for the site (section 6.12.3.4), COPCs have not been identified.

Organic Chemicals

All 52 samples collected at AOC 15-014(h) were analyzed for explosive compounds, SVOCs, and VOCs. Sixteen samples were also analyzed for PCBs. Acenaphthene, acetone, anthracene, Aroclor-1254, Aroclor-1260, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzoic acid, bis(2-ethylhexyl)phthalate, chloroform, chrysene, 1,1-dichloroethene, di-n-butylphthalate, di-n-octylphthalate, ethylbenzene, fluoranthene, indeno(1,2,3-cd)pyrene, 4-isopropyltoluene, methylene chloride, phenanthrene, pyrene, tetrachloroethene, toluene, 1,2,4-trimethylbenzene, 1,2-xylene, and 1,3-xylene+1,4-xylene were detected in samples collected at AOC 15-014(h). Table 6.12-3 presents the organic chemicals detected. The sampling locations and detected concentrations are shown on Plate 23.

Because the extent of contamination is not defined for the site (section 6.12.3.4), COPCs have not been identified.

Radionuclides

All 52 samples collected at AOC 15-014(h) were analyzed for americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium. Cesium-137, plutonium-238, plutonium-239/240, tritium, uranium-234, uranium-235/236, and uranium-238 were detected or detected above BVs/FVs at AOC 15-014(h). Table 6.12-4 presents the radionuclides detected above BVs/FVs, detected radionuclides that have no BVs/FVs, and detected radionuclides for which FVs do not apply. The sampling locations and detected concentrations are shown on Plate 24.

Because the extent of contamination is not defined for the site (section 6.12.3.4), COPCs have not been identified.

6.12.3.4 Nature and Extent of Soil and Rock Contamination

The extent of contamination is not defined at AOC 15-014(h).

Inorganic Chemicals

Aluminum was detected above the Qbt 3 BV (7340 mg/kg) in three subsurface samples at three locations. The concentration of aluminum remained unchanged with depth at location 15-610505 and decreased with depth at locations the other two locations. The vertical extent of aluminum is defined. The lateral extent of aluminum is defined because aluminum was not detected above BV at location 15-610517, the most downgradient sampling location.

Antimony and selenium were not detected above BVs but had DLs above BV. The vertical and lateral extent of antimony and selenium are defined.

Arsenic was detected above the sediment BV (3.98 mg/kg) in one surface sample at location 15-610524 but was not detected above BV in the deeper sample. The vertical extent of arsenic is defined. The lateral extent of arsenic is defined because it was not detected above BV at downgradient sampling locations.

Barium was detected above the sediment BV (127 mg/kg) in 14 surface samples and 9 subsurface samples at 17 locations. The concentration of barium increased with depth at location 15-610525. The vertical extent of barium is not defined at that location. The concentration of barium decreased with depth at all other locations. The lateral extent of barium is defined because it was not detected above BV at location 15-610517, the most downgradient sampling location.

Beryllium was detected above the sediment BV (1.31 mg/kg) in one subsurface sample at location 15-610516. The concentration (1.33 mg/kg) is equivalent to the BV. Beryllium was not detected above BV at the downgradient sampling locations. The vertical and lateral extent of beryllium are defined.

Cadmium was detected above the soil or sediment BV (both 0.4 mg/kg) in two surface samples and one subsurface sample at two locations. The concentration of cadmium increased with depth at location 15-610523, but the concentration in the deeper sample was below the maximum soil background concentration (2.6 mg/kg). Cadmium was not detected above BV in the deeper sample at location 15-610502. The vertical extent of cadmium is defined. The lateral extent of cadmium is defined because cadmium was not detected above BV at the downgradient sampling locations.

Calcium was detected above the soil or Qbt 3 BVs (6120 mg/kg and 2200 mg/kg, respectively) in one surface sample and one subsurface sample at location 15-610526. The vertical extent of calcium is defined because the concentration of calcium decreased with depth. The lateral extent of calcium is defined because calcium was not detected above BV at downgradient sampling locations.

Chromium was detected above the soil, sediment, or Qbt 3 BVs (19.3 mg/kg, 10.5 mg/kg, and 7.14 mg/kg, respectively) in 11 surface samples and 15 subsurface samples at 19 locations. The concentration of chromium increased with depth at 12 locations (15-610501, 15-610502, 15-610508, 15-610510, 15-610511, 15-610512, 15-610517, 15-610519, 15-610520, 15-610524, 15-610525, and 15-610526); the vertical extent of chromium is not defined at those locations. The concentration of chromium decreased with depth at the other seven locations. The lateral extent of chromium is defined because the concentration of chromium decreased downgradient at location 15-610517, the most downgradient sampling location.

Cobalt was detected above the soil, sediment, or Qbt 3 BVs (8.64 mg/kg, 4.73 mg/kg, and 3.14 mg/kg, respectively) in 11 surface samples and 7 subsurface samples at 16 locations. The concentrations of cobalt increased with depth at locations 15-610504, 15-610505, 15-610508, and 15-610525. The vertical extent of cobalt is not defined at those locations. The concentration of cobalt decreased with depth at the other 12 locations. The lateral extent of cobalt is defined because cobalt was not detected above BV at the farthest downgradient location (15-610517).

Copper was detected above the soil, sediment, or Qbt 3 BVs (14.7 mg/kg, 11.2 mg/kg, and 4.66 mg/kg, respectively) in five surface samples and six subsurface samples at eight locations. The concentration of copper increased with depth at location 15-610523. The vertical extent of copper is not defined at that location. The lateral extent of copper is defined because it was not detected above BV concentration at the downgradient sampling locations.

Total cyanide was detected above the soil or sediment BVs (0.5 mg/kg and 0.82 mg/kg, respectively) in one surface sample and one subsurface sample at two locations. The concentration of total cyanide increased with depth at location 15-610523. The vertical extent of total cyanide is not defined at that location. The lateral extent of total cyanide is defined because it was not detected above BV at location 15-610517, the most downgradient sampling location.

Iron was detected above the sediment BV (13,800 mg/kg) in two surface samples and two subsurface samples at four locations. The concentration of iron increased with depth at locations 15-61504 and 15-610525. The vertical extent of iron is not defined at those locations. The lateral extent of iron is defined because it was not detected above BV at the downgradient sampling locations.

Lead was detected above the maximum soil, sediment, or Qbt 3 BVs (22.3 mg/kg, 19.7 mg/kg, and 11.2 mg/kg, respectively) in eight surface samples and five subsurface samples at 10 locations. The concentration of lead increased with depth at location 15-610523 and remained unchanged with depth at location 15-610510. The vertical extent of lead is not defined at those locations. The lateral extent of lead is defined because it was not detected above BV at the downgradient sampling locations.

Magnesium was detected above the Qbt 3 BV (1690 mg/kg) in three subsurface samples at three locations at concentrations below the maximum Qbt 3 background concentration (2820 mg/kg). Concentrations of magnesium decreased with depth at locations 15-610508 and 15-610524 and decreased downgradient. The vertical and lateral extent of magnesium are defined.

Manganese was detected above the sediment or Qbt 3 BVs (543 mg/kg and 482 mg/kg, respectively) in one surface sample and one subsurface sample at two locations. The concentration of manganese

increased with depth at location 15-610505, but the concentration in the deeper sample was below the maximum Qbt 3 background concentration (752 mg/kg). The concentration of manganese decreased with depth at location 15-610519. The vertical extent of manganese is defined. The lateral extent of manganese is defined because manganese was not detected above BV at location 15-610517, the most downgradient sampling location.

Mercury was detected above the soil, sediment, or Qbt 3 BV (all 0.1 mg/kg) in six surface samples and four subsurface samples at six locations. The concentration of mercury increased with depth at locations 15-610510 and 15-610523. The vertical extent of mercury is not defined at those locations. The concentration of mercury decreased with depth at the other four locations. The lateral extent of mercury is defined because it was not detected above BV in the downgradient sampling locations.

Nickel was detected above the sediment or Qbt 3 BV (9.38 mg/kg and 6.58 mg/kg, respectively) in four surface samples and six subsurface samples at seven locations. The concentration of nickel increased with depth at locations 15-610501, 15-610502, and 15-610525. The vertical extent of nickel is not defined at those locations. The lateral extent of nickel is defined because it was not detected above BV in the downgradient sampling locations.

Perchlorate was detected in eleven surface samples and seven subsurface samples at 13 locations. The concentrations were below the EQL in all but one sample, the subsurface sample at location 15-610508. The concentration of perchlorate increased with depth at location 15-610508. The vertical extent of perchlorate is not defined at that location. The lateral extent of perchlorate is defined because concentrations decreased at the downgradient sampling locations.

Selenium was not detected above BVs but had DLs above the sediment or Qbt 3 BVs (both 0.3 mg/kg) in 32 samples at 22 locations. The vertical and lateral extent of selenium are defined.

Silver was detected above the soil, sediment, or Qbt 3 BV (all 1 mg/kg) in four surface samples and nine subsurface samples at eight locations. The concentration of silver increased with depth at locations 15-610514, 15-610517, 15-610520, 15-610523, and 15-610525. The vertical extent of silver is not defined at those locations. The concentration of silver decreased downgradient of the maximum detected concentration at location 15-610502 to location 15-610517, the most downgradient sampling location. The lateral extent of silver is defined.

Uranium was detected above the soil or sediment BVs (1.82 mg/kg and 2.22 mg/kg, respectively) in 18 surface samples and 4 subsurface samples at 19 locations. The concentration of uranium increased with depth at locations 15-610510 and 15-610523. The vertical extent of uranium is not defined at those locations. The concentration of uranium decreased downgradient of the maximum detected concentration at location 15-610520 to location 15-610517, the most downgradient sampling location. The lateral extent of uranium is defined.

Vanadium was detected above the sediment or Qbt 3 BVs (19.7 mg/kg and 17 mg/kg, respectively) in 15 surface samples and 7 subsurface samples at 18 locations. The concentration of vanadium increased with depth at locations 15-610501, 15-610504, 15-610505, 15-610517, and 15-610525. The vertical extent of vanadium is not defined at those locations. The concentration of vanadium decreased downgradient of the maximum detected concentration at location 15-610505 to location 15-610517, the most downgradient sampling location. The lateral extent of vanadium is defined.

Zinc was detected above the sediment BV (60.2 mg/kg) in three surface samples and one subsurface sample at three locations. The concentration of zinc decreased with depth at each location. The vertical

extent of zinc is defined. The lateral extent of zinc is defined because it was not detected above its BV at the downgradient sampling locations.

Organic Chemicals

Acenaphthene was detected in three surface samples and three subsurface samples at four locations. The concentration of acenaphthene increased with depth at location 15-610525. The vertical extent of acenaphthene is not defined at that location. Concentrations decreased with depth at the other three locations. The lateral extent of acenaphthene is defined because it was not detected at the downgradient sampling locations.

Acetone was detected in three surface samples and three subsurface samples at six locations. The concentration of acetone increased with depth at location 15-610508. The vertical extent of acetone is not defined at that location. The lateral extent of acetone is defined because it was not detected at the downgradient sampling locations.

Anthracene, bis(2-ethylhexyl)phthalate, chloroform, 1,1-dichloroethene, di-n-butylphthalate, ethylbenzene, phenanthrene, 1,2,4-trimethylbenzene,1,2-xylene, and 1,3-xylene+1,4-xylene were detected in one or more samples, at concentrations below below the EQLs. The vertical and lateral extent of anthracene, bis(2-ethylhexyl)phthalate, chloroform, 1,1-dichloroethene, di-n-butylphthalate, ethylbenzene, phenanthrene, 1,2,4-trimethylbenzene,1,2-xylene, and 1,3-xylene+1,4-xylene are defined.

Aroclor-1254 was detected in four samples at locations 15-610501 and 15-610502. At both locations the concentrations decreased with depth. The vertical extent of Aroclor-1254 is defined. The lateral extent of Aroclor-1254 is defined because it was not detected at the downgradient sampling locations.

Aroclor-1260 was detected in four samples at locations 15-610501 and 15-610502. At both locations the concentrations decreased with depth. The vertical extent of Aroclor-1260 is defined. The lateral extent of Aroclor-1260 is defined because it was not detected at the downgradient sampling locations.

Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, fluoranthene, and pyrene were detected in two to six samples. Concentrations decreased with depth at all locations, except at location 15-610526, where the sample concentrations in the deeper sample were below the EQLs. The vertical extent of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, fluoranthene, and pyrene is defined. The lateral extent is defined because they were not detected at downgradient sampling locations.

Benzoic acid was detected above the EQL in three surface samples. The concentration of benzoic acid decreased with depth at all three locations. The vertical extent of benzoic acid is defined. The lateral extent of benzoic acid is defined because it was not detected at downgradient sampling locations.

Di-n-octylphthalate was detected in one surface sample at location 15-610515. The concentration decreased with depth. The vertical extent of di-n-octylphthalate is defined. The lateral extent of di-n-octylphthalate is defined because it was not detected at downgradient sampling locations.

Indeno(1,2,3-cd)pyrene was detected in two surface samples at locations 15-610501 and 15-610523. Concentrations decreased with depth at both locations. The vertical extent of indeno(1,2,3-cd)pyrene is defined. The lateral extent of indeno(1,2,3-cd)pyrene is defined because it was not detected at downgradient sampling locations.

Isopropyltoluene[4-] was detected in five surface samples and one subsurface sample at six locations. Concentrations decreased with depth and/or were below EQLs at all six locations. The vertical extent of 4-isopropyltoluene is defined. The lateral extent of 4-isopropyltoluene is defined because it was not detected at downgradient sampling locations.

Methylene chloride and tetrachloroethene were detected in 7 and 14 samples, respectively. Concentrations decreased with depth and/or were below EQLs at all locations. The vertical extent of methylene chloride and tetrachloroethene is defined. The lateral extent of methylene chloride and tetrachloroethene is defined because concentrations decreased, or were not detected above EQLs, at downgradient sampling locations.

Toluene was detected in seven surface samples and eight subsurface samples at 12 locations. Concentrations decreased with depth or were below EQLs at all locations, except at location 15-610523, where the concentration increased with depth. The vertical extent of toluene is not defined at location 15-610523. The lateral extent of toluene is defined because it was not detected above the EQL at downgradient sampling locations.

Radionuclides

Cesium-137 was detected above its sediment FV (0.9 pCi/g) in one surface sample and was detected in six subsurface samples at seven locations. The concentration of cesium-137 increased with depth at locations 15-610514 and 15-610523. The vertical extent of cesium-137 is not defined at those locations. The lateral extent of cesium-137 is defined because the concentration of cesium-137 decreased downgradient.

Plutonium-238 was detected above the sediment BV/FV (0.006 pCi/g) in one surface sample at location 15-610511 and was not detected in the deeper sample. The vertical extent of plutonium-238 is defined. The lateral extent of plutonium-238 is defined because it was not detected or detected above FV at downgradient sampling locations.

Plutonium-239/240 was detected above the soil FV (0.054 pCi/g) in one surface sample and was detected in two subsurface samples. The concentrations of plutonium-239/240 increased with depth at locations 15-610509 and 15-610523. The vertical extent of plutonium-239/240 is not defined at those locations. The lateral extent of plutonium-239/240 is defined because it was not detected or detected above FV at downgradient sampling locations.

Tritium was detected in one surface sample and seven subsurface samples. The concentration of tritium increased with depth at locations 15-610520, 15-610521, 15-610523, 15-610524, and 15-610526. The vertical extent of tritium is not defined at those locations. The lateral extent of tritium is defined because it was not detected at downgradient sampling locations.

Uranium-234 was detected above the soil or sediment BV (both 2.59 pCi/g) in three surface samples and one subsurface sample at four locations. The concentration of uranium-234 increased with depth at location 15-610523 and decreased with depth at the other three locations. The vertical extent of uranium-234 is not defined at location 15-610523. The lateral extent of uranium-234 is defined because it was not detected above BV at downgradient sampling locations.

Uranium-235 was detected slightly above the soil or sediment BV (both 0.2 pCi/g) in one surface sample and one subsurface sample at two locations. The concentration of uranium-235 increased with depth at location 15-610523 and decreased with depth at location 15-610505. The vertical extent of uranium-235

is not defined at location 15-610523. The lateral extent of uranium-235 is defined because it was not detected above BV at downgradient sampling locations.

Uranium-238 was detected above the soil or sediment BV (both 2.29 pCi/g) in 11 surface samples and 2 subsurface samples at 11 locations. The concentration of uranium-238 increased with depth at locations 15-610510 and 15-610523 and decreased with depth at the other nine locations. The vertical extent of uranium-238 is not defined at locations 15-610510 and 15-610523. The lateral extent of uranium-238 is defined because the concentration decreased at downgradient sampling locations.

6.12.4 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at AOC 15-014(h), no human health risk-screening assessment was conducted for this site.

6.12.5 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at AOC 15-014(h), no ecological risk-screening assessment was conducted for this site.

7.0 TA-36 BACKGROUND AND FIELD INVESTIGATION RESULTS

7.1 Background of TA-36

TA-36 is located east of TA-15 and south of Pajarito Road (Plate 1). TA-36 contains four active firing sites (Eenie, Meenie, Minie, and Lower Slobovia) that support explosives testing. The firing sites and associated buildings are used for a wide variety of nonnuclear ordinance tests for the U.S. Department of Defense. Activities include shipping, receiving, transporting, and testing HE; developing diagnostic techniques; testing armor/antiarmor systems; and testing weapons components and guns (LANL 1993, 015313, p. 2-5). TA-36 operations associated with the Threemile Canyon Aggregate Area include a laboratory and an experiment facility located on a mesa top south of Threemile Canyon and west of TA-18.

The following two SWMUs and two AOCs within the Threemile Canyon Aggregate Area and located in TA-36 are addressed in this investigation report:

- SWMU 36-002 is a former sump (former structure 36-49) located approximately 40 ft northwest of controlled environmental building 36-48.
- SWMU 36-003(a) is a septic system located east of building 36-1.
- SWMU 36-008 is a surface disposal area located on the south rim of Threemile Canyon.
- SWMU C-36-003 is a former NPDES-permitted outfall located on the south rim of Threemile Canyon.

Figure 7.1-1 shows the site features of the SWMUs and AOCs at TA-36.

7.1.1 Surface Conditions

Surface conditions on the Pajarito Plateau and within the Threemile Canyon Aggregate Area are described in more detail in section 4.1.1.

All four TA-36 sites are located close to Potrillo Drive on Threemile Mesa, with SWMU 36-002 located to the south of the road and the other three located to the north of the road on the south rim of Threemile Canyon (Figure 7.1-1).

Several buildings—36-1, 36-48, and 36-53—are presently associated with or are located near the TA-36 sites under investigation (Figure 7.1-1). These buildings are currently in use.

7.1.2 Subsurface Conditions

The stratigraphic units encountered during investigation of the Threemile Canyon Aggregate Area are limited to the upper units (Qbt 3, Qbt 2, and Qbt 1v) of the Tshirege Member of the Bandelier Tuff.

- The predominant tuff unit at the surface is unit 3 of the Tshirege Member of the Bandelier Tuff (Qbt 3). Unit Qbt 3, approximately 100 ft thick, is a nonwelded to partially welded vapor-phase-altered tuff that forms the upper cliff.
- Below unit Qbt 3 is unit 2 of the Tshirege Member (Qbt 2). Unit Qbt 2, approximately 65 ft thick, forms a distinctive medium-brown vertical cliff that shows the greatest degree of welding in the Tshirege Member.
- Below unit Qbt 2 is unit 1v of the Tshirege Member (Qbt 1v). Unit Qbt 1v, approximately 75 ft thick, forms alternating cliff-like and sloping outcrops composed of porous, nonwelded crystallized tuff.
- Below unit Qbt 1v is Unit 1g of the Tshirege Member (Qbt 1g). Unit Qbt 1g, approximately 75 ft thick, is the lowermost tuff unit of the Tshirege Member and consists of porous, nonwelded, and poorly sorted ash-flow tuff.

The belowground features at TA-36 include a concrete-filled septic tank (structure 36-17) and a manhole (structure 36-38) associated with SWMU 36-003(a).

7.1.3 Groundwater Conditions

Groundwater conditions on the Pajarito Plateau and within the Threemile Canyon Aggregate Area are described in more detail in section 4.1.3.

The TA-36 sites, either on the mesa top or on the canyon slope, are separated from the regional aquifer by an unsaturated zone at least 700 ft thick (Figure 4.1-3). Groundwater monitoring is currently performed in accordance with the Interim Facility-Wide Groundwater Monitoring Plan, which is updated annually per the Consent Order. The regional groundwater and the intermediate groundwater in the Threemile Canyon watershed are monitored at regional well R-19 (LANL 2009, 106115), located near the southern boundary of the Threemile Canyon Aggregate Area in TA-36 (Plate 1). Two alluvial groundwater observation wells—18-BG-4 and 3MAO-2—are located in reach TH-3.

No alluvial or shallow groundwater was encountered during this investigation. No groundwater sampling or other groundwater investigations were included in the scope of this investigation.

7.1.4 Surface-Water Conditions

Surface-water conditions on the Pajarito Plateau and within the Threemile Canyon Aggregate Area are described in more detail in section 4.1.4.

No permanent surface water is present at the mesa top sites at TA-36. During spring snowmelt and summer thunderstorms, runoff flows from the mesa top onto the canyon slopes of Threemile Canyon. Reach TH-3 is located immediately downslope from SWMUs 36-008 and C-36-003 (Plate 1). Surface water and stormwater runoff monitoring station 3M-SMA-3 E246 is located in TA-18 in reach TH-3. Reaches in Threemile Canyon Aggregate Area are sampled under Pajarito Canyon sediment investigations (LANL 1998, 059577, p. 7-10; LANL 2006, 091812; LANL 2007, 095408).

Sediment deposition and erosion occur episodically as a result of snowmelt and stormwater runoff. Surface water runoff and sediment transport are the primary pathways for transport of contaminants. Slopes on the mesa tops are flat and erosion occurs as sheet flow. The canyon walls have much steeper slopes, resulting in greater potential for sediment transport and gully erosion (LANL 2009, 106939).

7.2 SWMU 36-002—Former Sump

SWMU 36-002 is a former sump (former structure 36-49) located at TA-36, approximately 40 ft northwest of building 36-48 near the edge of Threemile Canyon (LASL 1965, 102122) (Figure 7.2-1). The sump consisted of a 4-ft-diameter × 4.5-ft-long section of corrugated metal pipe placed into an unlined 8-ft-deep excavation. The excavation and the interior of the pipe were filled with 3-in.-diameter rocks to a depth of approximately 2 ft below grade. The remainder of the excavation outside the pipe was backfilled to grade with soil, and the pipe was covered with a metal cover (LANL 1993, 015313, p. 5-13). The sump had an inlet pipe from building 36-48 that consisted of 4-in.-diameter VCP.

The sump was constructed in 1965 and received water from two sinks in building 36-48 (LANL 1993, 015313, p. 5-13). Building 36-48 was initially used for shot assembly and for controlled-temperature experiments. DU was cut, lapped, and polished in the building. One of the sinks connected to the sump had a chemical-resistant coating. The building was used infrequently, less than 10 times per year (LANL 1993, 015313, p. 5-15). The sinks were disconnected from the sump in 1993, and the sump was removed (LANL 1993, 015313, p. 5-15; LANL 1995, 062839, p. 1-1).

7.2.1 Historical Releases

Other than operational releases, no documented releases are associated with SWMU 36-002.

7.2.2 Summary of Previous Investigations

In 1994, Phase I RFI activities were performed at SWMU 36-002. The soil and rock in and around the sump was excavated and stockpiled on the site on a lined, bermed pad. Five samples were collected from five depths within the excavation and analyzed for inorganic chemicals, SVOCs, and VOCs (LANL 1995, 062839, p. 1-6).

Based on the Phase I RFI results, the stockpiled material excavated during sampling was returned to the original sump excavation. The sump and part of the inlet pipe were removed and disposed of as construction debris (LANL 1995, 062839, p. 1-6).

Data from five samples collected during the 1994 RFI do not meet current data-validation standards and are not decision-level data. They were not used to evaluate the nature and extent of contamination and are not discussed further in this report.

7.2.3 Site Contamination

7.2.3.1 Soil and Rock Sampling

A total of six samples were collected in 2009–2010 from three locations at SWMU 36-002 and analyzed for inorganic chemicals (TAL metals, total cyanide, nitrate, and perchlorate); organic chemicals (explosive compounds, SVOCs, VOCs, and PCBs); and radionuclides (americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium). Table 7.2-1 presents the samples collected and the analyses requested. Figure 7.2-1 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

7.2.3.2 Soil and Rock Sample Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

7.2.3.3 Soil and Rock Sample Analytical Results

Inorganic Chemicals

All six samples collected at SWMU 36-002 were analyzed for TAL metals, total cyanide, nitrate, and perchlorate. Aluminum, antimony, barium, beryllium, calcium, chromium, cobalt, copper, lead, magnesium, manganese, nickel, perchlorate, and selenium were detected or were above BVs in samples collected at SWMU 36-002. Table 7.2-2 presents the inorganic chemicals above BVs and the detected inorganic chemicals that have no BVs. The sampling locations and detected concentrations above BVs are shown in Figure 7.2-2.

Because the extent of contamination is not defined for the site (section 7.2.3.4), COPCs have not been identified.

Organic Chemicals

All six samples collected SWMU 36-002 were analyzed for explosive compounds, SVOCs, and VOCs. Four samples were also analyzed for PCBs. Ethylbenzene was detected in samples collected at SWMU 36-002. Table 7.2-3 presents the organic chemicals detected. The sampling locations and detected concentrations are shown in Figure 7.2-3.

Because the extent of contamination is not defined for the site (section 7.2.3.4), COPCs have not been identified.

Radionuclides

All six samples collected at SWMU 36-002 were analyzed for americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium. Plutonium-238 and tritium were detected or detected above BVs/FVs at SWMU 36-002. Table 7.2-4 presents the radionuclides detected or detected above BVs/FVs. The sampling locations and detected concentrations above BVs/FVs are shown in Figure 7.2-4.

Because the extent of contamination is not defined for the site (section 7.2.3.4), COPCs have not been identified.

7.2.3.4 Nature and Extent of Soil and Rock Contamination

The extent of contamination is not defined at SWMU 36-002.

Inorganic Chemicals

Aluminum, beryllium, calcium, and lead were detected above their Qbt 2 BVs (7340 mg/kg, 1.21 mg/kg, 2200 mg/kg, and 11.2 mg/kg, respectively) in only one subsurface sample at location 36-610877. The concentrations decreased with depth. The vertical extent of aluminum, beryllium, calcium, and lead are defined. The lateral extent of aluminum, beryllium, calcium, and lead are defined because concentrations decreased at the downgradient sampling locations.

Antimony and selenium were not detected above BVs but had DLs above the Qbt 2 BVs (0.5 mg/kg and 0.3 mg/kg, respectively). The vertical and lateral extent of antimony and selenium are defined.

Barium was detected above the Qbt 2 BV (46 mg/kg) in three subsurface samples at two locations. The concentration of barium decreased with depth at both locations. The vertical extent of barium is defined. The lateral extent of barium is not defined because the concentration increased slightly downgradient.

Chromium was detected above the Qbt 2 BV (7.14 mg/kg) in two subsurface samples at two locations. The concentrations of chromium decreased with depth at location 36-610877 and were below the maximum Qbt 2 background concentration (13 mg/kg) at both locations. Concentrations of chromium decreased at downgradient sampling locations. The vertical and lateral extent of chromium are defined.

Cobalt was detected above the Qbt 2 BV (3.14 mg/kg) in one subsurface sample at location 36-610878. The concentration of cobalt decreased with depth. The vertical extent of cobalt is defined. The lateral extent of cobalt is defined because the concentration of cobalt decreased downgradient to location 36-610877.

Copper was detected above the Qbt 2 BV (4.66 mg/kg) in two subsurface samples at locations 36-610877 and 36-610878. The concentration decreased with depth at both locations. The vertical extent of copper is defined. The lateral extent of copper is not defined because the concentration increased downgradient to location 36-610877.

Magnesium was detected above the Qbt 2 BV (1690 mg/kg) in two subsurface samples at locations 36-610877 and 36-610878. The concentration decreased with depth at both locations. The vertical extent of magnesium is defined. The lateral extent of magnesium is not defined because the concentration increased downgradient to location 36-610877.

Manganese was detected above the Qbt 2 BV (482 mg/kg) in one subsurface sample at location 36-610876. The concentration of manganese increased with depth, but the concentrations were below the maximum Qbt 2 background concentration (752 mg/kg). The vertical extent of manganese is defined. The concentration of manganese decreased laterally and downgradient. The lateral extent of manganese is defined.

Nickel was detected above the Qbt 2 BV (6.58 mg/kg) in two subsurface samples at locations 36-610877 and 36-610878. The concentration decreased with depth at both locations. The vertical extent of nickel is

defined. The lateral extent of nickel is not defined because the concentration increased downgradient to location 36-610877.

Perchlorate was detected in two samples at location 36-610878. The concentration of perchlorate increased slightly with depth at location 36-610878 but decreased with depth at location 36-610877. The vertical extent is not defined at location 36-610878. The lateral extent of perchlorate is defined because the concentration of perchlorate decreased downgradient to location 36-610877.

Organic Chemicals

Ethylbenzene was detected in one sample at a concentration below the EQL. The vertical and lateral extent of ethylbenzene are defined.

Radionuclides

Plutonium-238 was detected in one subsurface sample at location 36-610878 but was not detected in the deeper sample. The vertical extent of plutonium-238 is defined. The lateral extent of plutonium-238 is defined because it was not detected at downgradient location 36-610877.

Tritium was detected in one subsurface sample. At location 36-610878, the concentration of tritium increased slightly with depth. The vertical extent of tritium is not defined. The lateral extent of tritium is defined because it was not detected at downgradient location 36-610877.

7.2.4 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at SWMU 36-002, no human health risk-screening assessment was conducted for this site.

7.2.5 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at SWMU 36-002, no ecological risk-screening assessment was conducted for this site.

7.3 SWMU 36-003(a)—Septic System

SWMU 36-003(a) is a septic system located at TA-36 approximately 115 ft east of building 36-1 (Figure 7.3-1). The septic system consists of a septic tank (structure 36-17), associated drainlines, a manhole (structure 36-38), a distribution box/drain field, and a seepage pit (LASL 1965, 102122; LANL 2004, 102121). The septic tank is a single-chamber tank constructed of reinforced concrete with an 1160-gal. capacity. The drain field consists of four 200-ft-long perforated tile pipes spaced 10 ft apart. The drain field was replaced with the seepage pit in late 1973 or early 1974.

This septic system was constructed in 1949 and received effluent from the restroom facilities in an office and laboratory in building 36-1. In addition to sanitary wastes, spent photo-processing chemicals from x-ray developing may have been discharged to the septic system (LANL 1993, 015313, pp. 5-24, 5-27). The main guard station at TA-36 (building 36-22) was later added to the septic system. In 1988, the guard station was disconnected from the septic tank and rerouted to an adjacent septic system. In 1992, the sanitary waste drainlines that previously served SWMU 36-003(a) were rerouted to the SWSC plant and are currently active (LANL 1993, 015313, pp. 5-22–5-23). In 1995, the septic tank was decontaminated by steam cleaning and the tank was filled with concrete.

7.3.1 Historical Releases

Other than operational releases, no documented releases are associated with SWMU 36-003(a).

7.3.2 Summary of Previous Investigations

In 1994, RFI activities were performed at SWMU 36-003(a). Four sludge samples were collected from four locations in the septic tank. Twelve subsurface samples were collected from borings at six locations. A sample was collected from each boring at the soil-tuff interface and in the tuff 2 ft below the interface. The samples were analyzed for inorganic chemicals, SVOCs, and VOCs (LANL 1995, 053985, p. 1-15).

In 1995, an EC was performed at SWMU 36-003(a). The cleanup involved excavating soil to expose the top of the tank, opening the tank and removing the contents, decontaminating the tank by steam-cleaning, filling the tank with concrete, and placing backfill above the tank. The tank contents were disposed of as hazardous waste. Five confirmation subsurface samples were collected from four locations outside the tank walls, beneath the tank inlet, beneath the tank outlet, and below the bottom of the tank and were submitted for analyses of inorganic chemicals and VOCs (LANL 1996, 054484, pp. 1–5).

Data from all samples collected during the 1994 RFI and the 1995 EC do not meet current data-validation standards and are not decision-level data. They were not used to evaluate the nature and extent of contamination and are not discussed further in this report.

7.3.3 Site Contamination

7.3.3.1 Soil and Rock Sampling

A total of 20 samples were collected in 2009–2010 from 10 locations at SWMU 36-003(a) and analyzed for inorganic chemicals (TAL metals, total cyanide, nitrate, and perchlorate); organic chemicals (explosive compounds, SVOCs, VOCs, and PCBs); and radionuclides (americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium). Table 7.3-1 presents the samples collected and the analyses requested. Figure 7.3-1 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

7.3.3.2 Soil and Rock Sample Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

7.3.3.3 Soil and Rock Sample Analytical Results

Inorganic Chemicals

All 20 samples collected at SWMU 36-003(a) were analyzed for TAL metals, total cyanide, nitrate, and perchlorate. Antimony, beryllium, cadmium, chromium, cobalt, copper, nickel, nitrate, perchlorate, selenium, sodium, and zinc were detected or were above BVs in samples collected at SWMU 36-003(a). Table 7.3-2 presents the inorganic chemicals above BVs and the detected inorganic chemicals that have no BVs at SWMU 36-003(a). The sampling locations and detected concentrations above BVs are shown in Figure 7.3-2.

Because the extent of contamination is not defined for the site (section 7.3.3.4), COPCs have not been identified.

Organic Chemicals

All 20 samples collected SWMU 36-003(a) were analyzed for explosive compounds, SVOCs, and VOCs. Six samples were also analyzed for PCBs. Acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, 4-isopropyltoluene, phenanthrene, pyrene, RDX, and 1,2,4-trimethylbenzene were detected in samples collected at SWMU 36-003(a). Table 7.3-3 presents the organic chemicals detected. The sampling locations and detected concentrations are shown in Figure 7.3-3.

Because the extent of contamination is not defined for the site (section 7.3.3.4), COPCs have not been identified.

Radionuclides

All 20 samples collected SWMU 36-003(a) were analyzed for americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium. Uranium-235/236 was detected above BV at SWMU 36-003(a). Table 7.3-4 presents the radionuclides detected above BVs. The sampling locations and detected concentrations above BVs are shown in Figure 7.3-4.

Because the extent of contamination is not defined for the site (section 7.3.3.4), COPCs have not been identified.

7.3.3.4 Nature and Extent of Soil and Rock Contamination

The extent of contamination is not defined at SWMU 36-003(a).

Inorganic Chemicals

Antimony, cadmium, and selenium were not detected above BVs but had DLs above BVs. The vertical and lateral extent of antimony, cadmium, and selenium are defined.

Beryllium and nickel were detected above the soil BVs (1.83 mg/kg and 15.4 mg/kg, respectively) in one subsurface sample at location 36-610889. The concentrations of beryllium and nickel increased with depth. The vertical extent of beryllium and nickel are not defined at location 36-610889. The lateral extent of beryllium and nickel is defined because concentrations decreased downgradient.

Chromium was detected above the soil or Qbt 2 BV (19.3 mg/kg and 7.14 mg/kg, respectively) in 10 subsurface samples at eight locations. The concentration of chromium increased with depth at locations 36-610882, 36-610884, 36-610885, and 36-610889. The vertical extent of chromium is not defined at those locations. Concentrations decreased with depth at location 36-610879, and were below the maximum background concentration at locations 36-610880, 36-610884, 36-610886, 36-610887, and 36-610888. The lateral extent of chromium is defined because the concentration of chromium decreased downgradient.

Cobalt was detected above the Qbt 2 BV (3.14 mg/kg) in three subsurface samples at two locations. The concentration of cobalt increased with depth at location 36-610882, and only one depth was sampled at location 36-610880. The vertical extent of cobalt is not defined at those locations. The lateral extent of

cobalt is defined because it was not detected above BV at downgradient locations 36-610879 and 36-610884.

Copper was detected above the Qbt 2 BV 4.66 mg/kg) in one subsurface sample at location 36-610880, at a concentration below the maximum Qbt 2 background concentration (6.2 mg/kg). Copper was not detected above BV at similar or deeper sampling depths at nearby locations 36-610879 and 36-610882. The concentration of copper decreased downgradient. The vertical and lateral extent of copper are defined.

Nitrate was detected in 14 samples at seven locations. The concentration of nitrate (maximum 2.87 mg/kg) likely reflects naturally occurring levels. The vertical and lateral extent of nitrate are defined.

Perchlorate was detected in five subsurface samples at four locations at concentrations below the EQL. The vertical and lateral extent of perchlorate are defined.

Sodium and zinc were detected above the soil BVs (915 mg/kg and 48.8 mg/kg, respectively) in three subsurface samples and one subsurface sample, respectively. The concentrations were below the maximum soil background concentrations (1800 mg/kg and 75.5 mg/kg, respectively) and decreased downgradient. The vertical and lateral extent of sodium and zinc are defined.

Organic Chemicals

PAHs [anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene] were detected in one to four subsurface samples. The concentrations of all these PAHs, except anthracene, decreased with depth at location 36-610888, and the concentration of anthracene is equivalent to the EQL in the deeper sample. Concentrations of fluoranthene, phenanthrene, and pyrene also decreased with depth at location 36-610882. At location 36-610880, only one depth was sampled, but PAHs were not detected or decreased with depth at location 36-610882 (within 15 ft laterally). PAHs were not detected in the deeper samples at nearby location 36-610879. The vertical extent of these PAHs is defined. The concentrations decreased downgradient of location 36-610880. The lateral extent of anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene is defined.

Acenaphthene was detected in one subsurface sample at location 36-610887 and was not detected in the shallower sample. The vertical extent of acenaphthene is not defined at that location. The lateral extent of acenaphthene is defined because it was not detected at the downgradient sampling locations.

Isopropyltoluene[4-] was detected in two subsurface samples at two locations. The concentration increased with depth at location 36-610882 but decreased and was below the EQL at location 36-610884. The vertical extent of 4-isopropyltoluene is not defined at location 36-610882. The lateral extent of 4-isopropyltoluene is defined because it was not detected at downgradient sampling locations.

RDX and 1,2,4-trimethylbenzene were each detected in one subsurface sample at concentrations below the EQLs. The vertical and lateral extent of RDX and 1,2,4-trimethylbenzene are defined.

Radionuclides

Uranium-235/236 was detected above the Qbt 2 BV (0.09 pCi/g) in one subsurface sample at location 36-610879. Uranium-235/236 was not detected above BV in any of the shallower samples or at

any downgradient locations, and the detected concentration (0.0857 pCi/g) was at the BV. The vertical and lateral extent of uranium-235/236 are defined.

7.3.4 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at SWMU 36-003(a), no human health risk-screening assessment was conducted for this site.

7.3.5 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at SWMU 36-003(a), no ecological risk-screening assessment was conducted for this site.

7.4 SWMU 36-008—Surface Disposal Area Located Near Building 36-1

SWMU 36-008 is a surface disposal area located at TA-36 on the south rim of Threemile Canyon behind building 36-1, shown on Plate 25. The disposal area covers an estimated 1 to 2 acres and extends below the building over the steeply sloping edge of the mesa. The dates the site was used for disposal are not known, but the site appears to be associated with building 36-1 (an office and laboratory), which was constructed in 1949. Materials disposed of at the site included laboratory glassware, metal cans, metal pipe, miscellaneous metal pieces, and other debris. This disposal area was revealed in June 2000 after the Cerro Grande fire burned the vegetation surrounding the site. As part of the emergency response actions associated with the fire, approximately 5 yd^3 of debris was collected from the site, segregated, and staged for disposal. Also, as part of the emergency response action, stormwater best management practices were implemented to prevent erosion (LANL 2000, 068656).

7.4.1 Historical Releases

Other than operational releases, no documented releases are associated with SWMU 36-008.

7.4.2 Summary of Previous Investigations

No sampling was conducted at SWMU 36-008 before 2009.

7.4.3 Site Contamination

7.4.3.1 Soil and Rock Sampling

A total of 91 samples were collected in 2009–2010 from 48 locations at SWMU 36-008 and analyzed for inorganic chemicals (TAL metals, total cyanide, total uranium, nitrate, and perchlorate); organic chemicals (explosive compounds, SVOCs, VOCs, and PCBs); and radionuclides (americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium). Table 7.4-1 presents the samples collected and the analyses requested. Plate 25 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

7.4.3.2 Soil and Rock Sample Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

7.4.3.3 Soil and Rock Sample Analytical Results

Inorganic Chemicals

All 91 samples collected at SWMU 36-008 were analyzed for TAL metals, total cyanide, total uranium, nitrate, and perchlorate. Aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, total cyanide, lead, magnesium, manganese, mercury, nickel, nitrate, perchlorate, selenium, silver, sodium, uranium, vanadium, and zinc were detected or were above BVs in samples collected at SWMU 36-008. Table 7.4-2 presents the inorganic chemicals above BVs and the detected inorganic chemicals that have no BVs at SWMU 36-008. The sampling locations and detected concentrations above BVs are shown on Plate 26.

Because the extent of contamination is not defined for the site (section 7.4.3.4), COPCs have not been identified.

Organic Chemicals

All 91 samples collected at SWMU 36-008 were analyzed for explosive compounds, SVOCs, and VOCs. Fifteen samples were also analyzed for PCBs. Acenaphthene, acenaphthylene, acetone, anthracene, Aroclor-1254, Aroclor-1260, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, benzoic acid, bis(2-ethylhexyl)phthalate, butylbenzylphthalate, chloroform, chloromethane, 2-chloronaphthalene, 4-chlorotoluene, chrysene, dibenz(a,h)anthracene, dibenzofuran, 1,1-dichloroethene, di-n-butylphthalate, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 4-isopropyltoluene, methylene chloride, 2-methlynaphthalene, naphthalene, phenanthrene, pyrene, styrene, TATB, toluene, trichloroethene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,2-xylene, and 1,3-xylene+1,4-xylene were detected in samples collected at SWMU 36-008. Table 7.4-3 presents the organic chemicals detected. The sampling locations and detected concentrations are shown on Plate 27.

Because the extent of contamination is not defined for the site (section 7.4.3.4), COPCs have not been identified.

Radionuclides

All 91 samples collected at SWMU 36-008 were analyzed for americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium. Americum-241, cesium-137, plutonium-239/240, tritium, uranium-234, uranium-235/236, and uranium-238 were detected or detected above BVs/FVs at SWMU 36-008. Table 7.4-4 presents the radionuclides detected or detected above BVs/FVs. The sampling locations and detected concentrations above BVs/FVs are shown on Plate 28.

Because the extent of contamination is not defined for the site (section 7.4.3.4), COPCs have not been identified.

7.4.3.4 Nature and Extent of Soil and Rock Contamination

The extent of contamination is not defined at SWMU 36-008.

Inorganic Chemicals

Aluminum was detected above the Qbt 3 BV (7340 mg/kg) in one subsurface sample at location 36-610584. The concentration of aluminum increased with depth. The vertical extent of aluminum is not defined at location 36-610584. The maximum detected concentration of aluminum was detected at location 36-610584, the location farthest downgradient in SWMU 36-008. In canyon reach TH-3, immediately below SWMU 36-008, however, aluminum was not detected at concentrations above BV (LANL 2008, 104909, p. 149). The lateral extent of aluminum is defined by reach TH-3.

Antimony was not detected above BVs but had DLs above the soil, sediment, or Qbt 3 BVs (0.83 mg/kg, 0.83 mg/kg, and 0.5 mg/kg, respectively) in 54 surface samples and 49 subsurface samples. The vertical and lateral extent of antimony are defined.

Arsenic was detected above the Qbt 3 BV (2.79 mg/kg) in one subsurface sample at location 36-610584. The concentration was below the maximum Qbt 3 background concentration (5 mg/kg). The vertical and lateral extent of arsenic are defined.

Barium was detected above the Qbt 2/3 BV (46 mg/kg) in two subsurface samples at two locations. The concentration of barium increased with depth at location 36-610584. The vertical extent of barium is not defined at that location. The maximum detected concentration of barium was detected at location 36-610584, the farthest downgradient location in SWMU 36-008. In canyon reach TH-3, immediately below SWMU 36-008, however, barium was not detected at concentrations above BV (LANL 2008, 104909, p. 149). The lateral extent of barium is defined by reach TH-3.

Beryllium was detected above the Qbt 2 BV (1.21 mg/kg) in one subsurface sample. The concentration of beryllium increased with depth at location 36-610602. The vertical extent of beryllium is not defined at that location. The lateral extent of beryllium is defined because it was not detected above BV at downgradient sampling locations.

Cadmium was detected above the soil/fill BV (0.4 mg/kg) in 10 surface samples and 2 subsurface samples at 10 locations. All concentrations were below the maximum soil background concentration (2.6 mg/kg) except one: the subsurface sample at location 36-610827. The concentration increased with depth. The vertical extent of cadmium is not defined at location 36-610827. The lateral extent of cadmium is defined because concentrations decreased at downgradient sampling locations.

Calcium was detected above the sediment or Qbt 3 BV (4420 mg/kg and 2200 mg/kg, respectively) in five surface samples and one subsurface sample at six locations. The concentration of calcium increased with depth at location 36-610584. The vertical extent of calcium is not defined at that location. The concentration of calcium decreased with depth at the other five locations. The maximum detected concentration of calcium was detected at location 36-610584, the location farthest downgradient in SWMU 36-008. In canyon reach TH-3, immediately below SWMU 36-008, however, calcium was not detected at concentrations above BV (LANL 2008, 104909, p. 149). The lateral extent of calcium is defined by reach TH-3.

Chromium was detected above the soil/fill, sediment, or Qbt 3 BVs (19.3 mg/kg, 10.5 mg/kg, and 7.14 mg/kg, respectively) in 16 surface samples and 15 subsurface samples at 23 locations. The concentration of chromium increased with depth at locations 36-610584, 36-610591, 36-610594,

36-610598, 36-610599, 36-610600, 36-610602, 36-610613, 36-610615, 36-610822, and 36-610825. The vertical extent of chromium is not defined at those locations. The concentration of chromium decreased with depth or was below the maximum background concentration at the other 13 locations. The lateral extent of chromium is defined because the concentrations decreased at downgradient sampling locations.

Cobalt was detected above the soil or Qbt 3 BVs (8.64 mg/kg and 3.14 mg/kg, respectively) in two subsurface samples at locations 36-610584 and 36-610594. The concentration of cobalt increased with depth at both locations. The vertical extent of cobalt is not defined at those locations. The lateral extent of cobalt is defined because the concentrations decreased at downgradient sampling locations.

Copper was detected above the soil/fill, sediment, or Qbt 3 BVs (14.7 mg/kg, 11.2 mg/kg, and 4.66 mg/kg, respectively) in 11 surface samples and 11 subsurface samples at 14 locations. The concentration of copper increased with depth at locations 36-610603, 36-610605, 36-610824, and 36-610827. The vertical extent of copper is not defined at those locations. The lateral extent of copper is defined because the concentration decreased at downgradient sampling locations.

Total cyanide was detected above the soil or sediment BVs (0.5 mg/kg and 0.82 mg/kg, respectively) in 19 surface samples and 6 subsurface samples at 19 locations. The concentration of total cyanide increased with depth at locations 36-610598 and 36-610824. The vertical extent of total cyanide is not defined at those locations. The concentration of total cyanide decreased with depth at the other 17 locations. The lateral extent of total cyanide is defined because it was not detected above BV at downgradient sampling locations.

Lead was detected above the soil, sediment, or Qbt 3 BVs (22.3 mg/kg, 19.7 mg/kg, and 11.2 mg/kg, respectively) in nine surface samples and seven subsurface samples at 10 locations. The concentration of lead increased with depth at location 36-610603. The vertical extent of lead is not defined at location 36-610603. The concentration of lead decreased with depth at the other nine locations. The lateral extent of lead is defined because the concentration decreased at downgradient sampling locations.

Magnesium was detected above the Qbt 3 BV (1690 mg/kg) in one subsurface sample, at location 36-610584 at a concentration below the maximum Qbt 3 background concentration (2820 mg/kg). The vertical and lateral extent of magnesium are defined.

Manganese was detected above the soil or sediment BV (671 mg/kg and 543 mg/kg, respectively) in six surface samples at six locations. The concentration of manganese decreased with depth, and manganese was not detected above BV in any subsurface samples. The vertical extent of manganese is defined. The lateral extent of manganese is defined because the concentration decreased at downgradient sampling locations.

Mercury was detected above the soil, sediment, or Qbt 3 BV (all 0.1 mg/kg) in 20 surface samples and 11 subsurface samples at 21 locations. The concentration of mercury increased with depth at locations 36-610605, 36-610606, and 36-610824. The vertical extent of mercury is not defined at those locations. The concentration of mercury decreased with depth at the other 18 locations. The lateral extent of mercury is defined because concentrations decreased at downgradient sampling locations, and mercury was not detected above BV at the locations farthest downgradient.

Nickel was detected above the soil, sediment, or Qbt 3 BVs (15.4 mg/kg, 9.38 mg/kg, and 6.58 mg/kg, respectively) in two surface samples and one subsurface sample at three locations. The concentration of nickel increased with depth at location 36-610584. The vertical extent of nickel is not defined at that location. Concentrations decreased with depth at the other two locations. The lateral extent of nickel is defined because the concentrations decreased at downgradient sampling locations.

Nitrate was detected in 33 surface samples and 29 subsurface samples. Concentrations of nitrate (maximum 540 mg/kg) are higher than naturally occurring levels. The concentration of nitrate increased with depth at locations 36-610574, 36-610581, 36-610584, 36-610618, 36-610620, and 36-610622. The vertical extent of nitrate is not defined at those locations. The concentration of nitrate decreased downgradient, and the concentrations in the downgradient portion of the site are consistent with naturally occurring levels of nitrate. The lateral extent of nitrate is defined.

Perchlorate was detected in 38 surface samples and 33 subsurface samples at 36 locations. The concentration of perchlorate increased with depth at 10 locations. The vertical extent of perchlorate is not defined. At the locations farthest downgradient, perchlorate either was not detected or was detected at or near the EQL. The lateral extent of perchlorate is defined.

Selenium was detected above the Qbt 3 BV (0.3 mg/kg) in only one sample: the subsurface sample at location 36-610825. The concentration decreased with depth at that location, and selenium was not detected above BV at any downgradient sampling locations. The vertical and lateral extent of selenium are defined.

Silver was detected above the soil, sediment, or Qbt 3 BV (all 1 mg/kg) in eight surface samples and six subsurface samples at eight locations. The concentration of silver increased with depth at locations 36-610825 and 36-610827; the vertical extent of silver is not defined at those locations. The maximum concentration of silver (348 mg/kg) was detected at location 36-610824. The concentration decreased downgradient, and silver was not detected above BV in the locations farthest downgradient. The lateral extent silver is defined.

Sodium was detected above the soil BV (915 mg/kg) in only one surface sample at location 36-610826. The concentration of sodium decreased with depth, and it was not detected above BV at any downgradient locations. The vertical and lateral extent of sodium are defined.

Uranium was detected above the soil or sediment BV (1.82 mg/kg and 2.22 mg/kg, respectively) in 21 surface samples and 5 subsurface samples at 22 locations. The concentration of uranium increased with depth at locations 36-610615 and 36-610824. The vertical extent of uranium is not defined at those locations. The concentration of uranium decreased at the other 20 locations. The lateral extent of uranium is defined because the concentration decreased at downgradient sampling locations.

Vanadium was detected above the Qbt 3 BV (17 mg/kg) in one subsurface sample at location 36-610584. The concentration of vanadium increased with depth. The vertical extent of vanadium is not defined at that location. The maximum detected concentration of vanadium was detected at location 36-610584. The lateral extent of uranium is defined because it was not detected above BV at downgradient sampling locations 36-610586 and 36-610598.

Zinc was detected above the soil, sediment, or Qbt 3 BVs (48.8 mg/kg, 60.2 mg/kg, and 63.5 mg/kg, respectively) in 16 surface samples and 12 subsurface samples at 19 locations. The concentration of zinc increased with depth at locations 36-610603 and 36-610619. At location 36-610619, the concentration of zinc was below the maximum soil background concentration (75.5 mg/kg). The vertical extent of zinc is not defined at location 36-610603. The highest concentrations of zinc were detected at locations 36-610588 (936 mg/kg) and 36-610825 (1320 mg/kg). The concentration of zinc decreased downgradient of both locations, and zinc was not detected above BV in the locations farthest downgradient. The lateral extent of zinc is defined.

Organic Chemicals

PAHs [acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene] were detected above their EQLs in numerous samples. The concentrations of PAHs increased with depth at location 36-610607; the vertical extent of PAHs is not defined at that location. The maximum detected concentrations of PAHs are at location 36-610588. The concentrations of these PAHs decreased downgradient. The lateral extent of PAHs is defined.

Aroclor-1254 was detected in 13 surface samples and 6 subsurface samples at 13 locations. The concentration of Aroclor-1254 decreased with depth at all locations except 36-610824, where the concentration increased slightly and is near the EQL. The vertical extent of Aroclor-1254 is defined. The lateral extent of Aroclor-1254 is defined because the concentration of Aroclor-1254 decreased downgradient.

Aroclor-1260 was detected in nine surface samples and six subsurface samples. The concentration of Aroclor-1260 increased with depth at locations 36-610574 and 36-610824. The vertical extent of Aroclor-1260 is not defined at those locations. The lateral extent of Aroclor-1260 is defined because the concentration of Aroclor-1260 decreased downgradient.

SVOCs (benzoic acid, butylbenzylphthalate, dibenzofuran, di-n-butylphthalate, and naphthalene) were detected in one or more samples. Dibenzofuran was detected above the EQL in four surface samples, and the concentration decreased with depth at all four locations. Naphthalene was detected above the EQL in six surface samples and one subsurface sample. The concentrations of naphthalene decreased with depth at all locations. All concentrations of benzoic acid, butylbenzylphthalate, and di-n-butylphthalate were below their EQLS. SVOCs were not detected or their concentrations decreased at downgradient sampling locations. The vertical and lateral extent of SVOCs are defined.

RDX and TATB were each detected in one surface sample at two locations. The concentrations decreased with depth at both locations and decreased at downgradient sampling locations. The vertical and lateral extent of RDX and TATB are defined.

Several VOCs (acetone, bromodichloromethane, chlorodibromomethane, chloroform, chloromethane, 4-chlorotoluene, 1,1-dochloroethene, 4-isopropyltoluene, methylene chloride, styrene, toluene, trichloroethene, 1,2,4-trimethylbenzene, 1,2-xylene, and 1,3-xylene+1,4-xylene) were detected in one or more samples. Acetone, 1,1-dichloroethene, 4-isopropyltoluene, methylene chloride, toluene, trichloroethene, 1,2,3-trimethylbenzene, 1,2-xylene, and 1,3-xylene+1,4-xylene were detected in multiple samples, but all concentrations were at or below the EQL. All other VOCs were detected in only one or two samples, and the concentrations were at or below the EQL. The vertical and lateral extent of VOCs are defined.

Radionuclides

Americium-241 was detected above the soil or sediment FV (0.013 pCi/g and 0.04 pCi/g, respectively) in six surface samples at six locations. The concentration decreased with depth at all six locations, and americium-241 was not detected in any subsurface samples. The vertical extent of americium-241 is defined. The maximum concentration of americium-241 was detected at location 36-610607. The lateral extent of americium-241 is defined because the concentrations decreased downgradient.

Cesium-137 was detected above the soil or sediment FV (1.65 pCi/g and 0.9 pCi/g, respectively) in three surface samples and was detected in 26 subsurface samples. The concentration of cesium-137 increased with depth at locations 36-610598 and 36-610603. The vertical extent of cesium-137 is not defined at those locations. The concentration of cesium-137 decreased with depth at all other locations. The lateral extent of cesium-137 is not defined because the maximum concentration was detected at location 36-610584, one of the most downgradient sampling locations.

Plutonium-239/240 was detected above the soil or sediment FV (0.054 pCi/g and 0.068 pCi/g, respectively) in six surface samples and was detected in four subsurface samples at 10 locations. The concentration of plutonium-239/240 increased with depth at locations 36-610598 and 36-610615. The vertical extent of plutonium-239/240 is not defined at those locations. The concentration of plutonium-239/240 decreased with depth at the other eight locations. The lateral extent of plutonium-239/240 is not defined because it was detected above FVs at several of the most downgradient sampling locations.

Tritium was detected in three surface samples and two subsurface samples. The concentration of tritium increased with depth at location 36-610607; the vertical extent of tritium is not defined at that location. The maximum concentration of tritium was detected at location 36-610588. The lateral extent of tritium is defined because the concentration decreased downgradient of location 36-610588.

Uranium-234 was detected above the soil BV in four surface samples and three subsurface samples at four locations. The concentration of uranium-234 increased slightly with depth at location 36-610824; the vertical extent of uranium-234 is not defined at that location. The maximum concentration of uranium-234 (6.1 pCi/g) was detected at location 36-610827, and uranium-234 was not detected above BV at downgradient sampling locations; the lateral extent of uranium-234 is defined.

Uranium-235/236 was detected above the soil or Qbt 3 BVs (0.2 pCi/g and 0.09 pCi/g, respectively) in one surface sample and one subsurface sample at two locations. The concentration of uranium-235/236 decreased with depth at both locations. The vertical extent of uranium-235/236 is defined. The lateral extent of uranium-235/236 is defined because it was not detected above BV in any downgradient sampling locations.

Uranium-238 was detected above the soil BV (2.29 pCi/g) in six surface samples and four subsurface samples at seven locations. The concentration of uranium-238 increased with depth at location 36-610605. The vertical extent of uranium-238 is not defined at that location. The maximum concentration of uranium-238 (5.17 pCi/g) was detected at location 36-610588, and uranium-238 was not detected above BV at downgradient sampling locations. The lateral extent of uranium-238 is defined.

7.4.4 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at SWMU 36-008, no human health risk-screening assessment was conducted for this site.

7.4.5 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at SWMU 36-008, no ecological risk-screening assessment was conducted for this site.

7.5 SWMU C-36-003—Outfall from Building 36-1

SWMU C-36-003 is a former NPDES-permitted outfall located at TA-36 on the south rim of Threemile Canyon, north of office and laboratory building 36-1 (Plate 25). The outfall received effluent from a floor drain and spent photo-processing chemicals from a sink in building 36-1 (an office and laboratory). The outfall became operational shortly after building 36-1 was constructed in 1949. During its operation, the outfall discharged a steady stream of liquid that ran downstream for approximately 35 ft (LANL 1993, 015313, pp. 5-63 to 5-64). During a July 1994 sampling effort, it was found that the photo-processing unit was no longer plumbed to the outfall; instead, a floor drain in room 6 of building 36-1 was plumbed to the outfall (LANL 1995, 053985, p. 1-16). This outfall was removed from the NPDES permit by 2001 (EPA 2001, 082282).

7.5.1 Historical Releases

Operational releases have occurred through the outfall, which was formerly NPDES-permitted. Other than operational releases, no documented releases are associated with SWMU C-36-003.

7.5.2 Summary of Previous Investigations

In 1994, RFI activities were performed at SWMU C-36-003 (LANL 1995, 053985). One surface and one water sample were collected from one location just below the outfall. Water from a source in building 36-1 was flushed through the drainline and outfall to provide water for sampling. Five surface samples were collected from five locations in the drainage channel below the outfall. The samples were analyzed for inorganic chemicals and SVOCs.

Data from all samples collected during the 1994 RFI do not meet current data-validation standards and are not decision-level data. They were not used to evaluate the nature and extent of contamination and are not discussed further in this report.

7.5.3 Site Contamination

7.5.3.1 Soil and Rock Sampling

A total of 16 samples were collected in 2009–2010 from eight locations at SWMU C-36-003 and analyzed for inorganic chemicals (TAL metals, total cyanide, total uranium, nitrate, and perchlorate); organic chemicals (explosive compounds, SVOCs, VOCs, and PCBs); and radionuclides (americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium). Table 7.5-1 presents the samples collected and the analyses requested. Plate 25 shows the sampling locations. Analytical methods and summaries of data quality are presented in Appendix D. Analytical results, analytical reports, and SCLs/COCs are included on DVD in Appendix E.

7.5.3.2 Soil and Rock Sample Field-Screening Results

No radiological field-screening results exceeded twice the daily site background levels. No changes were made to sampling or other activities based on field-screening results. Field-screening results are presented in Table 2.2-2.

7.5.3.3 Soil and Rock Sample Analytical Results

Inorganic Chemicals

All 16 samples collected at SWMU C-36-003 were analyzed for TAL metals, total cyanide, total uranium, nitrate, and perchlorate. Antimony, cadmium, calcium, chromium, copper, total cyanide, lead, manganese, mercury, nickel, nitrate, perchlorate, selenium, silver, sodium, uranium, and zinc were detected or were above BVs in samples collected at SWMU C-36-003. Table 7.5-2 presents the inorganic chemicals above BVs and the detected inorganic chemicals that have no BVs at SWMU C-36-003. The sampling locations and detected concentrations above BVs are shown on Plate 26.

Because the extent of contamination is not defined for the site (section 7.5.3.4), COPCs have not been identified.

Organic Chemicals

All 16 samples collected at SWMU C-36-003 were analyzed for explosive compounds, PCBs, SVOCs, and VOCs. Acenaphthene, anthracene, Aroclor-1254, Aroclor-1260, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzoic acid, bromodichloromethane, chlorodibromomethane, chloroform, chrysene, di-n-butylphthalate, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, 4-isopropyltoluene, methylene chloride, phenanthrene, pyrene, RDX, toluene, 1,2,4-trimethylbenzene, and 1,3-xylene+1,4-xylene were detected in samples collected at SWMU C-36-003. Table 7.5-3 presents the organic chemicals detected. The sampling locations and detected concentrations are shown on Plate 27.

Because the extent of contamination is not defined for the site (section 7.5.3.4), COPCs have not been identified.

Radionuclides

All 16 samples collected at SWMU C-36-003 were analyzed for americium-241, gamma-emitting radionuclides, isotopic plutonium, isotopic uranium, and tritium. Cesium-137, plutonium-238, plutonium-239/240, tritium, uranium-234, uranium-235/236, and uranium-238 were detected or detected above BVs/FVs at SWMU C-36-003. Table 7.5-4 presents the radionuclides detected or detected above BVs/FVs. The sampling locations and detected concentrations above BVs/FVs are shown on Plate 28.

Because the extent of contamination is not defined for the site (section 7.5.3.4), COPCs have not been identified.

7.5.3.4 Nature and Extent of Soil and Rock Contamination

The extent of contamination is not defined at SWMU C-36-003.

Inorganic Chemicals

Antimony was not detected above BVs but had DLs above the soil, sediment, or Qbt 3 BVs (0.83 mg/kg, 0.83 mg/kg, and 0.5 mg/kg, respectively) in eight surface samples and eight subsurface samples at eight locations. The vertical and lateral extent of antimony are defined.

Cadmium was detected above the soil or sediment BV (both 0.4 mg/kg) in three surface samples and two subsurface samples at four locations. The concentration of cadmium increased with depth at locations

36-610824 and 36-610827. The vertical extent of cadmium is not defined at those locations. The concentration of cadmium decreased with depth at the other two locations. The lateral extent of cadmium is defined because the concentrations of cadmium decreased at downgradient sampling locations.

Calcium was detected above the soil or sediment BV (6120 mg/kg and 4420 mg/kg, respectively) in two surface samples at two locations. Concentrations decreased with depth at both locations, and calcium was not detected above BV in any subsurface samples. The vertical extent of calcium is defined. The lateral extent of calcium is defined because it was not detected above BV at downgradient sampling locations.

Chromium was detected above the maximum soil, sediment, or Qbt 3 BVs (19.3 mg/kg, 10.5 mg/kg, and 7.14 mg/kg, respectively) in seven surface samples and five subsurface samples at eight locations. The concentration of chromium increased with depth at locations 36-610822 and 36-610825. The vertical extent of chromium is not defined at those locations. The concentration of chromium decreased with depth at the other six locations. The lateral extent of chromium is defined because concentrations decreased at downgradient sampling locations.

Copper was detected above the soil or Qbt 3 BVs (14.7 mg/kg and 4.66 mg/kg, respectively) in three surface samples and three subsurface samples at three locations. The concentration of copper increased with depth at locations 36-610824 and 36-610827. The vertical extent of copper is not defined at those locations. The concentration of copper decreased with depth at the other location. The lateral extent of copper is defined because concentrations of copper decreased at downgradient sampling locations.

Total cyanide was detected above the soil BV (0.5 mg/kg) in four surface samples and three subsurface samples at four locations. The concentration of total cyanide increased with depth at location 36-610824 and decreased with depth at the other three locations. The vertical extent of total cyanide is not defined at location 36-610824. The lateral extent of total cyanide is defined because concentrations of total cyanide decreased at downgradient sampling locations.

Lead was detected above the soil or Qbt 3 BVs (22.3 mg/kg and 11.2 mg/kg, respectively) in one surface sample and one subsurface sample at location 36-610825. The concentration of lead decreased with depth. The vertical extent of lead is defined. The lateral extent of lead is defined because it was not detected above BV at downgradient sampling locations.

Manganese was detected its sediment BV (543 mg/kg) in two surface samples at two locations. The concentration of manganese decreased with depth at both locations. The vertical extent of manganese is defined. The lateral extent of manganese is defined because it was not detected above BV at downgradient sampling locations.

Mercury was detected above the soil, sediment, or Qbt 3 BVs (all 0.1 mg/kg) in seven surface samples and four subsurface samples at seven locations. The concentration of mercury increased with depth at location 36-610824 but decreased with depth at the other six locations. The vertical extent of mercury is not defined at location 36-610824. The lateral extent of mercury is defined because it was not detected above BV at the downgradient sampling locations.

Nickel was detected above the soil BV (15.4 mg/kg) in one surface sample at location 36-610825 but was not detected above BV in the subsurface sample. The vertical extent of nickel is defined. The lateral extent of nickel is defined because it was not detected above BV at any downgradient sampling locations.

Nitrate was detected in seven surface samples and seven subsurface samples at eight locations. The concentrations of nitrate increased with depth at locations 36-610822 and 36-610828, but the

concentrations at those locations likely reflect naturally occurring levels of nitrate. The concentration of nitrate decreased with depth at the other six locations. Concentrations of nitrate at locations 36-610824 and 36-610826 (maximum 540 mg/kg) exceed natural levels, but concentrations decreased to natural levels at downgradient sampling locations. The vertical and lateral extent of nitrate are defined.

Perchlorate was detected in six surface samples and seven subsurface samples. The concentration of perchlorate increased with depth at locations 36-610822 and 36-610828, but the concentrations at location 36-610822 were below the EQL. The vertical extent of perchlorate is not defined at location 36-610828. The lateral extent of perchlorate is defined because concentrations decreased at downgradient sampling locations.

Selenium was detected above the Qbt 3 BV (0.3 mg/kg) in one subsurface sample at location 36-610825. The concentration of selenium decreased with depth at that location. The vertical extent of selenium is defined. The lateral extent of selenium is defined because selenium was not detected above BV at any downgradient sampling locations.

Silver was detected above the soil, sediment, or Qbt 3 BV (all 1 mg/kg) in six surface samples and six subsurface samples at six locations. The concentration of silver increased with depth at locations 36-610825 and 36-610827. The concentration of silver decreased with depth at the other four locations. At locations 36-610824 and 36-610826, the concentration of silver decreased with depth, but the concentrations in the deeper samples (338 mg/kg and 199 mg/kg, respectively) were higher than the BV. The vertical extent of silver is not defined at locations 36-610824, 36-610825, 36-610826, 36-610827. The lateral extent of silver is defined because concentration decreased at downgradient sampling locations.

Sodium was detected above the soil BV (915 mg/kg) in one surface sample at location 36-610826, but the concentration (1000 mg/kg) was below the maximum soil background concentration (1800 mg/kg). The vertical and lateral extent of sodium are defined.

Uranium was detected above the soil or sediment BV (1.82 mg/kg and 2.22 mg/kg, respectively) in six surface samples and three subsurface samples at six locations. The concentration of uranium increased with depth at location 36-610824 but decreased with depth at the other five locations. The vertical extent of uranium is not defined at location 36-610824. The lateral extent of uranium is defined because the concentrations of uranium decreased at downgradient sampling locations.

Zinc was detected above the soil or Qbt 3 BVs (48.8 mg/kg and 63.5 mg/kg, respectively) in four surface samples and four subsurface samples at four locations. The concentrations of zinc decreased with depth at all locations. The vertical extent of zinc is defined. The lateral extent of zinc is defined because concentrations of zinc decreased at downgradient sampling locations.

Organic Chemicals

PAHs [acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, phenanthrene, and pyrene] were each detected in five or more samples. Concentrations of PAHs decreased with depth at all locations. The vertical extent of PAHs is defined. The maximum detected concentrations of PAHs were detected in the surface sample at location 36-610827, and the concentrations decreased at downgradient sampling locations. The lateral extent of PAHs is defined.

PCBs (Aroclor-1254 and -1260) were each detected in four surface samples and three subsurface samples at four locations. Aroclor-1254 was also detected below the EQL in the surface sample at

location 36-610821. Concentrations of both PCBs increased with depth at location 36-610824 but decreased with depth at the other three locations. The vertical extent of PCBs is not defined at location 36-610824. The lateral extent of PCBs is defined because they were not detected or the concentrations decreased at downgradient sampling locations.

Benzoic acid was detected in one surface sample, but the concentration was below the EQL. The vertical and lateral extent of benzoic acid are defined.

Di-n-butylphthalate was detected in four surface samples and two subsurface samples at four locations, but all concentrations were below the EQL. The vertical and lateral extent of di-n-butylphthalate are defined.

RDX was detected in one surface sample, but the concentration was below the EQL (0.5 mg/kg). The vertical and lateral extent of RDX are defined.

Several VOCs (bromodichloromethane, chlorodibromomethane, chloroform, 4-isopropyltoluene, methylene chloride, 1,2,4-trimethylbenzene, and 1,3-xylene+1,4-xylene) were detected in one or more samples, but most concentrations were at or below EQLs. Concentrations of VOCs decreased or did not change substantially with depth at all locations, and they decreased at downgradient sampling locations. The vertical and lateral extent are defined.

Radionuclides

Cesium-137 was detected above the sediment FV (0.9 pCi/g) in one surface sample and was detected in five subsurface samples at five locations. The concentration of cesium-137 increased with depth at location 36-610824. The vertical extent of cesium-137 is not defined at that location. Concentrations of cesium-137 decreased with depth at the other four locations. The lateral extent of cesium-137 is defined because the concentrations of cesium-137 decreased at downgradient sampling locations.

Plutonium-238 was detected in one subsurface sample. The concentration of plutonium-238 increased with depth at location 36-610822. The vertical extent of plutonium-238 is not defined at that location. The lateral extent of plutonium-238 is defined because it was not detected at downgradient location 36-610823.

Plutonium-239/240 was detected above the sediment FV (0.068 pCi/g) in one surface sample and was not detected in any subsurface samples. The vertical extent of plutonium-239/240 is defined. The lateral extent of plutonium-239/240 is defined because it was not detected at downgradient sampling locations.

Tritium was detected in three surface samples and two subsurface samples at three locations. The concentrations of tritium increased with depth at locations 36-610825 and 36-610826. The vertical extent of tritium is not defined at those locations. Tritium was not detected in the deeper sample at location 36-610827. The lateral extent of tritium is defined because the concentration of tritium decreased at downgradient sampling locations.

Uranium-234 was detected above the soil BV (2.59 pCi/g) in three surface samples and three subsurface samples at three locations. The concentration of uranium-234 increased with depth at location 36-610824. The vertical extent of uranium-234 is not defined at that location. The concentrations of uranium-234 decreased with depth at the other two locations. The lateral extent of uranium-234 is defined because concentrations decreased at downgradient sampling locations.

Uranium-235/236 was detected above the soil or Qbt 3 BVs (0.2 pCi/g and 0.09 pCi/g, respectively) in one surface sample and one subsurface sample at two locations. The concentration of uranium-235/236 decreased with depth at both locations. The vertical extent of uranium-235/236 is defined. The lateral extent of uranium-235/236 is defined because the concentration of uranium-235/236 decreased at the downgradient sampling locations.

Uranium-238 was detected above the soil BV (2.29 pCi/g) in three surface samples and three subsurface samples at three locations. The concentrations of uranium-238 decreased with depth at all three locations. The vertical extent of uranium-238 is defined. The lateral extent of uranium-238 is defined because the concentration decreased at downgradient sampling locations.

7.5.4 Summary of Human Health Risk Screening

Because the extent of contamination is not defined at SWMU C-36-003, no human health risk-screening assessment was conducted for this site.

7.5.5 Summary of Ecological Risk Screening

Because the extent of contamination is not defined at SWMU C-36-003, no ecological risk-screening assessment was conducted for this site.

8.0 CONCLUSIONS

8.1 Nature and Extent of Contamination

The extent of contamination has not been defined for the sites investigated during the 2009–2010 Threemile Canyon Aggregate Area investigation. Summaries of the extent of contamination and remaining extent requirements are presented in the following sections.

8.1.1 Former TA-12

The extent of contamination is not defined for the following sites in former TA-12:

- Consolidated Unit 12-001(a)-99—lateral extent of antimony, barium, and cobalt; vertical extent of aluminum, antimony, barium, calcium, chromium, cobalt, copper, total cyanide, iron, manganese, nickel, silver, vanadium, zinc, HMX, RDX, cesium-137, plutonium-239/240, and uranium-238
- AOC 12-004(a)—lateral extent of barium, calcium, chromium, cobalt, nickel, uranium, vanadium, cesium-137, uranium-234, uranium-235/236, and uranium-238; vertical extent of aluminum, antimony, barium, cadmium, chromium, cobalt, copper, lead, nickel, uranium, vanadium, cesium-137, uranium-234, uranium-235/236, and uranium-238
- AOC 12-004(b)—vertical extent of calcium, chromium, copper, magnesium, nickel, and selenium
- AOC C-12-001—lateral extent of aluminum, barium, cobalt, nickel, Aroclor-1242, Aroclor-1254, and Aroclor-1260; vertical extent of aluminum, barium, calcium, chromium, and nickel
- AOC C-12-002—lateral extent of aluminum, barium, copper, nickel, and vanadium; vertical extent of aluminum, barium, calcium, cobalt, copper, and nickel

- AOC C-12-003—vertical extent of antimony, and chromium
- AOC C-12-004—lateral extent of aluminum, calcium, cobalt, copper, lead, and nickel; vertical extent of aluminum, barium, calcium, cobalt, copper, and nickel

8.1.2 TA-14

The nature and extent of contamination are not defined for the following site in TA-14:

- AOC C-14-006—lateral extent of TATB

8.1.3 TA-15

The nature and extent of contamination are not defined for the following sites in TA-15:

- AOC 15-004(d)—lateral extent of antimony, and uranium-238; vertical extent of antimony, uranium, and cesium-137
- AOC 15-005(c)—lateral extent of barium, chromium, cobalt, copper, iron, uranium, and vanadium; vertical extent of antimony, barium, chromium, cobalt, iron, and vanadium
- SWMU 15-008(b)—lateral extent of arsenic, cobalt, total cyanide, iron, cesium-137, and uranium-238; vertical extent of aluminum, antimony, arsenic, barium, beryllium, calcium, chromium, cobalt, copper, iron, lead, nickel, selenium, uranium, vanadium, americium-241, cesium-137, plutonium-239/240, tritium, uranium-234, uranium-235/236, and uranium-238
- AOC 15-008(g)—lateral extent of antimony, cobalt, lead, uranium, and TATB; vertical extent of antimony, uranium, TATB, tritium, and uranium-238
- SWMU 15-007(c)—vertical extent of aluminum, antimony, barium, calcium, chromium, cobalt, copper, lead, magnesium, nickel, and vanadium
- SWMU 15-007(d)—lateral extent of tritium
- SWMU 15-009(b)—lateral extent of barium, copper, total cyanide, lead, uranium, cesium-137, plutonium-239/240, uranium-234, uranium-235/236, and uranium-238; vertical extent of barium, chromium, uranium, benzo(b)fluoranthene, fluoranthene, uranium-234, uranium-235/236, and uranium-238
- SWMU 15-009(c)—vertical extent of chromium, uranium, acetone, uranium-234, uranium-235/236, and uranium-238
- SWMU 15-009(h)—vertical extent of barium, calcium, chromium, uranium, zinc, plutonium-239/240, and uranium-238
- SWMU 15-010(b)—lateral extent of iron and vanadium; vertical extent of chromium, iron, mercury, uranium, vanadium, zinc, acetone, Aroclor-1254, toluene, and uranium-238
- AOC 15-014(h)—vertical extent of barium, chromium, cobalt, copper, total cyanide, iron, lead, mercury, nickel, perchlorate, silver, uranium, vanadium, acenaphthene, acetone, toluene, cesium-137, plutonium-239/240, tritium, uranium-234, uranium-235/236, and uranium-238

8.1.4 TA-36

The nature and extent of contamination are not defined for the following sites in TA-36:

- SWMU 36-002—lateral extent of barium, copper, magnesium, and nickel; vertical extent of perchlorate and tritium
- SWMU 36-003(a)—vertical extent of beryllium, chromium, cobalt, nickel, acenaphthene, and 4-isopropyltoluene
- SWMU 36-008—lateral extent of cesium-137, and plutonium-239/240; vertical extent of aluminum, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, total cyanide, lead, mercury, nickel, nitrate, perchlorate, silver, uranium, vanadium, zinc, Aroclor-1260, PAHs, cesium-137, plutonium-239/240, tritium, uranium-234, and uranium-238
- SWMU C-36-003—vertical extent of cadmium, chromium, copper, total cyanide, mercury, perchlorate, silver, uranium, Aroclor-1254, Aroclor-1260, cesium-137, plutonium-238, tritium, and uranium-234

9.0 RECOMMENDATIONS

Additional sampling is necessary to define extent of contamination at each site, as described in section 8.1. A Phase II investigation work plan will be prepared, specifying sampling locations, number of samples, and analytical suites required to define the extent of contamination for each site.

9.1 Additional Field Characterization Activities

The extent of contamination has not been defined for the 26 sites investigated in the Threemile Canyon Aggregate Area. Additional sampling is needed to define the extent of contamination for one or more chemicals at the following sites:

- Consolidated Unit 12-001(a)-99
- AOC 12-004(a)
- AOC 12-004(b)
- AOC C-12-001
- AOC C-12-002
- AOC C-12-003
- AOC C-12-004
- AOC C-14-006
- AOC 15-004(d)
- AOC 15-005(c)
- SWMU 15-008(b)
- AOC 15-008(g)
- SWMU 15-007(c)
- SWMU 15-007(d)

- SWMU 15-009(b)
- SWMU 15-009(c)
- SWMU 15-009(h)
- SWMU 15-010(b)
- AOC 15-014(h)
- SWMU 36-002
- SWMU 36-003(a)
- SWMU 36-008
- SWMU C-36-003

Additional samples will be collected to replace rejected analytical results for barium and explosive compounds (4-nitrotoluene) at SWMU 15-008(g) and VOCs at AOC C-14-006 and SWMU C-36-003.

The Phase II investigation work plan will specify the sampling required to define extent of contamination based on the extent issues discussed in section 8.1, with the exception of AOC 15-004(d). Because AOC 15-004(d) is located entirely within the footprint of SWMU 15-004(a) and investigation of SWMU 15-004(a) is deferred under Table IV-2 of the Consent Order, additional characterization of AOC 15-004(d) will be delayed until the investigation of SWMU 15-004(a).

9.2 Remedial Activities

Based on the analytical data, remedial activities are recommended at six of the sites investigated at Threemile Canyon Aggregate Area. The Phase II investigation work plan will specify the following remedial activities:

- At SWMU 15-008(b), soil removal will be conducted to remove the elevated concentrations of copper, lead, and uranium as well as uranium-234, uranium-235/236, and uranium-238.
- At Consolidated Unit 15-007(c)-00, the subsurface lead shot will be removed.
- At SWMU 15-009(h), the septic tank will be stabilized in place and made inoperable.
- At SWMU 15-010(b), the HE settling tank will be removed or stabilized in place.
- At SWMU 36-008, cleanup will be conducted to remove elevated concentrations of PAHs from the slope.
- At SWMU C-36-003, a cleanup will be conducted to remove Aroclor-1254 from the drainage. Additional cleanups will be conducted to remove the silver from the drainage.

The results of Phase II sampling and remediation activities will be presented in a Phase II investigation report for the Threemile Canyon Aggregate Area.

10.0 SCHEDULE FOR RECOMMENDED ACTIVITIES

A Phase II investigation work plan will be developed and submitted to NMED within 6 mo of approval of this investigation report. The work plan will provide details and a schedule for the implementation of remediation and sampling activities and submittal of a Phase II investigation report.

11.0 REFERENCES AND MAP DATA SOURCES

11.1 References

The following list includes all documents cited in this report. Parenthetical information following each reference provides the author(s), publication date, and ER ID. This information is also included in text citations. ER IDs are assigned by the Environmental Programs Directorate's Records Processing Facility (RPF) and are used to locate the document at the RPF and, where applicable, in the master reference set.

Copies of the master reference set are maintained at the NMED Hazardous Waste Bureau and the Directorate. The set was developed to ensure that the administrative authority has all material needed to review this document, and it is updated with every document submitted to the administrative authority. Documents previously submitted to the administrative authority are not included.

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LASL (Los Alamos Scientific Laboratory), February 19, 1965. "Controlled Environment Building, Mech. - Water, Sewer, and Gas, Bldg. Kappa 48, TA-36," Engineering Drawing ENG-C-27660, sheet number 4 of 12, Los Alamos, New Mexico. (LASL 1965, 102122)

LASL (Los Alamos Scientific Laboratory), October 4, 1971. "Structure Location Plan, TA-15, R-Site," Engineering Drawing ENG-R-2432, sheet number 2 of 2, Revision 14, Los Alamos, New Mexico. (LASL 1971, 024036)

NMED (New Mexico Environment Department), December 23, 1998. "Approval: Class III Permit Modification to Remove Ninety-nine (99) Solid Waste Management Units from the Department of Energy/Los Alamos National Laboratory RCRA Permit NM 0890010515," New Mexico Environment Department letter to T. Taylor (DOE-LAAO) and J.C. Browne (LANL Director) from E. Kelley (NMED-HRMB), Santa Fe, New Mexico. (NMED 1998, 063042)

NMED (New Mexico Environment Department), May 2, 2001. "Approval of Class III Permit Modification to Remove Thirty (30) Solid Waste Management Units from the Department of Energy / Los Alamos National Laboratory RCRA Permit NM 0890010515," New Mexico Environment Department letter to D.A. Gurule (Area Manager/LAAO) and J.C. Browne (LANL Director) from G.J. Lewis (NMED-WWMD Director), Santa Fe, New Mexico. (NMED 2001, 070010)

NMED (New Mexico Environment Department), November 20, 2008. "Approval with Modifications for Investigation Work Plan for Threemile Canyon Aggregate Area, Revision 1," New Mexico Environment Department letter to D. Gregory (DOE-LASO) and D. McInroy (LANL) from J.P. Bearzi (NMED-HWB), Santa Fe, New Mexico. (NMED 2008, 104256)

NMED (New Mexico Environment Department), December 2009. "Technical Background Document for Development of Soil Screening Levels, Revision 5.0," with revised Table A-1, New Mexico Environment Department, Hazardous Waste Bureau and Ground Water Quality Bureau Voluntary Remediation Program, Santa Fe, New Mexico. (NMED 2009, 108070)

11.2 Map Data Sources

Data sources for all figures are provided below, unless otherwise indicated on the figures themselves.

Sampling location- er_location_ids_pnt; Point Feature Locations of the Environmental Restoration Project Database; Los Alamos National Laboratory, Waste and Environmental Services Division, EP2010-0035; 21 January 2010.

SWMU or AOC: er_prs_all_reg, Potential Release Sites; Los Alamos National Laboratory, Waste and Environmental Services Division, Environmental Data and Analysis Group, EP2009-0633; 1:2,500 Scale Data; 25 January 2010.

Structure or Building: ksl_structures_ply; Structures; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

Fence: ksl_fences_arc; Security and Industrial Fences and Gates; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

Paved road: ksl_paved_rds_arc; Paved Road Arcs; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

Dirt road: ksl_dirt_rds_arc; Dirt Road Arcs; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

Storm drain: ksl_stormdrn_arc; Storm Drain Line Distribution System; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

Contours: lanl_contour1991_; Hypsography, 2, 10, 20, 100 Foot Contour Interval; Los Alamos National Laboratory, ENV Environmental Remediation and Surveillance Programt; 1991.

Communication: ksl_comm_arc; Communication Lines; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 08 August 2002; as published 28 May 2009.

Electric: ksl_electric_arc; Primary Electric Grid; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

Gas: ksl_gas_arc; Primary Gas Distribution Lines; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

Industrial waste: wfm_indstrl_waste_arc; Primary Industrial Waste Lines; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 15 January 2009.

Sewer: ksl_sewer_arc; Sewer Line System; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

Steam: ksl_steam_arc; Steam Line Distribution System; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

Water: ksl_water_arc; Water Lines; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

LANL Boundary: plan_ownerclip_reg; Ownership Boundaries Around LANL Area; Los Alamos National Laboratory, Site Planning & Project Initiation Group, Infrastructure Planning Office; 19 September 2007; as published 04 December 2008.

Roads: lac_streets_arc; Streets; County of Los Alamos, Information Services; as published 16 May 2006.

Landscape: ksl_landscape_arc; Primary Landscape Features; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating and Mapping Section; 06 January 2004; as published 28 May 2009.

Former structures: frmr_structures_ply; Former Structures of the Los Alamos Site; Los Alamos National Laboratory, Waste and Environmental Services Division, EP2008-0441; 1:2,500 Scale Data; 08 August 2008.

Technical area boundary: plan_tecareas_ply; Technical Area Boundaries; Los Alamos National Laboratory, Site Planning & Project Initiation Group, Infrastructure Planning Office; September 2007; as published 04 December 2008.

Inactive Outfall: wqh_inact_outfalls_pnt; WQH Inactive Outfalls; Los Alamos National Laboratory, ENV Water Quality and Hydrology Group; Edition 2002.01; 01 September 2003.

NPDES Outfalls: wqh_npdes_outfalls_pnt: WQH NPDES Outfalls; Los Alamos National Laboratory, ENV Water Quality and Hydrology Group; Edition 2002.01; 01 September 2003.

Outfalls: er_outfalls_pnt: Outfalls; Los Alamos National Laboratory, ENV Environmental Remediation and Surveillance Program; Unknown publication date.

Monitoring wells: Environmental Surveillance at Los Alamos During 2006, Groundwater monitoring; LANL Report LA-14341-ENV, September 2007.

Supply Wells: Locations of Monitoring and Supply Wells at Los Alamos National Laboratory, Table A-2, 2009 General Facility Information; LANL Report LA-UR-09-1341; March 2009.

Drainage: wqh_drainage_arc: WQH Drainage_arc; Los Alamos National Laboratory, ENV Water Quality and Hydrology Group; 1:24,000 Scale Data; 03 June 2003.

Aggregate Area: er_agg_areas_ply: Aggregate Areas; Los Alamos National Laboratory, ENV Environmental Remediation & Surveillance Program, ER2005-0496; 1:2,500 Scale Data; 22 September 2005.

Canyon Reaches: er_reaches_ply: Canyon Reaches; Los Alamos National Laboratory, ENV Environmental Remediation and Surveillance Program, ER2002-0592; 1:24,000 Scale Data; Unknown publication date.

Springs: er_springs_pnt: Locations of Springs; Los Alamos National Laboratory, Waste and Environmental Services Division in cooperation with the New Mexico Environment Department, Department of Energy Oversight Bureau, EP2008-0138; 1:2,500 Scale Data; 17 March 2008.

Paved Road Arcs; Los Alamos National Laboratory, KSL Site Support Services, Planning, Locating, and Mapping Section; 06 January 2004; Development Edition of 05 January 2005.

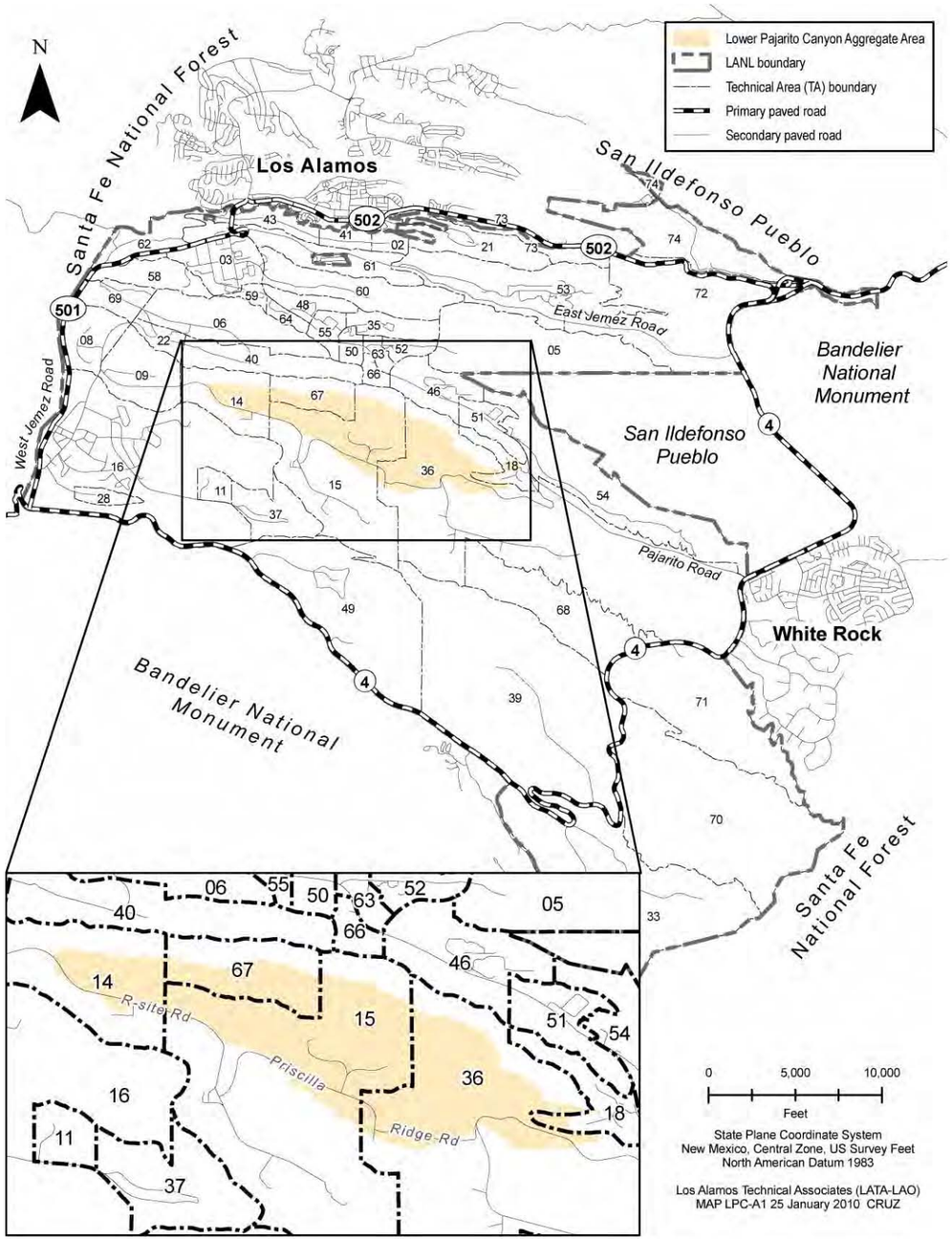


Figure 1.0-1 Location of Threemile Canyon Aggregate Area with respect to Laboratory technical areas

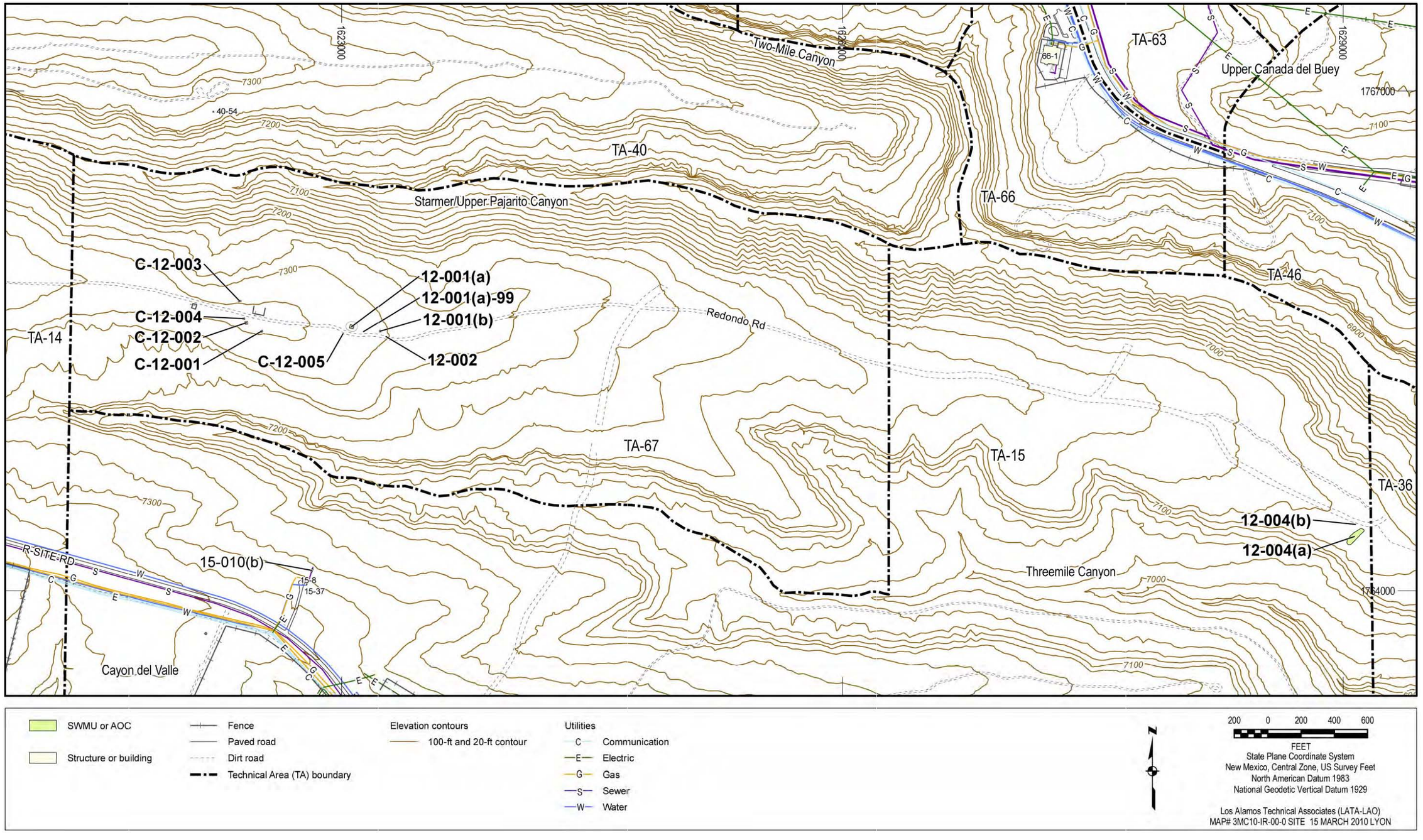


Figure 4.1-1 Sites in former TA-12

Bandelier Tuff	Tshirege Member	Qbt 4	Ash-flow units
		Qbt 3	
		Qbt 2	
		Qbt 1v	
		Qbt 1g	
		Tsankawi Pumice Bed	
Cerro Toledo interval		Volcaniclastic sediments and ash-falls	
Bandelier Tuff	Otowi Member	Ash-flow units	
		Guaje Pumice Bed	
Puye Formation and intercalated volcanic rocks	Fanglomerate	Fanglomerate facies includes sand, gravel, conglomerate, and tuffaceous sediments	
	Volcanic rocks	Cerros del Rio basalts intercalated within the Puye Formation, includes up to four interlayered basaltic flows. Andesites of the Tschicoma Formation present in western part of plateau	
	Fanglomerate	Fanglomerate facies includes sand, gravel, conglomerate, and tuffaceous sediments; includes “old alluvium”	
	Axial facies deposits of the ancestral Rio Grande	Totavi Lentil	
Santa Fe Group	Coarse sediments	Coarse-grained upper facies (called the ”Chaquehui Formation” by Purtymun 1995, 45344)	
	Basalt		
	Coarse sediments		
	Basalt		
	Coarse sediments		
	Basalt		
	Coarse sediments		
	Basalt		
	Coarse sediments		
	Arkosic clastic sedimentary deposits	Undivided Santa Fe Group (includes Chamita[?] and Tesuque Formations)	

Source: Baltz et al. 1963, 8402; Purtymun 1995, 45344; LANL 1998, 59599; Broxton and Reneau 1995, 49726.

Figure 4.1-2 Generalized stratigraphy of bedrock geologic units of the Pajarito Plateau

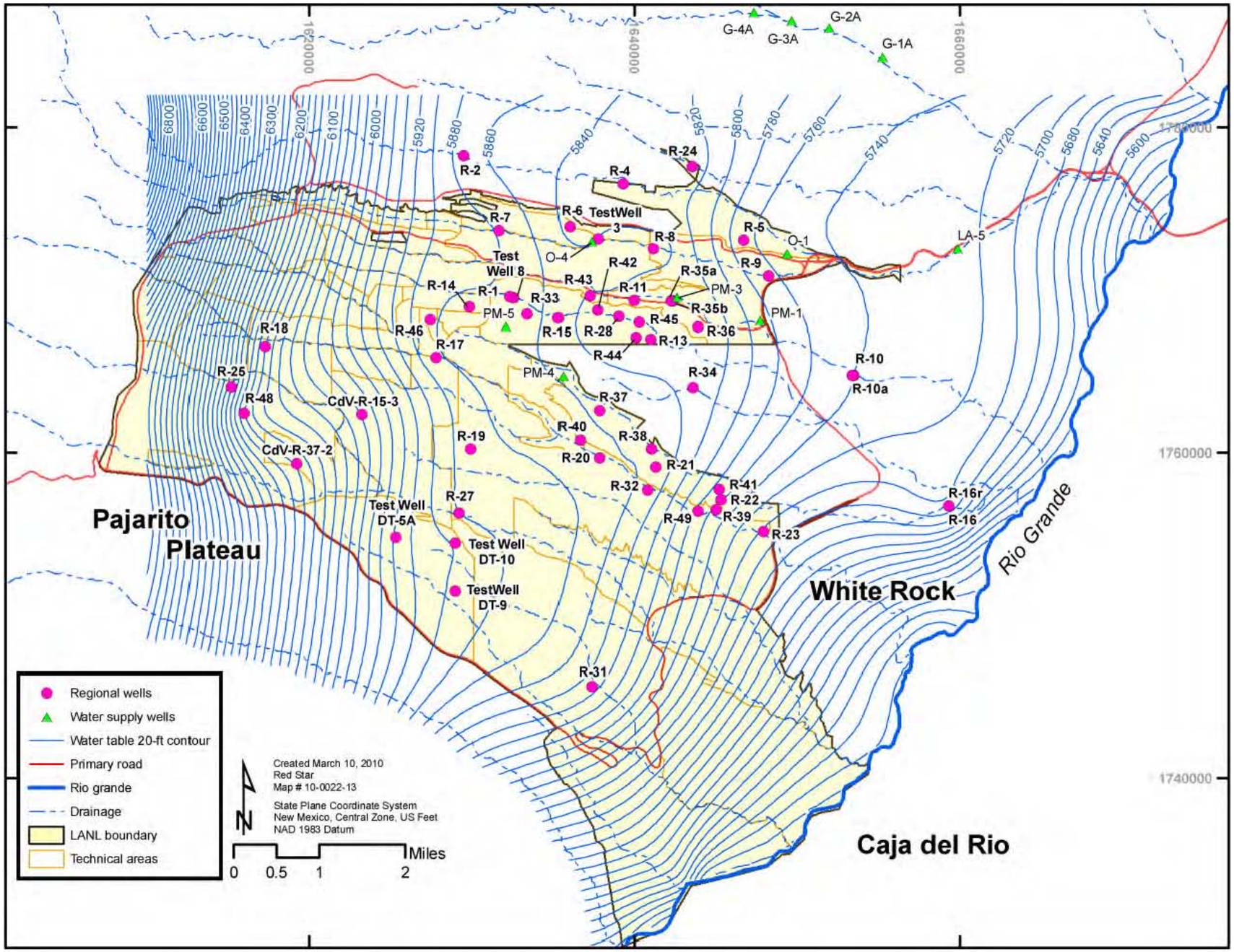


Figure 4.1-3 Elevations of top of regional aquifer across the Laboratory

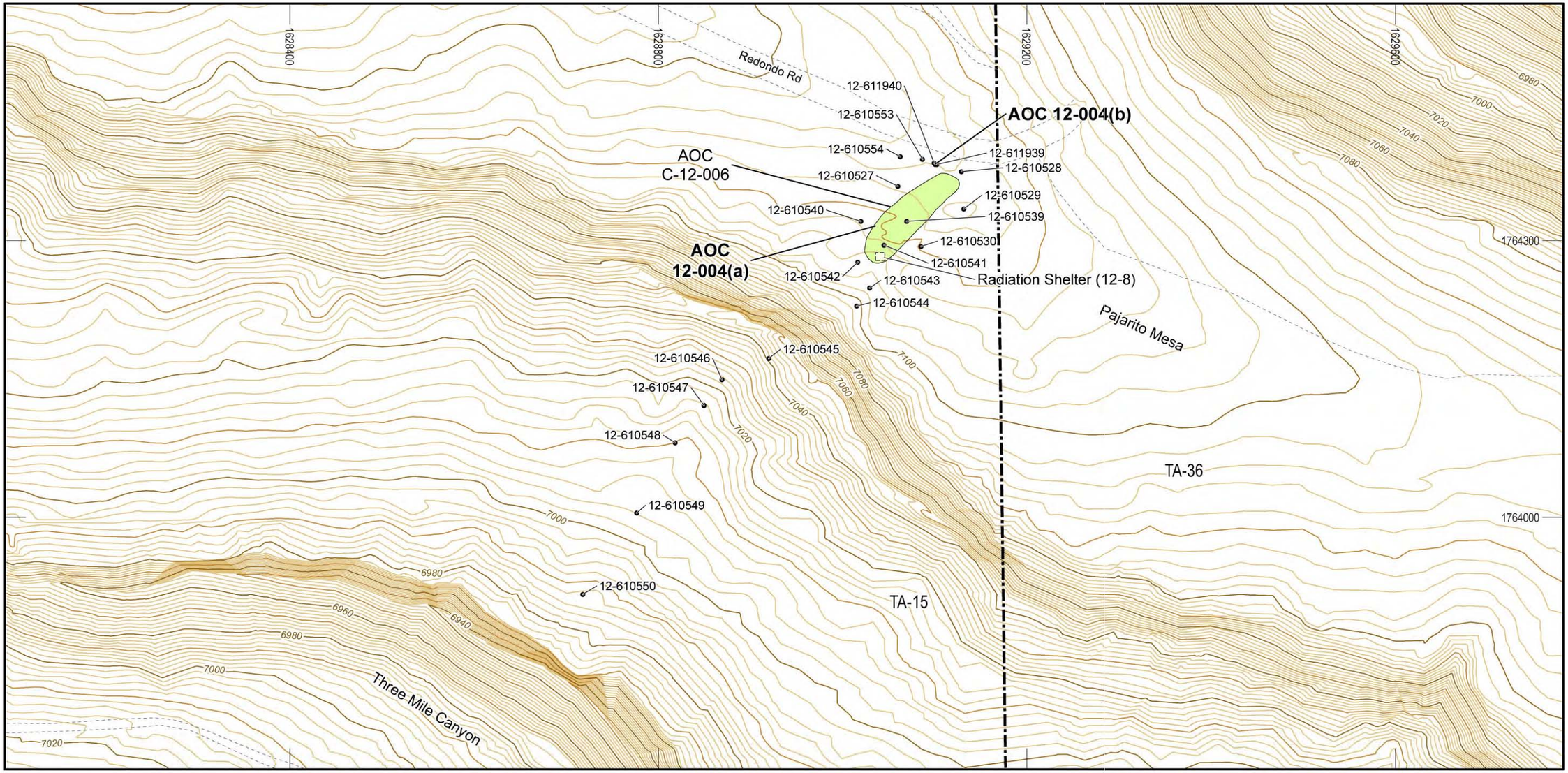


Figure 4.3-1 AOCs 12-004(a) and 12-004(b) site map and sampling locations

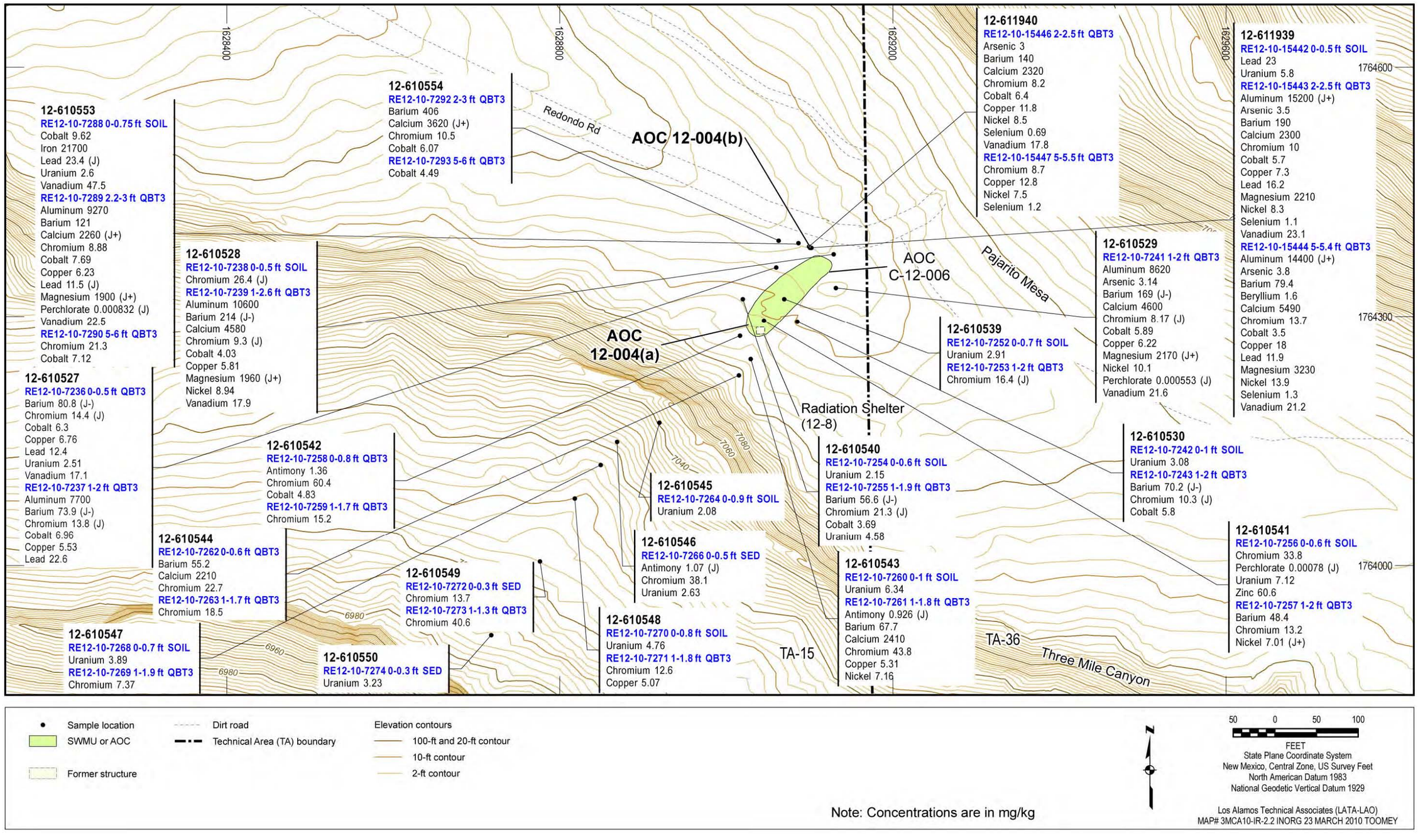


Figure 4.3-2 Inorganic chemicals detected or detected above BVs at AOCs 12-004(a) and 12-004(b)

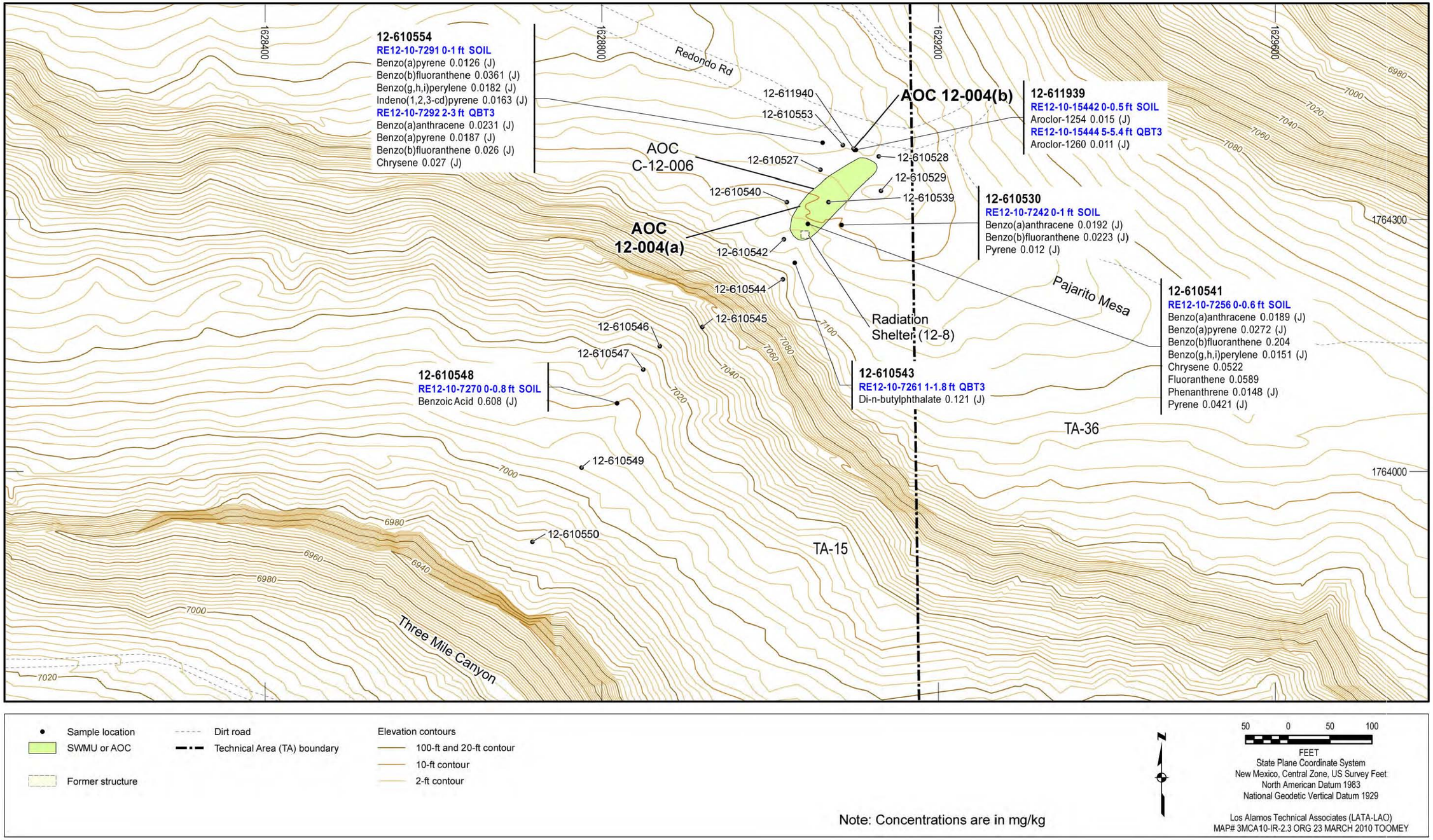


Figure 4.3-3 Organic chemicals detected at AOCs 12-004(a) and 12-004(b)

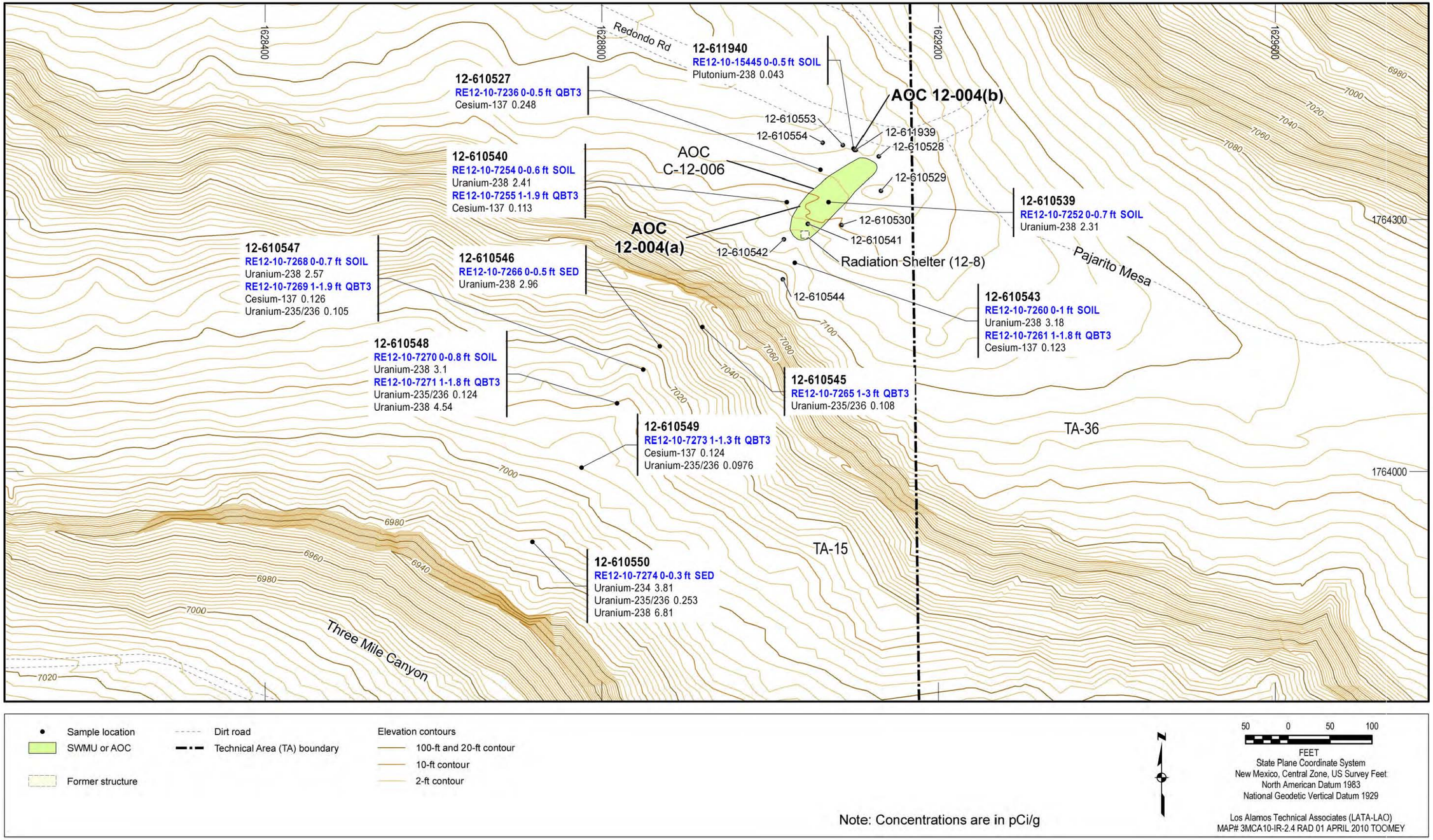


Figure 4.3-4 Radionuclides detected or detected above BVs/FVs at AOCs 12-004(a) and 12-004(b)

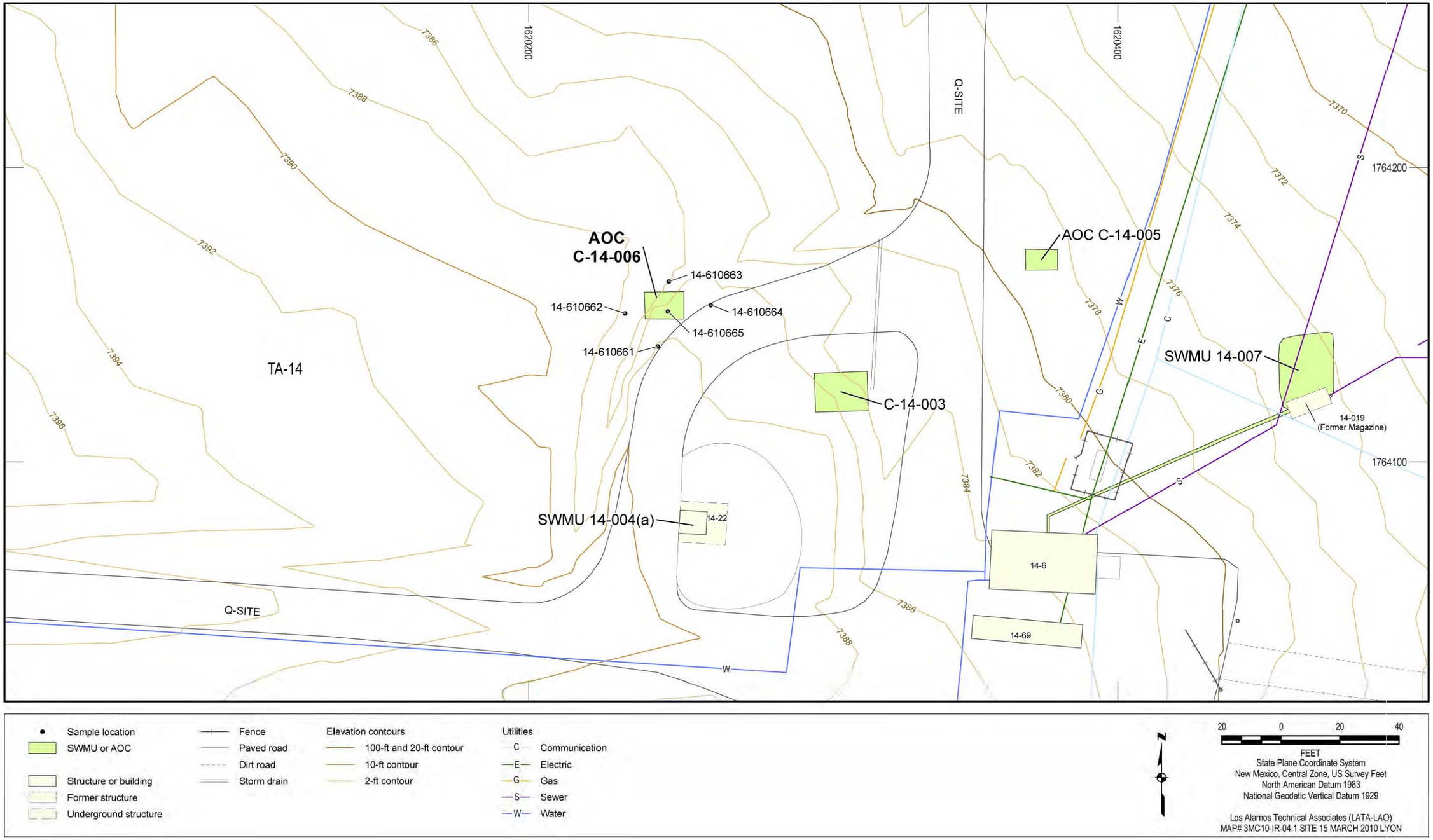


Figure 5.2-1 AOC C-14-006 site map and sampling locations

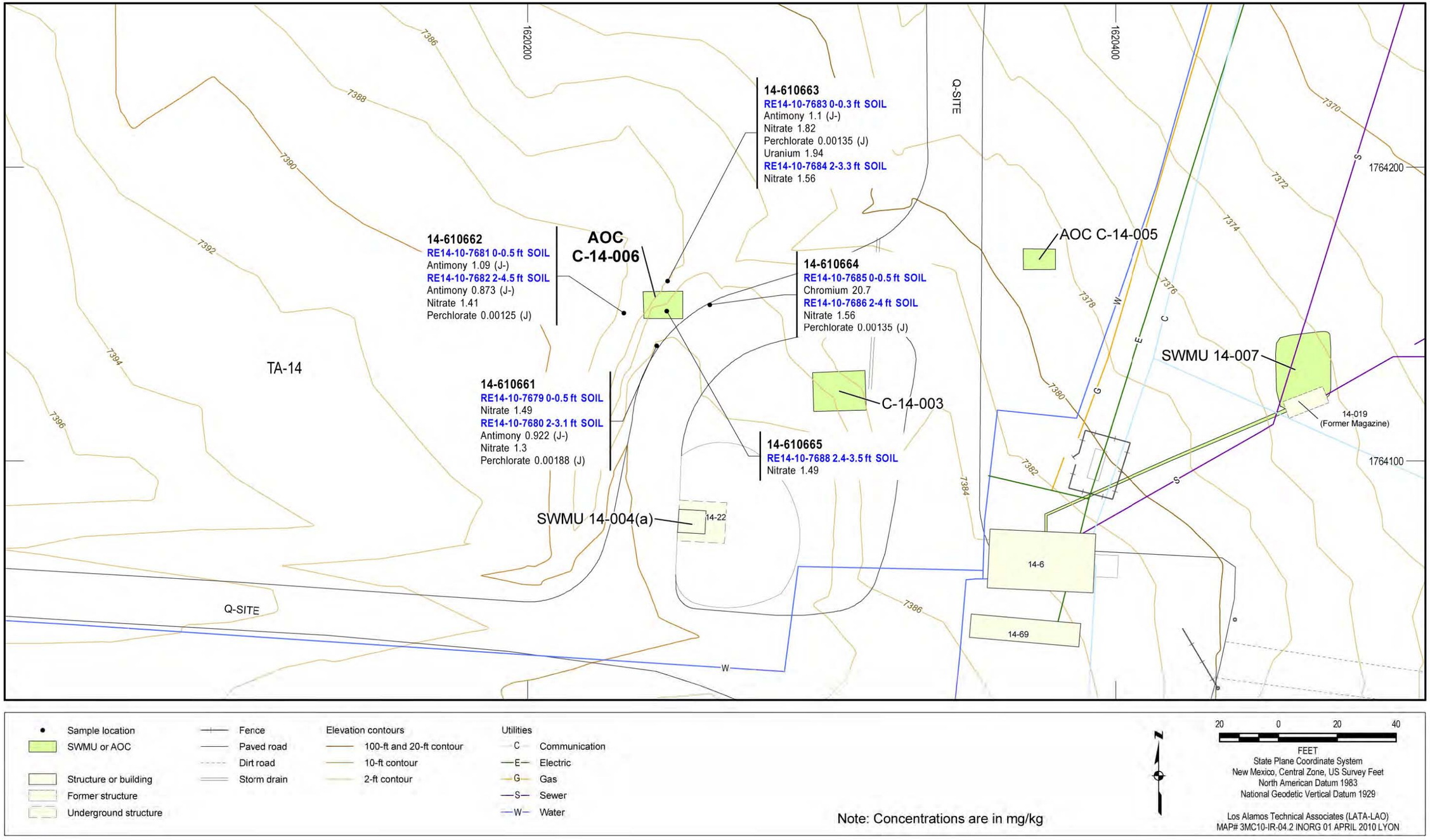


Figure 5.2-2 Inorganic chemicals detected or detected above BVs at AOC C-14-006

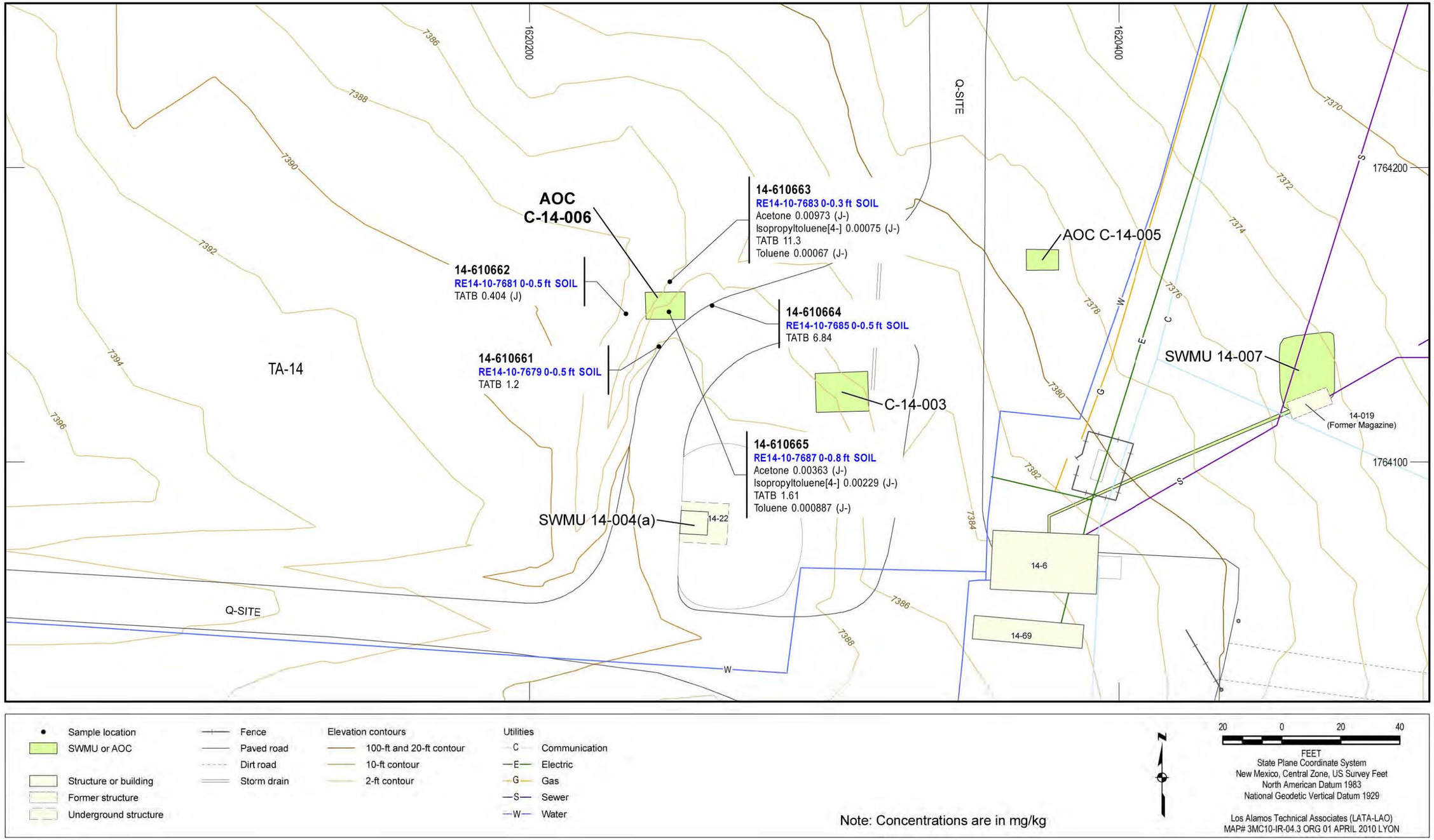


Figure 5.2-3 Organic chemicals detected at AOC C-14-006

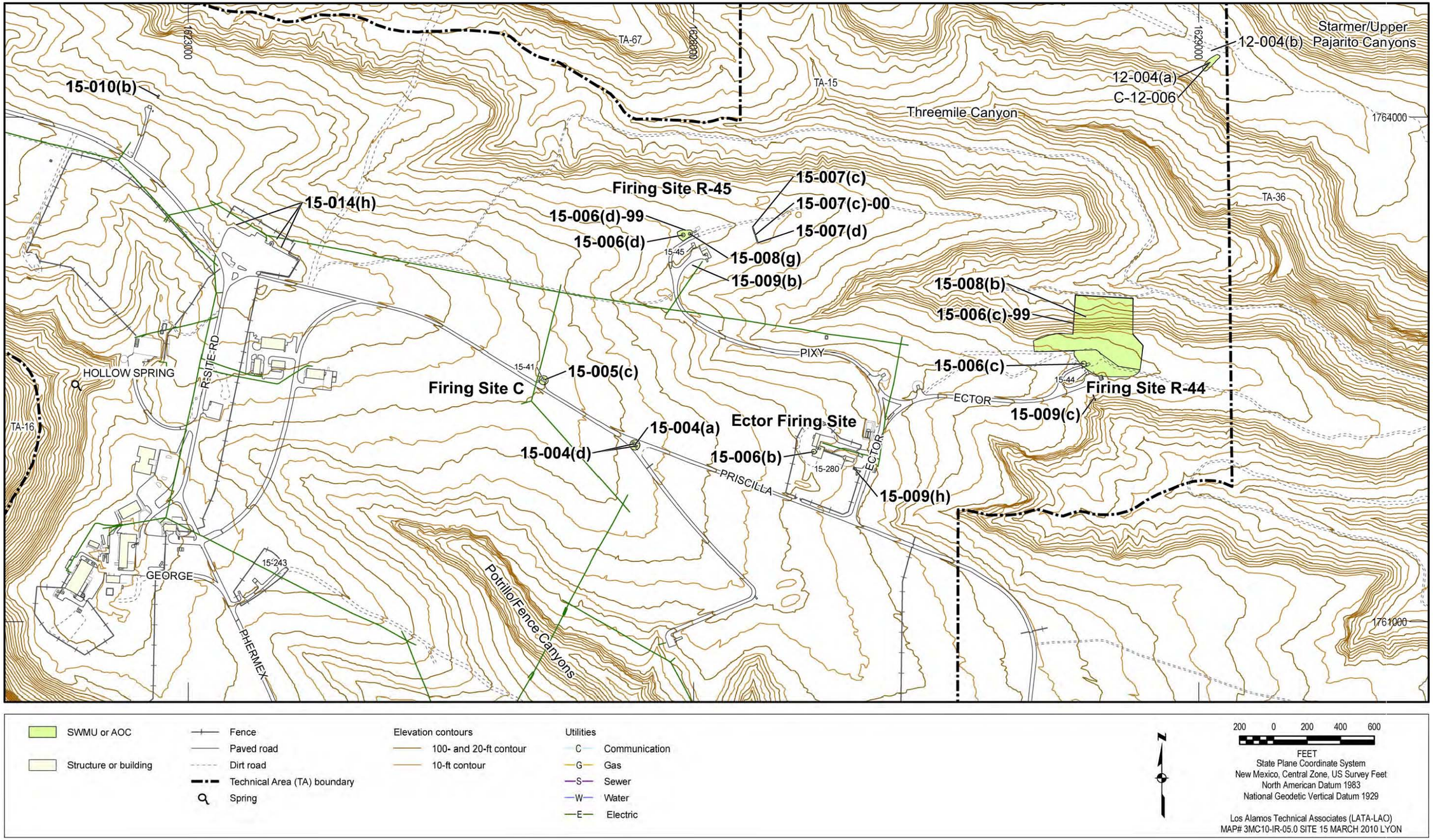


Figure 6.1-1 Site map of TA-15

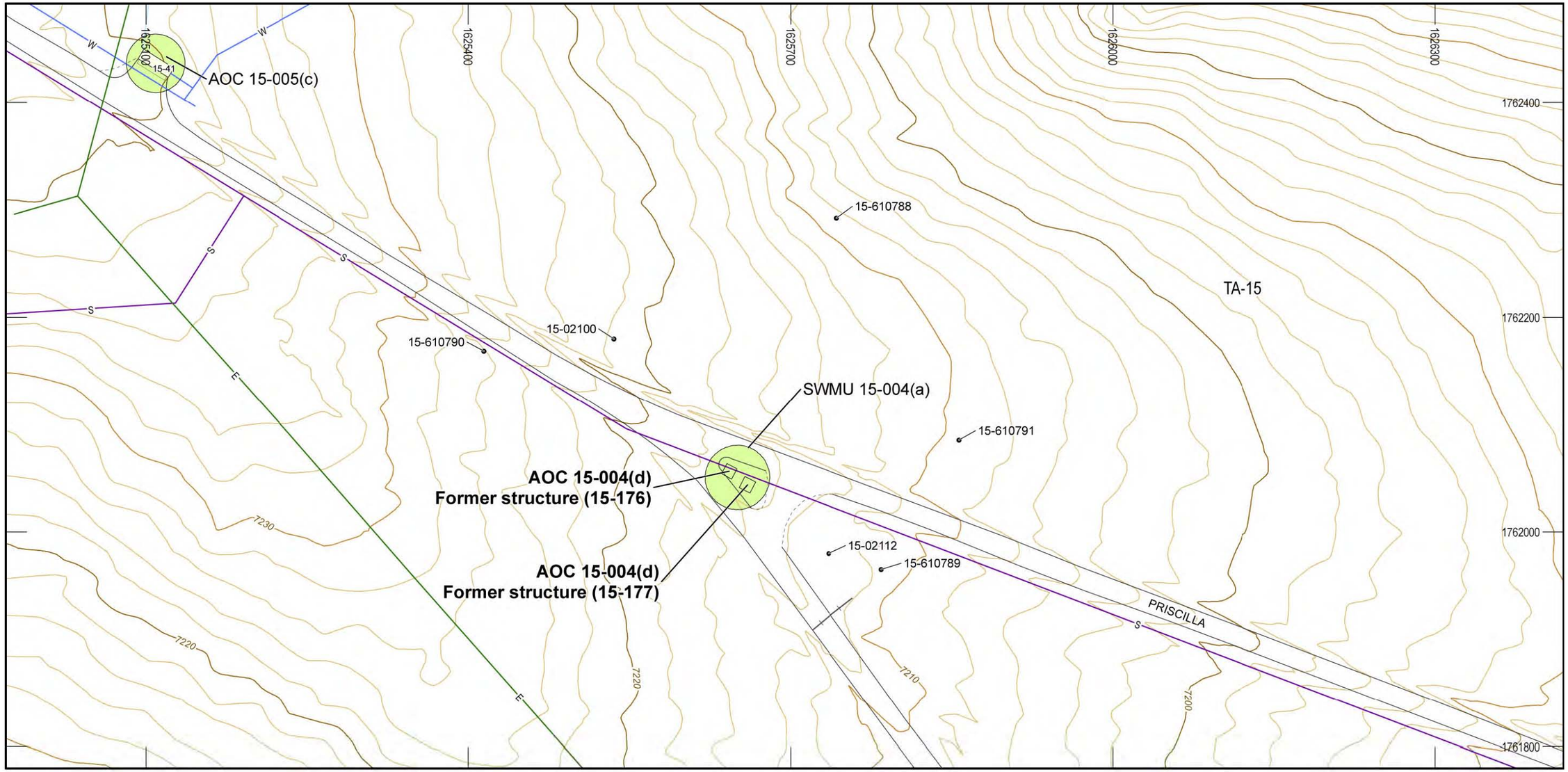


Figure 6.3-1 AOC15-004(d) site map and sampling locations

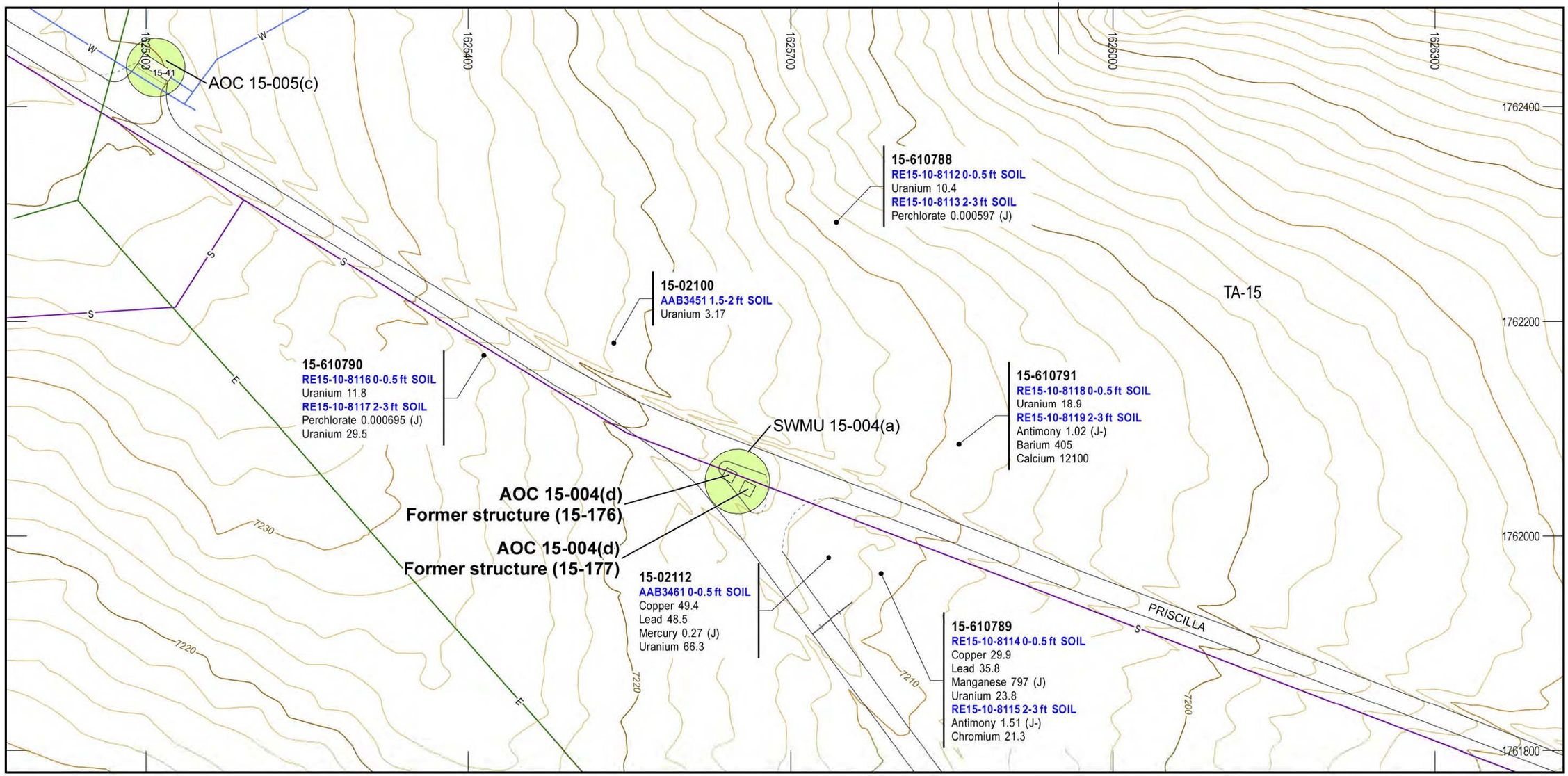


Figure 6.3-2 Inorganic chemicals detected or detected above BVs at AOC 15-004(d)

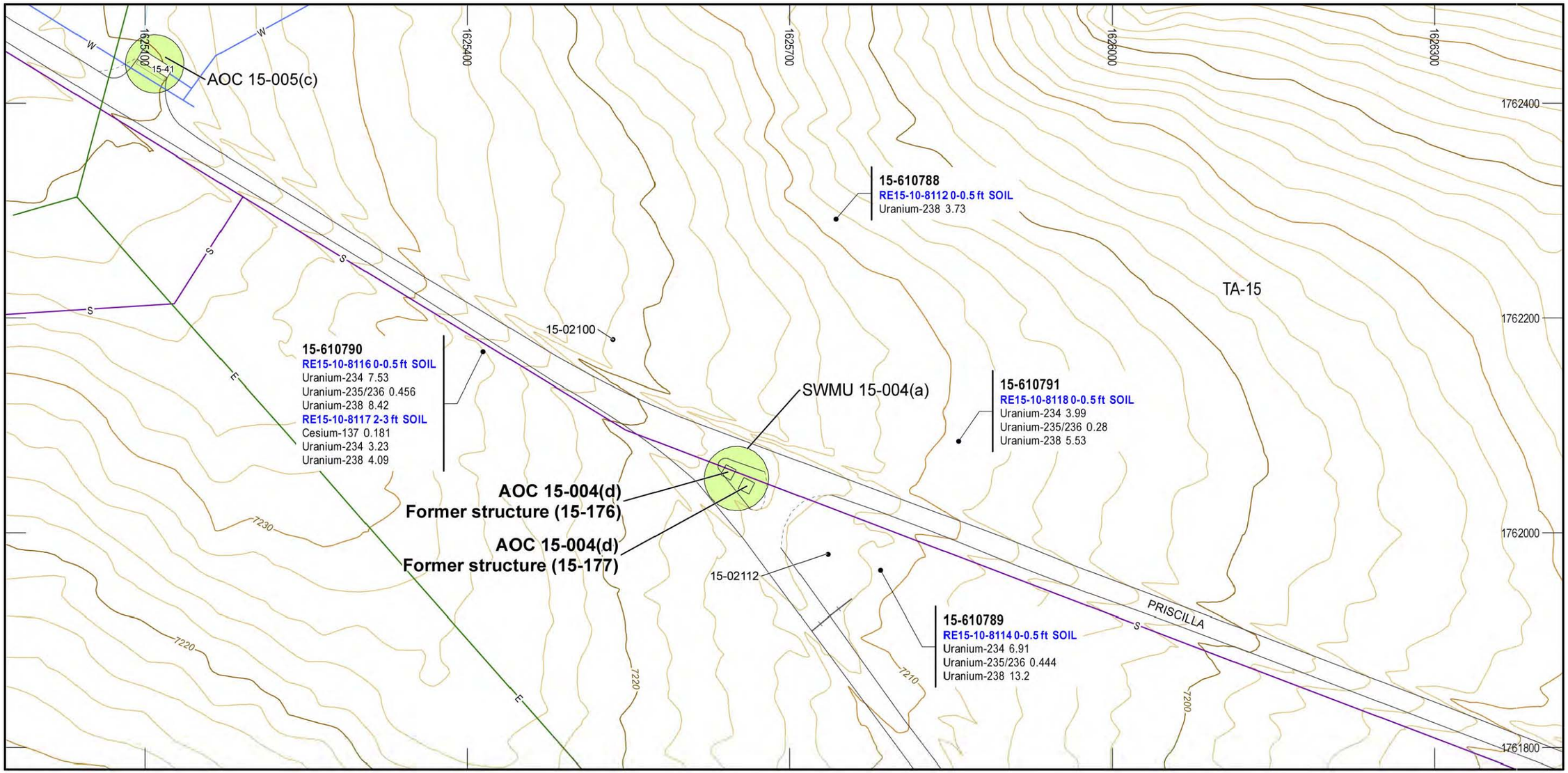


Figure 6.3-3 Radionuclides detected or detected above BVs/FVs at AOC 15-004(d)

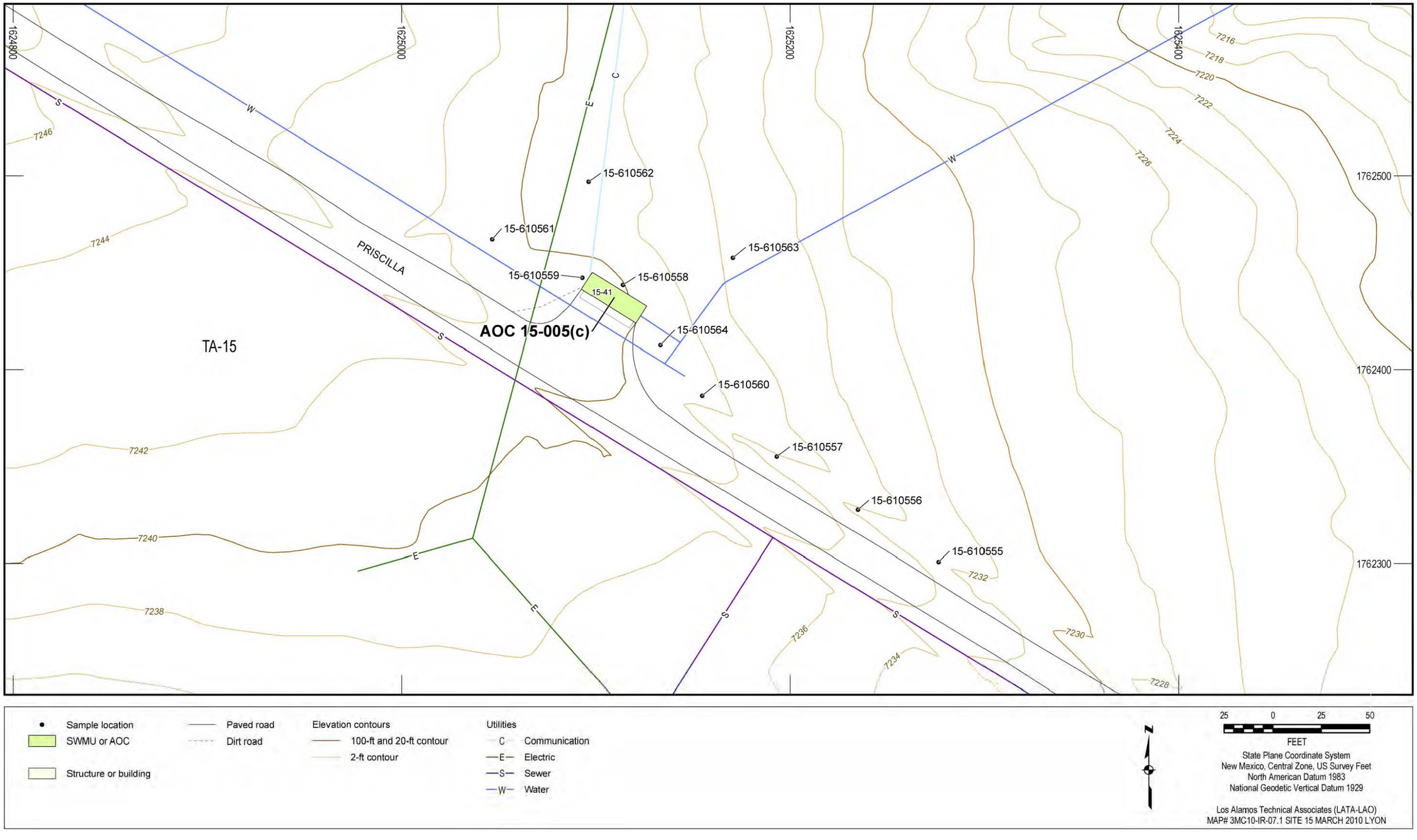


Figure 6.4-1 AOC15-005(c) site map and sampling locations

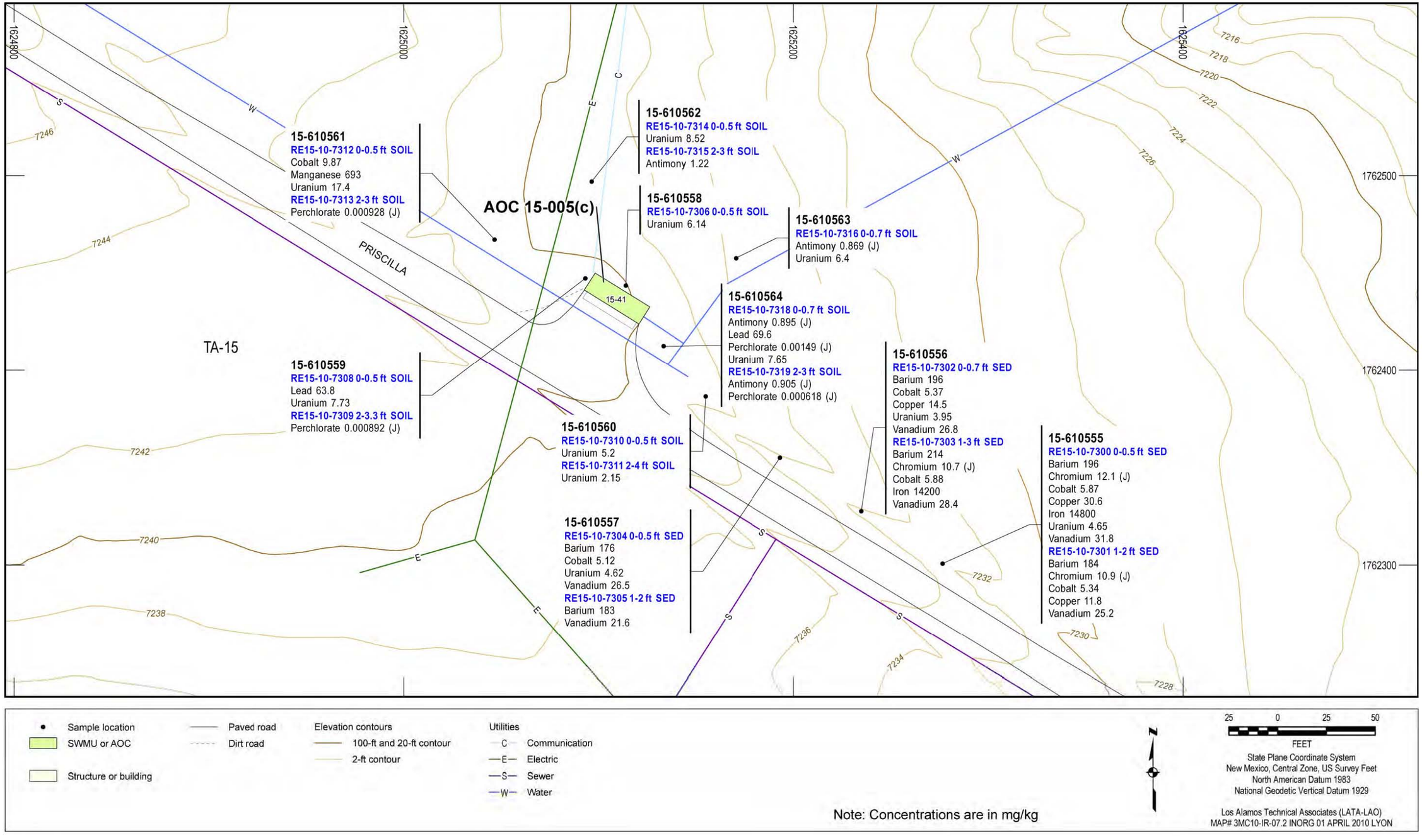


Figure 6.4-2 Inorganic chemicals detected or detected above BVs at AOC 15-005(c)

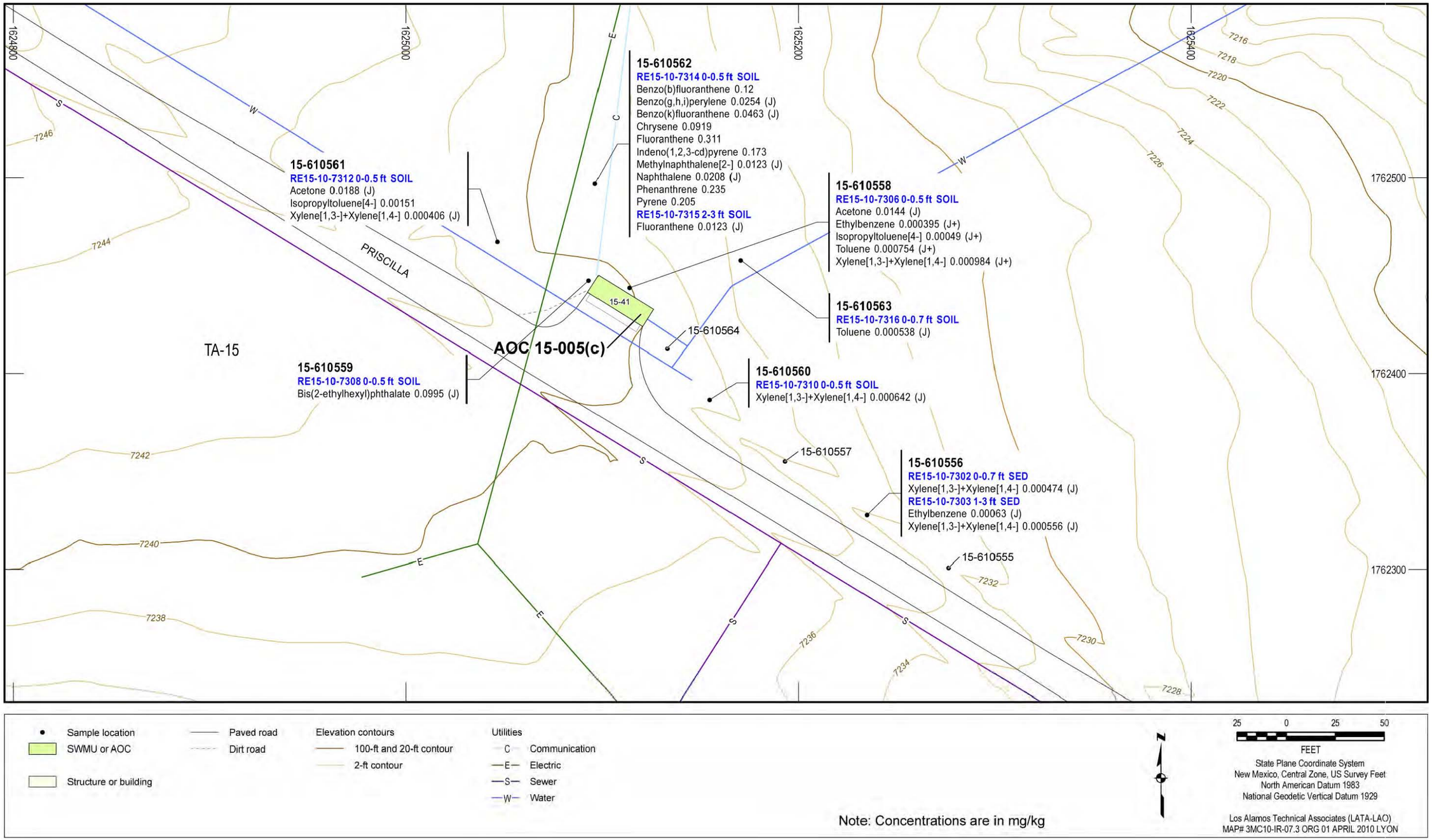


Figure 6.4-3 Organic chemicals detected at AOC 15-005(c)

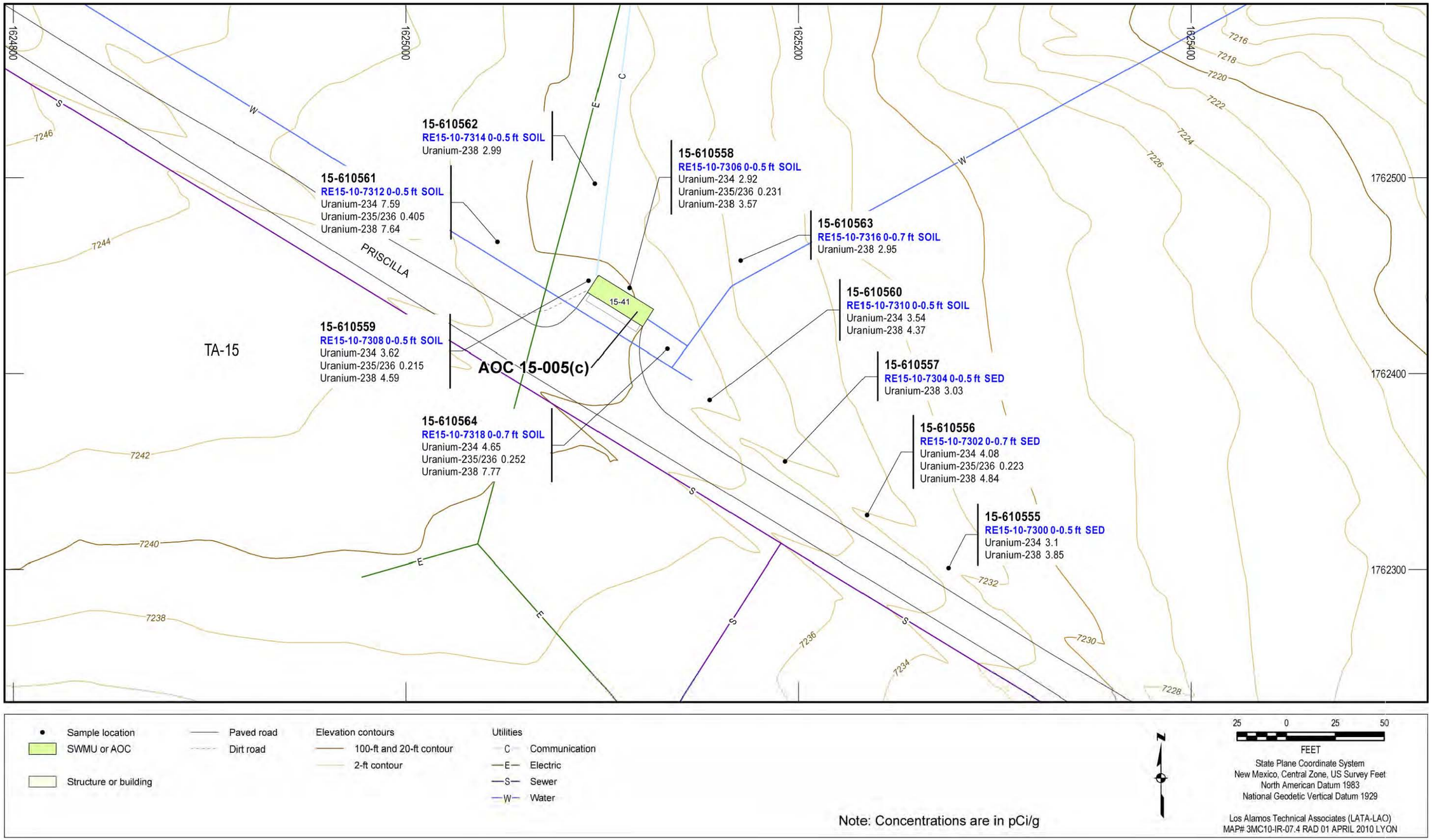


Figure 6.4-4 Radionuclides detected or detected above BVs/FVs at AOC 15-005(c)

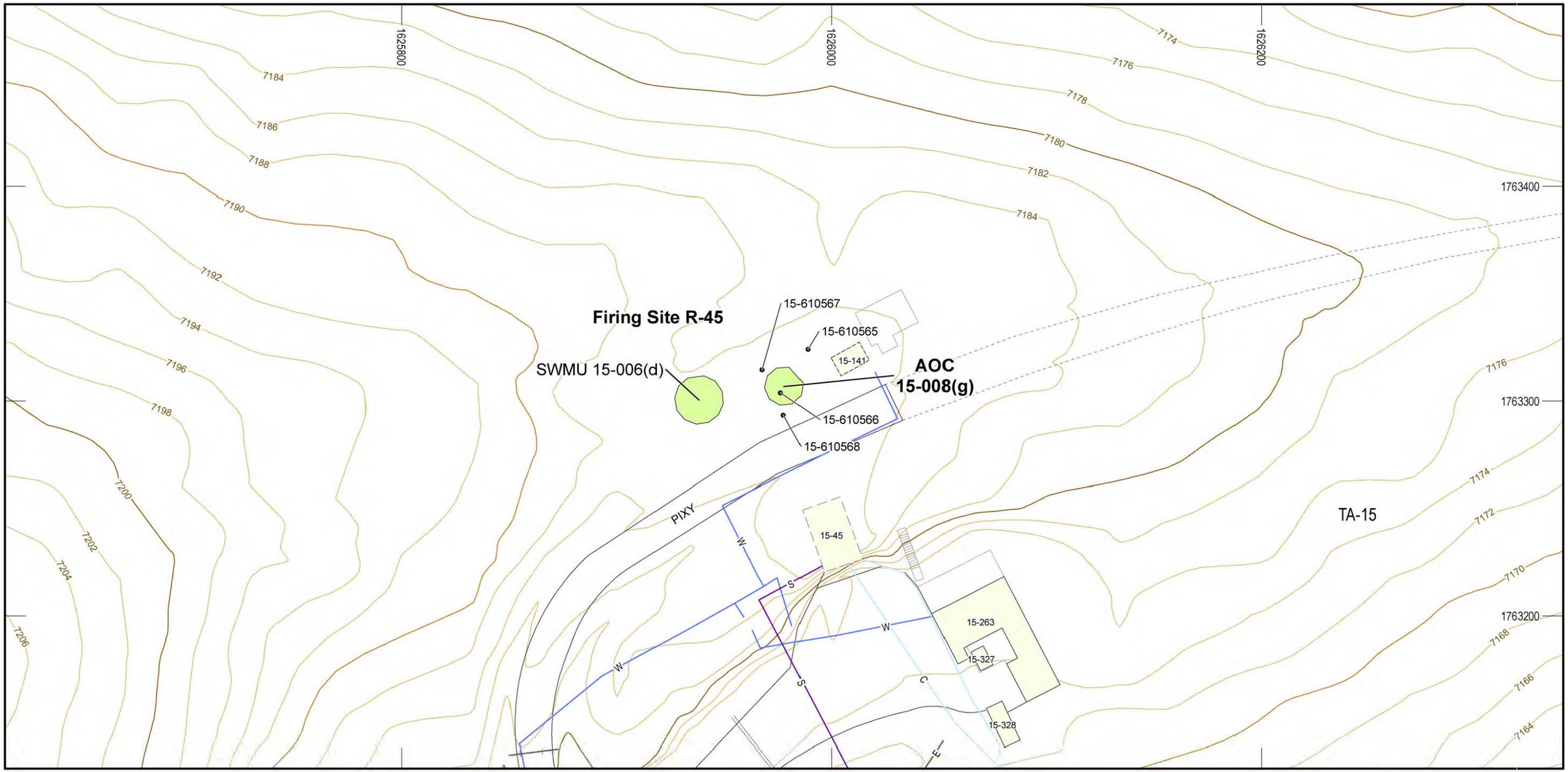


Figure 6.6-1 Consolidated Unit 15-006(d)-99 site map and sampling locations at AOC 15-008(g)

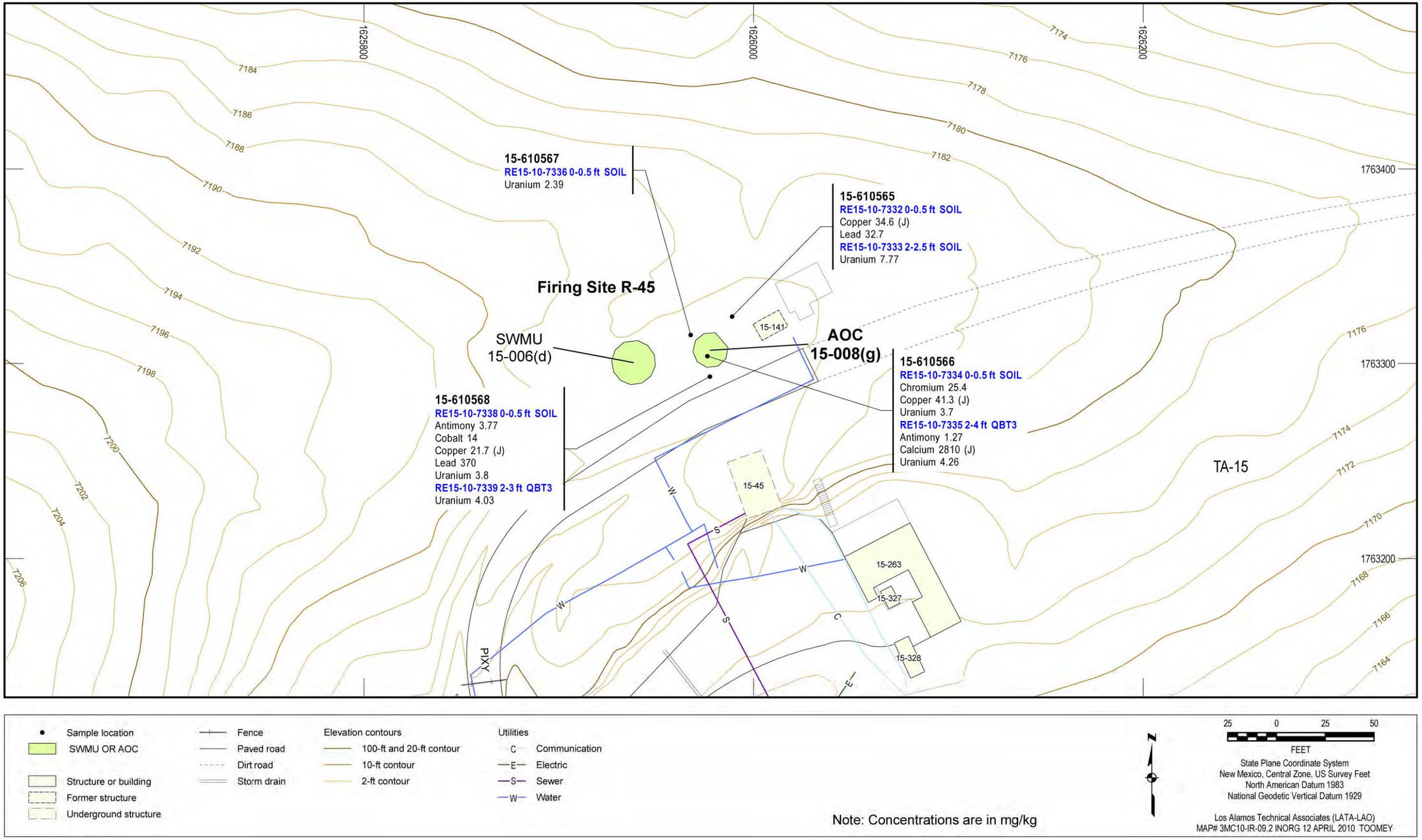


Figure 6.6-2 Inorganic chemicals detected or detected above BVs at AOC 15-008(g)

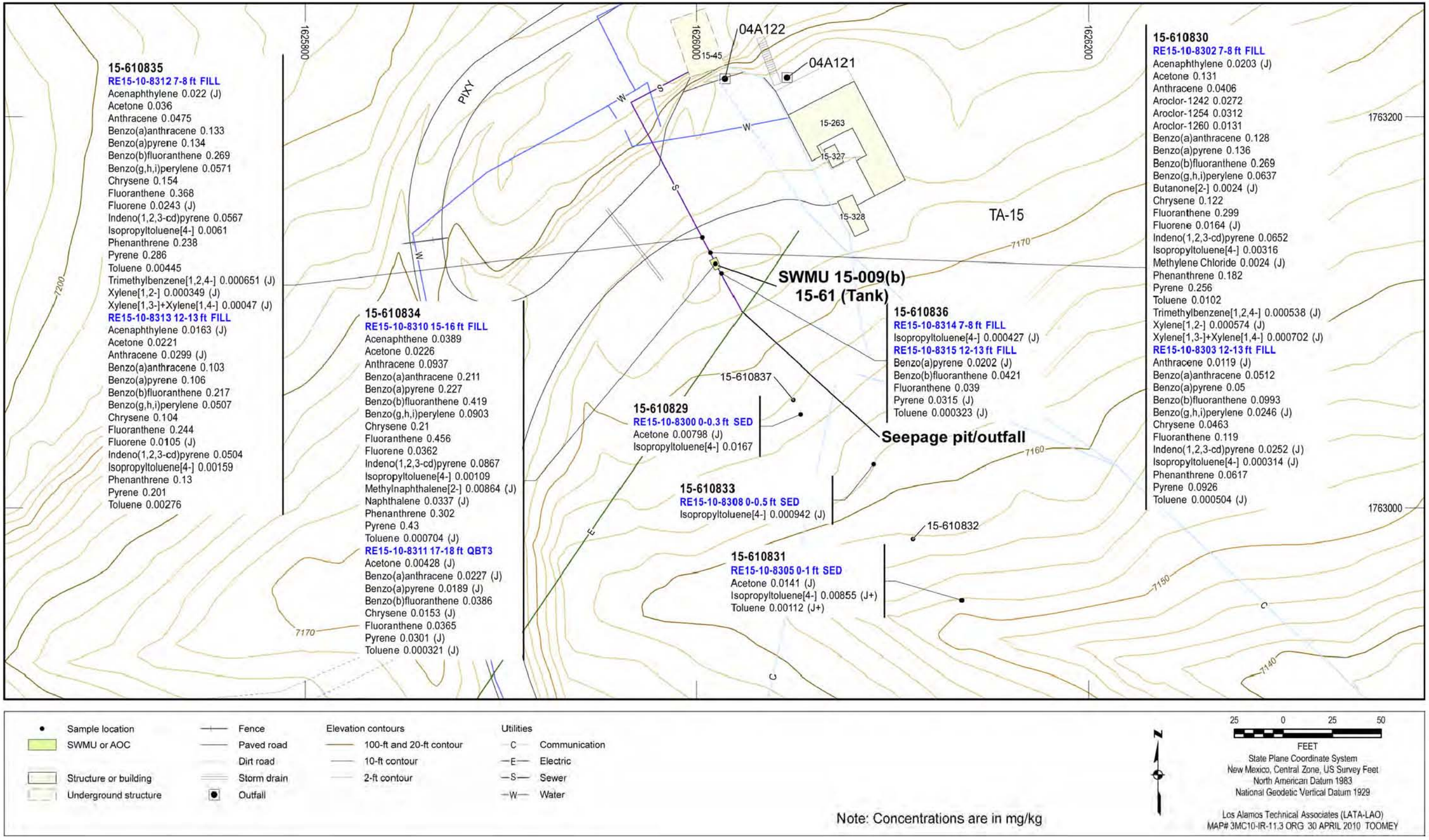


Figure 6.6-3 Organic chemicals detected at AOC 15-008(g)

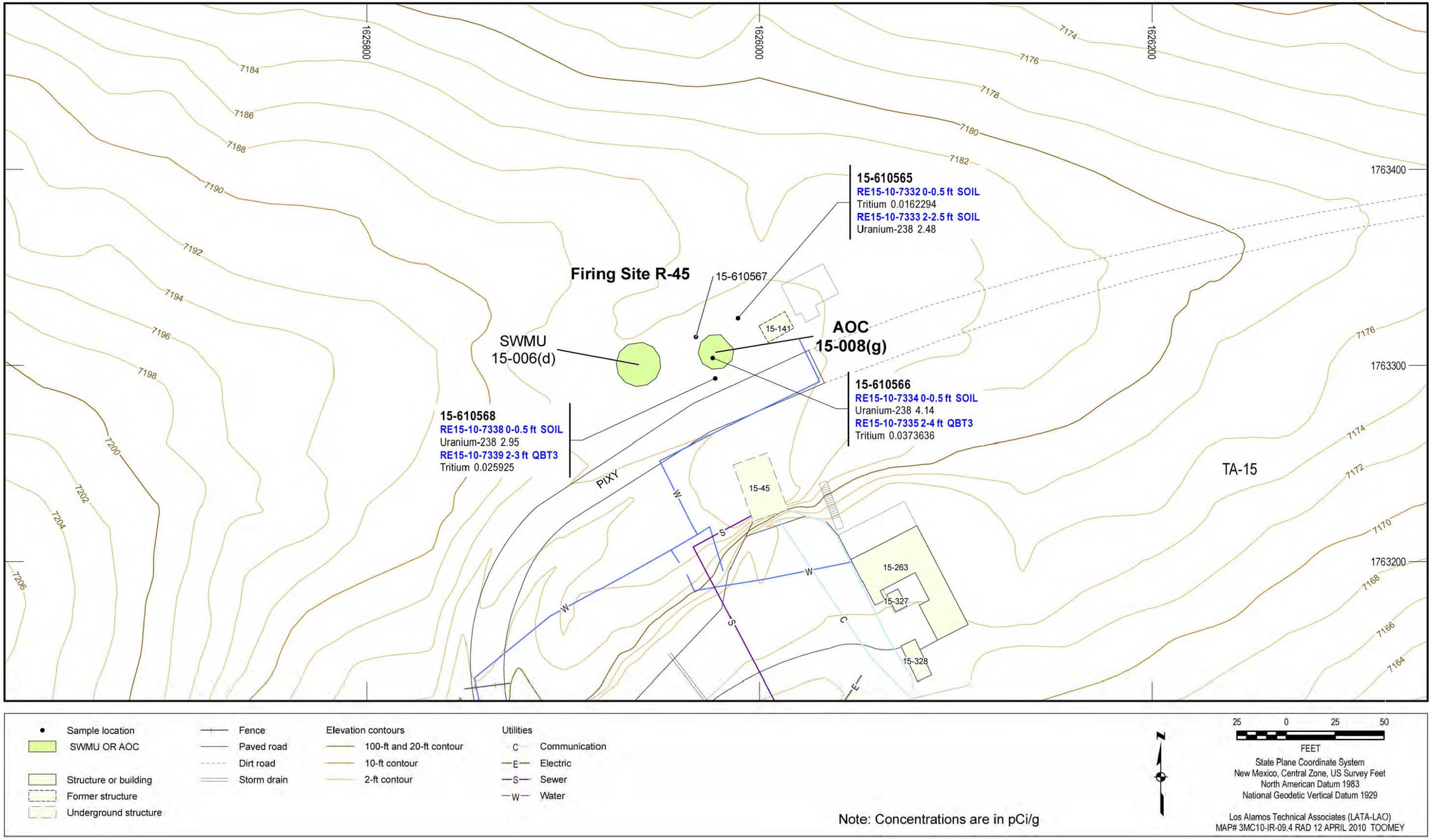


Figure 6.6-4 Radionuclides detected or detected above BVs/FVs at AOC 15-008(g)

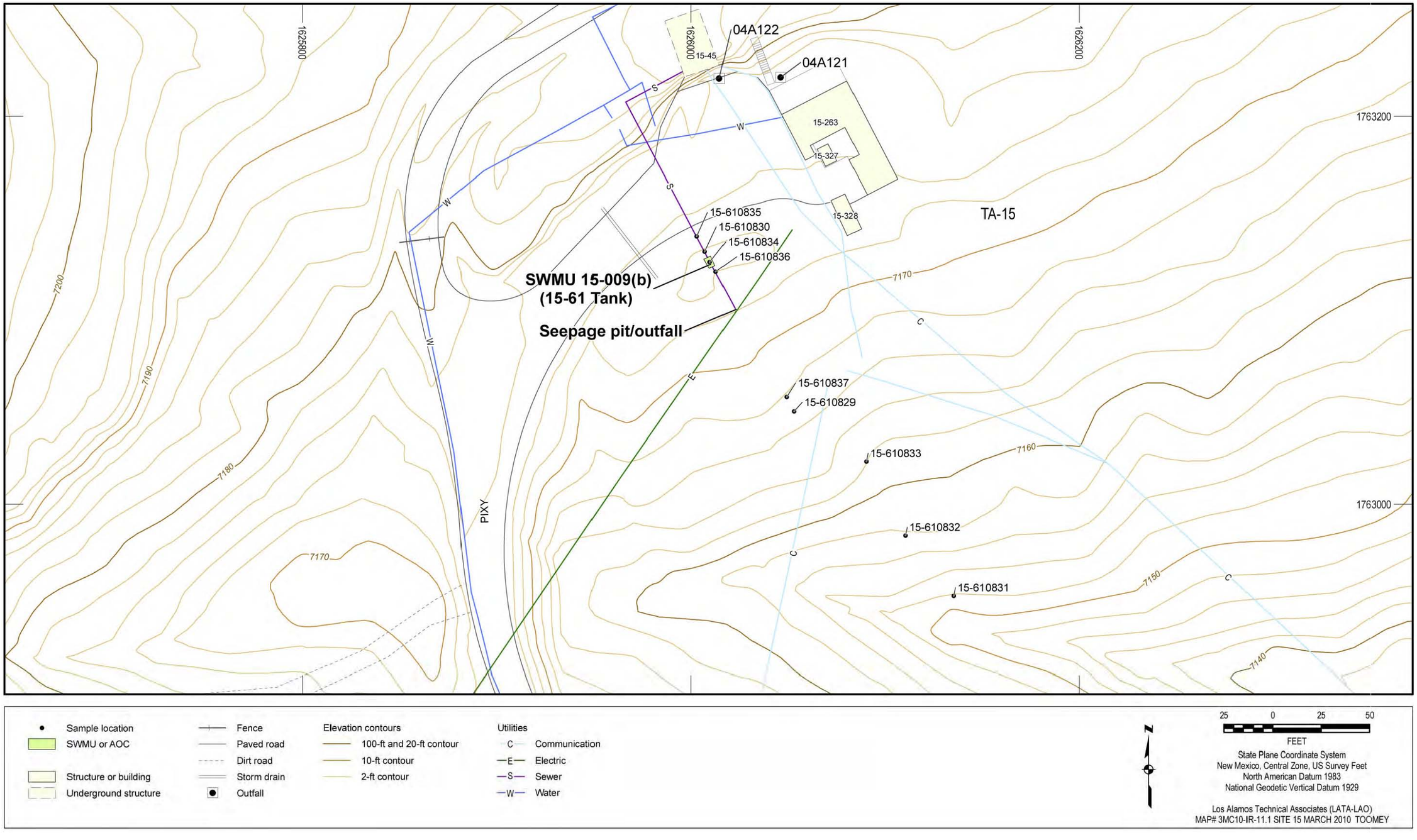


Figure 6.8-1 SWMU 15-009(b) site map and sampling locations

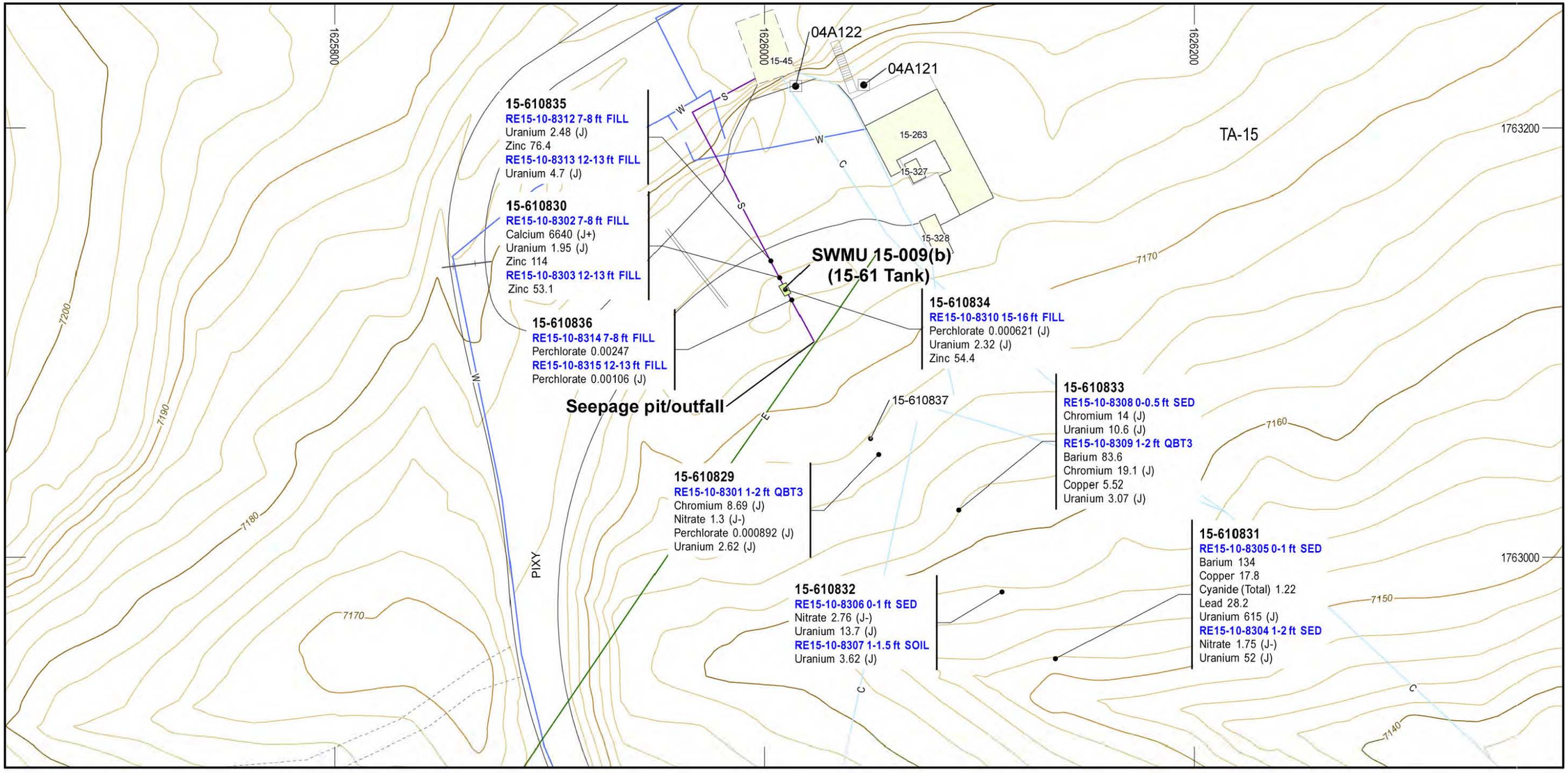


Figure 6.8-2 Inorganic chemicals detected or detected above BVs at SWMU 15-009(b)

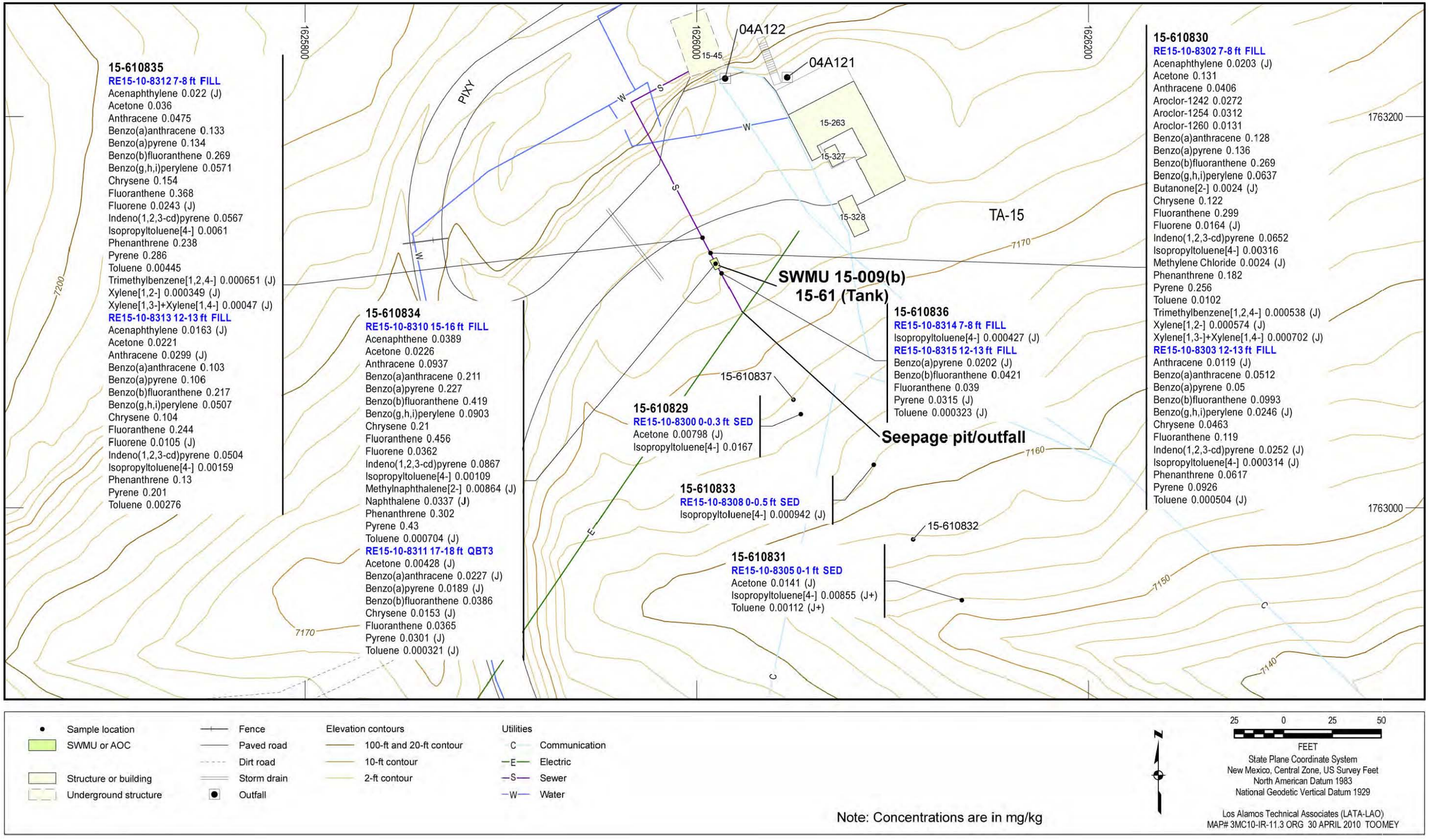


Figure 6.8-3 Organic chemicals detected at SWMU 15-009(b)

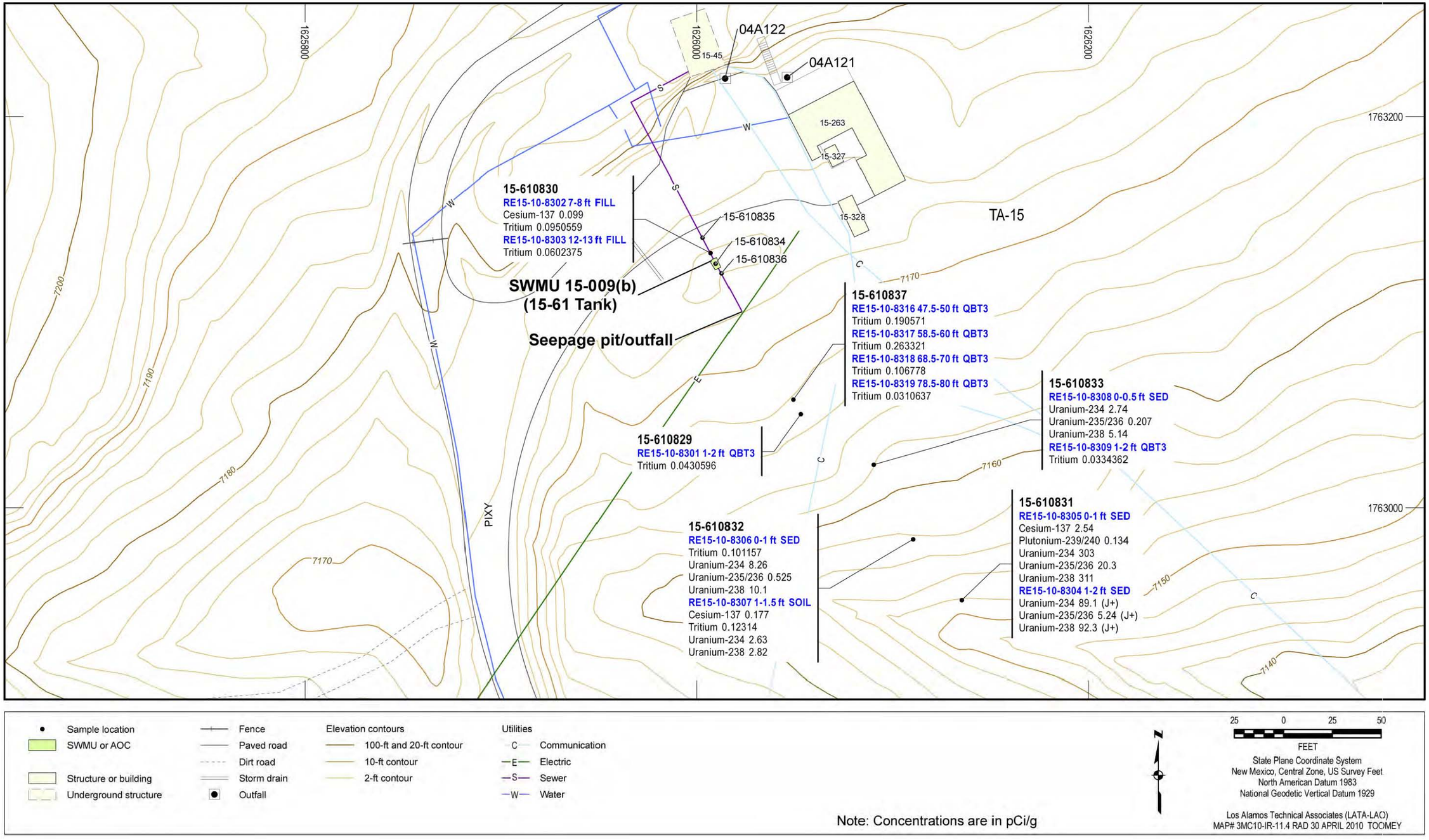


Figure 6.8-4 Radionuclides detected or detected above BVs/FVs at SWMU 15-009(b)

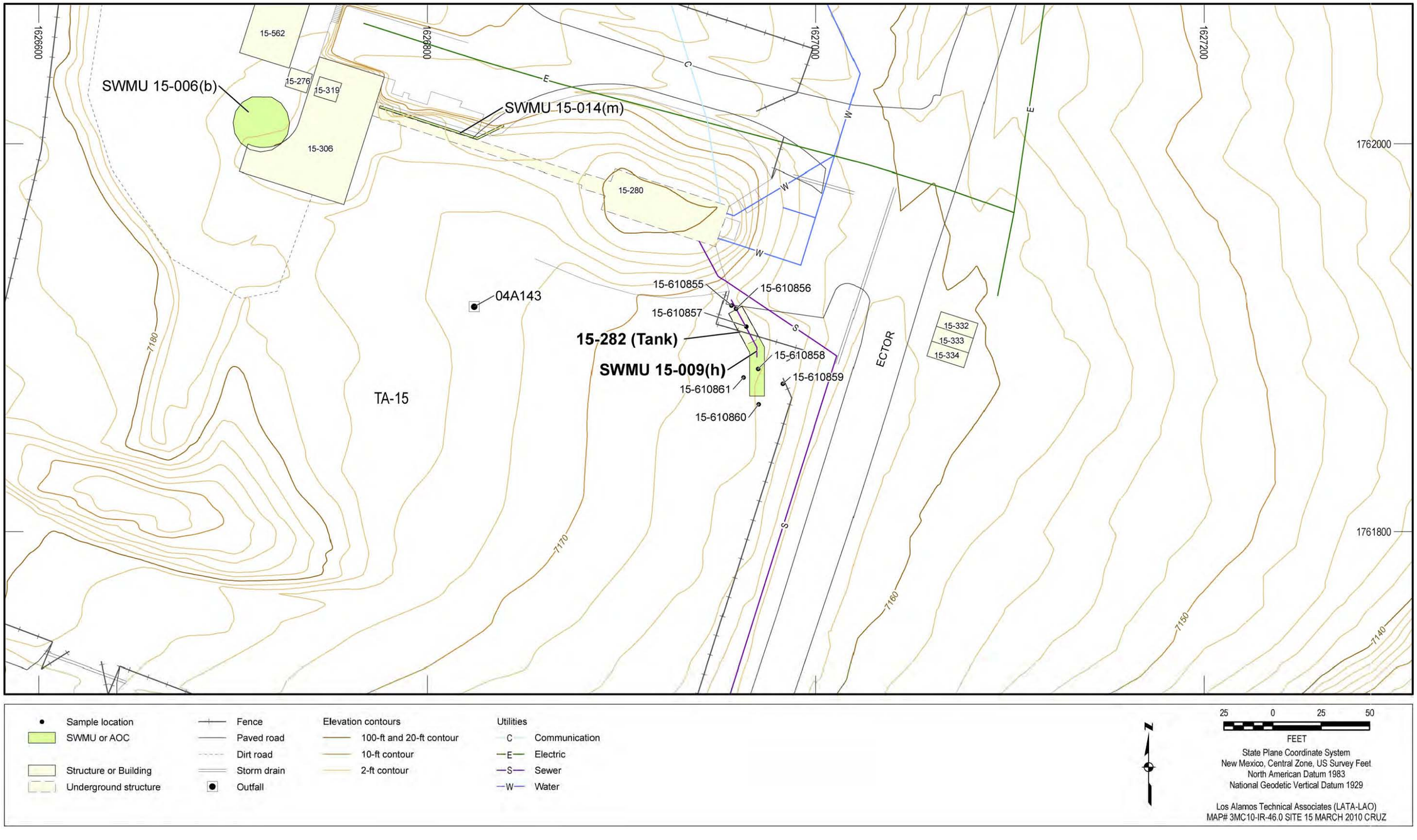


Figure 6.10-1 SWMU 15-009(h) site map and sampling locations

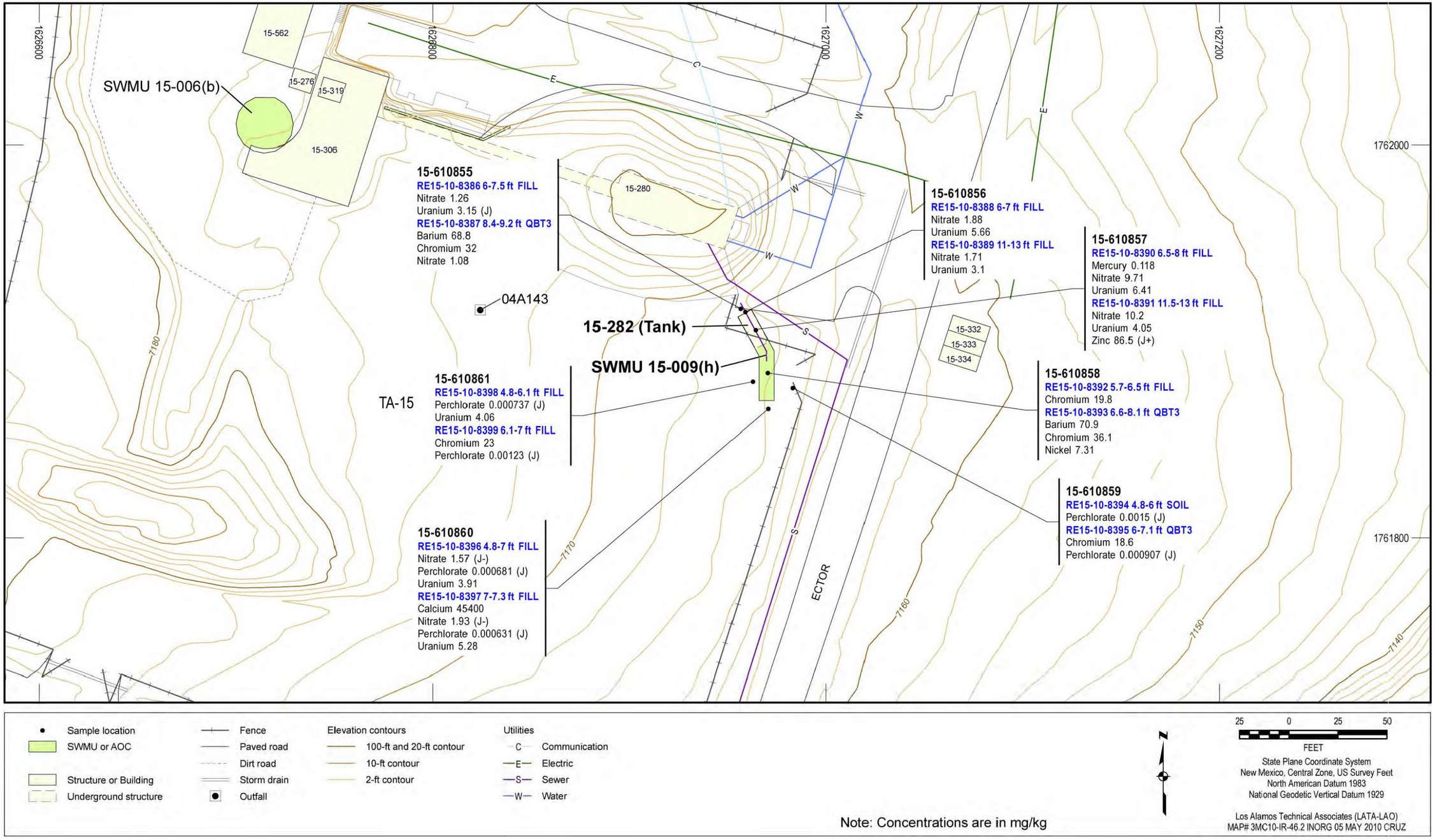


Figure 6.10-2 Inorganic chemicals detected or detected above BVs at SWMU 15-009(h)

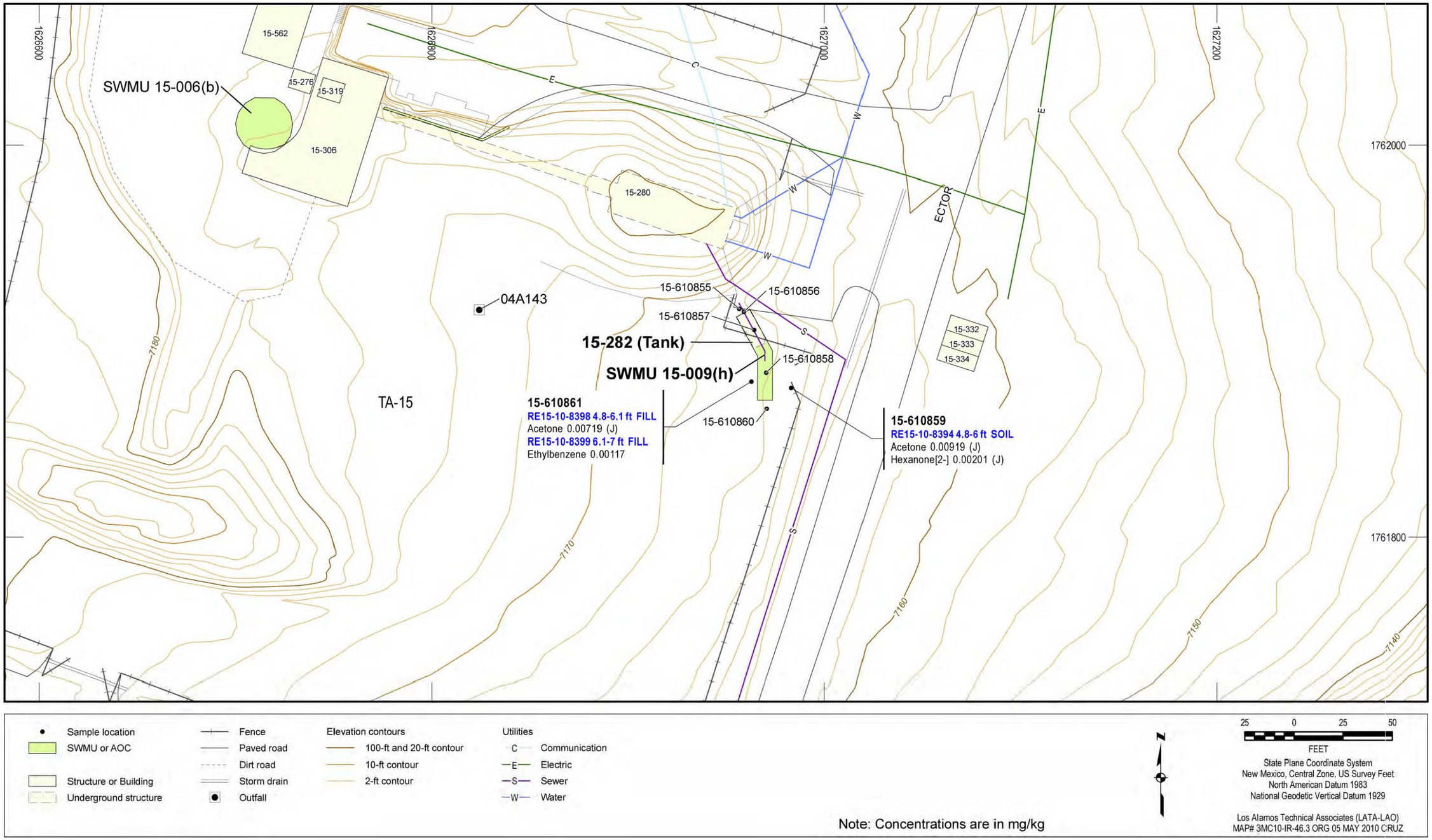


Figure 6.10-3 Organic chemicals detected at SWMU 15-009(h)

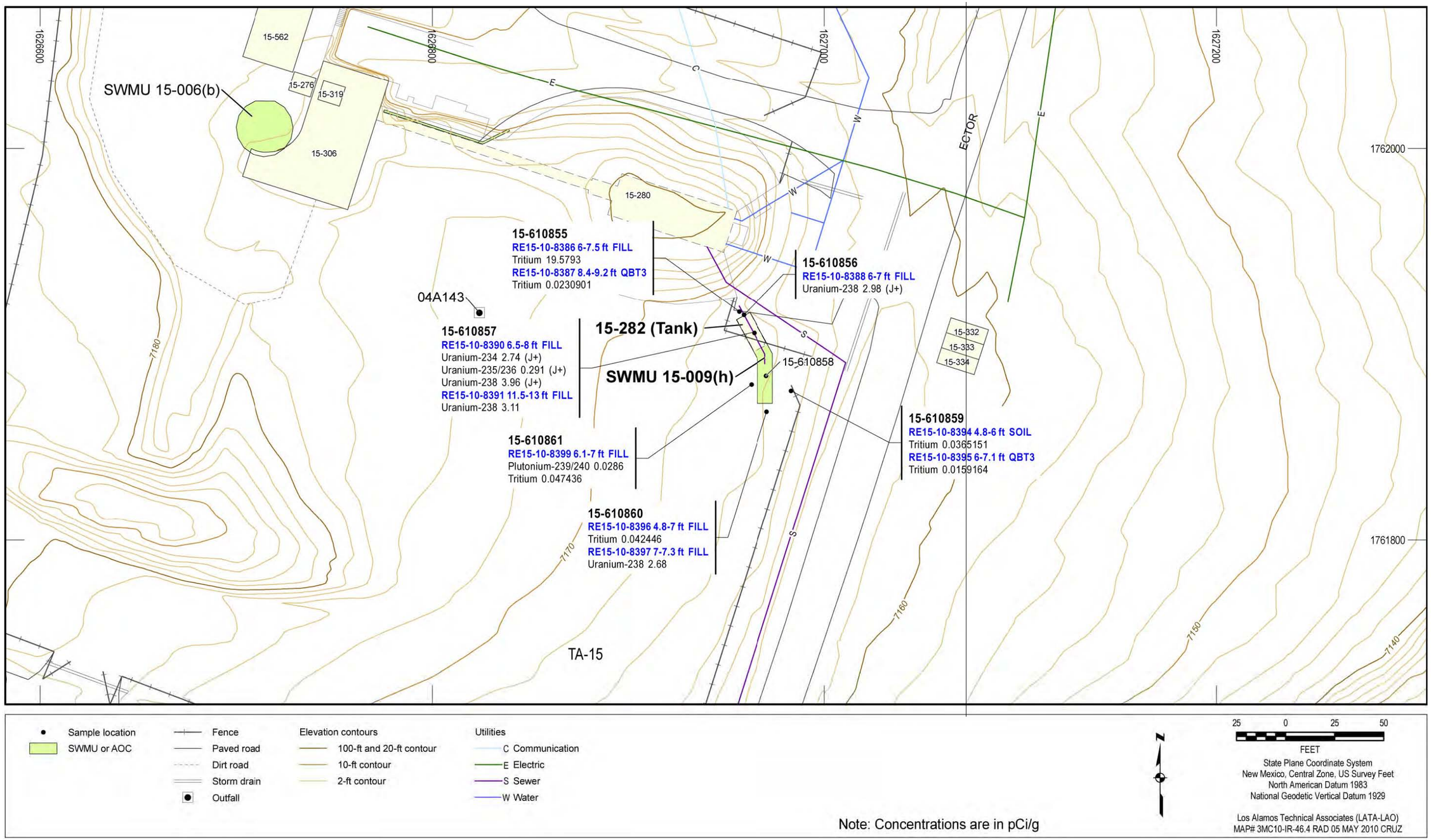


Figure 6.10-4 Radionuclides detected or detected above BVs/FVs at SWMU 15-009(h)

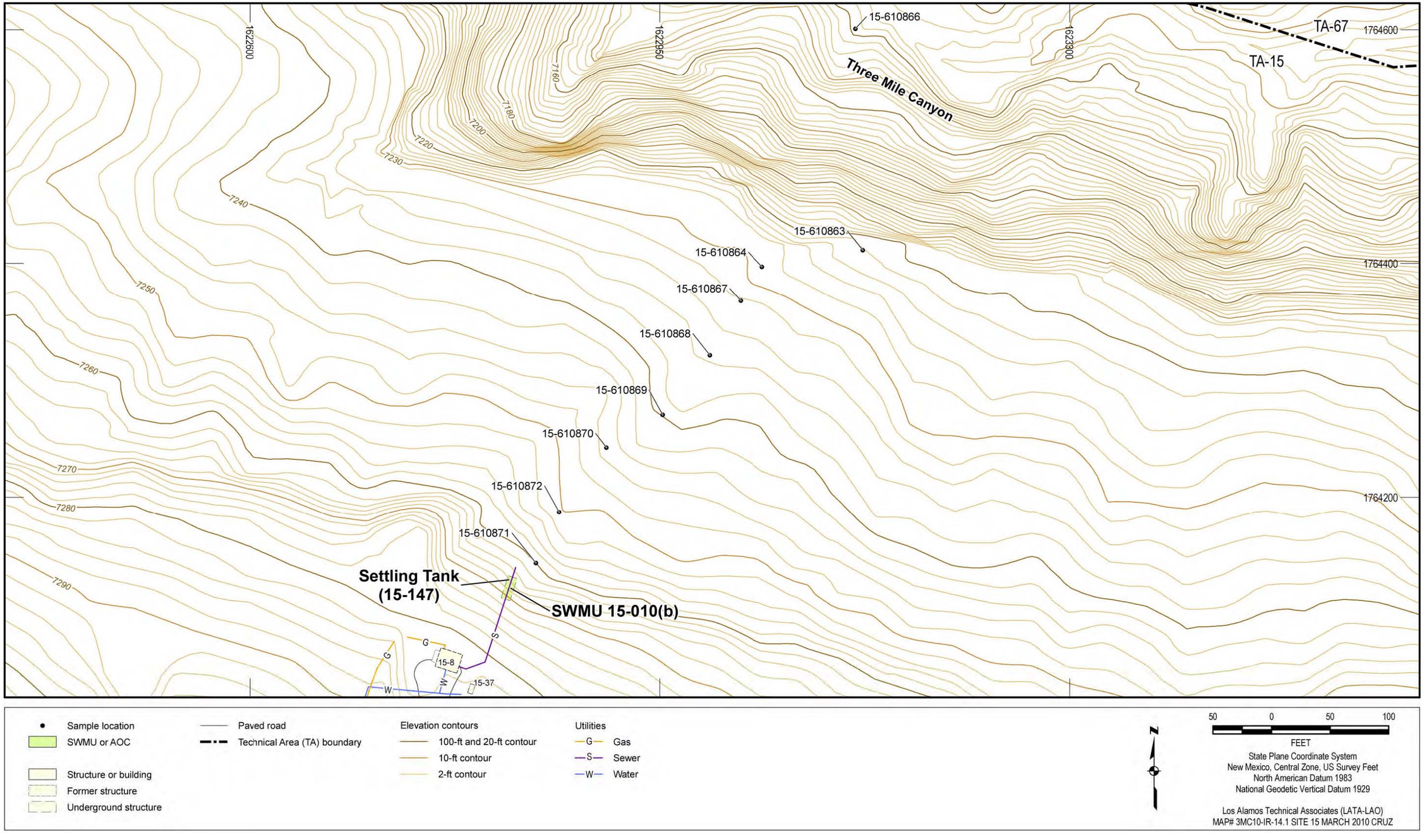


Figure 6.11-1 SWMU 15-010(b) site map and sampling locations

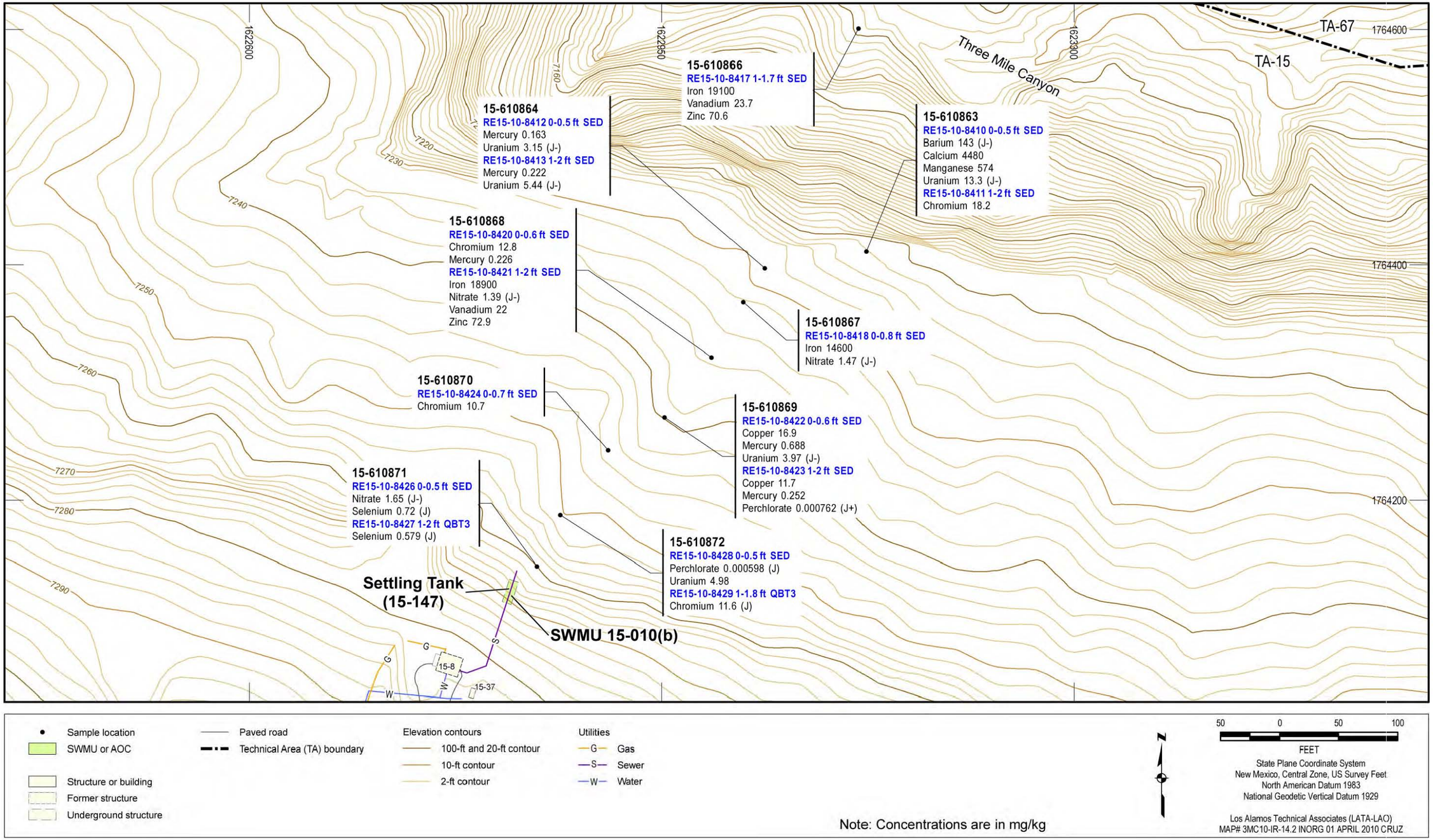


Figure 6.11-2 Inorganic chemicals detected or detected above BVs at SWMU 15-010(b)

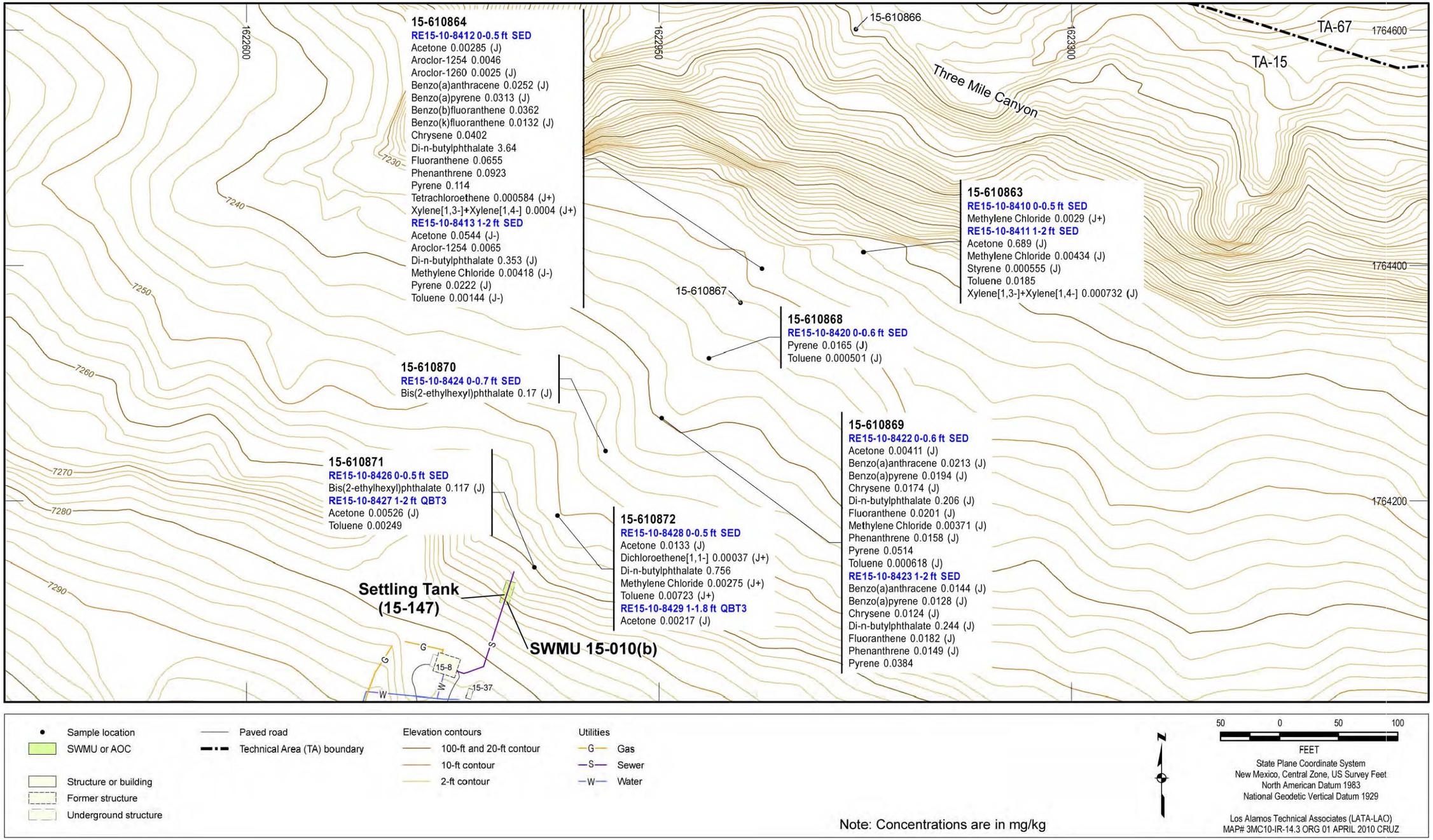


Figure 6.11-3 Organic chemicals detected at SWMU 15-010(b)

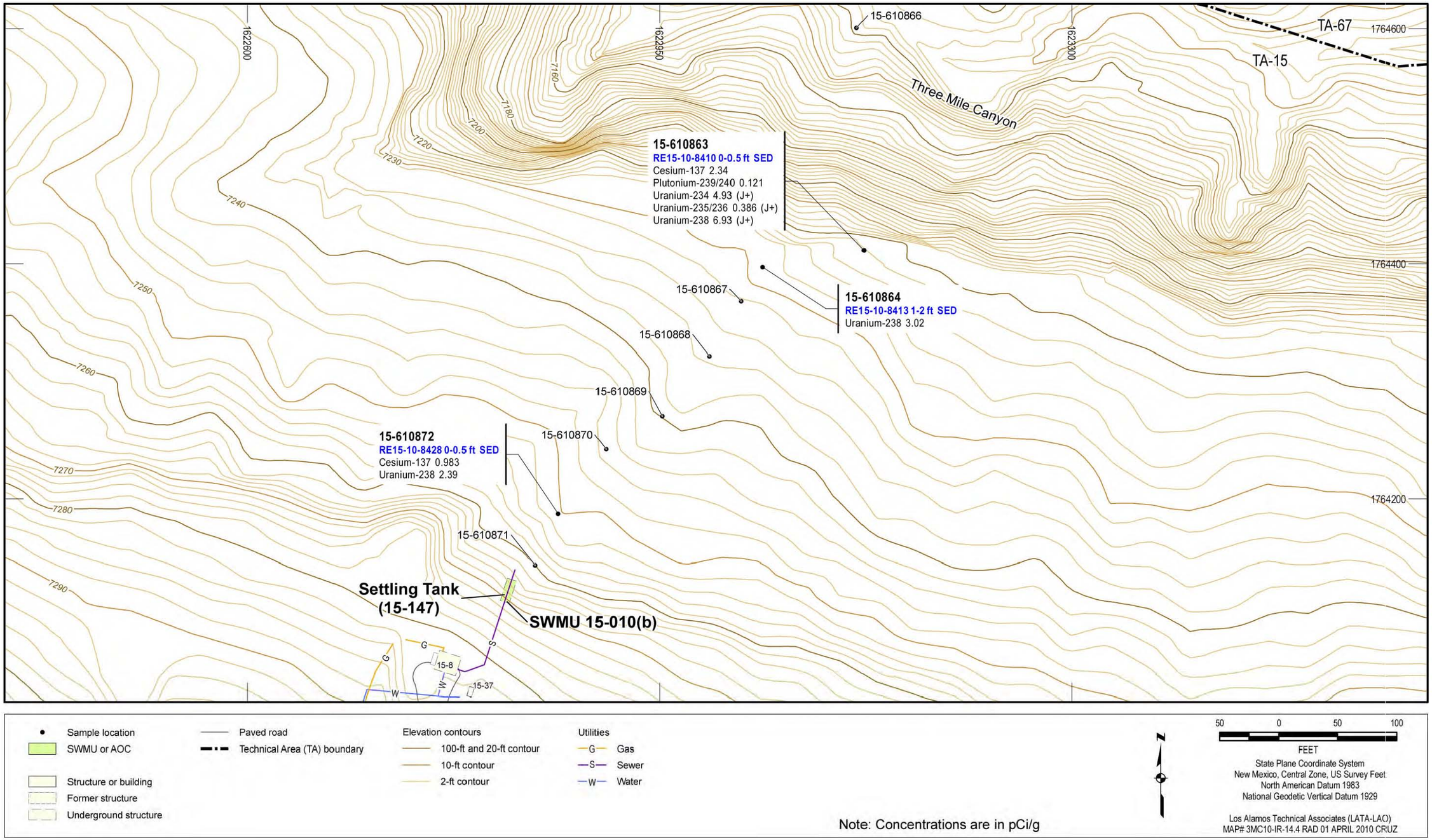


Figure 6.11-4 Radionuclides detected or detected above BVs/FVs at SWMU 15-010(b)

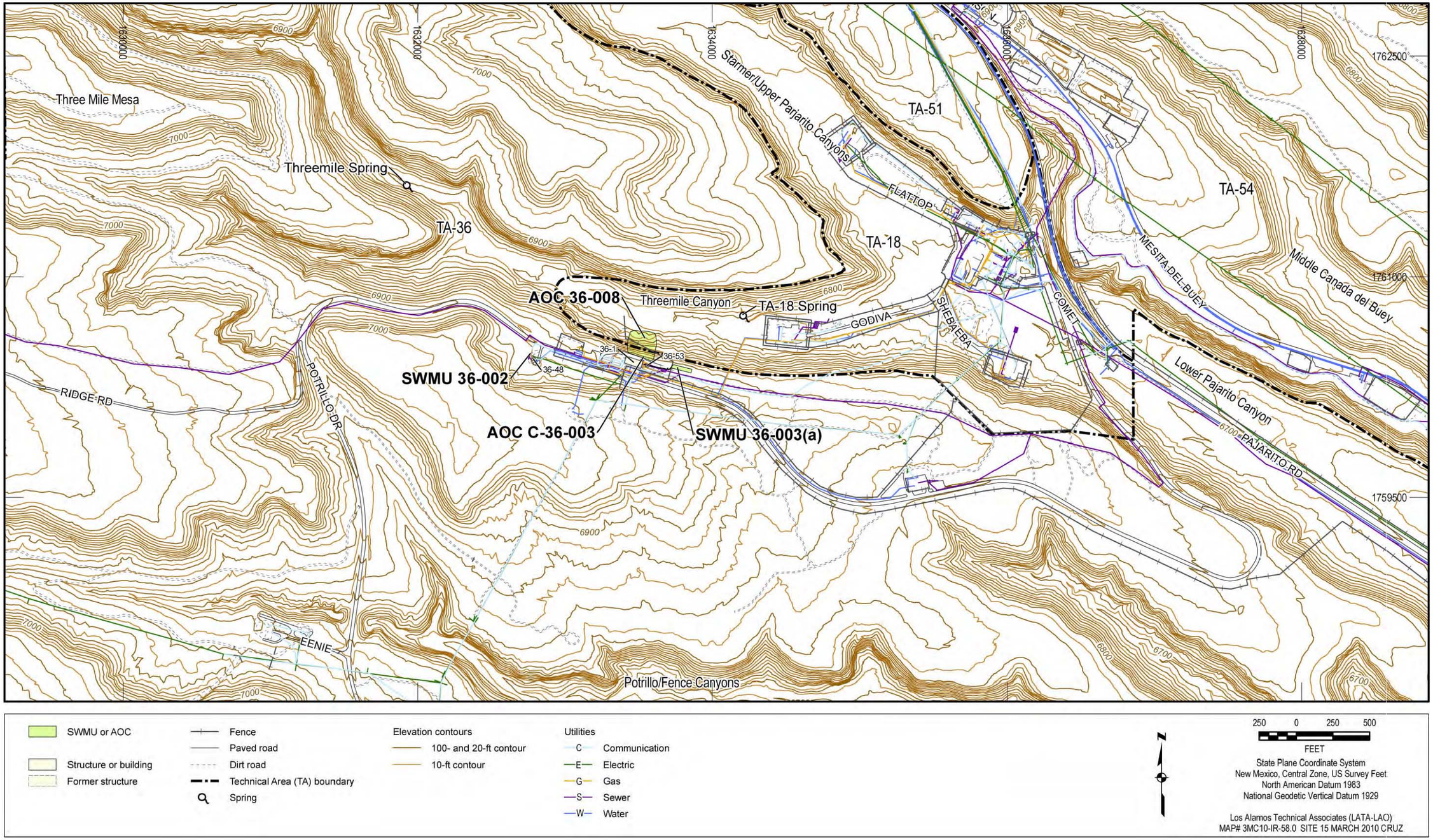


Figure 7.1-1 Site map of TA-36

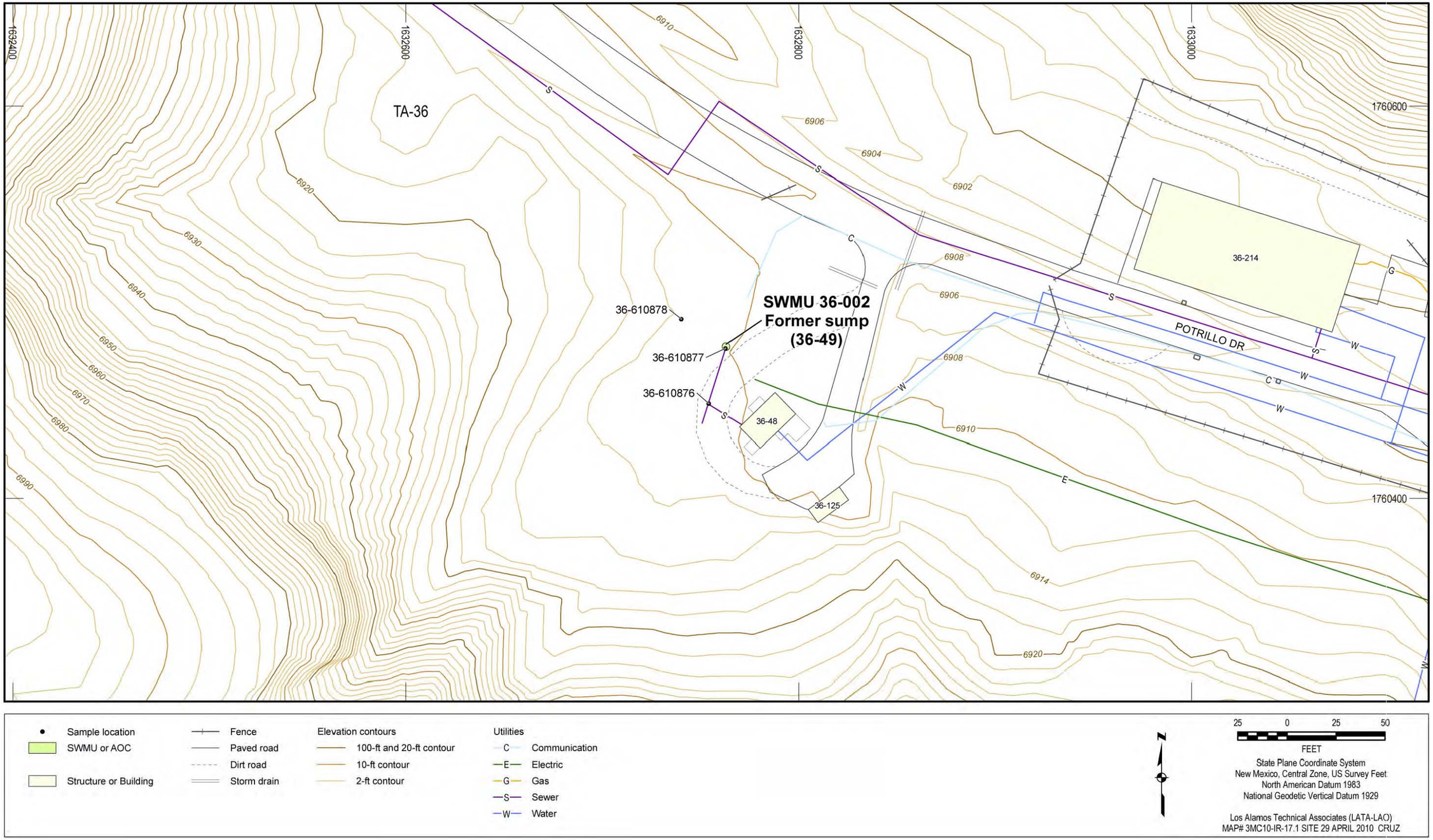


Figure 7.2-1 SWMU 36-002 site map and sampling locations

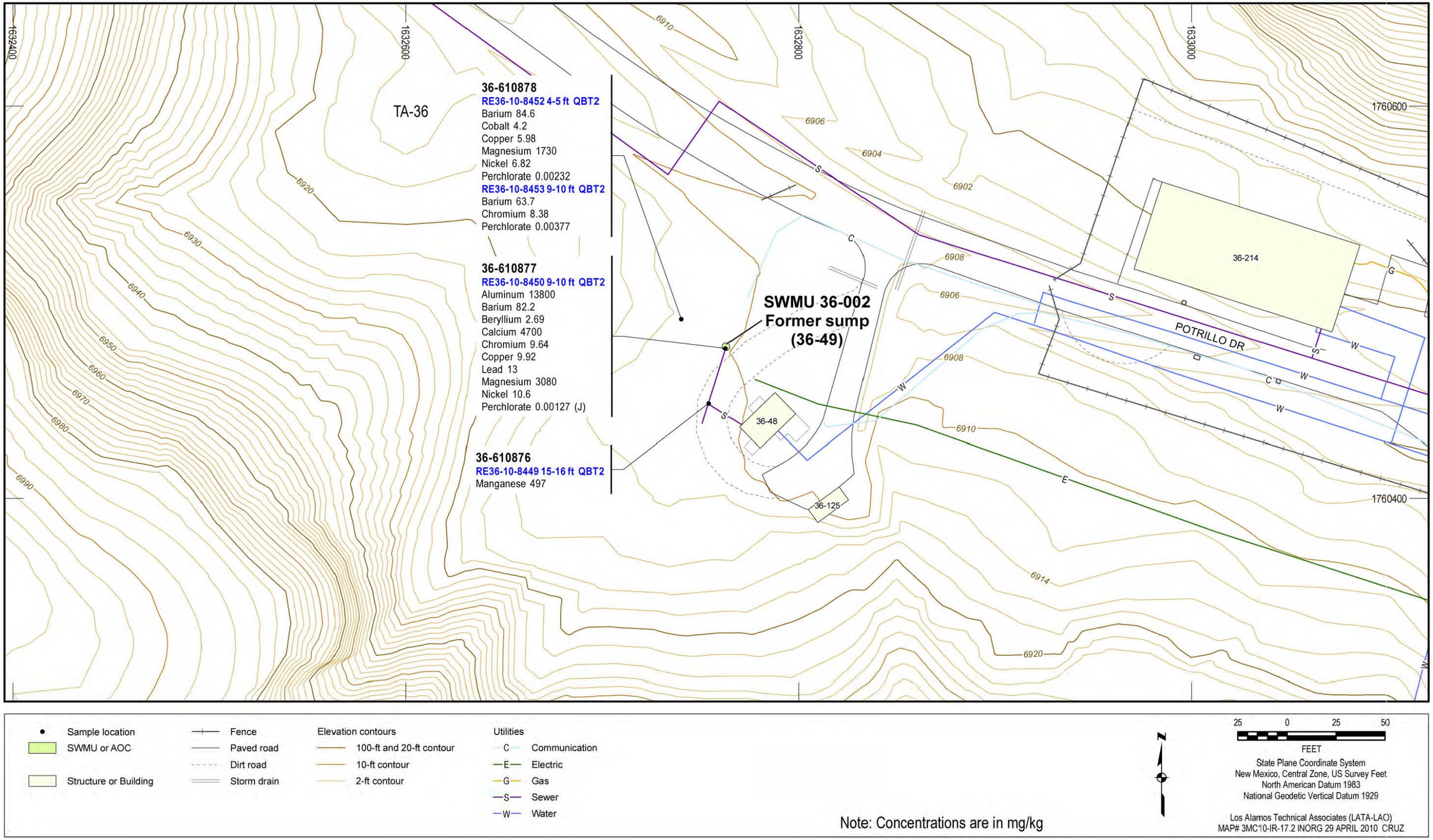


Figure 7.2-2 Inorganic chemicals detected or detected above BVs at SWMU 36-002

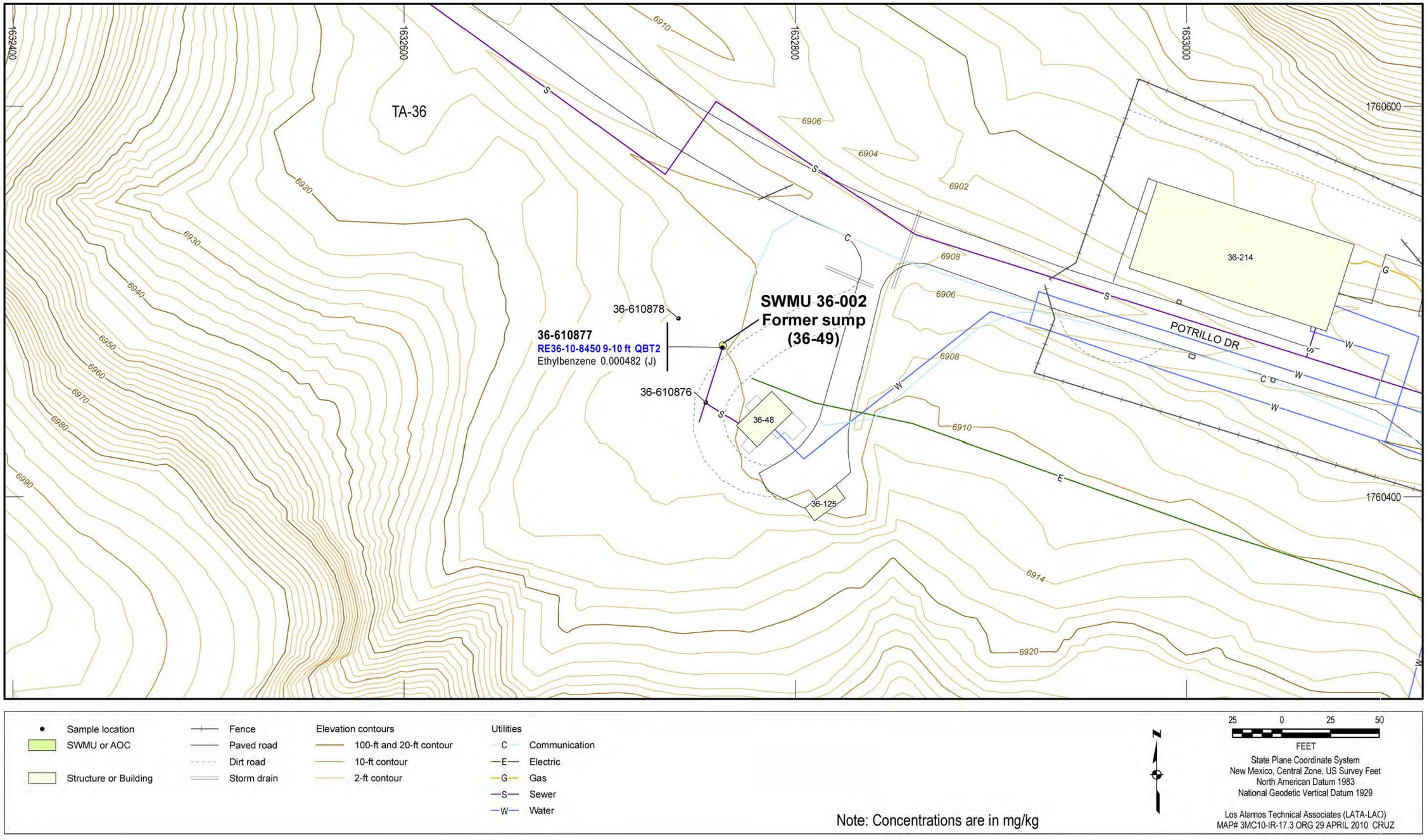


Figure 7.2-3 Organic chemicals detected at SWMU 36-002

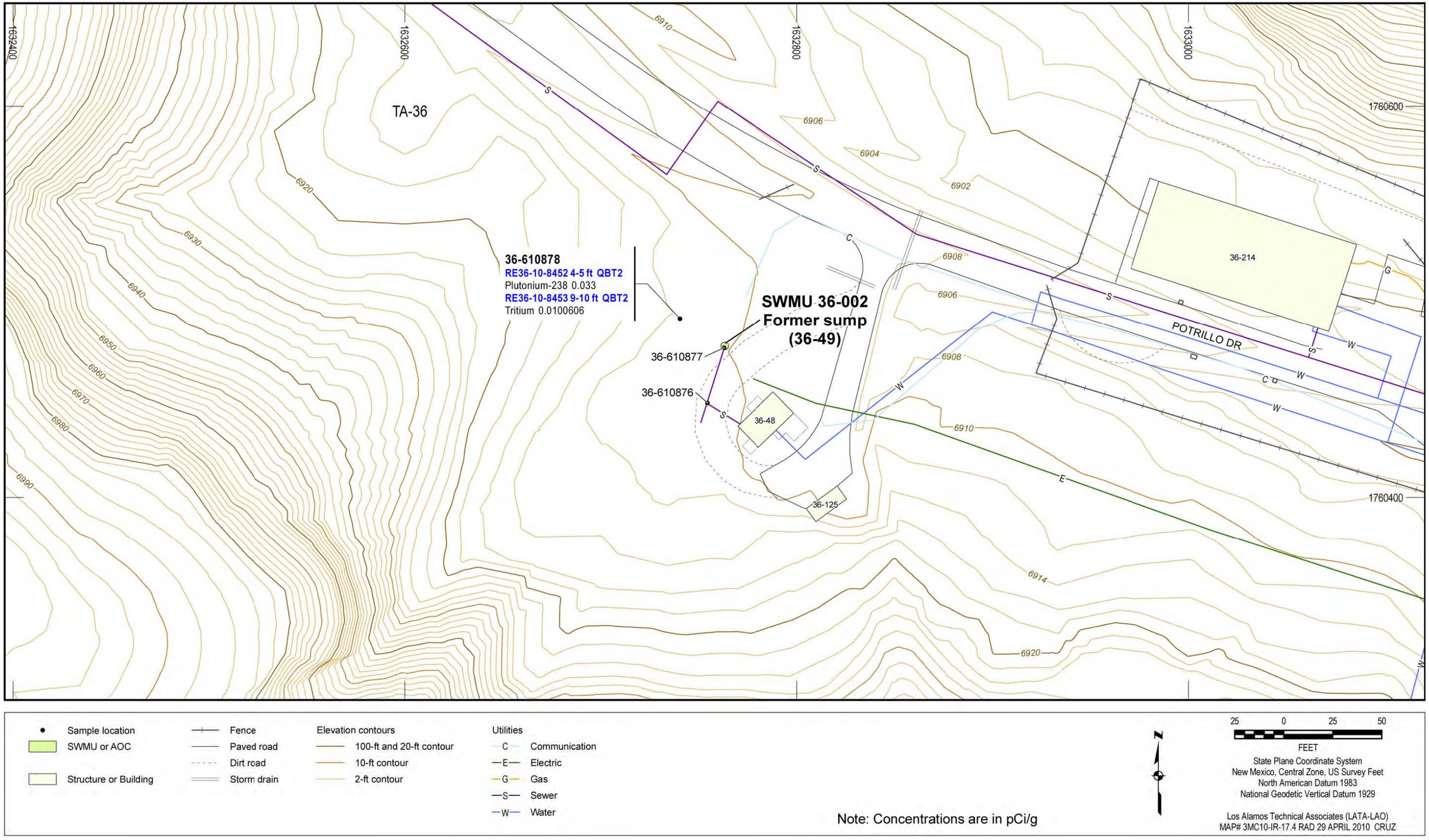


Figure 7.2-4 Radionuclides detected or detected above BVs/FVs at SWMU 36-002

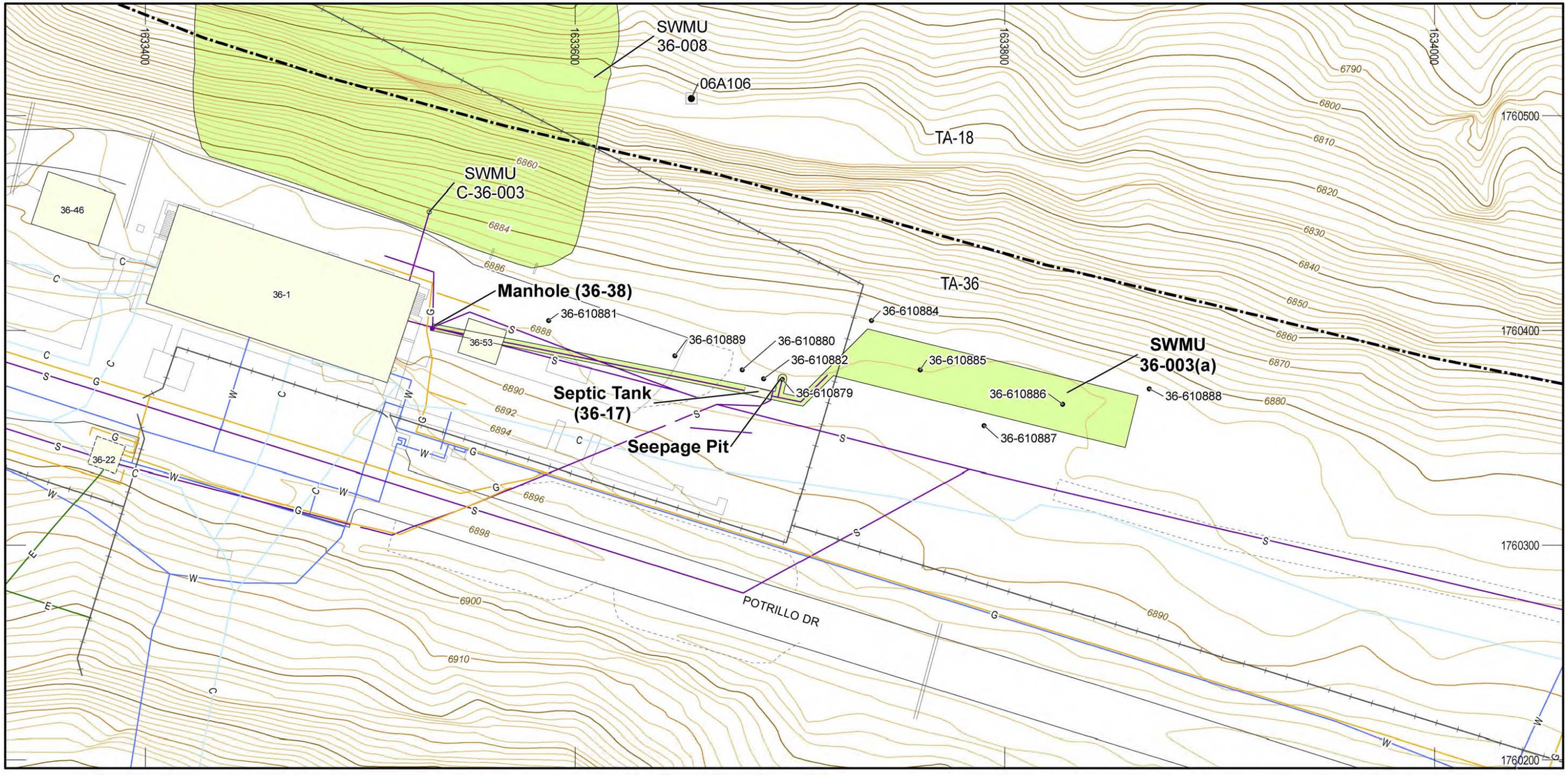


Figure 7.3-1 SWMU 36-003(a) site map and sampling locations

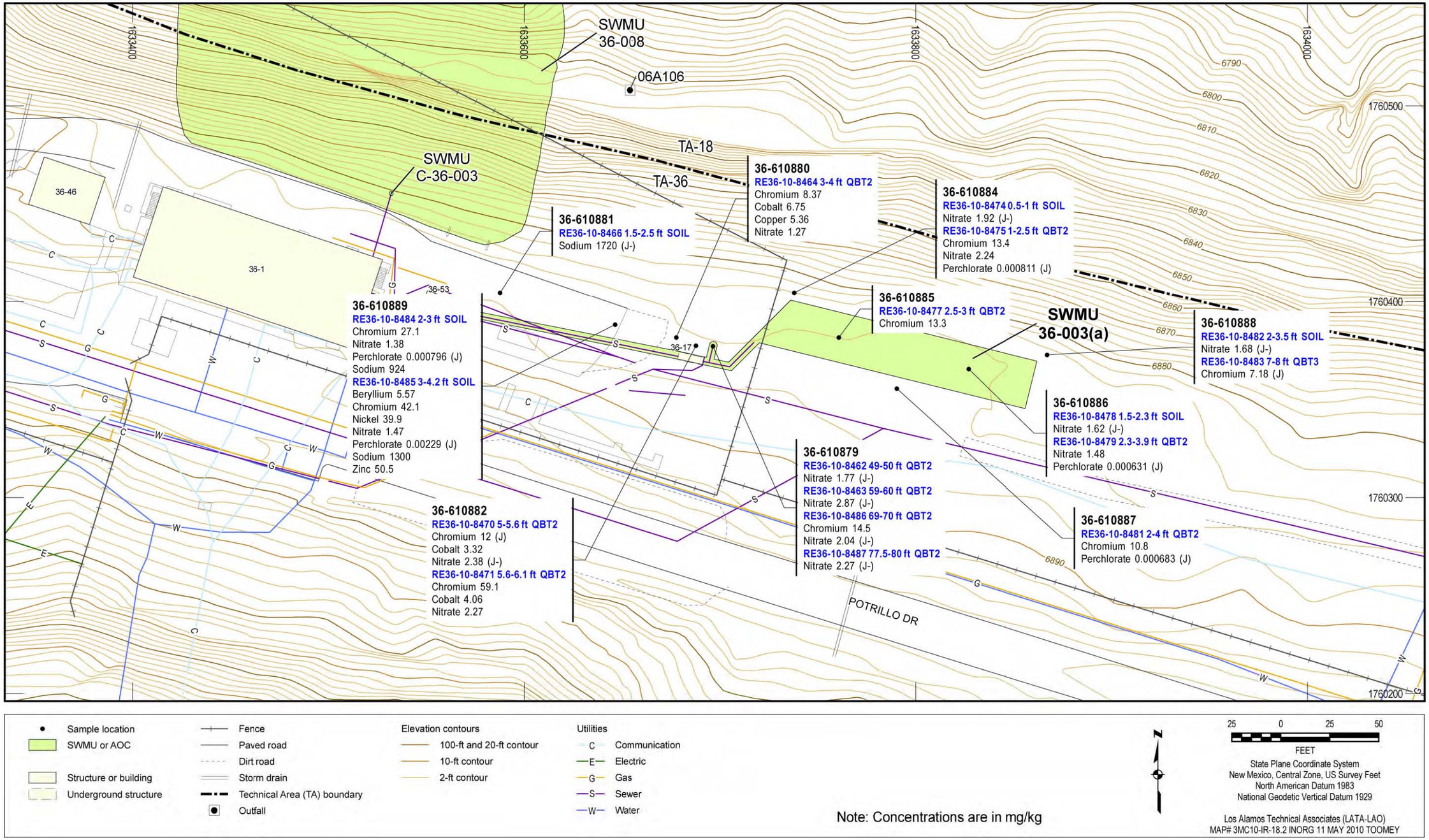


Figure 7.3-2 Inorganic chemicals detected or detected above BVs at SWMU 36-003(a)

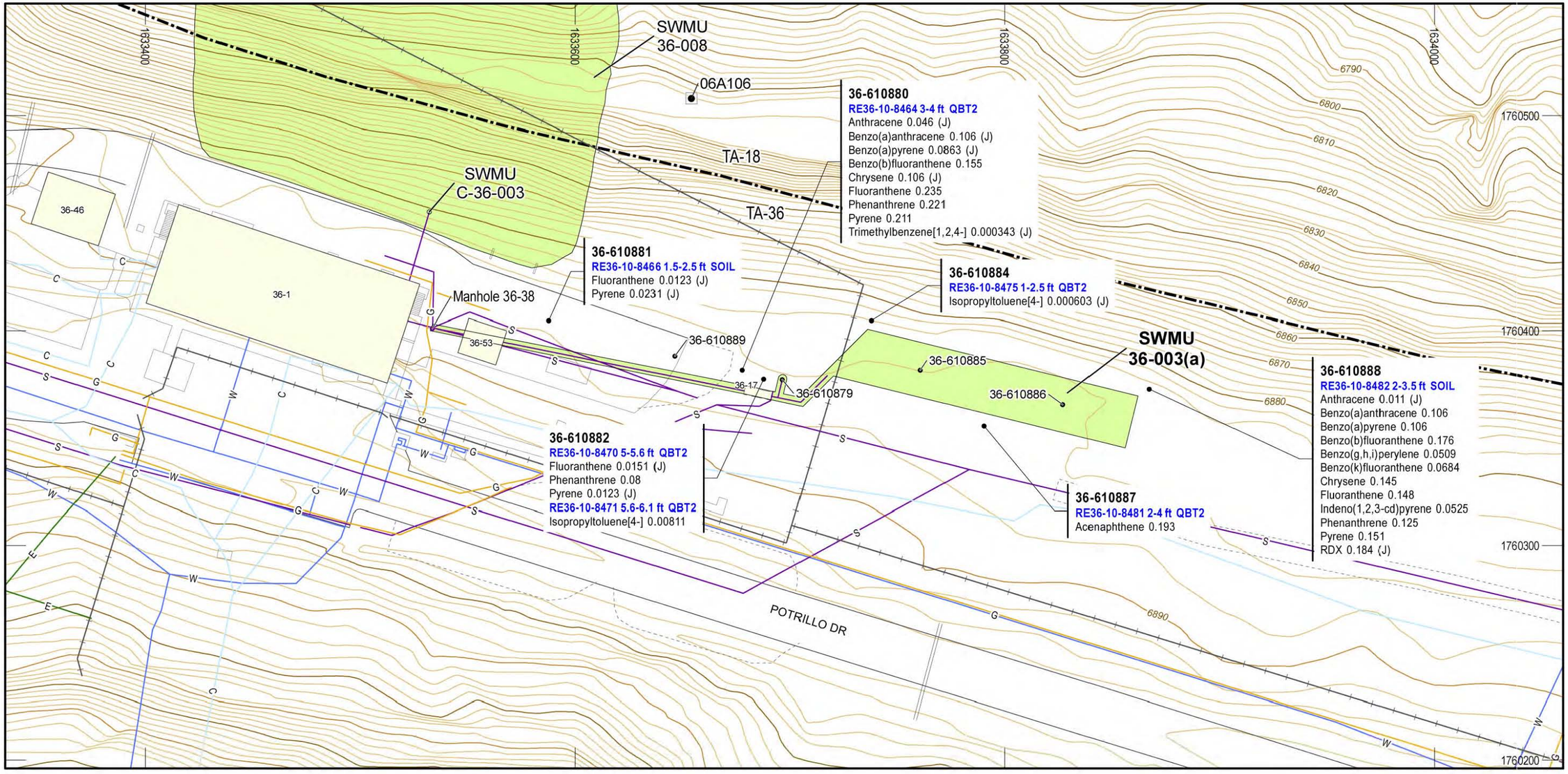


Figure 7.3-3 Organic chemicals detected at SWMU 36-003(a)

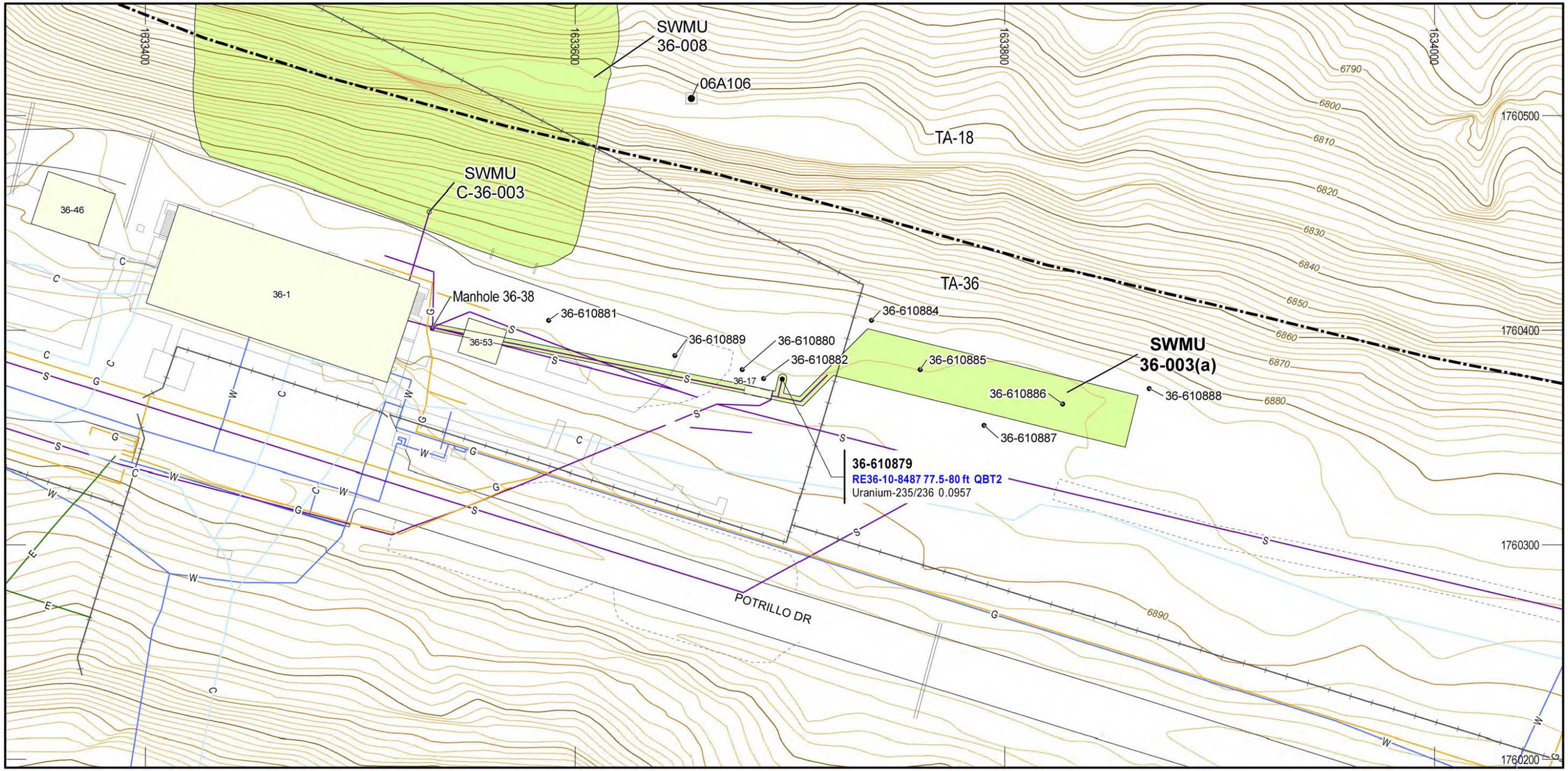


Figure 7.3-4 Radionuclides detected or detected above BVs/FVs at SWMU 36-003(a)

Table 1.0-1
Summary of Threemile Canyon Aggregate Area Sites and Their Status

Site ID Number	Subunit	Site Description	Site Status	Reference/ Report Section
Former TA-12				
Consolidated Unit 12-001(a)-99	SWMU 12-001(a)	Firing pit steel-lined chamber	Under investigation	Report section 4.2
	SWMU 12-001(b)	Firing pit	Under investigation	Report section 4.2
	SWMU 12-002	Potential soil contamination	Under investigation	Report section 4.2
	AOC C-12-005	Former junction box	Under investigation	Report section 4.2
AOC 12-003		A former gas cylinder storage area located on the southern side of the unimproved road and about one mile east of the firing pit (structure 12-4)	NFA approved 01/21/05	EPA 2005, 088464
AOC 12-004(a)		Radiation test facility	Under investigation	Report section 4.3
AOC 12-004(b)		Pipe	Under investigation	Report section 4.4
AOC C-12-001		Potential soil contamination associated with former building	Under investigation	Report section 4.5
AOC C-12-002		Potential soil contamination associated with former building	Under investigation	Report section 4.6
AOC C-12-003		Potential soil contamination associated with former building	Under investigation	Report section 4.7
AOC C-12-004		Potential soil contamination associated with former building	Under investigation	Report section 4.8
AOC C-12-006		A duplicate reporting of one of the elements of AOC 12-004(a)	NFA approved 01/21/05	EPA 2005, 088464
TA-14				
AOC C-14-006		Potential soil contamination associated with former building	Under investigation	Report section 5.2
TA-15				
SWMU 15-004(a)		Firing site C	Deferred per Table IV-2 of the Consent Order	Report section 6.2
AOC 15-004(d)		Firing platforms	Duplicate of 15-004(a)	Report section 6.3
SWMU 15-004(e)		Manhole bunker for electric cables	NFA approved 01/21/05	EPA 2005, 088464

Table 1.0-1 (continued)

Site ID Number	Subunit	Site Description	Site Status	Reference/ Report Location
AOC 15-005(c)		Container storage area (R-41)	Under investigation	Report section 6.4
SWMU 15-006(b)		Ector firing site	Deferred per Table IV-2 of the Consent Order	Report section 6.2
Consolidated Unit 15-006(c)-99	SWMU 15-006(c)	Firing site R-44	Deferred per Table IV-2 of the Consent Order	Report section 6.2
	SWMU 15-008(b)	Surface disposal area	Under investigation	Report section 6.5
Consolidated Unit 15-006(d)-99	SWMU 15-006(d)	Firing site R-45	Deferred per Table IV-2 of the Consent Order	Report section 6.2
	AOC 15-008(g)	Surface disposal area	Under investigation	Report section 6.6
Consolidated Unit 15-007(c)-00	SWMU 15-007(c)	Shaft	Under investigation	Report section 6.7
	SWMU 15-007(d)	Shaft	Under investigation	Report section 6.7
SWMU 15-009(b)		Septic system	Under investigation	Report section 6.8
SWMU 15-009(c)		Septic system	Under investigation	Report section 6.9
AOC 15-009(d)		A building drain on the north side of R-40 (building 15-40)	NFA approved 01/21/05	EPA 2005, 088464
SWMU 15-009(h)		Septic system	Under investigation	Report section 6.10
SWMU 15-010(b)		Settling tank	Under investigation	Report section 6.11
AOC 15-014(f)		A drainline for cooling water from building 15-263 and an associated outfall draining into Threemile Canyon. The outfall discharged once-through cooling water only and was NPDES-permitted (04A121)	NFA approved 01/21/05	EPA 2005, 088464
AOC 15-014(h)		Outfalls from building 15-40	Under investigation	Report section 6.12
SWMU 15-014(m)		An NPDES-permitted outfall that handled non-contact cooling water from building 15-306	Removed from Module VIII of the Hazardous Waste Facility Permit (HWFP), 12/23/98	NMED 1998, 063042

Table 1.0-1 (continued)

Site ID Number	Subunit	Site Description	Site Status	Reference/ Report Location
AOC C-15-003		Pile of black granular material located north of structure 15-45	NFA approved 01/21/05	EPA 2005, 088464
AOC C-15-009		Underground butane storage tank (structure 15-48)	NFA approved 01/21/05	EPA 2005, 088464
TA-18				
SWMU 18-007		Armored vehicle suspected to have been buried west of structure 18-32. Field investi-gations, including an extensive electromagnetic survey, and archival information were unable to verify the burial of the armored vehicle at the suspected locations.	Removed from Module VIII of the HWFP, 5/02/01	NMED 2001, 070010
TA-36				
SWMU 36-002		Former sump	Under investigation	Report section 7.2
SWMU 36-003(a)		Septic system	Under investigation	Report section 7.3
AOC 36-003(d)		Septic system used to serve building 36-1	NFA approved 01/21/05	EPA 2005, 088464
SWMU 36-008		Surface disposal area located near building 36-1	Under investigation	Report section 7.4
SWMU C-36-003		Outfall from building 36-1	Under investigation	Report section 7.5

Note: Shading denotes NFA approved or pending.

Table 2.2-1
Crosswalk of Proposed and Sampled Locations with Surveyed Coordinates

SWMU/AOC/ Consolidated Unit	Sampling Strategy	Location ID	Easting	Northing
Former TA-12				
Consolidated Unit 12-001(a)-99				
SWMU 12-001(a), Firing Pit Steel-Lined Chamber	18 surface and subsurface samples will be collected from 9 locations bounding the firing pit	12-610693	1623054.33	1765567.37
		12-610694	1623021.14	1765564.77
		12-610695	1623016.75	1765601.40
		12-610696	1623040.30	1765587.51
		12-610697	1623070.95	1765627.62
		12-610698	1623072.65	1765549.01
		12-610699	1623078.77	1765578.78
		12-610700	1623102.38	1765585.69
		12-610701	1623062.24	1765600.70
	30 surface and subsurface samples will be collected from 15 locations in the drainage below the firing pit	12-610666	1623111.96	1765414.51
		12-610667	1623202.79	1765280.04
		12-610668	1623461.17	1765094.31
		12-610669	1623077.04	1765508.03
		12-610670	1623159.10	1765343.79
		12-610671	1623240.36	1765244.19
		12-610672	1623356.55	1765185.65
		12-610673	1623402.87	1765141.14
		12-610674	1623457.90	1765027.56
		12-610675	1623471.87	1764971.68
		12-610676	1623501.55	1764913.15
		12-610677	1623513.44	1764847.45
		12-610678	1623501.71	1764796.91
		12-610679	1623490.36	1764651.82
		12-610680	1623527.12	1764615.39
SWMU 12-001(b), Firing Pit	34 surface and subsurface samples will be collected from 17 locations within and bounding the firing site	12-610639	1623139.85	1765618.96
		12-610640	1623226.47	1765570.70
		12-610641	1623215.19	1765555.22
		12-610642	1623228.26	1765557.01
		12-610643	1623176.97	1765572.51
		12-610644	1623227.10	1765611.26
		12-610645	1623228.28	1765543.86
		12-610646	1623190.79	1765508.19
		12-610647	1623129.45	1765501.00
		12-610648	1623194.06	1765447.62
		12-610649	1623266.33	1765501.99

Table 2.2-1 (continued)

SWMU/AOC/ Consolidated Unit	Sampling Strategy	Location ID	Easting	Northing
SWMU 12-001(b), Firing Pit (continued)		12-610650	1623289.03	1765455.73
		12-610651	1623284.34	1765576.11
		12-610652	1623321.74	1765553.49
		12-610653	1623299.19	1765636.85
		12-610654	1623241.96	1765557.04
		12-610655	1623224.08	1765666.72
SWMU 12-002, Potential Soil Contamination	2 surface and subsurface samples will be collected from 1 location beneath the asphalt covering the burn site	12-610787	1623266.88	1765520.59
AOC C-12-005	10 surface and subsurface samples will be collected from 5 locations within and bounding the former junction box footprint	12-610656	1623010.08	1765548.01
		12-610657	1623002.90	1765529.31
		12-610658	1623018.13	1765537.57
		12-610659	1622991.34	1765546.01
		12-610660	1623006.16	1765539.63
AOC 12-004(a), Radiation Test Facility	16 surface and subsurface samples will be collected from 8 locations within and bounding the experiment site	12-610527	1629060.03	1764359.12
		12-610528	1629128.95	1764374.77
		12-610529	1629131.67	1764334.53
		12-610530	1629085.29	1764293.57
		12-610539	1629069.59	1764320.87
		12-610540	1629019.87	1764320.93
		12-610541	1629045.09	1764294.95
		12-610542	1629016.37	1764276.54
	16 surface and subsurface samples will be collected from 8 locations in the drainage below the experiment site	12-610543	1629029.34	1764248.61
		12-610544	1629015.06	1764228.80
		12-610545	1628919.62	1764172.13
		12-610546	1628868.89	1764149.08
		12-610547	1628849.12	1764121.31
		12-610548	1628818.01	1764081.02
		12-610549	1628776.25	1764004.87
		12-610550	1628717.61	1763916.27
AOC 12-004(b), Pipe	6 surface and subsurface samples will be collected from 2 locations beneath the pipe	12-610553	1629086.65	1764388.42
		12-610554	1629062.78	1764391.15
		12-611939	1629102.25	1764382.74
		12-611940	1629099.34	1764384.15
AOC C-12-001, Potential Soil Contamination Associated with Former Building	10 surface and subsurface samples will be collected from 5 locations within and bounding the footprint of the former building	12-610624	1622516.37	1765568.71
		12-610625	1622530.95	1765557.77
		12-610626	1622518.60	1765554.57
		12-610627	1622505.28	1765548.96
		12-610628	1622520.89	1765540.63

Table 2.2-1 (continued)

SWMU/AOC/ Consolidated Unit	Sampling Strategy	Location ID	Easting	Northing
AOC C-12-002, Potential Soil Contamination Associated with Former Building	10 surface and subsurface samples will be collected from 5 locations within and bounding the footprint of the former building	12-610629	1622426.31	1765619.36
		12-610630	1622443.31	1765605.93
		12-610631	1622425.86	1765591.17
		12-610632	1622411.10	1765605.04
		12-610633	1622427.71	1765606.87
AOC C-12-003, Potential Soil Contamination Associated with Former Building	10 surface and subsurface samples will be collected from 5 locations within and bounding the footprint of the former building	12-610634	1622465.20	1765756.92
		12-610635	1622462.64	1765741.67
		12-610636	1622441.92	1765755.53
		12-610637	1622464.55	1765782.89
		12-610638	1622495.32	1765765.08
AOC C-12-004, Potential Soil Contamination Associated with Former Building	10 surface and subsurface samples will be collected from 5 locations within and bounding the footprint of the former building	12-610569	1622410.20	1765646.20
		12-610570	1622410.20	1765631.88
		12-610571	1622410.65	1765619.36
		12-610572	1622425.41	1765631.88
		12-610573	1622394.09	1765630.10
TA-14				
AOC C-14-006, Potential Soil Contamination Associated with Former Building	10 surface and subsurface samples will be collected from 5 locations within and bounding the footprint of the former building	14-610661	1620243.82	1764139.17
		14-610662	1620232.65	1764150.46
		14-610663	1620247.55	1764161.31
		14-610664	1620261.82	1764153.24
		14-610665	1620247.27	1764151.11
TA-15				
AOC 15-004(d), Firing Platform	8 surface and subsurface samples will be collected from 4 locations beyond the historical sampling locations	15-610788	1625743.03	1762292.60
		15-610789	1625784.60	1761965.05
		15-610790	1625414.64	1762168.74
		15-610791	1625856.93	1762085.60
AOC 15-005(c), Container Storage Area	14 surface and subsurface samples will be collected from 7 locations within and bounding the site	15-610558	1625113.94	1762443.66
		15-610559	1625093.11	1762447.34
		15-610560	1625154.78	1762386.49
		15-610561	1625046.54	176467.23
		15-610562	1625096.41	1762497.01
		15-610563	1625170.48	1762457.64
		15-610564	1625133.28	1762412.51
	6 surface and subsurface samples will be collected from 3 locations in the drainage along the road southwest of the storage facility	15-610555	1625276.48	1762300.72
		15-610556	1625234.82	1762327.68
		15-610557	1625193.17	1762355.04

Table 2.2-1 (continued)

SWMU/AOC/ Consolidated Unit	Sampling Strategy	Location ID	Easting	Northing
Consolidated Unit 15-006(c)-99				
SWMU 15-008(b), Surface Disposal Area Associated with Firing Site R-44	112 surface and subsurface samples will be collected from 56 locations within and bounding the disposal area on the mesas top and edge	15-610704	1628295.71	1762609.07
		15-610705	1628343.79	1762525.32
		15-610706	1628458.63	1762656.76
		15-610707	1628241.78	1762657.20
		15-610708	1628491.08	1762703.41
		15-610709	1628193.66	1762655.26
		15-610710	1628638.61	1762698.82
		15-610711	1628593.14	1762575.35
		15-610712	1628599.87	1762705.30
		15-610713	1628541.12	1762622.51
		15-610714	1628442.99	1762701.45
		15-610715	1628445.85	1762570.57
		15-610722	1628243.70	1762516.64
		15-610723	1628243.71	1762561.92
		15-610724	1628297.59	1762566.69
		15-610725	1628343.83	1762611.92
		15-610726	1628392.92	1762610.98
		15-610727	1628397.77	1762527.23
		15-610728	1628493.87	1762571.57
		15-610729	1628493.05	1762618.73
		15-610730	1628493.99	1762661.06
		15-610731	1628294.70	1762657.20
		15-610732	1628346.72	1762656.21
		15-610733	1628240.83	1762696.63
		15-610734	1628195.98	1762692.89
		15-610735	1628593.85	1762487.46
		15-610736	1628700.92	1762490.69
		15-610737	1628494.97	1762533.02
		15-610738	1628649.90	1762538.84
		15-610739	1628544.98	1762537.87
		15-610740	1628646.06	1762625.37
		15-610741	1628693.24	1762671.63
		15-610742	1628691.52	1762718.90
		15-610743	1628585.98	1762667.22
		15-610744	1628545.00	1762704.39
		15-610745	1628694.23	1762582.12
		15-610746	1628382.00	1762656.98
		15-610747	1628389.09	1762699.55

Table 2.2-1 (continued)

SWMU/AOC/ Consolidated Unit	Sampling Strategy	Location ID	Easting	Northing
SWMU 15-008(b), Surface Disposal Area Associated with Firing Site R-44 (continued)		15-610748	1628343.84	1762698.56
		15-610749	1628296.10	1762698.60
		15-610750	1628439.09	1762613.89
		15-610751	1628443.94	1762529.20
		15-610752	1628347.69	1762567.68
		15-610753	1628393.87	1762569.56
		15-610754	1628290.33	1762527.97
		15-610755	1628243.67	1762609.05
		15-610756	1628200.41	1762606.18
		15-610757	1628147.42	1762691.82
		15-610758	1628096.44	1762648.54
		15-610759	1628142.63	1762607.12
		15-610760	1628047.34	1762602.31
		15-610761	1627952.05	1762596.52
		15-610762	1627953.94	1762676.45
		15-610763	1627998.25	1762644.68
		15-610764	1628045.01	1762663.89
		15-610765	1628095.45	1762686.05
	52 surface and subsurface samples will be collected from 26 locations in drainages below the disposal area	15-610716	1628539.22	1762980.64
		15-610717	1628441.04	1762867.04
		15-610718	1628335.15	1762936.33
		15-610719	1628012.74	1762966.04
		15-610720	1627965.53	1762800.62
		15-610721	1628708.60	1762910.38
		15-610766	1628630.67	1762870.90
		15-610767	1628636.46	1762920.88
		15-610768	1628540.22	1762869.96
		15-610769	1628538.12	1762920.53
		15-610770	1628539.22	1762802.54
		15-610771	1628432.35	1762987.40
		15-610772	1628444.89	1762799.66
		15-610773	1628436.23	1762932.55
		15-610774	1628339.97	1762792.92
		15-610775	1628338.04	1762868.96
		15-610776	1628238.89	1762790.99
		15-610777	1628240.82	1762872.81
		15-610778	1628334.85	1762989.51
		15-610779	1628117.60	1762796.77
		15-610780	1628119.94	1762754.29

Table 2.2-1 (continued)

SWMU/AOC/ Consolidated Unit	Sampling Strategy	Location ID	Easting	Northing
SWMU 15-008(b) (continued)		15-610781	1628106.06	1762880.54
		15-610782	1628249.50	1762945.01
		15-610783	1627994.41	1762885.30
		15-610784	1628102.18	1762974.87
		15-610785	1628252.39	1763001.79
Consolidated Unit 15-006(d)-99				
AOC 15-008(g), Surface Disposal Area Associated with Firing Site R-45	8 surface and subsurface samples will be collected from 4 locations within and bounding the disposal area	15-610565	1625989.00	1763324.19
		15-610566	1625976.26	1763303.82
		15-610567	1625967.77	1763314.65
		15-610568	1625977.69	1763293.37
Consolidated Unit 15-006(d)-99				
SWMU 15-007(c), Shaft	36 surface and subsurface samples will be collected from 3 locations bounding the location of the shaft	15-610816	1626281.25	1763382.57
		15-610817	1626378.95	1763397.73
		15-610818	1626363.82	1763300.67
	48 surface and subsurface samples will be collected from 24 locations on a 20-ft grid bounding the concrete pad around the shaft	15-610792	1626317.09	1763353.73
		15-610793	1626364.89	1763371.26
		15-610794	1626352.35	1763335.13
		15-610796	1626328.36	1763345.27
		15-610797	1626325.18	1763364.98
		15-610798	1626333.63	1763376.56
		15-610799	1626345.23	1763368.12
		15-610800	1626319.92	1763334.04
		15-610801	1626331.51	1763325.28
		15-610802	1626339.93	1763337.20
		15-610803	1626343.10	1763317.52
		15-610804	1626362.75	1763320.35
		15-610805	1626351.55	1763328.78
		15-610806	1626358.80	1763336.06
		15-610807	1626336.78	1763356.89
		15-610808	1626346.64	1763358.62
		15-610809	1626356.83	1763360.01
		15-610810	1626360.45	1763350.00
		15-610811	1626371.21	1763331.92
		15-610812	1626367.68	1763351.58
		15-610813	1626379.29	1763343.53
		15-610814	1626338.17	1763347.04
SWMU 15-007(d), Shaft	24 surface and subsurface samples will be collected from 2 locations bounding the location of the shaft	15-610819	1626334.42	1763196.54
		15-610820	1626441.47	1763238.15

Table 2.2-1 (continued)

SWMU/AOC/ Consolidated Unit	Sampling Strategy	Location ID	Easting	Northing
SWMU 15-009(b), Septic System	8 surface and subsurface samples will be collected from 4 locations beneath the inlet line, tank inlet, tank, tank outlet	15-610835	1626002.95	1763138.32
		15-610830	1626007.05	1763130.37
		15-610834	1626009.62	1763124.97
		15-610836	1626012.71	1763120.09
	4 surface and subsurface samples will be collected from 1 location adjacent to and downgradient of the seepage pit	15-610837	1626049.26	1763055.28
	8 surface and subsurface samples will be collected from 4 locations in the drainage below the outfall	15-610829	1626053.10	1763047.84
		15-610831	1626135.36	1762952.61
		15-610832	1626110.44	1762983.85
		15-610833	1626090.18	1763022.09
SWMU 15-009(c), Septic System	8 surface and subsurface samples will be collected from 4 locations beneath the inlet line, tank inlet, tank, tank outlet	15-610844	1628351.20	1762402.97
		15-610841	1628372.69	1762351.08
		15-610843	1628376.54	1762343.38
		15-610842	1628379.43	1762335.68
	26 surface and subsurface samples will be collected from 13 locations in the drainage below the outfall	15-610838	1628448.09	1762250.85
		15-610839	1628606.61	1762120.05
		15-610840	1628823.21	1761974.73
		15-610845	1628473.40	1762225.66
		15-610846	1628516.99	1762176.81
		15-610847	1628563.71	1762146.62
		15-610848	1628641.23	1762075.76
		15-610849	1628682.67	1762042.08
		15-610850	1628730.80	1762024.78
		15-610851	1628776.99	1761995.89
		15-610852	1628852.07	1761925.67
		15-610853	1628889.61	1761896.71
		15-610854	1628918.13	1761877.84
SWMU 15-009(h), Septic System	8 surface and subsurface samples will be collected from 4 locations beneath the inlet line, tank inlet, tank, tank outlet	15-610855	1626956.54	1761916.63
		15-610856	1626958.82	1761915.03
		15-610857	1626363.65	1761883.91
		No sample under the tank		
	8 surface and subsurface samples will be collected from 4 locations within and bounding the drainfield	15-610858	1626970.29	1761883.91
		15-610859	1626983.02	1761876.16
		15-610860	1626970.5	1761865.51
		15-610861	1626962.69	1761879.39

Table 2.2-1 (continued)

SWMU/AOC/ Consolidated Unit	Sampling Strategy	Location ID	Easting	Northing
SWMU 15-010(b), Settling Tank	8 surface and subsurface samples will be collected from 4 locations beneath the inlet line, tank inlet, tank, tank outlet	No samples collected		
	18 surface and subsurface samples will be collected from 9 locations in the drainage below the outfall	15-610863	1623123.50	1764411.53
		15-610864	1623037.28	1764397.31
		15-610866	1623117.21	1764600.96
		15-610867	1623018.95	1764368.23
		15-610868	1622992.41	1764321.46
		15-610869	1622952.25	1764270.51
		15-610870	1622904.38	1764242.58
		15-610871	1622844.18	1764143.74
		15-610872	1622863.88	1764187.41
AOC 15-014(h), Outfalls from Building 15-40	6 subsurface samples will be collected from 3 locations beneath the drainlines	15-610503	1623261.99	1763319.07
		15-610522	1623525.66	1763174.35
		15-610526	1623475.95	1763191.80
	46 surface and subsurface samples will be collected from 23 locations in the drainage at and below the three outfalls	15-610501	1623300.42	1763374.32
		15-610502	1623323.50	1763414.21
		15-610504	1623640.35	1763366.65
		15-610505	1623589.99	1763444.29
		15-610506	1623676.01	1763542.86
		15-610507	1623362.64	1763461.79
		15-610508	1623379.43	1763512.80
		15-610509	1623543.81	1763331.72
		15-610510	1623559.20	1763389.05
		15-610511	1623598.36	1763305.79
		15-610512	1623646.61	1763500.21
		15-610513	1623689.33	1763412.80
		15-610514	1623717.99	1763603.08
		15-610515	1623727.10	1763452.66
		15-610516	1623766.94	1763497.42
		15-610517	1623886.54	1763624.75
		15-610518	1623818.01	1763537.99
		15-610519	1623852.23	1763576.46
		15-610520	1623455.68	1763591.14
		15-610521	1623417.25	1763555.48
		15-610523	1623529.82	1763291.83
		15-610524	1623578.77	1763269.40
		15-610525	1623557.83	1763231.68

Table 2.2-1 (continued)

SWMU/AOC/ Consolidated Unit	Sampling Strategy	Location ID	Easting	Northing
TA-36				
SWMU 36-002, Former Sump	4 subsurface samples will be collected from 2 locations at the location of and 10 ft downgradient of the former sump	36-610876	1632754.289	1760448.304
		36-610877	1632762.811	1760476.512
	2 subsurface samples will be collected from 1 location at the location of the inlet line	36-610878	1632740.185	1760491.498
SWMU 36-003(a), Septic System	10 surface and subsurface samples will be collected from 5 locations beneath the inlet line, tank inlet, tank, tank outlet	36-610881	1633587.673	1760404.681
		36-610889	1633646.36	1760388.19
		36-610880	1633677.745	1760381.677
		36-610882	1633687.825	1760377.428
	4 subsurface samples will be collected from 1 location adjacent to and downgradient of the seepage pit	36-610879	1633696.418	1760377.196
	10 subsurface samples will be collected from 5 locations within and bounding the drainfield	36-610884	1633737.96	1760404.67
		36-610885	1633760.66	1760381.68
		36-610886	1633826.982	1760365.524
		36-610887	1633790.21	1760355.55
		36-610888	1633867.186	1760372.78
SWMU 36-008, Surface Disposal Area Located Near Building 36-1	100 surface and subsurface samples will be collected from 50 locations within and bounding the disposal area	36-610574	1633474.29	1760483.75
		36-610575	1633562.31	1760458.60
		36-610576	1633520.15	1760511.11
		36-610579	1633440.68	1760481.40
		36-610580	1633479.36	1760644.12
		36-610581	1633442.66	1760573.72
		36-610582	1633528.18	1760543.39
		36-610583	1633426.94	1760540.70
		36-610584	1633640.71	1760608.79
		36-610585	1633558.96	1760445.62
		36-610586	1633683.65	1760608.35
		36-610587	1633567.86	1760474.87
		36-610588	1633505.35	1760478.20
		36-610589	1633579.60	1760436.75
		36-610590	1633579.51	1760524.54
		36-610591	1633612.42	1760535.00
		36-610592	1633639.58	1760504.59
		36-610593	1633575.99	1760495.95
		36-610594	1633628.43	1760564.61

Table 2.2-1 (continued)

SWMU/AOC/ Consolidated Unit	Sampling Strategy	Location ID	Easting	Northing
SWMU 36-008, Surface Disposal Area Located Near Building 36-1 (continued)		36-610595	1633485.75	1760518.88
		36-610596	1633605.83	1760569.02
		36-610597	1633679.59	1760559.71
		36-610598	1633603.18	1760618.85
		36-610599	1633612.20	1760426.75
		36-610600	1633622.60	1760462.29
		36-610601	1633586.72	1760450.46
		36-610602	1633590.05	1760466.73
		36-610603	1633386.21	1760495.64
		36-610604	1633394.77	1760528.13
		36-610605	1633413.95	1760489.34
		36-610606	1633422.14	1760521.84
		36-610607	1633442.11	1760495.58
		36-610608	1633472.20	1760472.01
		36-610609	1633448.77	1760512.96
		36-610610	1633501.14	1760465.01
		36-610611	1633423.28	1760672.41
		36-610612	1633462.00	1760663.83
		36-610613	1633425.47	1760615.78
		36-610614	1633415.04	1760582.56
		36-610615	1633477.06	1760562.71
		36-610616	1633455.42	1760605.80
		36-610617	1633479.15	1760593.51
		36-610618	1633512.91	1760589.44
		36-610619	1633497.83	1760566.15
		36-610620	1633540.40	1760581.03
		36-610621	1633554.33	1760634.87
		36-610622	1633532.41	1760640.60
		36-610623	1633453.20	1760530.35
SWMU C-36-003, Outfall from Building 36-1	16 surface and subsurface samples will be collected from 8 locations in the drainage at and below the outfall	36-610821	1633569.34	1760578.44
		36-610822	1633576.36	1760600.24
		36-610823	1633568.14	1760635.05
		36-610824	1633549.00	1760502.24
		36-610825	1633531.89	1760456.78
		36-610826	1633543.08	1760484.12
		36-610827	1633537.90	1760468.58
		36-610828	1633561.54	1760537.05

Table 2.2-2
Field-Screening Results for Samples Collected at Threemile Canyon Aggregate

SWMU/AOC	Location ID	Start Depth (ft)	End Depth (ft)	Sample ID	Alpha Reading (dpm)*	Beta/ Gamma Reading (dpm)
12-001(a)	12-610693	0	0.5	RE12-10-7838	≤16	≤2050
12-001(a)	12-610693	2	2.7	RE12-10-7839	≤16	≤2190
12-001(a)	12-610694	0	0.7	RE12-10-7840	≤11	≤2430
12-001(a)	12-610694	3	3.4	RE12-10-7841	≤33	≤1886
12-001(a)	12-610695	0	1	RE12-10-7842	≤55	≤2250
12-001(a)	12-610695	2	2.4	RE12-10-7843	≤11	≤2100
12-001(a)	12-610696	0	0.75	RE12-10-7844	≤22	≤2230
12-001(a)	12-610696	2	2.6	RE12-10-7845	≤77	≤2260
12-001(a)	12-610697	0	0.5	RE12-10-7846	≤50	≤2080
12-001(a)	12-610697	1.4	1.8	RE12-10-7847	≤16	≤1990
12-001(a)	12-610698	0	0.75	RE12-10-7848	≤22	≤1845
12-001(a)	12-610698	2	3	RE12-10-7849	≤16	≤2140
12-001(a)	12-610699	0	0.5	RE12-10-7850	≤16	≤1824
12-001(a)	12-610699	2	2.5	RE12-10-7851	≤71	≤1928
12-001(a)	12-610700	0	0.6	RE12-10-7852	≤33	≤1893
12-001(a)	12-610700	2	3.5	RE12-10-7853	≤55	≤1879
12-001(a)	12-610701	0	0.6	RE12-10-7854	≤16	≤2010
12-001(a)	12-610701	2	3	RE12-10-7855	≤71	≤2000
12-001(a)-99	12-610666	0	0.5	RE12-10-7697	≤22	≤2090
12-001(a)-99	12-610666	1	2	RE12-10-7698	≤38	≤2030
12-001(a)-99	12-610667	0	0.5	RE12-10-7699	≤27	≤2480
12-001(a)-99	12-610667	1	2	RE12-10-7700	≤11	≤2750
12-001(a)-99	12-610668	0	1	RE12-10-7701	≤11	≤2450
12-001(a)-99	12-610668	1	1.9	RE12-10-7702	≤11	≤2770
12-001(a)-99	12-610669	0	0.7	RE12-10-7703	≤33	≤2010
12-001(a)-99	12-610669	1	2.1	RE12-10-7704	≤44	≤2220
12-001(a)-99	12-610670	0	0.7	RE12-10-7705	≤38	≤2100
12-001(a)-99	12-610670	1	2	RE12-10-7706	≤22	≤2390
12-001(a)-99	12-610671	0	0.3	RE12-10-7707	≤33	≤2460
12-001(a)-99	12-610671	1	2	RE12-10-7708	≤44	≤2790
12-001(a)-99	12-610672	0	0.8	RE12-10-7709	≤27	≤3060
12-001(a)-99	12-610672	1	2.8	RE12-10-7710	≤44	≤2930
12-001(a)-99	12-610673	0	0.9	RE12-10-7711	≤22	≤2550
12-001(a)-99	12-610673	1	1.9	RE12-10-7712	≤27	≤2670
12-001(a)-99	12-610674	0	0.1	RE12-10-7713	≤33	≤2210
12-001(a)-99	12-610674	1	2	RE12-10-7714	≤44	≤2640
12-001(a)-99	12-610675	0	0.6	RE12-10-7715	≤33	≤2220

Table 2.2-2 (continued)

SWMU/AOC	Location ID	Start Depth (ft)	End Depth (ft)	Sample ID	Alpha Reading (dpm)*	Beta/ Gamma Reading (dpm)
12-001(a)-99	12-610675	1	2	RE12-10-7716	≤16	≤2460
12-001(a)-99	12-610676	0	0.3	RE12-10-7717	≤22	≤2430
12-001(a)-99	12-610676	1	1.5	RE12-10-7718	≤11	≤3110
12-001(a)-99	12-610677	0	0.7	RE12-10-7719	≤27	≤2230
12-001(a)-99	12-610678	0	0.2	RE12-10-7721	≤38	≤2810
12-001(a)-99	12-610679	0	0.5	RE12-10-7856	≤33	≤2350
12-001(a)-99	12-610679	1	1.8	RE12-10-7857	≤33	≤2550
12-001(a)-99	12-610680	0	0.5	RE12-10-8096	≤5	≤2280
12-001(a)-99	12-610680	1	2	RE12-10-8097	≤55	≤2430
12-001(b)	12-610639	0	0.5	RE12-10-7617	≤22	≤1755
12-001(b)	12-610639	2	3	RE12-10-7618	≤38	≤7618
12-001(b)	12-610640	0	1	RE12-10-7619	≤66	≤2010
12-001(b)	12-610640	2	2.8	RE12-10-7620	≤38	≤1707
12-001(b)	12-610641	0	1	RE12-10-7621	≤38	≤2090
12-001(b)	12-610641	2	3.2	RE12-10-7622	≤38	≤1990
12-001(b)	12-610642	0	0.5	RE12-10-7623	≤66	≤1852
12-001(b)	12-610642	2	2.6	RE12-10-7624	≤11	≤2000
12-001(b)	12-610643	0	0.6	RE12-10-7625	≤44	≤1803
12-001(b)	12-610643	2	3	RE12-10-7626	≤27	≤1686
12-001(b)	12-610644	0	0.5	RE12-10-7627	≤11	≤1838
12-001(b)	12-610644	2	2.5	RE12-10-7628	≤60	≤1879
12-001(b)	12-610645	0	0.4	RE12-10-7629	≤33	≤2080
12-001(b)	12-610645	2	2.7	RE12-10-7630	≤88	≤2140
12-001(b)	12-610646	0	0.6	RE12-10-7631	≤16	≤2030
12-001(b)	12-610646	2	3	RE12-10-7632	≤27	≤2050
12-001(b)	12-610647	0	0.7	RE12-10-7633	≤16	2060
12-001(b)	12-610647	2	3	RE12-10-7634	≤27	≤2280
12-001(b)	12-610648	0	0.7	RE12-10-7635	≤22	≤2340
12-001(b)	12-610648	2	3	RE12-10-7636	≤55	≤2390
12-001(b)	12-610649	0	0.6	RE12-10-7638	≤22	≤2450
12-001(b)	12-610649	2	3	RE12-10-7637	≤33	≤2330
12-001(b)	12-610650	0	0.7	RE12-10-7639	≤27	≤2320
12-001(b)	12-610650	2	3	RE12-10-7640	≤16	≤2520
12-001(b)	12-610651	0	0.9	RE12-10-7641	≤38	≤2110
12-001(b)	12-610651	2	3	RE12-10-7642	≤55	≤2180
12-001(b)	12-610652	0	0.5	RE12-10-7643	≤44	≤2170
12-001(b)	12-610652	2	3	RE12-10-7644	≤11	≤2350
12-001(b)	12-610653	0	1	RE12-10-7645	≤38	≤1969

Table 2.2-2 (continued)

SWMU/AOC	Location ID	Start Depth (ft)	End Depth (ft)	Sample ID	Alpha Reading (dpm)*	Beta/ Gamma Reading (dpm)
12-001(b)	12-610653	2	3.6	RE12-10-7646	≤16	≤2340
12-001(b)	12-610654	0	1	RE12-10-7647	≤33	≤2270
12-001(b)	12-610654	2	3	RE12-10-7648	≤22	≤2610
12-001(b)	12-610655	0	0.7	RE12-10-7649	≤55	≤2060
12-001(b)	12-610655	1.5	2.5	RE12-10-7650	≤16	≤1969
12-002	12-610787	0.4	0.8	RE12-10-8094	≤33	≤2320
12-002	12-610787	2	3.3	RE12-10-8095	≤33	≤2170
12-004(a)	12-610527	0	0.5	RE12-10-7236	≤16	≤2020
12-004(a)	12-610527	1	2	RE12-10-7237	≤16	≤2580
12-004(a)	12-610528	0	0.5	RE12-10-7238	≤11	≤1962
12-004(a)	12-610528	1	2.6	RE12-10-7239	≤22	≤2250
12-004(a)	12-610529	0	0.6	RE12-10-7240	≤27	≤2100
12-004(a)	12-610529	1	2	RE12-10-7241	≤55	≤2450
12-004(a)	12-610530	0	1	RE12-10-7242	≤5	≤1997
12-004(a)	12-610530	1	2	RE12-10-7243	≤49	≤2260
12-004(a)	12-610539	0	0.7	RE12-10-7252	≤22	≤2050
12-004(a)	12-610539	1	2	RE12-10-7253	≤27	≤2570
12-004(a)	12-610540	0	0.6	RE12-10-7254	≤27	≤2440
12-004(a)	12-610540	1	1.9	RE12-10-7255	≤27	≤2320
12-004(a)	12-610541	0	0.6	RE12-10-7256	≤11	≤2490
12-004(a)	12-610541	1	2	RE12-10-7257	≤33	≤2610
12-004(a)	12-610542	0	0.8	RE12-10-7258	≤33	≤2590
12-004(a)	12-610542	1	1.7	RE12-10-7259	≤27	≤2640
12-004(a)	12-610543	0	1	RE12-10-7260	≤38	≤2690
12-004(a)	12-610543	1	1.8	RE12-10-7261	≤22	≤2480
12-004(a)	12-610544	0	0.6	RE12-10-7262	≤16	≤2500
12-004(a)	12-610544	1	1.7	RE12-10-7263	≤16	≤2430
12-004(a)	12-610545	0	0.9	RE12-10-7264	≤22	≤2700
12-004(a)	12-610545	1	3	RE12-10-7265	≤22	≤3150
12-004(a)	12-610546	0	0.5	RE12-10-7266	≤16	≤2710
12-004(a)	12-610546	1	2	RE12-10-7267	≤38	≤3000
12-004(a)	12-610547	0	0.7	RE12-10-7268	≤22	≤3030
12-004(a)	12-610547	1	1.9	RE12-10-7269	≤22	≤2920
12-004(a)	12-610548	0	0.8	RE12-10-7270	≤16	≤2860
12-004(a)	12-610548	1	1.8	RE12-10-7271	≤27	≤2860
12-004(a)	12-610549	0	0.3	RE12-10-7272	≤16	≤2550
12-004(a)	12-610549	1	1.3	RE12-10-7273	≤44	≤2810
12-004(a)	12-610550	0	0.3	RE12-10-7274	≤33	≤2820

Table 2.2-2 (continued)

SWMU/AOC	Location ID	Start Depth (ft)	End Depth (ft)	Sample ID	Alpha Reading (dpm)*	Beta/ Gamma Reading (dpm)
12-004(b)	12-610553	0	0.75	RE12-10-7288	≤16	≤2190
12-004(b)	12-610553	2.2	3	RE12-10-7289	≤44	≤2200
12-004(b)	12-610553	5	6	RE12-10-7290	≤38	≤2560
12-004(b)	12-610554	0	1	RE12-10-7291	≤60	≤2300
12-004(b)	12-610554	2	3	RE12-10-7292	≤33	≤2700
12-004(b)	12-610554	5	6	RE12-10-7293	≤38	≤2300
12-004(b)	12-611939	0	0.5	RE12-10-15442	≤25	≤796
12-004(b)	12-611939	2	2.5	RE12-10-15443	≤25	≤796
12-004(b)	12-611939	5	5.4	RE12-10-15444	≤25	≤796
12-004(b)	12-611940	0	0.5	RE12-10-15445	≤25	≤796
12-004(b)	12-611940	2	2.5	RE12-10-15446	≤25	≤796
12-004(b)	12-611940	5	5.5	RE12-10-15447	≤25	≤796
C-12-001	12-610624	0	0.5	RE12-10-7551	≤33	≤2190
C-12-001	12-610624	2	3	RE12-10-7552	≤22	≤2400
C-12-001	12-610625	0	0.5	RE12-10-7553	≤27	≤2050
C-12-001	12-610625	2	3	RE12-10-7554	≤44	≤2330
C-12-001	12-610626	0	0.5	RE12-10-7555	≤33	≤2470
C-12-001	12-610626	2.1	3	RE12-10-7556	≤27	≤2410
C-12-001	12-610627	0	0.5	RE12-10-7557	≤60	≤2070
C-12-001	12-610627	2.4	3	RE12-10-7558	≤33	≤2390
C-12-001	12-610628	0	1	RE12-10-7561	≤16	≤2030
C-12-001	12-610628	2	3	RE12-10-7562	≤22	≤3360
C-12-002	12-610629	0	0.5	RE12-10-7580	≤38	≤1969
C-12-002	12-610629	2	2.75	RE12-10-7581	≤49	≤2280
C-12-002	12-610630	0	0.75	RE12-10-7582	≤22	≤1983
C-12-002	12-610630	2	3	RE12-10-7583	≤49	≤2080
C-12-002	12-610631	0	0.5	RE12-10-7584	≤33	≤1942
C-12-002	12-610631	2	3	RE12-10-7585	≤49	≤2120
C-12-002	12-610632	0	0.75	RE12-10-7586	≤22	≤2230
C-12-002	12-610632	2	3	RE12-10-7587	≤16	≤2010
C-12-002	12-610633	0	0.5	RE12-10-7590	≤22	≤2110
C-12-002	12-610633	2	3	RE12-10-7591	≤44	≤2160
C-12-003	12-610634	0	0.6	RE12-10-7596	≤49	≤2530
C-12-003	12-610634	2.5	3	RE12-10-7597	≤49	≤2160
C-12-003	12-610635	0	0.5	RE12-10-7598	≤33	≤2280
C-12-003	12-610635	2	2.9	RE12-10-7599	≤33	≤2190
C-12-003	12-610636	0	0.5	RE12-10-7600	≤22	≤1859
C-12-003	12-610636	2	3.2	RE12-10-7601	≤60	≤2700

Table 2.2-2 (continued)

SWMU/AOC	Location ID	Start Depth (ft)	End Depth (ft)	Sample ID	Alpha Reading (dpm)*	Beta/ Gamma Reading (dpm)
C-12-003	12-610637	0	0.5	RE12-10-7602	≤22	≤2120
C-12-003	12-610637	1.9	2.5	RE12-10-7603	≤49	≤2730
C-12-003	12-610638	0	0.5	RE12-10-7606	≤55	≤2080
C-12-003	12-610638	2	2.7	RE12-10-7607	≤66	≤2490
C-12-004	12-610569	0	0.5	RE12-10-7351	≤16	≤2120
C-12-004	12-610569	2	3	RE12-10-7352	≤38	≤2300
C-12-004	12-610570	0	0.75	RE12-10-7353	≤22	≤1959
C-12-004	12-610570	1.75	2.7	RE12-10-7354	≤27	≤2290
C-12-004	12-610571	0	0.75	RE12-10-7355	≤22	≤2180
C-12-004	12-610571	2	2.5	RE12-10-7356	≤33	≤2220
C-12-004	12-610572	0	0.75	RE12-10-7357	≤6	≤1976
C-12-004	12-610572	2	2.5	RE12-10-7358	≤60	≤2320
C-12-004	12-610573	0	0.5	RE12-10-7359	≤38	≤2060
C-12-004	12-610573	2	2.5	RE12-10-7360	≤27	≤2220
C-12-005	12-610656	0	0.5	RE12-10-7663	≤11	≤1935
C-12-005	12-610656	2	2.9	RE12-10-7664	≤11	≤2280
C-12-005	12-610657	0	0.5	RE12-10-7665	≤60	≤1949
C-12-005	12-610657	2	3.6	RE12-10-7666	≤49	≤2050
C-12-005	12-610658	0	0.5	RE12-10-7667	≤16	≤2040
C-12-005	12-610658	2.5	2.9	RE12-10-7668	≤44	≤2260
C-12-005	12-610659	0	0.4	RE12-10-7669	≤49	≤1872
C-12-005	12-610659	2	3	RE12-10-7670	≤99	≤1949
C-12-005	12-610660	0	0.6	RE12-10-7671	≤27	≤1769
C-12-005	12-610660	2	2.5	RE12-10-7672	≤38	≤2190
C-14-006	14-610661	0	0.5	RE14-10-7679	≤16	≤1852
C-14-006	14-610661	2	3.1	RE14-10-7680	≤11	≤1845
C-14-006	14-610662	0	0.5	RE14-10-7681	≤16	≤2080
C-14-006	14-610662	2	4.5	RE14-10-7682	≤38	≤2090
C-14-006	14-610664	0	0.5	RE14-10-7685	≤33	≤1935
C-14-006	14-610664	2	4	RE14-10-7686	≤22	≤2100
C-14-006	14-610665	0	0.8	RE14-10-7687	≤16	≤1769
C-14-006	14-610665	2.4	3.5	RE14-10-7688	≤16	≤2000
15-004(d)	15-610788	0	0.5	RE15-10-8112	≤44	≤1990
15-004(d)	15-610788	2	3	RE15-10-8113	≤60	≤1962
15-004(d)	15-610789	0	0.5	RE15-10-8114	≤33	≤1624
15-004(d)	15-610789	2	3	RE15-10-8115	≤16	≤1658
15-004(d)	15-610790	0	0.5	RE15-10-8116	≤33	≤1872
15-004(d)	15-610790	2	3	RE15-10-8117	≤71	≤1976

Table 2.2-2 (continued)

SWMU/AOC	Location ID	Start Depth (ft)	End Depth (ft)	Sample ID	Alpha Reading (dpm)*	Beta/ Gamma Reading (dpm)
15-004(d)	15-610791	0	0.5	RE15-10-8118	≤38	≤2140
15-004(d)	15-610791	2	3	RE15-10-8119	≤33	≤2140
15-005(c)	15-610555	0	0.5	RE15-10-7300	≤27	≤2080
15-005(c)	15-610555	1	2	RE15-10-7301	≤27	≤1810
15-005(c)	15-610556	0	0.7	RE15-10-7302	≤27	≤2010
15-005(c)	15-610556	1	3	RE15-10-7303	≤49	≤1962
15-005(c)	15-610557	0	0.5	RE15-10-7304	≤27	≤2230
15-005(c)	15-610557	1	2	RE15-10-7305	≤16	≤1983
15-005(c)	15-610558	0	0.5	RE15-10-7306	≤22	≤2260
15-005(c)	15-610558	2	3	RE15-10-7307	≤16	≤1907
15-005(c)	15-610559	0	0.5	RE15-10-7308	≤11	≤1976
15-005(c)	15-610559	2	3.3	RE15-10-7309	≤16	≤1824
15-005(c)	15-610560	0	0.5	RE15-10-7310	≤16	≤2110
15-005(c)	15-610560	2	4	RE15-10-7311	≤38	≤1955
15-005(c)	15-610561	0	0.5	RE15-10-7312	≤5	≤1845
15-005(c)	15-610561	2	3	RE15-10-7313	≤5	≤1790
15-005(c)	15-610562	0	0.5	RE15-10-7314	≤11	≤1734
15-005(c)	15-610562	2	3	RE15-10-7315	≤27	≤1637
15-005(c)	15-610563	0	0.7	RE15-10-7316	≤0	≤1513
15-005(c)	15-610563	2	3	RE15-10-7317	≤22	≤1935
15-005(c)	15-610564	0	0.7	RE15-10-7318	≤5	≤2080
15-005(c)	15-610564	2	3	RE15-10-7319	≤5	≤1686
15-007(c)	15-610792	0	0.5	RE15-10-8126	≤5	≤1796
15-007(c)	15-610792	1	2	RE15-10-8127	≤11	≤1575
15-007(c)	15-610793	0	0.5	RE15-10-8128	≤16	≤1637
15-007(c)	15-610793	1	2	RE15-10-8129	≤11	≤1707
15-007(c)	15-610794	0	0.5	RE15-10-8130	≤27	≤1762
15-007(c)	15-610794	1	2	RE15-10-8131	≤16	≤1658
15-007(c)	15-610796	0	0.5	RE15-10-8134	≤27	≤1755
15-007(c)	15-610796	1	2	RE15-10-8135	≤0	≤1955
15-007(c)	15-610797	0	0.5	RE15-10-8136	≤27	≤1665
15-007(c)	15-610797	1	1.5	RE15-10-8137	≤22	≤1610
15-007(c)	15-610798	0	0.5	RE15-10-8138	≤16	≤1582
15-007(c)	15-610798	1	2	RE15-10-8139	≤22	≤1444
15-007(c)	15-610799	0	0.5	RE15-10-8140	≤11	≤1437
15-007(c)	15-610799	1	2	RE15-10-8141	≤27	≤1596
15-007(c)	15-610800	0	0.5	RE15-10-8142	≤11	≤1368
15-007(c)	15-610800	1	2	RE15-10-8143	≤11	≤1520

Table 2.2-2 (continued)

SWMU/AOC	Location ID	Start Depth (ft)	End Depth (ft)	Sample ID	Alpha Reading (dpm)*	Beta/ Gamma Reading (dpm)
15-007(c)	15-610801	0	0.5	RE15-10-8144	≤5	≤1423
15-007(c)	15-610801	1	2	RE15-10-8145	≤16	≤1624
15-007(c)	15-610802	0	0.5	RE15-10-8147	≤11	≤1534
15-007(c)	15-610802	1	2	RE15-10-8146	≤5	≤1707
15-007(c)	15-610803	0	0.5	RE15-10-8148	≤11	≤1575
15-007(c)	15-610803	1	2.1	RE15-10-8149	≤11	≤1748
15-007(c)	15-610804	0	0.5	RE15-10-8151	≤16	≤1796
15-007(c)	15-610804	1	2	RE15-10-8150	≤11	≤1672
15-007(c)	15-610805	0	0.5	RE15-10-8153	≤0	≤1755
15-007(c)	15-610805	1	2	RE15-10-8152	≤5	≤1527
15-007(c)	15-610806	0	0.5	RE15-10-8154	≤5	≤1610
15-007(c)	15-610806	1	2	RE15-10-8155	≤27	≤1589
15-007(c)	15-610807	0	0.5	RE15-10-8156	≤22	≤1555
15-007(c)	15-610807	1	2	RE15-10-8157	≤16	≤1561
15-007(c)	15-610808	0	0.5	RE15-10-8158	≤11	≤1589
15-007(c)	15-610808	1	2	RE15-10-8159	≤22	≤1651
15-007(c)	15-610809	0	0.5	RE15-10-8160	≤16	≤1548
15-007(c)	15-610809	1	1.5	RE15-10-8161	≤11	≤1845
15-007(c)	15-610810	0	0.5	RE15-10-8162	≤5	≤1796
15-007(c)	15-610810	1	2	RE15-10-8163	≤22	≤1527
15-007(c)	15-610811	0	0.5	RE15-10-8164	≤11	≤1783
15-007(c)	15-610811	1	2	RE15-10-8165	≤11	≤1748
15-007(c)	15-610812	0	0.5	RE15-10-8166	≤27	≤1720
15-007(c)	15-610812	1	1.5	RE15-10-8167	≤33	≤1561
15-007(c)	15-610813	0	0.5	RE15-10-8168	≤5	≤1430
15-007(c)	15-610813	1	1.5	RE15-10-8169	≤5	≤1513
15-007(c)	15-610814	0	0.5	RE15-10-8170	≤16	≤1714
15-007(c)	15-610814	1	2	RE15-10-8171	≤16	≤1561
15-007(c)	15-610816	3.5	5	RE15-10-8174	≤33	≤1748
15-007(c)	15-610816	17.5	20	RE15-10-8175	≤33	≤2120
15-007(c)	15-610816	34	35	RE15-10-8176	≤16	≤1935
15-007(c)	15-610816	49	50	RE15-10-8177	≤16	≤1783
15-007(c)	15-610816	65	66	RE15-10-8178	≤5	≤1755
15-007(c)	15-610816	79	80	RE15-10-8179	≤20	≤643
15-007(c)	15-610816	94	95	RE15-10-8180	≤23.1	≤1410
15-007(c)	15-610816	109	110	RE15-10-8181	≤10	≤2700
15-007(c)	15-610816	124	125	RE15-10-8182	≤10	≤1053
15-007(c)	15-610816	139	140	RE15-10-8183	≤3	≤1680

Table 2.2-2 (continued)

SWMU/AOC	Location ID	Start Depth (ft)	End Depth (ft)	Sample ID	Alpha Reading (dpm)*	Beta/ Gamma Reading (dpm)
15-007(c)	15-610816	154	155	RE15-10-8184	≤24	≤1397
15-007(c)	15-610816	169	170	RE15-10-8185	≤20	≤1397
15-007(c)	15-610816	181.5	182.5	RE15-10-8210	≤24	≤1397
15-007(c)	15-610817	4	5	RE15-10-8186	≤14	≤2040
15-007(c)	15-610817	18	20	RE15-10-8187	≤.009	≤2121
15-007(c)	15-610817	34	35	RE15-10-8188	≤33	≤224
15-007(c)	15-610817	49	50	RE15-10-8189	≤48	≤2980
15-007(c)	15-610817	64	65	RE15-10-8190	≤72	≤427
15-007(c)	15-610817	79	80	RE15-10-8191	≤24	≤2230
15-007(c)	15-610817	94	95	RE15-10-8192	≤24	≤2210
15-007(c)	15-610817	109	110	RE15-10-8193	≤19	≤2280
15-007(c)	15-610817	124	126	RE15-10-8194	≤38	≤2660
15-007(c)	15-610817	139	140	RE15-10-8195	≤19	≤2350
15-007(c)	15-610817	156	157.5	RE15-10-8196	≤24	≤2410
15-007(c)	15-610817	171.5	172.5	RE15-10-8197	≤38	≤322
15-007(c)	15-610817	181.5	182.5	RE15-10-8211	≤28	≤223
15-007(c)	15-610818	4	5	RE15-10-8198	≤14	≤330
15-007(c)	15-610818	19	20	RE15-10-8199	≤28	≤212
15-007(c)	15-610818	34	35	RE15-10-8200	≤9	≤240
15-007(c)	15-610818	49	50	RE15-10-8201	≤24	≤215
15-007(c)	15-610818	63.5	65	RE15-10-8202	≤19	≤420
15-007(c)	15-610818	79	80	RE15-10-8203	≤22	≤282
15-007(c)	15-610818	94	95	RE15-10-8204	≤6.5	≤257
15-007(c)	15-610818	109	110	RE15-10-8205	≤45	≤258
15-007(c)	15-610818	124	130	RE15-10-8206	≤68	≤280
15-007(c)	15-610818	139	140	RE15-10-8207	≤59	≤640
15-007(c)	15-610818	154	155	RE15-10-8208	≤32	≤275
15-007(c)	15-610818	169	170	RE15-10-8209	≤5.9	≤275
15-007(c)	15-610818	180	182.5	RE15-10-8212	≤71	≤264
15-007(d)	15-610819	4	5	RE15-10-8240	≤23	≤2280
15-007(d)	15-610819	19	20	RE15-10-8241	≤47	≤2600
15-007(d)	15-610819	33	35	RE15-10-8242	≤17	≤2400
15-007(d)	15-610819	49	50	RE15-10-8243	≤53	≤2510
15-007(d)	15-610819	64	65	RE15-10-8244	≤89	≤2370
15-007(d)	15-610819	79	80	RE15-10-8245	≤47	≤2450
15-007(d)	15-610819	104	105	RE15-10-8246	≤41	≤2230
15-007(d)	15-610819	109	110	RE15-10-8247	≤36	≤2112
15-007(d)	15-610819	123.5	125	RE15-10-8248	≤46	≤2110

Table 2.2-2 (continued)

SWMU/AOC	Location ID	Start Depth (ft)	End Depth (ft)	Sample ID	Alpha Reading (dpm)*	Beta/ Gamma Reading (dpm)
15-007(d)	15-610819	138.5	140	RE15-10-8249	≤10	≤1989
15-007(d)	15-610819	154	155	RE15-10-8250	≤36	≤1963
15-007(d)	15-610819	169	170	RE15-10-8251	≤36	≤2140
15-007(d)	15-610819	181.5	182.5	RE15-10-8264	≤5	≤1956
15-007(d)	15-610820	4	5	RE15-10-8252	≤25	≤2070
15-007(d)	15-610820	18	20	RE15-10-8253	≤20	≤2040
15-007(d)	15-610820	34	35	RE15-10-8254	≤25	≤1845
15-007(d)	15-610820	48.5	50	RE15-10-8255	≤25	≤2.10
15-007(d)	15-610820	63.5	65	RE15-10-8256	≤15	≤1898
15-007(d)	15-610820	79	80	RE15-10-8257	≤30	≤2.9
15-007(d)	15-610820	93.5	95	RE15-10-8258	≤30	≤2.15
15-007(d)	15-610820	108.5	110	RE15-10-8259	≤15	≤2.9
15-007(d)	15-610820	124	125	RE15-10-8260	≤15	≤1898
15-007(d)	15-610820	138.5	140	RE15-10-8261	≤41	≤1891
15-007(d)	15-610820	153.5	155	RE15-10-8262	≤51	≤2100
15-007(d)	15-610820	168.5	170	RE15-10-8263	≤51	≤2120
15-007(d)	15-610820	178	180	RE15-10-8265	≤30	≤2040
15-008(b)	15-610704	0	0.5	RE15-10-7869	≤16	≤3000
15-008(b)	15-610704	1	2.5	RE15-10-7870	≤27	≤2250
15-008(b)	15-610705	0	0.5	RE15-10-7871	≤27	≤3210
15-008(b)	15-610705	2	3	RE15-10-7872	≤27	≤2380
15-008(b)	15-610706	0	0.5	RE15-10-7873	≤33	≤3520
15-008(b)	15-610706	2	3.5	RE15-10-7874	≤33	≤2680
15-008(b)	15-610707	0	0.5	RE15-10-7875	≤55	≤3510
15-008(b)	15-610707	2.5	3.5	RE15-10-7876	≤33	≤2550
15-008(b)	15-610708	0	0.5	RE15-10-7877	≤16	≤2730
15-008(b)	15-610708	3	4	RE15-10-7878	≤38	≤2670
15-008(b)	15-610709	0	0.5	RE15-10-7879	≤16	≤2520
15-008(b)	15-610709	2.8	3.6	RE15-10-7880	≤44	≤2120
15-008(b)	15-610710	0	0.5	RE15-10-7881	≤5	≤1990
15-008(b)	15-610710	1	1.6	RE15-10-7882	≤38	≤2010
15-008(b)	15-610711	0	0.4	RE15-10-7883	≤52	≤2120
15-008(b)	15-610711	3	3.8	RE15-10-7884	≤91	≤2410
15-008(b)	15-610712	0	0.4	RE15-10-7885	≤22	≤2260
15-008(b)	15-610712	3	3.5	RE15-10-7886	≤5	≤2130
15-008(b)	15-610713	0	0.6	RE15-10-7887	≤27	≤1534
15-008(b)	15-610713	3	4	RE15-10-7888	≤33	≤1928
15-008(b)	15-610714	0	0.5	RE15-10-7889	≤33	≤3080

Table 2.2-2 (continued)

SWMU/AOC	Location ID	Start Depth (ft)	End Depth (ft)	Sample ID	Alpha Reading (dpm)*	Beta/ Gamma Reading (dpm)
15-008(b)	15-610714	2.5	3.5	RE15-10-7890	≤60	≤2640
15-008(b)	15-610715	0	0.5	RE15-10-7891	≤33	≤4490
15-008(b)	15-610715	3	4	RE15-10-7892	≤49	≤2430
15-008(b)	15-610716	0	0.5	RE15-10-7893	≤11	≤1755
15-008(b)	15-610716	1	2	RE15-10-7894	≤5	≤1617
15-008(b)	15-610717	0	0.5	RE15-10-7895	≤27	≤2130
15-008(b)	15-610717	1	2	RE15-10-7896	≤27	≤2280
15-008(b)	15-610718	0	0.5	RE15-10-7897	≤44	≤2020
15-008(b)	15-610718	1	2	RE15-10-7898	≤27	≤1997
15-008(b)	15-610719	0	0.5	RE15-10-7899	≤16	≤1955
15-008(b)	15-610719	1	1.5	RE15-10-7900	≤22	≤1817
15-008(b)	15-610720	0	0.5	RE15-10-7901	≤5	≤1776
15-008(b)	15-610720	1	2	RE15-10-7902	≤22	≤1962
15-008(b)	15-610721	0	0.5	RE15-10-7903	≤5	≤2230
15-008(b)	15-610721	1	1.9	RE15-10-7904	≤16	≤2050
15-008(b)	15-610722	0	0.5	RE15-10-7905	≤16	≤3840
15-008(b)	15-610722	3	3.8	RE15-10-7906	≤22	≤2590
15-008(b)	15-610723	0	0.5	RE15-10-7907	≤44	≤3760
15-008(b)	15-610723	2.9	3.5	RE15-10-7908	≤16	≤6710
15-008(b)	15-610724	0	0.5	RE15-10-7909	≤38	≤5730
15-008(b)	15-610724	3	3.6	RE15-10-7910	≤27	≤3730
15-008(b)	15-610725	0	0.3	RE15-10-7911	≤55	≤8130
15-008(b)	15-610725	3	4	RE15-10-7912	≤16	≤4810
15-008(b)	15-610726	0	0.3	RE15-10-7913	≤27	≤2030
15-008(b)	15-610726	2	3	RE15-10-7914	≤22	≤2390
15-008(b)	15-610727	0	0.4	RE15-10-7915	≤27	≤5480
15-008(b)	15-610727	2	3.1	RE15-10-7916	≤38	≤2480
15-008(b)	15-610728	0	0.6	RE15-10-7917	≤38	≤2350
15-008(b)	15-610728	1.3	3.6	RE15-10-7918	≤55	≤2260
15-008(b)	15-610729	0	0.5	RE15-10-7919	≤49	≤3290
15-008(b)	15-610729	2	3.3	RE15-10-7920	≤27	≤2680
15-008(b)	15-610730	0	0.5	RE15-10-7921	≤38	≤2920
15-008(b)	15-610730	2	3	RE15-10-7922	≤66	≤2600
15-008(b)	15-610731	0	0.5	RE15-10-7923	≤22	≤2830
15-008(b)	15-610731	2	3	RE15-10-7924	≤22	≤2470
15-008(b)	15-610732	0	0.5	RE15-10-7925	≤16	≤4400
15-008(b)	15-610732	2	2.8	RE15-10-7926	≤5	≤3700
15-008(b)	15-610733	0	0.5	RE15-10-7927	≤16	≤3280

Table 2.2-2 (continued)

SWMU/AOC	Location ID	Start Depth (ft)	End Depth (ft)	Sample ID	Alpha Reading (dpm)*	Beta/ Gamma Reading (dpm)
15-008(b)	15-610733	3	4	RE15-10-7928	≤27	≤2210
15-008(b)	15-610734	0	0.5	RE15-10-7929	≤49	≤2030
15-008(b)	15-610734	2.5	3.5	RE15-10-7930	≤27	≤2240
15-008(b)	15-610735	0	0.5	RE15-10-7931	≤39	≤2370
15-008(b)	15-610735	3	4	RE15-10-7932	≤39	≤2490
15-008(b)	15-610736	0	0.5	RE15-10-7933	≤39	≤2440
15-008(b)	15-610736	3	3.9	RE15-10-7934	≤85	≤2880
15-008(b)	15-610737	0	0.3	RE15-10-7935	≤104	≤4540
15-008(b)	15-610737	2.9	4	RE15-10-7936	≤72	≤2710
15-008(b)	15-610738	0	0.5	RE15-10-7937	≤85	≤2330
15-008(b)	15-610738	2.9	3.7	RE15-10-7938	≤11	≤2060
15-008(b)	15-610739	0	0.5	RE15-10-7939	≤27	≤1596
15-008(b)	15-610739	3	3.5	RE15-10-7940	≤22	≤7940
15-008(b)	15-610740	0	0.5	RE15-10-7941	≤22	≤1845
15-008(b)	15-610740	3	4	RE15-10-7942	≤11	≤2130
15-008(b)	15-610741	0	1	RE15-10-7943	≤16	≤2270
15-008(b)	15-610741	2.9	3.5	RE15-10-7944	≤27	≤2060
15-008(b)	15-610742	0	0.3	RE15-10-7945	≤16	≤1783
15-008(b)	15-610742	2.5	3.5	RE15-10-7946	≤16	≤2070
15-008(b)	15-610743	0	0.5	RE15-10-7947	≤16	≤2300
15-008(b)	15-610743	3	3.9	RE15-10-7948	≤11	≤2050
15-008(b)	15-610744	0	0.5	RE15-10-7949	≤16	≤1700
15-008(b)	15-610744	1.5	1.7	RE15-10-7950	≤22	≤1741
15-008(b)	15-610745	0	0.5	RE15-10-7951	≤5	≤2030
15-008(b)	15-610745	2.5	3.5	RE15-10-7952	≤16	≤1997
15-008(b)	15-610746	0	0.8	RE15-10-7953	≤22	≤7970
15-008(b)	15-610746	3	3.4	RE15-10-7954	≤33	≤3340
15-008(b)	15-610747	0	0.5	RE15-10-7955	≤5	≤4250
15-008(b)	15-610747	3	3.7	RE15-10-7956	≤44	2910
15-008(b)	15-610748	0	1	RE15-10-7957	≤16	≤8210
15-008(b)	15-610748	3	4	RE15-10-7958	≤60	≤14,040
15-008(b)	15-610749	0	0.7	RE15-10-7959	≤22	≤7170
15-008(b)	15-610749	3	3.6	RE15-10-7960	≤49	≤5440
15-008(b)	15-610750	0	0.5	RE15-10-7961	≤22	≤3700
15-008(b)	15-610750	3	4	RE15-10-7962	≤38	≤2010
15-008(b)	15-610751	0	0.5	RE15-10-7963	≤55	≤1962
15-008(b)	15-610751	3	4	RE15-10-7964	≤55	≤2070
15-008(b)	15-610752	0	0.5	RE15-10-7965	≤55	≤2350

Table 2.2-2 (continued)

SWMU/AOC	Location ID	Start Depth (ft)	End Depth (ft)	Sample ID	Alpha Reading (dpm)*	Beta/ Gamma Reading (dpm)
15-008(b)	15-610752	3	4.2	RE15-10-7966	≤44	≤2150
15-008(b)	15-610753	0	0.5	RE15-10-7967	≤22	≤6140
15-008(b)	15-610753	3	3.5	RE15-10-7968	≤38	≤2710
15-008(b)	15-610754	0	0.5	RE15-10-7969	≤38	≤2150
15-008(b)	15-610754	3	3.3	RE15-10-7970	≤44	≤1900
15-008(b)	15-610755	0	0.5	RE15-10-7971	≤55	≤6250
15-008(b)	15-610755	3	3.6	RE15-10-7972	≤88	≤2450
15-008(b)	15-610756	0	0.7	RE15-10-7973	≤49	≤2120
15-008(b)	15-610756	2.7	3.3	RE15-10-7974	≤38	≤2280
15-008(b)	15-610757	0	0.3	RE15-10-7975	≤44	≤2150
15-008(b)	15-610757	3	3.6	RE15-10-7976	≤49	≤2660
15-008(b)	15-610758	0	0.6	RE15-10-7977	≤27	≤1886
15-008(b)	15-610758	1	2	RE15-10-7978	≤49	≤1984
15-008(b)	15-610759	0	0.5	RE15-10-7979	≤27	≤2050
15-008(b)	15-610759	3	3.7	RE15-10-7980	≤49	≤2060
15-008(b)	15-610760	0	0.5	RE15-10-7981	≤11	≤1900
15-008(b)	15-610760	3	3.5	RE15-10-7982	≤27	≤2040
15-008(b)	15-610761	0	0.5	RE15-10-7983	≤11	≤1879
15-008(b)	15-610761	3	3.7	RE15-10-7984	≤33	≤2280
15-008(b)	15-610762	0	0.4	RE15-10-7985	≤11	≤1955
15-008(b)	15-610763	0	0.3	RE15-10-7987	≤5	≤1803
15-008(b)	15-610763	2.5	3.5	RE15-10-7988	≤16	≤1942
15-008(b)	15-610764	0	0.5	RE15-10-7989	≤16	≤1969
15-008(b)	15-610764	3	4	RE15-10-7990	≤11	≤2050
15-008(b)	15-610765	0	0.5	RE15-10-7991	≤22	≤1803
15-008(b)	15-610765	3	4	RE15-10-7992	≤5	≤2140
15-008(b)	15-610766	0	0.7	RE15-10-7993	≤0	≤2090
15-008(b)	15-610766	1	2	RE15-10-7994	≤16	≤1962
15-008(b)	15-610767	0	1	RE15-10-7995	≤22	≤2150
15-008(b)	15-610767	1	1.8	RE15-10-7996	≤16	≤2200
15-008(b)	15-610768	0	0.7	RE15-10-7997	≤16	≤2060
15-008(b)	15-610768	1	1.5	RE15-10-7998	≤11	≤2220
15-008(b)	15-610769	0	0.7	RE15-10-7999	≤16	≤1769
15-008(b)	15-610769	1	2	RE15-10-8000	≤33	≤2030
15-008(b)	15-610770	0	0.8	RE15-10-8001	≤22	≤2330
15-008(b)	15-610770	1	2	RE15-10-8002	≤38	≤2020
15-008(b)	15-610771	0	0.5	RE15-10-8003	≤38	≤2420
15-008(b)	15-610771	1	2	RE15-10-8004	≤22	≤1907

Table 2.2-2 (continued)

SWMU/AOC	Location ID	Start Depth (ft)	End Depth (ft)	Sample ID	Alpha Reading (dpm)*	Beta/ Gamma Reading (dpm)
15-008(b)	15-610772	0	0.5	RE15-10-8005	≤5	≤2500
15-008(b)	15-610772	1	2	RE15-10-8006	≤11	≤2220
15-008(b)	15-610773	0	0.8	RE15-10-8007	≤22	≤2010
15-008(b)	15-610773	1	2	RE15-10-8008	≤11	≤2380
15-008(b)	15-610774	0	0.5	RE15-10-8009	≤11	≤5100
15-008(b)	15-610774	1	2	RE15-10-8010	≤27	≤2520
15-008(b)	15-610775	0	0.5	RE15-10-8011	≤11	≤2070
15-008(b)	15-610775	1	2	RE15-10-8012	≤22	≤2110
15-008(b)	15-610776	0	0.5	RE15-10-8013	≤5	≤2220
15-008(b)	15-610776	1	2	RE15-10-8014	≤33	≤2250
15-008(b)	15-610777	0	0.5	RE15-10-8015	≤5	≤1762
15-008(b)	15-610777	0.5	2	RE15-10-8016	≤22	≤2100
15-008(b)	15-610778	0	0.5	RE15-10-8017	≤27	≤3560
15-008(b)	15-610778	1	2	RE15-10-8018	≤16	≤3980
15-008(b)	15-610779	0	0.5	RE15-10-8019	≤19	≤2410
15-008(b)	15-610779	1	2	RE15-10-8020	≤44	≤2340
15-008(b)	15-610780	0	0.5	RE15-10-8021	≤11	≤2170
15-008(b)	15-610780	1	2	RE15-10-8022	≤27	≤2270
15-008(b)	15-610781	0	0.5	RE15-10-8023	≤11	≤2000
15-008(b)	15-610781	1	2	RE15-10-8024	≤22	≤2060
15-008(b)	15-610782	0	0.5	RE15-10-8025	≤22	≤1810
15-008(b)	15-610782	1	2	RE15-10-8026	≤0	≤2090
15-008(b)	15-610783	0	0.5	RE15-10-8027	≤22	≤1859
15-008(b)	15-610783	1	2	RE15-10-8028	≤16	≤1817
15-008(b)	15-610784	0	0.5	RE15-10-8029	≤0	≤1596
15-008(b)	15-610784	1	2	RE15-10-8030	≤22	≤1907
15-008(b)	15-610785	0	0.5	RE15-10-8031	≤5	≤1879
15-008(b)	15-610785	1	2	RE15-10-8032	≤16	≤2080
15-008(g)	15-610565	0	0.5	RE15-10-7332	≤5	≤1617
15-008(g)	15-610565	2	2.5	RE15-10-7333	≤11	≤1596
15-008(g)	15-610566	0	0.5	RE15-10-7334	≤22	≤1430
15-008(g)	15-610566	2	4	RE15-10-7335	≤16	≤2080
15-008(g)	15-610567	0	0.5	RE15-10-7336	≤11	≤1727
15-008(g)	15-610567	2	3	RE15-10-7337	≤11	≤1631
15-008(g)	15-610568	0	0.5	RE15-10-7338	≤16	≤1506
15-008(g)	15-610568	2	3	RE15-10-7339	≤22	≤1893
15-009(b)	15-610829	0	0.3	RE15-10-8300	≤5	≤1900
15-009(b)	15-610829	1	2	RE15-10-8301	≤33	≤2280

Table 2.2-2 (continued)

SWMU/AOC	Location ID	Start Depth (ft)	End Depth (ft)	Sample ID	Alpha Reading (dpm)*	Beta/ Gamma Reading (dpm)
15-009(b)	15-610830	7	8	RE15-10-8302	≤5	≤1983
15-009(b)	15-610830	12	13	RE15-10-8303	≤11	≤1879
15-009(b)	15-610831	0	1	RE15-10-8305	≤22	≤9130
15-009(b)	15-610831	1	2	RE15-10-8304	≤11	≤2250
15-009(b)	15-610832	0	1	RE15-10-8306	≤11	≤2050
15-009(b)	15-610832	1	1.5	RE15-10-8307	≤11	≤1824
15-009(b)	15-610833	0	0.5	RE15-10-8308	≤11	≤1845
15-009(b)	15-610833	1	2	RE15-10-8309	≤27	≤2050
15-009(b)	15-610834	15	16	RE15-10-8310	≤27	≤2120
15-009(b)	15-610834	17	18	RE15-10-8311	≤11	≤2080
15-009(b)	15-610835	7	8	RE15-10-8312	≤16	≤1976
15-009(b)	15-610835	12	13	RE15-10-8313	≤22	≤2120
15-009(b)	15-610836	7	8	RE15-10-8314	≤22	≤2280
15-009(b)	15-610836	12	13	RE15-10-8315	≤11	≤2140
15-009(b)	15-610837	47.5	50	RE15-10-8316	≤10	≤2010
15-009(b)	15-610837	58.5	60	RE15-10-8317	≤25	≤2080
15-009(b)	15-610837	68.5	70	RE15-10-8318	≤20	≤1917
15-009(b)	15-610837	78.5	80	RE15-10-8319	≤36	≤1983
15-009(c)	15-610838	0	0.5	RE15-10-8336	≤33	≤1976
15-009(c)	15-610838	1	1.5	RE15-10-8337	≤11	≤2010
15-009(c)	15-610839	0	0.8	RE15-10-8338	≤11	≤2100
15-009(c)	15-610839	1	2.5	RE15-10-8339	≤11	≤2140
15-009(c)	15-610840	0	1	RE15-10-8340	≤11	≤1790
15-009(c)	15-610840	1	1.5	RE15-10-8341	≤16	≤2250
15-009(c)	15-610841	3	3.5	RE15-10-8342	≤11	≤2170
15-009(c)	15-610841	8	8.5	RE15-10-8343	≤11	≤2240
15-009(c)	15-610842	2	2.5	RE15-10-8345	≤22	≤2260
15-009(c)	15-610842	7	7.5	RE15-10-8344	≤5	≤2270
15-009(c)	15-610843	10.5	11	RE15-10-8346	≤5	≤2160
15-009(c)	15-610843	15.5	16	RE15-10-8347	≤27	≤2180
15-009(c)	15-610844	3	4	RE15-10-8348	≤33	≤2210
15-009(c)	15-610844	8	9	RE15-10-8349	≤0	≤2180
15-009(c)	15-610845	0	0.7	RE15-10-8350	≤0	≤1817
15-009(c)	15-610845	1	1.2	RE15-10-8351	≤22	≤2080
15-009(c)	15-610846	0	0.5	RE15-10-8352	≤16	≤2030
15-009(c)	15-610846	1	2	RE15-10-8353	≤0	≤2380
15-009(c)	15-610847	0	0.7	RE15-10-8354	≤11	≤2100
15-009(c)	15-610847	1	2	RE15-10-8355	≤33	≤2280

Table 2.2-2 (continued)

SWMU/AOC	Location ID	Start Depth (ft)	End Depth (ft)	Sample ID	Alpha Reading (dpm)*	Beta/ Gamma Reading (dpm)
15-009(c)	15-610848	0	0.8	RE15-10-8356	≤11	≤2220
15-009(c)	15-610848	1	2	RE15-10-8357	≤27	≤2210
15-009(c)	15-610849	0	0.8	RE15-10-8358	≤27	≤2100
15-009(c)	15-610849	1	2	RE15-10-8359	≤11	≤1945
15-009(c)	15-610850	0	0.9	RE15-10-8360	≤22	≤2390
15-009(c)	15-610850	1	2	RE15-10-8361	≤33	≤2030
15-009(c)	15-610851	0	0.7	RE15-10-8362	≤33	≤2020
15-009(c)	15-610851	1	2	RE15-10-8363	≤11	≤2090
15-009(c)	15-610852	0	0.5	RE15-10-8364	≤11	≤2210
15-009(c)	15-610852	1	1.7	RE15-10-8365	≤16	≤2030
15-009(c)	15-610853	0	0.5	RE15-10-8366	≤11	≤2030
15-009(c)	15-610853	1	1.5	RE15-10-8367	≤11	≤1949
15-009(c)	15-610854	0	0.5	RE15-10-8368	≤22	≤2170
15-009(h)	15-610855	6	7.5	RE15-10-8386	≤5	≤2240
15-009(h)	15-610855	8.4	9.2	RE15-10-8387	≤16	≤2190
15-009(h)	15-610856	6	7	RE15-10-8388	≤20	≤1924
15-009(h)	15-610856	11	13	RE15-10-8389	≤25	≤2070
15-009(h)	15-610857	6.5	8	RE15-10-8390	≤15	≤2090
15-009(h)	15-610857	11.5	13	RE15-10-8391	≤30	≤2190
15-009(h)	15-610858	5.7	6.5	RE15-10-8392	≤22	≤1955
15-009(h)	15-610858	6.6	8.1	RE15-10-8393	≤35	≤2530
15-009(h)	15-610859	4.8	6	RE15-10-8394	≤23	≤2250
15-009(h)	15-610859	6	7.1	RE15-10-8395	≤6	≤2330
15-009(h)	15-610860	4.8	7	RE15-10-8396	≤41	≤2270
15-009(h)	15-610860	7	7.3	RE15-10-8397	≤35	≤1966
15-009(h)	15-610861	4.8	6.1	RE15-10-8398	≤47	≤2190
15-009(h)	15-610861	6.1	7	RE15-10-8399	≤35	≤2390
15-010(b)	15-610863	0	0.5	RE15-10-8410	≤22	≤2340
15-010(b)	15-610863	1	2	RE15-10-8411	≤55	≤2180
15-010(b)	15-610864	0	0.5	RE15-10-8412	≤16	≤2370
15-010(b)	15-610864	1	2	RE15-10-8413	≤22	≤2550
15-010(b)	15-610866	0	0.7	RE15-10-8416	≤55	≤2210
15-010(b)	15-610866	1	1.7	RE15-10-8417	≤33	≤2640
15-010(b)	15-610867	0	0.8	RE15-10-8418	≤33	≤2710
15-010(b)	15-610868	0	0.6	RE15-10-8420	≤16	≤2520
15-010(b)	15-610868	1	2	RE15-10-8421	≤11	≤2510
15-010(b)	15-610869	0	0.6	RE15-10-8422	≤22	≤2140
15-010(b)	15-610869	1	2	RE15-10-8423	≤16	≤2010

Table 2.2-2 (continued)

SWMU/AOC	Location ID	Start Depth (ft)	End Depth (ft)	Sample ID	Alpha Reading (dpm)*	Beta/ Gamma Reading (dpm)
15-010(b)	15-610870	0	0.7	RE15-10-8424	≤22	≤2640
15-010(b)	15-610870	1	1.6	RE15-10-8425	≤5	≤2460
15-010(b)	15-610871	0	0.5	RE15-10-8426	≤27	≤2370
15-010(b)	15-610871	1	2	RE15-10-8427	≤27	≤2510
15-010(b)	15-610872	0	0.5	RE15-10-8428	≤5	≤1990
15-010(b)	15-610872	1	1.8	RE15-10-8429	≤27	≤2550
15-014(h)	15-610501	0	0.5	RE15-10-7160	≤49	≤2150
15-014(h)	15-610501	1	2.2	RE15-10-7161	≤38	≤2340
15-014(h)	15-610502	0	0.5	RE15-10-7162	≤44	≤2280
15-014(h)	15-610502	1	2.5	RE15-10-7163	≤11	≤2730
15-014(h)	15-610503	2	3.9	RE15-10-7164	≤33	≤2070
15-014(h)	15-610503	7	8.8	RE15-10-7165	≤27	≤1983
15-014(h)	15-610504	0	1	RE15-10-7166	≤22	≤2070
15-014(h)	15-610504	1	2.2	RE15-10-7167	≤22	≤2370
15-014(h)	15-610505	0	0.5	RE15-10-7168	≤22	≤2050
15-014(h)	15-610505	1	2.1	RE15-10-7169	≤16	≤2160
15-014(h)	15-610506	0	0.7	RE15-10-7170	≤38	≤2300
15-014(h)	15-610506	1	2.1	RE15-10-7171	≤38	≤2350
15-014(h)	15-610507	0	0.7	RE15-10-7172	≤16	≤2640
15-014(h)	15-610507	1	2.6	RE15-10-7173	≤49	≤2240
15-014(h)	15-610508	0	1	RE15-10-7174	≤27	≤2390
15-014(h)	15-610508	1	2	RE15-10-7175	≤33	≤2460
15-014(h)	15-610509	0	0.6	RE15-10-7176	≤33	≤2300
15-014(h)	15-610509	1	2	RE15-10-7177	≤38	≤2520
15-014(h)	15-610510	0	0.5	RE15-10-7178	≤44	≤2390
15-014(h)	15-610510	1	2	RE15-10-7179	≤27	≤2120
15-014(h)	15-610511	0	1	RE15-10-7180	≤22	≤2260
15-014(h)	15-610511	1	1.9	RE15-10-7181	≤33	≤2280
15-014(h)	15-610512	0	0.6	RE15-10-7182	≤27	≤2540
15-014(h)	15-610512	1	1.8	RE15-10-7183	≤27	≤2530
15-014(h)	15-610513	0	0.7	RE15-10-7184	≤27	≤2460
15-014(h)	15-610513	1	2	RE15-10-7185	≤33	≤2440
15-014(h)	15-610514	0	0.5	RE15-10-7186	≤33	≤2070
15-014(h)	15-610514	1	2	RE15-10-7187	≤55	≤2390
15-014(h)	15-610515	0	0.8	RE15-10-7188	≤33	≤2280
15-014(h)	15-610515	1	2.2	RE15-10-7189	≤38	≤2070
15-014(h)	15-610516	0	0.7	RE15-10-7190	≤22	≤1962
15-014(h)	15-610516	1	2	RE15-10-7191	≤22	≤2270

Table 2.2-2 (continued)

SWMU/AOC	Location ID	Start Depth (ft)	End Depth (ft)	Sample ID	Alpha Reading (dpm)*	Beta/ Gamma Reading (dpm)
15-014(h)	15-610517	0	0.5	RE15-10-7192	≤11	≤1990
15-014(h)	15-610517	1	2	RE15-10-7193	≤44	≤2110
15-014(h)	15-610518	0	1	RE15-10-7194	≤33	≤2180
15-014(h)	15-610518	1	2	RE15-10-7195	≤38	≤2360
15-014(h)	15-610519	0	0.5	RE15-10-7196	≤16	≤2150
15-014(h)	15-610519	1	2	RE15-10-7197	≤33	≤2710
15-014(h)	15-610520	0	0.5	RE15-10-7198	≤22	≤2280
15-014(h)	15-610520	1	2.4	RE15-10-7199	≤44	≤2430
15-014(h)	15-610521	0	0.5	RE15-10-7200	≤22	≤1935
15-014(h)	15-610521	2	3.7	RE15-10-7201	≤88	≤2280
15-014(h)	15-610522	2	3.9	RE15-10-7202	≤44	≤2160
15-014(h)	15-610522	6	6.7	RE15-10-7203	≤16	≤2050
15-014(h)	15-610523	0	0.5	RE15-10-7204	≤27	≤2260
15-014(h)	15-610523	1	1.5	RE15-10-7205	≤27	≤2510
15-014(h)	15-610524	0	0.7	RE15-10-7206	≤38	≤1990
15-014(h)	15-610524	1	2.1	RE15-10-7207	≤11	≤2410
15-014(h)	15-610525	0	0.5	RE15-10-7208	≤22	≤1831
15-014(h)	15-610525	1	1.4	RE15-10-7209	≤38	≤1976
15-014(h)	15-610526	2	2.9	RE15-10-7210	≤38	≤1727
15-014(h)	15-610526	6	6.7	RE15-10-7211	≤16	≤2480
36-002	36-610876	7.5	10	RE36-10-8448	≤36	≤3330
36-002	36-610876	15	16	RE36-10-8449	≤41	≤2220
36-002	36-610877	9	10	RE36-10-8450	≤41	≤1976
36-002	36-610877	14	15	RE36-10-8451	≤36	≤2090
36-002	36-610878	4	5	RE36-10-8452	≤56	≤2040
36-002	36-610878	9	10	RE36-10-8453	≤46	≤2150
36-003(a)	36-610879	49	50	RE36-10-8462	≤28	≤3000
36-003(a)	36-610879	59	60	RE36-10-8463	≤19	≤758
36-003(a)	36-610879	69	70	RE36-10-8486	≤97	≤549
36-003(a)	36-610879	77.5	80	RE36-10-8487	≤30	≤681
36-003(a)	36-610880	3	4	RE36-10-8464	≤5	≤2010
36-003(a)	36-610881	1.5	2.5	RE36-10-8466	≤41	≤2050
36-003(a)	36-610882	5	5.6	RE36-10-8470	≤27	≤2220
36-003(a)	36-610882	5.6	6.1	RE36-10-8471	≤30	≤2290
36-003(a)	36-610884	0.5	1	RE36-10-8474	≤22	≤1955
36-003(a)	36-610884	1	2.5	RE36-10-8475	≤41	≤2270
36-003(a)	36-610885	1.5	2.5	RE36-10-8476	≤22	≤2270
36-003(a)	36-610885	2.5	3	RE36-10-8477	≤30	≤1970

Table 2.2-2 (continued)

SWMU/AOC	Location ID	Start Depth (ft)	End Depth (ft)	Sample ID	Alpha Reading (dpm)*	Beta/ Gamma Reading (dpm)
36-003(a)	36-610886	1.5	2.3	RE36-10-8478	≤27	≤2310
36-003(a)	36-610886	2.3	3.9	RE36-10-8479	≤25	≤2100
36-003(a)	36-610887	1.5	2	RE36-10-8480	≤17	≤2090
36-003(a)	36-610887	2	4	RE36-10-8481	≤30	≤2010
36-003(a)	36-610888	2	3.5	RE36-10-8482	≤11	≤2260
36-003(a)	36-610888	7	8	RE36-10-8483	≤16	≤2230
36-003(a)	36-610889	2	3	RE36-10-8484	≤25	≤2110
36-003(a)	36-610889	3	4.2	RE36-10-8485	≤10	≤1734
36-008	36-610574	0	0.5	RE36-10-7403	≤53	≤1966
36-008	36-610574	2	2.5	RE36-10-7404	≤35	≤2180
36-008	36-610575	0	0.5	RE36-10-7405	≤35	≤1858
36-008	36-610575	2	2.5	RE36-10-7406	≤76	≤2260
36-008	36-610576	0	0.5	RE36-10-7407	≤25	≤1538
36-008	36-610579	0	0.5	RE36-10-7413	≤0	≤163
36-008	36-610579	2	3	RE36-10-7414	≤5	≤386
36-008	36-610580	0	0.5	RE36-10-7415	≤17	≤1556
36-008	36-610580	2	3	RE36-10-7416	≤29	≤1814
36-008	36-610581	0	0.5	RE36-10-7417	≤17	≤1368
36-008	36-610581	2	3	RE36-10-7418	≤29	≤2080
36-008	36-610582	0	0.5	RE36-10-7419	≤82	≤2146
36-008	36-610582	2	3	RE36-10-7420	≤94	≤2070
36-008	36-610583	0	0.5	RE36-10-7421	≤94	≤2290
36-008	36-610583	2	3	RE36-10-7422	≤29	≤2160
36-008	36-610584	0	0.5	RE36-10-7423	≤14	≤1377
36-008	36-610584	2	3	RE36-10-7424	≤6	≤323
36-008	36-610585	0	1	RE36-10-7425	≤29	≤2030
36-008	36-610585	2	3	RE36-10-7426	≤17	≤2000
36-008	36-610586	0	0.5	RE36-10-7427	≤6	≤9
36-008	36-610586	2	3	RE36-10-7428	≤6	≤211
36-008	36-610587	0	0.5	RE36-10-7429	≤41	≤1634
36-008	36-610588	0	0.5	RE36-10-7431	≤29	≤1697
36-008	36-610588	2	2.5	RE36-10-7432	≤23	≤1995
36-008	36-610589	0	0.5	RE36-10-7433	≤23	≤2000
36-008	36-610589	1	2	RE36-10-7434	≤53	≤2030
36-008	36-610590	0	0.5	RE36-10-7435	≤10	≤1734
36-008	36-610590	2	3	RE36-10-7436	≤47	≤1990
36-008	36-610591	0	0.5	RE36-10-7437	≤58	≤1785
36-008	36-610591	2	3	RE36-10-7438	≤41	≤2210

Table 2.2-2 (continued)

SWMU/AOC	Location ID	Start Depth (ft)	End Depth (ft)	Sample ID	Alpha Reading (dpm)*	Beta/ Gamma Reading (dpm)
36-008	36-610592	0	0.5	RE36-10-7439	≤41	≤1644
36-008	36-610592	2	3	RE36-10-7440	≤72	≤2090
36-008	36-610593	0	0.5	RE36-10-7441	≤64	≤1834
36-008	36-610593	2	3	RE36-10-7442	≤15	≤1996
36-008	36-610594	0	0.5	RE36-10-7443	≤41	≤1805
36-008	36-610594	2	3	RE36-10-7444	≤61	≤1623
36-008	36-610595	0	0.5	RE36-10-7445	≤25	≤1583
36-008	36-610596	0	0.5	RE36-10-7447	≤29	≤1936
36-008	36-610596	2	3	RE36-10-7448	≤47	≤2000
36-008	36-610597	0	0.5	RE36-10-7449	≤29	≤1790
36-008	36-610597	2	3	RE36-10-7450	≤51	≤1996
36-008	36-610598	0	0.5	RE36-10-7451	≤10	≤1518
36-008	36-610598	2	3	RE36-10-7452	≤25	≤1688
36-008	36-610599	0	0.5	RE36-10-7453	≤36	≤2050
36-008	36-610599	0.5	1	RE36-10-7454	≤15	≤2100
36-008	36-610600	0	0.5	RE36-10-7455	≤30	≤1760
36-008	36-610600	1	2	RE36-10-7456	≤36	≤1865
36-008	36-610601	0	0.5	RE36-10-7457	≤10	≤1720
36-008	36-610601	2	3	RE36-10-7458	≤56	≤1930
36-008	36-610602	0	0.5	RE36-10-7459	≤20	≤2010
36-008	36-610602	1.5	2.6	RE36-10-7460	≤41	≤1963
36-008	36-610603	0	0.5	RE36-10-7461	≤0	≤111
36-008	36-610603	2	3	RE36-10-7462	≤5	≤81
36-008	36-610604	0	0.5	RE36-10-7463	≤26	≤626
36-008	36-610604	2	3	RE36-10-7464	≤5	≤183
36-008	36-610605	0	0.5	RE36-10-7465	≤0	≤183
36-008	36-610605	2	3	RE36-10-7466	≤0	≤307
36-008	36-610606	0	0.5	RE36-10-7467	≤15	≤196
36-008	36-610606	2	2.9	RE36-10-7468	≤10	≤405
36-008	36-610607	0	0.5	RE36-10-7469	≤20	≤510
36-008	36-610607	2	3	RE36-10-7470	≤0	≤716
36-008	36-610608	0	0.8	RE36-10-7471	≤20	≤72
36-008	36-610608	2	3	RE36-10-7472	≤36	≤484
36-008	36-610609	0	0.5	RE36-10-7473	≤15	≤543
36-008	36-610610	0	0.5	RE36-10-7475	≤5	≤510
36-008	36-610610	2	3	RE36-10-7476	≤20	≤736
36-008	36-610611	0	0.5	RE36-10-7477	≤53	≤1980
36-008	36-610611	2	3	RE36-10-7478	≤23	≤2450

Table 2.2-2 (continued)

SWMU/AOC	Location ID	Start Depth (ft)	End Depth (ft)	Sample ID	Alpha Reading (dpm)*	Beta/ Gamma Reading (dpm)
36-008	36-610612	0	0.5	RE36-10-7479	≤41	≤1819
36-008	36-610612	2	3	RE36-10-7480	≤5	≤2220
36-008	36-610613	0	0.5	RE36-10-7481	≤41	≤1931
36-008	36-610613	2	3	RE36-10-7482	≤47	≤1931
36-008	36-610614	0	0.5	RE36-10-7483	≤29	≤1844
36-008	36-610614	2	3	RE36-10-7484	≤17	≤2030
36-008	36-610615	0	0.5	RE36-10-7485	≤58	≤1800
36-008	36-610615	2	3	RE36-10-7486	≤23	≤1726
36-008	36-610616	0	0.5	RE36-10-7487	≤29	≤1848
36-008	36-610616	2	3	RE36-10-7488	≤41	≤1844
36-008	36-610617	0	0.5	RE36-10-7489	≤11	≤1829
36-008	36-610617	2	3	RE36-10-7490	≤64	≤1795
36-008	36-610618	0	0.5	RE36-10-7491	≤47	≤1693
36-008	36-610618	2	3	RE36-10-7492	≤41	≤1668
36-008	36-610619	0	0.5	RE36-10-7493	≤47	≤1805
36-008	36-610619	2	3	RE36-10-7494	≤29	≤1780
36-008	36-610620	0	0.5	RE36-10-7495	≤88	≤1848
36-008	36-610620	2	3	RE36-10-7496	≤58	≤2160
36-008	36-610621	0	0.5	RE36-10-7497	≤82	≤1517
36-008	36-610621	2	3	RE36-10-7498	≤58	≤1829
36-008	36-610622	0	0.5	RE36-10-7499	≤29	≤1824
36-008	36-610622	2	3	RE36-10-7500	≤53	≤1902
36-008	36-610623	0	0.5	RE36-10-7501	≤23	≤1746
C-36-003	36-610821	0	0.5	RE36-10-8273	≤36	≤1873
C-36-003	36-610821	2	3	RE36-10-8274	≤82	≤2040
C-36-003	36-610822	0	0.5	RE36-10-8275	≤29	≤1887
C-36-003	36-610822	2	3	RE36-10-8276	≤36	≤1655
C-36-003	36-610823	0	0.5	RE36-10-8277	≤20	≤1564
C-36-003	36-610823	2	3	RE36-10-8278	≤58	≤2200
C-36-003	36-610824	0	0.5	RE36-10-8279	≤47	≤1961
C-36-003	36-610824	2	3	RE36-10-8280	≤30	≤1793
C-36-003	36-610825	0	1	RE36-10-8281	≤35	≤1844
C-36-003	36-610825	2	2.5	RE36-10-8282	≤82	≤2140
C-36-003	36-610826	0	0.5	RE36-10-8283	≤25	≤2370
C-36-003	36-610826	2	3	RE36-10-8284	≤15	≤2130
C-36-003	36-610827	0	0.5	RE36-10-8285	≤20	≤1721

Table 2.2-2 (continued)

SWMU/AOC	Location ID	Start Depth (ft)	End Depth (ft)	Sample ID	Alpha Reading (dpm)*	Beta/ Gamma Reading (dpm)
C-36-003	36-610827	2	3	RE36-10-8286	≤36	≤2130
C-36-003	36-610828	0	0.5	RE36-10-8287	≤10	≤1564
C-36-003	36-610828	2	3	RE36-10-8288	≤35	≤1873

* dpm = Disintegrations per minute.

Table 4.2-1
Samples Collected and Analyses Requested at Consolidated Unit 12-001(a)-99

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Gamma Spectroscopy	Explosive Compounds	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	TAL Metals
SWMU 12-001(a)												
RE12-10-7838	12-610693	0–0.5	SOIL	10-1100	10-1101	10-1100	10-1100	10-1100	10-1100	10-1100	10-1101	10-1101
RE12-10-7839	12-610693	2–2.7	SOIL	10-1100	10-1101	10-1100	10-1100	10-1100	10-1100	10-1100	10-1101	10-1101
RE12-10-7840	12-610694	0–0.7	SOIL	10-1100	10-1101	10-1100	10-1100	10-1100	10-1100	10-1100	10-1101	10-1101
RE12-10-7841	12-610694	3–3.4	SOIL	10-1100	10-1101	10-1100	10-1100	10-1100	10-1100	10-1100	10-1101	10-1101
RE12-10-7842	12-610695	0–1	SOIL	10-1100	10-1101	10-1100	10-1100	10-1100	10-1100	—*	10-1101	10-1101
RE12-10-7843	12-610695	2–2.4	SOIL	10-1100	10-1101	10-1100	10-1100	10-1100	10-1100	—	10-1101	10-1101
RE12-10-7844	12-610696	0–0.75	SOIL	10-1100	10-1101	10-1100	10-1100	10-1100	10-1100	—	10-1101	10-1101
RE12-10-7845	12-610696	2–2.6	SOIL	10-1100	10-1101	10-1100	10-1100	10-1100	10-1100	—	10-1101	10-1101
RE12-10-7846	12-610697	0–0.5	SOIL	10-1100	10-1101	10-1100	10-1100	10-1100	10-1100	—	10-1101	10-1101
RE12-10-7847	12-610697	1.4–1.8	SOIL	10-1100	10-1101	10-1100	10-1100	10-1100	10-1100	—	10-1101	10-1101
RE12-10-7848	12-610698	0–0.75	SOIL	10-1126	10-1126	10-1126	10-1126	10-1126	10-1126	—	10-1126	10-1126
RE12-10-7849	12-610698	2–3	SOIL	10-1126	10-1126	10-1126	10-1126	10-1126	10-1126	—	10-1126	10-1126
RE12-10-7850	12-610699	0–0.5	SOIL	10-1126	10-1126	10-1126	10-1126	10-1126	10-1126	—	10-1126	10-1126
RE12-10-7851	12-610699	2–2.5	SOIL	10-1126	10-1126	10-1126	10-1126	10-1126	10-1126	—	10-1126	10-1126
RE12-10-7852	12-610700	0–0.6	SOIL	10-1126	10-1126	10-1126	10-1126	10-1126	10-1126	—	10-1126	10-1126
RE12-10-7853	12-610700	2–3.5	SOIL	10-1126	10-1126	10-1126	10-1126	10-1126	10-1126	—	10-1126	10-1126
RE12-10-7854	12-610701	0–0.6	SOIL	10-1263	10-1263	10-1263	10-1263	10-1263	10-1263	—	10-1263	10-1263
RE12-10-7855	12-610701	2–3	QBT3	10-1263	10-1263	10-1263	10-1263	10-1263	10-1263	—	10-1263	10-1263

Table 4.2-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Gamma Spectroscopy	Explosive Compounds	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	TAL Metals
Drainage below SWMU 12-001(a)												
RE12-10-7697	12-610666	0–0.5	SOIL	10-1130	10-1130	10-1130	10-1130	10-1130	10-1130	10-1130	10-1130	10-1130
RE12-10-7698	12-610666	1–2	SOIL	10-1130	10-1130	10-1130	10-1130	10-1130	10-1130	10-1130	10-1130	10-1130
RE12-10-7699	12-610667	0–0.5	SOIL	10-1162	10-1161	10-1162	10-1160	10-1162	10-1162	10-1160	10-1161	10-1161
RE12-10-7700	12-610667	1–2	QBT3	10-1162	10-1161	10-1162	10-1160	10-1162	10-1162	10-1160	10-1161	10-1161
RE12-10-7701	12-610668	0–1	SED	10-1162	10-1161	10-1162	10-1160	10-1162	10-1162	10-1160	10-1161	10-1161
RE12-10-7702	12-610668	1–1.9	QBT3	10-1162	10-1161	10-1162	10-1160	10-1162	10-1162	10-1160	10-1161	10-1161
RE12-10-7703	12-610669	0–0.7	SOIL	10-1130	10-1130	10-1130	10-1130	10-1130	10-1130	—	10-1130	10-1130
RE12-10-7704	12-610669	1–2.1	SOIL	10-1130	10-1130	10-1130	10-1130	10-1130	10-1130	—	10-1130	10-1130
RE12-10-7705	12-610670	0–0.7	SOIL	10-1162	10-1161	10-1162	10-1160	10-1162	10-1162	—	10-1161	10-1161
RE12-10-7706	12-610670	1–2	QBT3	10-1162	10-1161	10-1162	10-1160	10-1162	10-1162	—	10-1161	10-1161
RE12-10-7707	12-610671	0–0.3	SOIL	10-1162	10-1161	10-1162	10-1160	10-1162	10-1162	—	10-1161	10-1161
RE12-10-7708	12-610671	1–2	QBT3	10-1162	10-1161	10-1162	10-1160	10-1162	10-1162	—	10-1161	10-1161
RE12-10-7709	12-610672	0–0.8	SOIL	10-1162	10-1161	10-1162	10-1160	10-1162	10-1162	—	10-1161	10-1161
RE12-10-7710	12-610672	1–2.8	QBT3	10-1162	10-1161	10-1162	10-1160	10-1162	10-1162	—	10-1161	10-1161
RE12-10-7711	12-610673	0–0.9	SOIL	10-1162	10-1161	10-1162	10-1160	10-1162	10-1162	—	10-1161	10-1161
RE12-10-7712	12-610673	1–1.9	QBT3	10-1162	10-1161	10-1162	10-1160	10-1162	10-1162	—	10-1161	10-1161
RE12-10-7713	12-610674	0–0.1	SOIL	10-1162	10-1161	10-1162	10-1160	10-1162	10-1162	—	10-1161	10-1161
RE12-10-7714	12-610674	1–2	SOIL	10-1162	10-1161	10-1162	10-1160	10-1162	10-1162	—	10-1161	10-1161
RE12-10-7715	12-610675	0–0.6	SOIL	10-1162	10-1161	10-1162	10-1160	10-1162	10-1162	—	10-1161	10-1161
RE12-10-7716	12-610675	1–2	SOIL	10-1162	10-1161	10-1162	10-1160	10-1162	10-1162	—	10-1161	10-1161
RE12-10-7717	12-610676	0–0.3	SED	10-1162	10-1161	10-1162	10-1160	10-1162	10-1162	—	10-1161	10-1161

Table 4.2-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Gamma Spectroscopy	Explosive Compounds	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	TAL Metals
RE12-10-7718	12-610676	1–1.5	QBT3	10-1162	10-1161	10-1162	10-1160	10-1162	10-1162	—	10-1161	10-1161
RE12-10-7719	12-610677	0–0.7	SOIL	10-1162	10-1161	10-1162	10-1160	10-1162	10-1162	—	10-1161	10-1161
RE12-10-7722	12-610678	0–0.2	SED	10-1209	10-1209	10-1209	10-1209	10-1209	10-1209	—	10-1209	10-1209
RE12-10-7856	12-610679	0–0.5	SOIL	10-1263	10-1263	10-1263	10-1263	10-1263	10-1263	10-1263	10-1263	10-1263
RE12-10-7857	12-610679	1–1.8	SOIL	10-1263	10-1263	10-1263	10-1263	10-1263	10-1263	10-1263	10-1263	10-1263
RE12-10-8096	12-610680	0–0.5	SOIL	10-1264	10-1264	10-1264	10-1264	10-1264	10-1264	10-1264	10-1264	10-1264
RE12-10-8097	12-610680	1–2	SOIL	10-1264	10-1264	10-1264	10-1264	10-1264	10-1264	10-1264	10-1264	10-1264
SWMU 12-001(b)												
RE12-10-7617	12-610639	0–0.5	SOIL	10-1129	10-1128	10-1127	10-1129	10-1129	10-1129	10-1127	10-1128	10-1128
RE12-10-7618	12-610639	2–3	SOIL	10-1129	10-1128	10-1127	10-1129	10-1129	10-1129	10-1127	10-1128	10-1128
RE12-10-7619	12-610640	0–1	SOIL	10-1129	10-1128	10-1127	10-1129	10-1129	10-1129	10-1127	10-1128	10-1128
RE12-10-7620	12-610640	2–2.8	SOIL	10-1129	10-1128	10-1127	10-1129	10-1129	10-1129	10-1127	10-1128	10-1128
RE12-10-7621	12-610641	0–1	SOIL	10-1129	10-1128	10-1127	10-1129	10-1129	10-1129	10-1127	10-1128	10-1128
RE12-10-7622	12-610641	2–3.2	SOIL	10-1129	10-1128	10-1127	10-1129	10-1129	10-1129	10-1127	10-1128	10-1128
RE12-10-7623	12-610642	0–0.5	SOIL	10-1129	10-1128	10-1127	10-1129	10-1129	10-1129	10-1127	10-1128	10-1128
RE12-10-7624	12-610642	2–2.6	SOIL	10-1129	10-1128	10-1127	10-1129	10-1129	10-1129	10-1127	10-1128	10-1128
RE12-10-7625	12-610643	0–0.6	SOIL	10-1129	10-1128	10-1127	10-1129	10-1129	10-1129	—	10-1128	10-1128
RE12-10-7626	12-610643	2–3	SOIL	10-1129	10-1128	10-1127	10-1129	10-1129	10-1129	—	10-1128	10-1128
RE12-10-7627	12-610644	0–0.5	SOIL	10-1129	10-1128	10-1127	10-1129	10-1129	10-1129	—	10-1128	10-1128
RE12-10-7628	12-610644	2–2.5	SOIL	10-1129	10-1128	10-1127	10-1129	10-1129	10-1129	—	10-1128	10-1128
RE12-10-7629	12-610645	0–0.4	SOIL	10-1129	10-1128	10-1127	10-1129	10-1129	10-1129	—	10-1128	10-1128
RE12-10-7630	12-610645	2–2.7	SOIL	10-1129	10-1128	10-1127	10-1129	10-1129	10-1129	—	10-1128	10-1128

Table 4.2-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Gamma Spectroscopy	Explosive Compounds	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	TAL Metals
RE12-10-7631	12-610646	0–0.6	SOIL	10-1129	10-1128	10-1127	10-1129	10-1129	10-1129	—	10-1128	10-1128
RE12-10-7632	12-610646	2–3	SOIL	10-1129	10-1128	10-1127	10-1129	10-1129	10-1129	—	10-1128	10-1128
RE12-10-7633	12-610647	0–0.7	SOIL	10-1133	10-1132	10-1131	10-1133	10-1133	10-1133	—	10-1132	10-1132
RE12-10-7634	12-610647	2–3	SOIL	10-1133	10-1132	10-1131	10-1133	10-1133	10-1133	—	10-1132	10-1132
RE12-10-7635	12-610648	0–0.7	SOIL	10-1133	10-1132	10-1131	10-1133	10-1133	10-1133	—	10-1132	10-1132
RE12-10-7636	12-610648	2–3	SOIL	10-1133	10-1132	10-1131	10-1133	10-1133	10-1133	—	10-1132	10-1132
RE12-10-7638	12-610649	0–0.6	SOIL	10-1133	10-1132	10-1131	10-1133	10-1133	10-1133	—	10-1132	10-1132
RE12-10-7637	12-610649	2–3	SOIL	10-1133	10-1132	10-1131	10-1133	10-1133	10-1133	—	10-1132	10-1132
RE12-10-7639	12-610650	0–0.7	SOIL	10-1133	10-1132	10-1131	10-1133	10-1133	10-1133	—	10-1132	10-1132
RE12-10-7640	12-610650	2–3	QBT3	10-1133	10-1132	10-1131	10-1133	10-1133	10-1133	—	10-1132	10-1132
RE12-10-7641	12-610651	0–0.9	SOIL	10-1133	10-1132	10-1131	10-1133	10-1133	10-1133	—	10-1132	10-1132
RE12-10-7642	12-610651	2–3	SOIL	10-1133	10-1132	10-1131	10-1133	10-1133	10-1133	—	10-1132	10-1132
RE12-10-7643	12-610652	0–0.5	SOIL	10-1133	10-1132	10-1131	10-1133	10-1133	10-1133	—	10-1132	10-1132
RE12-10-7644	12-610652	2–3	SOIL	10-1133	10-1132	10-1131	10-1133	10-1133	10-1133	—	10-1132	10-1132
RE12-10-7645	12-610653	0–1	SOIL	10-1133	10-1132	10-1131	10-1133	10-1133	10-1133	—	10-1132	10-1132
RE12-10-7646	12-610653	2–3.6	SOIL	10-1133	10-1132	10-1131	10-1133	10-1133	10-1133	—	10-1132	10-1132
RE12-10-7647	12-610654	0–1	SOIL	10-1133	10-1132	10-1131	10-1133	10-1133	10-1133	—	10-1132	10-1132
RE12-10-7648	12-610654	2–3	QBT3	10-1133	10-1132	10-1131	10-1133	10-1133	10-1133	—	10-1132	10-1132
RE12-10-7649	12-610655	0–0.7	SOIL	10-1133	10-1132	10-1131	10-1133	10-1133	10-1133	—	10-1132	10-1132
RE12-10-7650	12-610655	1.5–2.5	SOIL	10-1133	10-1132	10-1131	10-1133	10-1133	10-1133	—	10-1132	10-1132

Table 4.2-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Gamma Spectroscopy	Explosive Compounds	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	TAL Metals
SWMU 12-002												
RE12-10-8094	12-610787	0.4–0.8	QBT3	10-1264	10-1264	10-1264	10-1264	10-1264	10-1264	10-1264	10-1264	10-1264
RE12-10-8095	12-610787	2–3.3	QBT3	10-1264	10-1264	10-1264	10-1264	10-1264	10-1264	10-1264	10-1264	10-1264
AOC C-12-005												
RE12-10-7663	12-610656	0.00–0.50	SOIL	10-1102	10-1103	10-1102	10-1102	10-1102	10-1102	10-1102	10-1103	10-1103
RE12-10-7664	12-610656	2.00–2.90	SOIL	10-1102	10-1103	10-1102	10-1102	10-1102	10-1102	10-1102	10-1103	10-1103
RE12-10-7665	12-610657	0.00–0.50	SOIL	10-1102	10-1103	10-1102	10-1102	10-1102	10-1102	—	10-1103	10-1103
RE12-10-7666	12-610657	2.00–3.60	SOIL	10-1102	10-1103	10-1102	10-1102	10-1102	10-1102	—	10-1103	10-1103
RE12-10-7667	12-610658	0.00–0.50	SOIL	10-1102	10-1103	10-1102	10-1102	10-1102	10-1102	—	10-1103	10-1103
RE12-10-7668	12-610658	2.50–2.90	SOIL	10-1102	10-1103	10-1102	10-1102	10-1102	10-1102	—	10-1103	10-1103
RE12-10-7669	12-610659	0.00–0.40	SOIL	10-1102	10-1103	10-1102	10-1102	10-1102	10-1102	—	10-1103	10-1103
RE12-10-7670	12-610659	2.00–3.00	SOIL	10-1102	10-1103	10-1102	10-1102	10-1102	10-1102	—	10-1103	10-1103
RE12-10-7671	12-610660	0.00–0.60	SOIL	10-1102	10-1103	10-1102	10-1102	10-1102	10-1102	—	10-1103	10-1103
RE12-10-7672	12-610660	2.00–2.50	SOIL	10-1102	10-1103	10-1102	10-1102	10-1102	10-1102	—	10-1103	10-1103

Note: Numbers in analyte columns are request numbers.

* — = Analysis not requested.

Table 4.2-2
Inorganic Chemicals above BVs at Consolidated Unit 12-001(a)-99

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Barium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Iron	Lead	Magnesium	Manganese	Nickel	Perchlorate	Selenium	Silver	Uranium	Vanadium	Zinc
Qbt 2, 3, 4 BV				**7340**	**0.5**	**46**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**0.5**	**14500**	**11.2**	**1690**	**482**	**6.58**	**na**[a]	**0.3**	**1**	**2.4**	**17**	**63.5**
Sediment BV				**15400**	**0.83**	**127**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**0.82**	**13800**	**19.7**	**2370**	**543**	**9.38**	**na**	**0.3**	**1**	**2.22**	**19.7**	**60.2**
Soil BV				**29200**	**0.83**	**295**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**0.5**	**21500**	**22.3**	**4610**	**671**	**15.4**	**na**	**1.52**	**1**	**1.82**	**39.6**	**48.8**
Industrial SSL[b]				**1130000**	**454**	**224000**	**1120**	**na**	**2920**	**300**[c]	**45400**	**22700**	**795000**	**800**	**na**	**145000**	**22700**	**795**	**5680**	**5680**	**3410**	**5680**	**341000**
Residential SSL[b]				**78100**	**31.3**	**15600**	**77.9**	**na**	**219**	**23**[c]	**3130**	**1560**	**54800**	**400**	**na**	**10700**	**1560**	**54.8**	**391**	**391**	**235**	**391**	**23500**
SWMU 12-001(a)																							
RE12-10-7838	12-610693	0–0.5	SOIL	—[d]	1.22 (U)	—	0.609 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	2.05	—	—
RE12-10-7839	12-610693	2–2.7	SOIL	—	1.13 (U)	—	0.566 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7840	12-610694	0–0.7	SOIL	—	1.19 (U)	—	0.597 (U)	—	—	—	—	—	—	—	—	—	—	0.000656 (J)	—	—	3.94	—	—
RE12-10-7841	12-610694	3–3.4	SOIL	—	1.15	407 (J)	—	—	67.6	22.8 (J-)	—	—	—	22.5	—	2150 (J)	—	—	—	—	—	—	—
RE12-10-7842	12-610695	0–1	SOIL	—	1.14 (U)	—	0.569 (U)	—	24.5	17.3 (J-)	—	—	—	—	—	802 (J)	—	—	—	—	1.84	—	—
RE12-10-7843	12-610695	2–2.4	SOIL	—	1.09 (U)	—	0.544 (U)	—	20	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7844	12-610696	0–0.75	SOIL	—	1.14 (U)	—	0.571 (U)	—	27.1	—	—	—	—	—	—	—	—	—	—	—	2.79	—	—
RE12-10-7845	12-610696	2–2.6	SOIL	—	1.06 (U)	—	-	—	—	12.4 (J-)	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7846	12-610697	0–0.5	SOIL	—	1.13 (U)	—	0.565 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7847	12-610697	1.4–1.8	SOIL	—	1.09 (U)	—	0.545 (U)	—	36.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7848	12-610698	0–0.75	SOIL	—	1.16 (UJ)	—	—	—	—	—	—	—	—	41	—	—	—	—	—	—	—	—	—
RE12-10-7849	12-610698	2–3	SOIL	—	1.08 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7850	12-610699	0–0.5	SOIL	—	1.22 (UJ)	—	—	—	43	—	—	—	—	—	—	—	—	—	—	—	2.07	—	—
RE12-10-7851	12-610699	2–2.5	SOIL	—	1.05 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7852	12-610700	0–0.6	SOIL	—	1.14 (UJ)	—	—	—	31	—	—	—	—	—	—	—	—	—	—	—	1.84	—	—
RE12-10-7853	12-610700	2–3.5	SOIL	—	1.08 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	0.000672 (J)	—	—	—	—	—
RE12-10-7854	12-610701	0–0.6	SOIL	—	1.15 (U)	—	0.574 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	3.2	—	—
RE12-10-7855	12-610701	2–3	QBT3	11400	1.05 (U)	243	—	2400	11.5	7.08	7.07	—	—	14.7	2040 (J+)	—	8.43	—	1.04 (U)	—	—	28.8	—
Drainage below SWMU 12-001(a)																							
RE12-10-7697	12-610666	0–0.5	SOIL	—	—	—	0.574 (U)	—	20	—	—	—	—	—	—	—	—	—	—	—	1.84	—	—
RE12-10-7698	12-610666	1–2	SOIL	—	1.11 (U)	—	0.555 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7699	12-610667	0–0.5	SOIL	—	—	—	0.601 (U)	—	42.9	—	—	—	—	—	—	—	—	0.00071 (J)	—	—	3.59 (J)	—	—
RE12-10-7700	12-610667	1–2	QBT3	—	1.03 (U)	49.2	—	—	22.9	—	—	—	—	—	—	—	—	—	0.979 (U)	—	—	—	—
RE12-10-7701	12-610668	0–1	SED	—	1.28 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	1.29 (U)	—	4.92 (J)	—	—
RE12-10-7702	12-610668	1–1.9	QBT3	—	1.08 (U)	—	—	—	11.4	—	—	—	—	—	—	—	—	—	1.16 (U)	—	—	—	—
RE12-10-7703	12-610669	0–0.7	SOIL	—	1.45 (U)	—	0.599 (U)	—	69.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7704	12-610669	1–2.1	SOIL	—	—	—	0.548 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7705	12-610670	0–0.7	SOIL	—	1.13 (U)	—	0.565 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 4.2-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Barium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Iron	Lead	Magnesium	Manganese	Nickel	Perchlorate	Selenium	Silver	Uranium	Vanadium	Zinc
Qbt 2, 3, 4 BV				**7340**	**0.5**	**46**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**0.5**	**14500**	**11.2**	**1690**	**482**	**6.58**	**na**[a]	**0.3**	**1**	**2.4**	**17**	**63.5**
Sediment BV				**15400**	**0.83**	**127**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**0.82**	**13800**	**19.7**	**2370**	**543**	**9.38**	**na**	**0.3**	**1**	**2.22**	**19.7**	**60.2**
Soil BV				**29200**	**0.83**	**295**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**0.5**	**21500**	**22.3**	**4610**	**671**	**15.4**	**na**	**1.52**	**1**	**1.82**	**39.6**	**48.8**
Industrial SSL[b]				**1130000**	**454**	**224000**	**1120**	**na**	**2920**	**300**[c]	**45400**	**22700**	**795000**	**800**	**na**	**145000**	**22700**	**795**	**5680**	**5680**	**3410**	**5680**	**341000**
Residential SSL[b]				**78100**	**31.3**	**15600**	**77.9**	**na**	**219**	**23**[c]	**3130**	**1560**	**54800**	**400**	**na**	**10700**	**1560**	**54.8**	**391**	**391**	**235**	**391**	**23500**
RE12-10-7706	12-610670	1–2	QBT3	10800	—	102	—	—	14.7	3.15	6.6	—	14600	—	2060 (J+)	—	6.8	—	1.1 (U)	—	—	19.1	—
RE12-10-7707	12-610671	0–0.3	SOIL	—	1.26 (U)	—	—	—	23.9	—	—	—	—	—	—	—	—	—	—	—	5.55 (J)	—	—
RE12-10-7708	12-610671	1–2	QBT3	10800	0.99 (U)	197	—	2780	12.4	5.7	6.77	—	—	15.4	1910 (J+)	—	—	—	1.03 (U)	—	—	27.8	—
RE12-10-7709	12-610672	0–0.8	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.1	—	—
RE12-10-7710	12-610672	1–2.8	QBT3	—	1.04 (U)	—	—	—	12.8	—	—	0.502	—	—	—	—	—	—	1.02 (U)	—	—	—	—
RE12-10-7711	12-610673	0–0.9	SOIL	—	1.2 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.41	—	—
RE12-10-7712	12-610673	1–1.9	QBT3	—	—	—	—	—	11.1	—	—	—	—	—	—	—	—	—	1.11 (U)	—	—	—	—
RE12-10-7713	12-610674	0–0.1	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.78	—	—
RE12-10-7714	12-610674	1–2	SOIL	—	1.06 (U)	—	0.532 (U)	—	—	—	—	—	—	—	—	—	—	0.000612 (J)	—	—	—	—	—
RE12-10-7715	12-610675	0–0.6	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00209 (J)	—	—	8.43 (J)	—	55.8
RE12-10-7716	12-610675	1–2	SOIL	—	0.999 (U)	—	—	—	—	—	—	—	22100	—	—	—	—	—	—	—	—	—	85.6
RE12-10-7717	12-610676	0–0.3	SED	—	1.22 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	1.2 (U)	—	—	—	—
RE12-10-7718	12-610676	1–1.5	QBT3	—	1.12 (U)	—	—	—	32.1	—	—	—	—	—	—	—	—	—	1.11 (U)	—	—	—	—
RE12-10-7719	12-610677	0–0.7	SOIL	—	1.19 (U)	—	0.594 (U)	—	—	—	—	—	—	—	—	—	—	0.000621 (J)	—	—	3.18 (J)	—	—
RE12-10-7722	12-610678	0–0.2	SED	—	1.13 (U)	—	0.566 (U)	—	—	—	—	—	—	—	—	—	—	—	1.11 (U)	—	—	—	—
RE12-10-7856	12-610679	0–0.5	SOIL	—	1.08 (U)	—	0.54 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7857	12-610679	1–1.8	SOIL	—	1.03 (U)	—	0.514 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-8096	12-610680	0–0.5	SOIL	—	1.04 (U)	—	0.52 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-8097	12-610680	1–2	SOIL	—	1.04 (U)	—	0.519 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
SWMU 12-001(b)																							
RE12-10-7617	12-610639	0–0.5	SOIL	—	1.07 (UJ)	—	—	—	31.3	—	—	—	—	—	—	—	—	0.000909 (J)	—	—	2.59	—	—
RE12-10-7618	12-610639	2–3	SOIL	—	1.2 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7619	12-610640	0–1	SOIL	—	1.16 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7620	12-610640	2–2.8	SOIL	—	1.1 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7621	12-610641	0–1	SOIL	—	1.06 (UJ)	503	—	—	—	—	29	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7622	12-610641	2–3.2	SOIL	—	1.06 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7623	12-610642	0–0.5	SOIL	—	1.15 (UJ)	346	—	—	20	—	—	—	—	—	—	—	—	0.00117 (J)	—	—	2.5	—	—
RE12-10-7624	12-610642	2–2.6	SOIL	—	1.08 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	0.000546 (J)	—	—	—	—	—
RE12-10-7625	12-610643	0–0.6	SOIL	—	1.19 (UJ)	—	—	—	27.2	—	18.5	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7626	12-610643	2–3	SOIL	—	1.09 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	0.0006 (J)	—	—	—	—	—
RE12-10-7627	12-610644	0–0.5	SOIL	—	1.3 (UJ)	—	—	—	21.4	—	—	—	—	—	—	—	—	—	—	—	2.92	—	—

Table 4.2-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Barium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Iron	Lead	Magnesium	Manganese	Nickel	Perchlorate	Selenium	Silver	Uranium	Vanadium	Zinc
Qbt 2, 3, 4 BV				**7340**	**0.5**	**46**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**0.5**	**14500**	**11.2**	**1690**	**482**	**6.58**	**na[a]**	**0.3**	**1**	**2.4**	**17**	**63.5**
Sediment BV				**15400**	**0.83**	**127**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**0.82**	**13800**	**19.7**	**2370**	**543**	**9.38**	**na**	**0.3**	**1**	**2.22**	**19.7**	**60.2**
Soil BV				**29200**	**0.83**	**295**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**0.5**	**21500**	**22.3**	**4610**	**671**	**15.4**	**na**	**1.52**	**1**	**1.82**	**39.6**	**48.8**
Industrial SSL[b]				**1130000**	**454**	**224000**	**1120**	**na**	**2920**	**300[c]**	**45400**	**22700**	**795000**	**800**	**na**	**145000**	**22700**	**795**	**5680**	**5680**	**3410**	**5680**	**341000**
Residential SSL[b]				**78100**	**31.3**	**15600**	**77.9**	**na**	**219**	**23[c]**	**3130**	**1560**	**54800**	**400**	**na**	**10700**	**1560**	**54.8**	**391**	**391**	**235**	**391**	**23500**
RE12-10-7628	12-610644	2–2.5	SOIL	—	1.07 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7629	12-610645	0–0.4	SOIL	—	0.886 (U)	—	—	—	74.3	—	—	—	—	—	—	—	—	0.000738 (J)	—	—	3.59	—	—
RE12-10-7630	12-610645	2–2.7	SOIL	—	1.1 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7631	12-610646	0–0.6	SOIL	—	0.955 (U)	—	—	—	56.8	—	—	—	—	—	—	—	—	—	—	—	1.92	—	—
RE12-10-7632	12-610646	2–3	SOIL	—	1.08 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7633	12-610647	0–0.7	SOIL	—	1.18 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	0.000809 (J)	—	—	2.24 (J+)	—	—
RE12-10-7634	12-610647	2–3	SOIL	—	1.1 (UJ)	334 (J)	—	—	—	15.2 (J-)	—	—	—	—	—	1380 (J)	—	—	—	1.11	—	—	—
RE12-10-7635	12-610648	0–0.7	SOIL	—	1.16 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.15	—	—
RE12-10-7636	12-610648	2–3	SOIL	—	1.06 (UJ)	—	0.53 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	1.97	—	—
RE12-10-7638	12-610649	0–0.6	SOIL	—	1.13 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8.68 (J+)	—	—
RE12-10-7637	12-610649	2–3	SOIL	—	1.11 (UJ)	—	0.553 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7639	12-610650	0–0.7	SOIL	—	1.16 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.9 (J+)	—	—
RE12-10-7640	12-610650	2–3	QBT3	11700	1.07 (UJ)	130 (J)	—	—	13.2	5.3 (J-)	5.81	—	14600	—	2080	—	7.19	—	1.06 (UJ)	—	—	23.1	—
RE12-10-7641	12-610651	0–0.9	SOIL	—	1.15 (UJ)	—	—	—	19.6	—	—	—	—	—	—	—	—	—	—	—	7.42	—	—
RE12-10-7642	12-610651	2–3	SOIL	—	1.12 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7643	12-610652	0–0.5	SOIL	—	1.15 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.48	—	—
RE12-10-7644	12-610652	2–3	SOIL	—	1.11 (UJ)	—	0.553 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7645	12-610653	0–1	SOIL	—	1.08 (UJ)	—	0.542 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7646	12-610653	2–3.6	SOIL	—	1.12 (UJ)	—	0.559 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7647	12-610654	0–1	SOIL	—	1.2 (UJ)	—	0.598 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	3.58	—	—
RE12-10-7648	12-610654	2–3	QBT3	—	1.03 (UJ)	140 (J)	—	3240	7.26	—	—	—	—	—	—	—	—	—	1.01 (UJ)	—	—	—	—
RE12-10-7649	12-610655	0–0.7	SOIL	—	1.26 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.92	—	—
RE12-10-7650	12-610655	1.5–2.5	SOIL	—	1.14 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	0.000645 (J)	—	—	—	—	—
SWMU 12-002																							
RE12-10-8094	12-610787	0.4–0.8	QBT3	—	1.03 (U)	74.3	—	—	—	13.4	7.83	—	—	—	—	—	—	—	1.06 (U)	—	—	—	—
RE12-10-8095	12-610787	2–3.3	QBT3	14200	—	191	—	2440	13.5	14.2	11.1	—	18900	13	2220 (J+)	—	9.28	—	1.1 (U)	—	—	27.1	—
AOC C-12-005																							
RE12-10-7663	12-610656	0.00–0.50	SOIL	—	3.89	—	0.636 (U)	—	196	—	—	—	—	48.2	—	—	—	—	—	—	—	—	—
RE12-10-7664	12-610656	2.00–2.90	SOIL	—	1.09 (U)	—	0.546 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7665	12-610657	0.00–0.50	SOIL	—	1.08 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7666	12-610657	2.00–3.60	SOIL	—	1.08 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 4.2-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Barium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Iron	Lead	Magnesium	Manganese	Nickel	Perchlorate	Selenium	Silver	Uranium	Vanadium	Zinc
Qbt 2, 3, 4 BV				**7340**	**0.5**	**46**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**0.5**	**14500**	**11.2**	**1690**	**482**	**6.58**	**na[a]**	**0.3**	**1**	**2.4**	**17**	**63.5**
Sediment BV				**15400**	**0.83**	**127**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**0.82**	**13800**	**19.7**	**2370**	**543**	**9.38**	**na**	**0.3**	**1**	**2.22**	**19.7**	**60.2**
Soil BV				**29200**	**0.83**	**295**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**0.5**	**21500**	**22.3**	**4610**	**671**	**15.4**	**na**	**1.52**	**1**	**1.82**	**39.6**	**48.8**
Industrial SSL[b]				**1130000**	**454**	**224000**	**1120**	**na**	**2920**	**300[c]**	**45400**	**22700**	**795000**	**800**	**na**	**145000**	**22700**	**795**	**5680**	**5680**	**3410**	**5680**	**341000**
Residential SSL[b]				**78100**	**31.3**	**15600**	**77.9**	**na**	**219**	**23[c]**	**3130**	**1560**	**54800**	**400**	**na**	**10700**	**1560**	**54.8**	**391**	**391**	**235**	**391**	**23500**
RE12-10-7667	12-610658	0.00–0.50	SOIL	—	1.2 (U)	—	0.502 (J)	—	31	—	—	—	—	—	—	—	—	—	—	—	2.77	—	—
RE12-10-7668	12-610658	2.50–2.90	SOIL	—	1.09 (U)	—	0.547 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7669	12-610659	0.00–0.40	SOIL	—	1.32 (U)	—	0.661 (U)	—	39	—	—	—	—	—	—	—	—	0.00197 (J)	—	—	2.16	—	—
RE12-10-7670	12-610659	2.00–3.00	SOIL	—	1.1 (U)	—	0.552 (U)	—	—	—	—	—	—	—	—	—	—	0.00124 (J)	—	—	—	—	—
RE12-10-7671	12-610660	0.00–0.60	SOIL	—	1.23 (U)	—	0.613 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7672	12-610660	2.00–2.50	SOIL	—	1.13 (U)	—	0.564 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] na = Not available.

[b] SSLs from NMED 2009, 108070, unless otherwise noted.

[c] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[d] — = Not detected or not detected above BV.

Table 4.2-3
Organic Chemicals Detected at SWMU 12-001(b)

Sample ID	Location ID	Depth (ft)	Media	Amino-2,6-dinitrotoluene[4-]	HMX	PETN	RDX	Tetryl
Industrial SSL[a]				**1900**[b]	**34200**	**na**[c]	**174**	**2740**
Residential SSL[a]				**150**[b]	**3060**	**na**	**44.2**	**244**
RE12-10-7619	12-610640	0–1	SOIL	—[d]	0.217 (J)	—	0.239 (J)	—
RE12-10-7620	12-610640	2–2.8	SOIL	—	0.765 (J)	—	0.277 (J)	—
RE12-10-7621	12-610641	0–1	SOIL	0.127 (J)	11.4	5.82	49.4 (J)	0.333 (J)
RE12-10-7622	12-610641	2–3.2	SOIL	—	2.01 (J)	—	0.413 (J)	—
RE12-10-7623	12-610642	0–0.5	SOIL	—	0.173 (J)	—	0.246 (J)	—
RE12-10-7624	12-610642	2–2.6	SOIL	—	0.487 (J)	—	0.419 (J)	—
RE12-10-7625	12-610643	0–0.6	SOIL	—	—	—	0.113 (J)	—
RE12-10-7631	12-610646	0–0.6	SOIL	—	—	—	0.127 (J)	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] SSLs from NMED 2009, 108070, unless otherwise noted.

[b] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[c] na = Not available.

[d] — = Not detected.

Table 4.2-4
Radionuclides Detected or Detected above BVs/FVs at
Consolidated Unit 12-001(a)-99

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Plutonium-239/240	Uranium-234	Uranium-235/236	Uranium-238
Qbt 2, 3, 4 BV[a]				**na**[b]	**na**	**na**	**1.98**	**0.09**	**1.93**
Sediment BV[a]				**0.04**	**0.9**	**0.068**	**2.59**	**0.2**	**2.29**
Soil BV[a]				**0.013**[c]	**1.65**[c]	**0.054**[c]	**2.59**	**0.2**	**2.29**
Industrial SAL[d]				**180**	**23**	**210**	**1500**	**na**	**430**
Residential SAL[d]				**30**	**5.6**	**33**	**170**	**na**	**87**
Drainage below SWMU 12-001(a)									
RE12-10-7701	12-610668	0–1	SED	—[e]	—	—	—	—	2.32
RE12-10-7707	12-610671	0–0.3	SOIL	—	—	—	2.65	—	3.64
RE12-10-7709	12-610672	0–0.8	SOIL	0.0257	—	—	—	—	2.9
RE12-10-7711	12-610673	0–0.9	SOIL	—	—	—	—	0.205	3.05
RE12-10-7713	12-610674	0–0.1	SOIL	—	—	—	—	—	2.91
RE12-10-7715	12-610675	0–0.6	SOIL	—	—	0.0682	2.86	0.22	3.68
RE12-10-7718	12-610676	1–1.5	QBT3	—	0.227	—	—	—	2.67
RE12-10-7719	12-610677	0–0.7	SOIL	—	—	—	—	—	2.44
RE12-10-7857	12-610679	1–1.8	SOIL	—	0.0779	—	—	—	—
RE12-10-8097	12-610680	1–2	SOIL	—	0.331	—	—	—	—
SWMU 12-001(b)									
RE12-10-7618	12-610639	2–3	SOIL	—	0.345	0.0286	—	—	—
RE12-10-7633	12-610647	0–0.7	SOIL	—	—	—	—	—	2.58
RE12-10-7638	12-610649	0–0.6	SOIL	—	—	—	4.15	—	4.47
RE12-10-7641	12-610651	0–0.9	SOIL	—	—	—	—	—	2.97
RE12-10 -7643	12-610652	0–0.5	SOIL	—	—	—	—	—	2.33

Note: Results are in pCi/g.

[a] BVs/FVs are from LANL 1998, 059730.

[b] na = Not available.

[c] FV applies to soil and tuff samples collected from 0–1 ft only.

[d] SALs from LANL 2009, 107655.

[e] — = Not detected or not detected above BV/FV.

Table 4.3-1
Samples Collected and Analyses Requested at AOC 12-004(a)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	SVOC	TAL Metals
RE12-10-7236	12-610527	0–0.5	QBT3	10-1211	10-1212	10-1210	10-1211	10-1211	10-1211	10-1210	10-1212	10-1210	10-1212
RE12-10-7237	12-610527	1–2	QBT3	10-1211	10-1212	10-1210	10-1211	10-1211	10-1211	10-1210	10-1212	10-1210	10-1212
RE12-10-7238	12-610528	0–0.5	SOIL	10-1211	10-1212	10-1210	10-1211	10-1211	10-1211	10-1210	10-1212	10-1210	10-1212
RE12-10-7239	12-610528	1–2.6	QBT3	10-1211	10-1212	10-1210	10-1211	10-1211	10-1211	10-1210	10-1212	10-1210	10-1212
RE12-10-7240	12-610529	0–0.6	SOIL	10-1211	10-1212	10-1210	10-1211	10-1211	10-1211	10-1210	10-1212	10-1210	10-1212
RE12-10-7241	12-610529	1–2	QBT3	10-1211	10-1212	10-1210	10-1211	10-1211	10-1211	10-1210	10-1212	10-1210	10-1212
RE12-10-7242	12-610530	0–1	SOIL	10-1211	10-1212	10-1210	10-1211	10-1211	10-1211	10-1210	10-1212	10-1210	10-1212
RE12-10-7243	12-610530	1–2	QBT3	10-1211	10-1212	10-1210	10-1211	10-1211	10-1211	10-1210	10-1212	10-1210	10-1212
RE12-10-7252	12-610539	0–0.7	SOIL	10-1211	10-1212	10-1210	10-1211	10-1211	10-1211	—*	10-1212	10-1210	10-1212
RE12-10-7253	12-610539	1–2	QBT3	10-1211	10-1212	10-1210	10-1211	10-1211	10-1211	—	10-1212	10-1210	10-1212
RE12-10-7254	12-610540	0–0.6	SOIL	10-1211	10-1212	10-1210	10-1211	10-1211	10-1211	—	10-1212	10-1210	10-1212
RE12-10-7255	12-610540	1–1.9	QBT3	10-1211	10-1212	10-1210	10-1211	10-1211	10-1211	—	10-1212	10-1210	10-1212
RE12-10-7256	12-610541	0–0.6	SOIL	10-1213	10-1213	10-1213	10-1213	10-1213	10-1213	—	10-1213	10-1213	10-1213
RE12-10-7257	12-610541	1–2	QBT3	10-1213	10-1213	10-1213	10-1213	10-1213	10-1213	—	10-1213	10-1213	10-1213
RE12-10-7258	12-610542	0–0.8	QBT3	10-1227	10-1226	10-1225	10-1227	10-1227	10-1227	—	10-1226	10-1225	10-1226
RE12-10-7259	12-610542	1–1.7	QBT3	10-1227	10-1226	10-1225	10-1227	10-1227	10-1227	—	10-1226	10-1225	10-1226
RE12-10-7260	12-610543	0–1	SOIL	10-1227	10-1226	10-1225	10-1227	10-1227	10-1227	—	10-1226	10-1225	10-1226
RE12-10-7261	12-610543	1–1.8	QBT3	10-1227	10-1226	10-1225	10-1227	10-1227	10-1227	—	10-1226	10-1225	10-1226
RE12-10-7262	12-610544	0–0.6	QBT3	10-1227	10-1226	10-1225	10-1227	10-1227	10-1227	—	10-1226	10-1225	10-1226
RE12-10-7263	12-610544	1–1.7	QBT3	10-1227	10-1226	10-1225	10-1227	10-1227	10-1227	—	10-1226	10-1225	10-1226
RE12-10-7264	12-610545	0–0.9	SOIL	10-1227	10-1226	10-1225	10-1227	10-1227	10-1227	—	10-1226	10-1225	10-1226

Table 4.3-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	SVOC	TAL Metals
RE12-10-7265	12-610545	1–3	QBT3	10-1227	10-1226	10-1225	10-1227	10-1227	10-1227	—	10-1226	10-1225	10-1226
RE12-10-7266	12-610546	0–0.5	SED	10-1227	10-1227	10-1225	10-1227	10-1227	10-1226	—	10-1226	10-1225	10-1226
RE12-10-7267	12-610546	1–2	QBT3	10-1227	10-1227	10-1225	10-1227	10-1227	10-1226	—	10-1226	10-1225	10-1226
RE12-10-7268	12-610547	0–0.7	SOIL	10-1227	10-1227	10-1225	10-1227	10-1227	10-1226	—	10-1226	10-1225	10-1226
RE12-10-7269	12-610547	1–1.9	QBT3	10-1227	10-1227	10-1225	10-1227	10-1227	10-1226	—	10-1226	10-1225	10-1226
RE12-10-7270	12-610548	0–0.8	SOIL	10-1227	10-1227	10-1225	10-1227	10-1227	10-1226	—	10-1226	10-1225	10-1226
RE12-10-7271	12-610548	1–1.8	QBT3	10-1227	10-1227	10-1225	10-1227	10-1227	10-1226	—	10-1226	10-1225	10-1226
RE12-10-7272	12-610549	0–0.3	SED	10-1262	10-1262	10-1262	10-1262	10-1262	10-1262	—	10-1262	10-1262	10-1262
RE12-10-7273	12-610549	1–1.3	QBT3	10-1262	10-1262	10-1262	10-1262	10-1262	10-1262	—	10-1262	10-1262	10-1262
RE12-10-7274	12-610550	0–0.3	SED	10-1262	10-1262	10-1262	10-1262	10-1262	10-1262	—	10-1262	10-1262	10-1262

Note: Numbers in analyte columns are request numbers.

* — = Analysis not requested.

Table 4.3-2
Inorganic Chemicals above BVs at AOC 12-004(a)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Cadmium	Calcium	Chromium	Cobalt	Copper	Lead	Magnesium	Nickel	Perchlorate	Selenium	Uranium	Vanadium	Zinc
Qbt 2, 3, 4 BV				**7340**	**0.5**	**2.79**	**46**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**11.2**	**1690**	**6.58**	**na**[a]	**0.3**	**2.4**	**17**	**63.5**
Sediment BV				**15400**	**0.83**	**3.98**	**127**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**19.7**	**2370**	**9.38**	**na**	**0.3**	**2.22**	**19.7**	**60.2**
Soil BV				**29200**	**0.83**	**8.17**	**295**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**22.3**	**4610**	**15.4**	**na**	**1.52**	**1.82**	**39.6**	**48.8**
Industrial SSL[b]				**1130000**	**454**	**17.7**	**224000**	**1120**	**na**	**2920**	**300**[c]	**45400**	**800**	**na**	**22700**	**795**	**5680**	**3410**	**5680**	**341000**
Residential SSL[b]				**78100**	**31.3**	**3.9**	**15600**	**77.9**	**na**	**219**	**23**[c]	**3130**	**400**	**na**	**1560**	**54.8**	**391**	**235**	**391**	**23500**
RE12-10-7236	12-610527	0–0.5	QBT3	—[d]	1.26 (U)	—	80.8 (J-)	—	—	14.4 (J)	6.3	6.76	12.4	—	—	—	1.26 (U)	2.51	17.1	—
RE12-10-7237	12-610527	1–2	QBT3	7700	1.09 (U)	—	73.9 (J-)	—	—	13.8 (J)	6.96	5.53	22.6	—	—	—	1.09 (U)	—	—	—
RE12-10-7238	12-610528	0–0.5	SOIL	—	1.16 (U)	—	—	0.579 (U)	—	26.4 (J)	—	—	—	—	—	—	—	—	—	—
RE12-10-7239	12-610528	1–2.6	QBT3	10600	1.08 (U)	—	214 (J-)	—	4580	9.3 (J)	4.03	5.81	—	1960 (J+)	8.94	—	1.1 (U)	—	17.9	—
RE12-10-7240	12-610529	0–0.6	SOIL	—	1.15 (U)	—	—	0.574 (U)	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7241	12-610529	1–2	QBT3	8620	1.09 (U)	3.14	169 (J-)	—	4600	8.17 (J)	5.89	6.22	—	2170 (J+)	10.1	0.000553 (J)	1.1 (U)	—	21.6	—
RE12-10-7242	12-610530	0–1	SOIL	—	1.19 (U)	—	—	0.594 (U)	—	—	—	—	—	—	—	—	—	3.08	—	—
RE12-10-7243	12-610530	1–2	QBT3	—	1.05 (U)	—	70.2 (J-)	—	—	10.3 (J)	5.8	—	—	—	—	—	1.03 (U)	—	—	—
RE12-10-7252	12-610539	0–0.7	SOIL	—	1.19 (U)	—	—	0.595 (U)	—	—	—	—	—	—	—	—	—	2.91	—	—
RE12-10-7253	12-610539	1–2	QBT3	—	1.01 (U)	—	—	—	—	16.4 (J)	—	—	—	—	—	—	0.996 (U)	—	—	—
RE12-10-7254	12-610540	0–0.6	SOIL	—	1.14 (U)	—	—	0.572 (U)	—	—	—	—	—	—	—	—	—	2.15	—	—
RE12-10-7255	12-610540	1–1.9	QBT3	—	—	—	56.6 (J-)	—	—	21.3 (J)	3.69	—	—	—	—	—	1.07 (U)	4.58	—	—
RE12-10-7256	12-610541	0–0.6	SOIL	—	—	—	—	—	—	33.8	—	—	—	—	—	0.00078 (J)	—	7.12	—	60.6
RE12-10-7257	12-610541	1–2	QBT3	—	1.1 (U)	—	48.4	—	—	13.2	—	—	—	—	7.01 (J+)	—	1.11 (U)	—	—	—
RE12-10-7258	12-610542	0–0.8	QBT3	—	1.36	—	—	—	—	60.4	4.83	—	—	—	—	—	1.15 (UJ)	—	—	—
RE12-10-7259	12-610542	1–1.7	QBT3	—	1.05 (U)	—	—	—	—	15.2	—	—	—	—	—	—	1.02 (UJ)	—	—	—
RE12-10-7260	12-610543	0–1	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.34	—	—
RE12-10-7261	12-610543	1–1.8	QBT3	—	0.926 (J)	—	67.7	—	2410	43.8	—	5.31	—	—	7.16	—	1.13 (UJ)	—	—	—
RE12-10-7262	12-610544	0–0.6	QBT3	—	—	—	55.2	—	2210	22.7	—	—	—	—	—	—	1.09 (UJ)	—	—	—
RE12-10-7263	12-610544	1–1.7	QBT3	—	—	—	—	—	—	18.5	—	—	—	—	—	—	1.04 (UJ)	—	—	—
RE12-10-7264	12-610545	0–0.9	SOIL	—	1.1 (U)	—	—	—	—	—	—	—	—	—	—	—	—	2.08	—	—
RE12-10-7265	12-610545	1–3	QBT3	—	1.04 (U)	—	—	—	—	—	—	—	—	—	—	—	1.02 (UJ)	—	—	—
RE12-10-7266	12-610546	0–0.5	SED	—	1.07 (J)	—	—	—	—	38.1	—	—	—	—	—	—	1.22 (UJ)	2.63	—	—
RE12-10-7267	12-610546	1–2	QBT3	—	1.04 (U)	—	—	—	—	—	—	—	—	—	—	—	1.07 (UJ)	—	—	—
RE12-10-7268	12-610547	0–0.7	SOIL	—	1.08 (U)	—	—	0.541 (U)	—	—	—	—	—	—	—	—	—	3.89	—	—
RE12-10-7269	12-610547	1–1.9	QBT3	—	1.06 (U)	—	—	—	—	7.37	—	—	—	—	—	—	1.01 (UJ)	—	—	—

Table 4.3-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Cadmium	Calcium	Chromium	Cobalt	Copper	Lead	Magnesium	Nickel	Perchlorate	Selenium	Uranium	Vanadium	Zinc
Qbt 2, 3, 4 BV				**7340**	**0.5**	**2.79**	**46**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**11.2**	**1690**	**6.58**	**na**[a]	**0.3**	**2.4**	**17**	**63.5**
Sediment BV				**15400**	**0.83**	**3.98**	**127**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**19.7**	**2370**	**9.38**	**na**	**0.3**	**2.22**	**19.7**	**60.2**
Soil BV				**29200**	**0.83**	**8.17**	**295**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**22.3**	**4610**	**15.4**	**na**	**1.52**	**1.82**	**39.6**	**48.8**
Industrial SSL[b]				**1130000**	**454**	**17.7**	**224000**	**1120**	**na**	**2920**	**300**[c]	**45400**	**800**	**na**	**22700**	**795**	**5680**	**3410**	**5680**	**341000**
Residential SSL[b]				**78100**	**31.3**	**3.9**	**15600**	**77.9**	**na**	**219**	**23**[c]	**3130**	**400**	**na**	**1560**	**54.8**	**391**	**235**	**391**	**23500**
RE12-10-7270	12-610548	0–0.8	SOIL	—	1.14 (U)	—	—	—	—	—	—	—	—	—	—	—	—	4.76	—	—
RE12-10-7271	12-610548	1–1.8	QBT3	—	—	—	—	—	—	12.6	—	5.07	—	—	—	—	1.06 (UJ)	—	—	—
RE12-10-7272	12-610549	0–0.3	SED	—	—	—	—	0.562 (U)	—	13.7	—	—	—	—	—	—	1.12 (U)	—	—	—
RE12-10-7273	12-610549	1–1.3	QBT3	—	1.16 (U)	—	—	—	—	40.6	—	—	—	—	—	—	1.12 (U)	—	—	—
RE12-10-7274	12-610550	0–0.3	SED	—	1.15 (U)	—	—	0.573 (U)	—	—	—	—	—	—	—	—	1.13 (U)	3.23	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] na = Not available.

[b] SSLs from NMED 2009, 108070, unless otherwise noted.

[c] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[d] — = Not detected or not detected above BV.

Table 4.3-3
Organic Chemicals Detected at AOC 12-004(a)

Sample ID	Location ID	Depth (ft)	Media	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzoic Acid	Chrysene	Di-n-butylphthalate	Fluoranthene	Phenanthrene	Pyrene
Industrial SSL[a]				**23.4**	**2.34**	**23.4**	**18300**[b]	**2500000**[c]	**2340**	**68400**	**24400**	**20500**	**18300**
Residential SSL[a]				**6.21**	**0.621**	**6.21**	**1720**[b]	**240000**[c]	**621**	**6110**	**2290**	**1830**	**1720**
RE12-10-7242	12-610530	0–1	SOIL	0.0192 (J)	—[d]	0.0223 (J)	—	—	—	—	—	—	0.012 (J)
RE12-10-7256	12-610541	0–0.6	SOIL	0.0189 (J)	0.0272 (J)	0.204	0.0151 (J)	—	0.0522	—	0.0589	0.0148 (J)	0.0421 (J)
RE12-10-7261	12-610543	1–1.8	QBT3	—	—	—	—	—	—	0.121 (J)	—	—	—
RE12-10-7270	12-610548	0–0.8	SOIL	—	—	—	—	0.608 (J)	—	—	—	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] SSLs from NMED 2009, 108070, unless otherwise noted.

[b] Pyrene used as a surrogate based on structural similarity.

[c] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[d] — = Not detected.

Table 4.3-4
Radionuclides Detected or Detected above BVs/FVs at AOC 12-004(a)

Sample ID	Location ID	Depth (ft)	Media	Cesium-137	Uranium-234	Uranium-235/236	Uranium-238
Qbt 2, 3, 4 BV[a]				**na**[b]	**1.98**	**0.09**	**1.93**
Sediment BV[a]				**0.9**	**2.59**	**0.2**	**2.29**
Soil BV[a]				**1.65**[c]	**2.59**	**0.2**	**2.29**
Industrial SAL[d]				**23**	**1500**	**na**	**430**
Residential SAL[d]				**5.6**	**170**	**na**	**87**
RE12-10-7236	12-610527	0–0.5	QBT3	0.248	—[e]	—	—
RE12-10-7252	12-610539	0–0.7	SOIL	—	—	—	2.31
RE12-10-7254	12-610540	0–0.6	SOIL	—	—	—	2.41
RE12-10-7255	12-610540	1–1.9	QBT3	0.113	—	—	—
RE12-10-7260	12-610543	0–1	SOIL	—	—	—	3.18
RE12-10-7261	12-610543	1–1.8	QBT3	0.123	—	—	—
RE12-10-7265	12-610545	1–3	QBT3	—	—	0.108	—
RE12-10-7266	12-610546	0–0.5	SED	—	—	—	2.96
RE12-10-7268	12-610547	0–0.7	SOIL	—	—	—	2.57
RE12-10-7269	12-610547	1–1.9	QBT3	0.126	—	0.105	—
RE12-10-7270	12-610548	0–0.8	SOIL	—	—	—	3.1
RE12-10-7271	12-610548	1–1.8	QBT3	—	—	0.124	4.54
RE12-10-7273	12-610549	1–1.3	QBT3	0.124	—	0.0976	—
RE12-10-7274	12-610550	0–0.3	SED	—	3.81	0.253	6.81

Note: Results are in pCi/g.
[a] BVs/FVs are from LANL 1998, 059730.
[b] na = Not available.
[c] FV applies to soil and tuff samples collected from 0–1 ft only.
[d] SALs from LANL 2009, 107655.
[e] — = Not detected or not detected above BV/FV.

Table 4.4-1
Samples Collected and Analyses Requested at AOC 12-004(b)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	SVOC	TAL Metals
RE12-10-7288	12-610553	0–0.75	SOIL	10-1037	10-1037	10-1036	10-1037	10-1037	10-1037	10-1036	10-1037	10-1036	10-1037
RE12-10-7289	12-610553	2.2–3	QBT3	10-1037	10-1037	10-1036	10-1037	10-1037	10-1037	10-1036	10-1037	10-1036	10-1037
RE12-10-7290	12-610553	5–6	QBT3	10-1037	10-1037	10-1036	10-1037	10-1037	10-1037	10-1036	10-1037	10-1036	10-1037
RE12-10-7291	12-610554	0–1	SOIL	10-1037	10-1037	10-1036	10-1037	10-1037	10-1037	—*	10-1037	10-1036	10-1037
RE12-10-7292	12-610554	2–3	QBT3	10-1037	10-1037	10-1036	10-1037	10-1037	10-1037	—	10-1037	10-1036	10-1037
RE12-10-7293	12-610554	5–6	QBT3	10-1037	10-1037	10-1036	10-1037	10-1037	10-1037	—	10-1037	10-1036	10-1037
RE12-10-15442	12-611939	0–0.5	SOIL	10-2689	10-2688	10-2687	10-2689	10-2689	10-2689	10-2687	10-2688	10-2687	10-2688
RE12-10-15443	12-611939	2–2.5	QBT3	10-2689	10-2688	10-2687	10-2689	10-2689	10-2689	10-2687	10-2688	10-2687	10-2688
RE12-10-15444	12-611939	5–5.4	QBT3	10-2689	10-2688	10-2687	10-2689	10-2689	10-2689	10-2687	10-2688	10-2687	10-2688
RE12-10-15445	12-611940	0–0.5	SOIL	10-2689	10-2688	10-2687	10-2689	10-2689	10-2689	—	10-2688	10-2687	10-2688
RE12-10-15446	12-611940	2–2.5	QBT3	10-2689	10-2688	10-2687	10-2689	10-2689	10-2689	—	10-2688	10-2687	10-2688
RE12-10-15447	12-611940	5–5.5	QBT3	10-2689	10-2688	10-2687	10-2689	10-2689	10-2689	—	10-2688	10-2687	10-2688

* — = Analysis not requested.

Table 4.4-2
Inorganic Chemicals above BVs at AOC 12-004(b)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Iron	Lead	Magnesium	Nickel	Perchlorate	Selenium	Uranium	Vanadium
Qbt 2, 3, 4 BV				**7340**	**0.5**	**2.79**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**0.5**	**14500**	**11.2**	**1690**	**6.58**	**na**[a]	**0.3**	**2.4**	**17**
Soil BV				**29200**	**0.83**	**8.17**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**0.5**	**21500**	**22.3**	**4610**	**15.4**	**na**	**1.52**	**1.82**	**39.6**
Industrial SSL[b]				**1130000**	**454**	**17.7**	**224000**	**2260**	**1120**	**na**	**2920**	**300**[c]	**45400**	**22700**	**795000**	**800**	**na**	**22700**	**795**	**5680**	**3410**	**5680**
Residential SSL[b]				**78100**	**31.3**	**3.9**	**15600**	**156**	**77.9**	**na**	**219**	**23c**	**3130**	**1560**	**54800**	**400**	**na**	**1560**	**54.8**	**391**	**235**	**391**
RE12-10-7288	12-610553	0–0.75	SOIL	—[d]	1.05 (U)	—	—	—	—	—	—	9.62	—	—	21700	23.4 (J)	—	—	—	—	2.6	47.5
RE12-10-7289	12-610553	2.2–3	QBT3	9270	—	—	121	—	—	2260 (J+)	8.88	7.69	6.23	—	—	11.5 (J)	1900 (J+)	—	0.000832 (J)	1.09 (U)	—	22.5
RE12-10-7290	12-610553	5–6	QBT3	—	1 (U)	—	—	—	—	—	21.3	7.12	—	—	—	—	—	—	—	1.03 (U)	—	—
RE12-10-7291	12-610554	0–1	SOIL	—	1.05 (U)	—	—	—	0.543 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7292	12-610554	2–3	QBT3	—	1.02 (U)	—	406	—	—	3620 (J+)	10.5	6.07	—	—	—	—	—	—	—	1.03 (U)	—	—
RE12-10-7293	12-610554	5–6	QBT3	—	0.939 (U)	—	—	—	—	—	—	4.49	—	—	—	—	—	—	—	1.01 (U)	—	—
RE12-10-15442	12-611939	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	0.58 (U)	—	23	—	—	—	—	5.8	—
RE12-10-15443	12-611939	2–2.5	QBT3	15200 (J+)	—	3.5	190	—	—	2300	10	5.7	7.3	0.59 (U)	—	16.2	2210	8.3	—	1.1	—	23.1
RE12-10-15444	12-611939	5–5.4	QBT3	14400 (J+)	—	3.8	79.4	1.6	—	5490	13.7	3.5	18	0.6 (U)	—	11.9	3230	13.9	—	1.3	—	21.2
RE12-10-15445	12-611940	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	0.58 (U)	—	—	—	—	—	—	—	—
RE12-10-15446	12-611940	2–2.5	QBT3	—	—	3	140	—	—	2320	8.2	6.4	11.8	0.53 (U)	—	—	—	8.5	—	0.69	—	17.8
RE12-10-15447	12-611940	5–5.5	QBT3	—	—	—	—	—	—	—	8.7	—	12.8	0.52 (U)	—	—	—	7.5	—	1.2	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] na = Not available.

[b] SSLs from NMED 2009, 108070, unless otherwise noted.

[c] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[d] — = Not detected or not detected above BV.

Table 4.4-3
Organic Chemicals Detected at AOC 12-004(b)

Sample ID	Location ID	Depth (ft)	Media	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Indeno(1,2,3-cd)pyrene
Industrial SSL[a]				**8.26**	**8.26**	**23.4**	**2.34**	**23.4**	**18300**[b]	**2340**	**23.4**
Residential SSL[a]				**1.12**	**2.22**	**6.21**	**0.621**	**6.21**	**1720**[b]	**621**	**6.21**
RE12-10-7291	12-610554	0–1	SOIL	NA[c]	NA	—[d]	0.0126 (J)	0.0361 (J)	0.0182 (J)	—	0.0163 (J)
RE12-10-7292	12-610554	2–3	QBT3	NA	NA	0.0231 (J)	0.0187 (J)	0.026 (J)	—	0.027 (J)	—
RE12-10-15442	12-611939	0–0.5	SOIL	0.015 (J)	—	—	—	—	—	—	—
RE12-10-15444	12-611939	5–5.4	QBT3	—	0.011 (J)	—	—	—	—	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] SSLs from NMED 2009, 108070, unless otherwise noted.

[b] Pyrene used as a surrogate.

[c] NA = Not analyzed.

[d] — = Not detected.

Table 4.4-4
Radionuclides Detected or Detected above BVs/FVs at AOC 12-004(b)

Sample ID	Location ID	Depth (ft)	Media	Plutonium-238
Soil BV[a]				**0.023**[b]
Industrial SAL[c]				**240**
Residential SAL[c]				**37**
RE12-10-15445	12-611940	0–0.5	SOIL	0.043

Note: Results are in pCi/g.

[a] BVs/FVs are from LANL 1998, 059730.

[b] FV applies to soil and tuff samples collected from 0–1 ft only.

[c] SALs from LANL 2009, 107655.

Table 4.5-1
Samples Collected and Analyses Requested at AOC C-12-001

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	TAL Metals
RE12-10-7551	12-610624	0.00–0.50	SOIL	10-1038	10-1038	10-1038	10-1038	10-1038	10-1038	10-1038	10-1038	10-1038
RE12-10-7552	12-610624	2.00–3.00	QBT3	10-1038	10-1038	10-1038	10-1038	10-1038	10-1038	10-1038	10-1038	10-1038
RE12-10-7553	12-610625	0.00–0.50	SOIL	10-1038	10-1038	10-1038	10-1038	10-1038	10-1038	—*	10-1038	10-1038
RE12-10-7554	12-610625	2.00–3.00	QBT3	10-1038	10-1038	10-1038	10-1038	10-1038	10-1038	—	10-1038	10-1038
RE12-10-7555	12-610626	0.00–0.50	SOIL	10-1073	10-1073	10-1073	10-1073	10-1073	10-1073	—	10-1073	10-1073
RE12-10-7556	12-610626	2.10–3.00	QBT3	10-1073	10-1073	10-1073	10-1073	10-1073	10-1073	—	10-1073	10-1073
RE12-10-7557	12-610627	0.00–0.50	SOIL	10-1073	10-1073	10-1073	10-1073	10-1073	10-1073	—	10-1073	10-1073
RE12-10-7558	12-610627	2.40–3.00	QBT3	10-1073	10-1073	10-1073	10-1073	10-1073	10-1073	—	10-1073	10-1073
RE12-10-7561	12-610628	0.00–1.00	SOIL	10-1073	10-1073	10-1073	10-1073	10-1073	10-1073	10-1073	10-1073	10-1073
RE12-10-7562	12-610628	2.00–3.00	QBT3	10-1073	10-1073	10-1073	10-1073	10-1073	10-1073	10-1073	10-1073	10-1073

Note: Numbers in analyte columns are request numbers.
* — = Analysis not requested.

Table 4.5-2
Inorganic Chemicals above BVs at AOC C-12-001

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Barium	Cadmium	Calcium	Chromium	Cobalt	Copper	Magnesium	Nickel	Perchlorate	Selenium	Uranium
QBT3 BV				**7340**	**0.5**	**46**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**1690**	**6.58**	**na**[a]	**0.3**	**2.4**
SOIL BV				**29200**	**0.83**	**295**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**4610**	**15.4**	**na**	**1.52**	**1.82**
Industrial SSL[b]				**1130000**	**454**	**224000**	**1120**	**na**	**2920**	**300**[c]	**45400**	**na**	**22700**	**795**	**5680**	**3410**
Residential SSL[b]				**78100**	**31.3**	**15600**	**77.9**	**na**	**219**	**23**[c]	**3130**	**na**	**1560**	**54.8**	**391**	**235**
RE12-10-7551	12-610624	0.00–0.50	SOIL	—[d]	1.08 (U)	—	0.561 (U)	—	—	—	—	—	—	—	—	—
RE12-10-7552	12-610624	2.00–3.00	QBT3	—	1.07 (U)	66.8	—	—	16.9	3.67	—	—	—	—	1.06 (U)	—
RE12-10-7553	12-610625	0.00–0.50	SOIL	—	1.25 (U)	—	0.627 (U)	—	—	—	—	—	—	—	—	4.07
RE12-10-7554	12-610625	2.00–3.00	QBT3	8510	—	132	—	3670 (J+)	27	—	—	1970 (J+)	7.45	0.000754 (J)	1.07 (U)	—
RE12-10-7555	12-610626	0.00–0.50	SOIL	—	1.13 (U)	—	0.564 (U)	—	—	—	—	—	—	—	—	—
RE12-10-7556	12-610626	2.10–3.00	QBT3	8220	1.08 (U)	92.4	—	—	—	3.16	—	—	—	—	1.03 (U)	—
RE12-10-7557	12-610627	0.00–0.50	SOIL	—	1.1 (U)	—	0.548 (U)	—	—	—	—	—	—	—	—	—
RE12-10-7558	12-610627	2.40–3.00	QBT3	8840	1.04 (U)	161	—	4530	—	—	—	1860 (J+)	—	0.00241	1.04 (U)	—
RE12-10-7561	12-610628	0.00–1.00	SOIL	—	1.12 (U)	—	0.558 (U)	—	—	—	—	—	—	—	—	2
RE12-10-7562	12-610628	2.00–3.00	QBT3	10800	1.09 (U)	144	—	2300	8.05	3.56	5.36	2100 (J+)	9.26	—	1.09 (U)	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] na = Not available.

[b] SSLs from NMED 2009, 108070, unless otherwise noted.

[c] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[d] — = Not detected or not detected above BV.

Table 4.5-3
Organic Chemicals Detected at AOC C-12-001

Sample ID	Location ID	Depth (ft)	Media	Aroclor-1242	Aroclor-1254	Aroclor-1260
Industrial SSL*				**8.26**	**8.26**	**8.26**
Residential SSL*				**2.22**	**1.12**	**2.22**
RE12-10-7561	12-610628	0.00–1.00	SOIL	0.114	0.109	0.0477

Notes: Results are in mg/kg.
* SSLs from NMED 2009, 108070.

Table 4.6-1
Samples Collected and Analyses Requested at AOC C-12-002

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	TAL Metals
RE12-10-7580	12-610629	0.00–0.50	SOIL	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032
RE12-10-7581	12-610629	2.00–2.75	SOIL	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032
RE12-10-7582	12-610630	0.00–0.75	SOIL	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032
RE12-10-7583	12-610630	2.00–3.00	SOIL	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032
RE12-10-7584	12-610631	0.00–0.50	SOIL	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032
RE12-10-7585	12-610631	2.00–3.00	QBT3	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032
RE12-10-7586	12-610632	0.00–0.75	SOIL	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032
RE12-10-7587	12-610632	2.00–3.00	QBT3	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032
RE12-10-7590	12-610633	0.00–0.50	SOIL	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032
RE12-10-7591	12-610633	2.00–3.00	SOIL	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032	10-1032

Note: Numbers in analyte columns are request numbers.

Table 4.6-2
Inorganic Chemicals above BVs at AOC C-12-002

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Barium	Cadmium	Calcium	Chromium	Cobalt	Copper	Magnesium	Manganese	Nickel	Perchlorate	Selenium	Uranium	Vanadium
QBT3 BV				**7340**	**0.5**	**46**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**1690**	**482**	**6.58**	**na**[a]	**0.3**	**2.4**	**17**
SOIL BV				**29200**	**0.83**	**295**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**4610**	**671**	**15.4**	**na**	**1.52**	**1.82**	**39.6**
Industrial SSL[b]				**1130000**	**454**	**224000**	**1120**	**na**	**2920**	**300**[c]	**45400**	**na**	**145000**	**22700**	**795**	**5680**	**3410**	**5680**
Residential SSL[b]				**78100**	**31.3**	**15600**	**77.9**	**na**	**219**	**23**[c]	**3130**	**na**	**10700**	**1560**	**54.8**	**391**	**235**	**391**
RE12-10-7580	12-610629	0.00–0.50	SOIL	—[d]	1.11 (U)	—	—	—	—	—	—	—	—	—	—	—	3.13	—
RE12-10-7581	12-610629	2.00–2.75	SOIL	—	1.1 (U)	—	0.55 (U)	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7582	12-610630	0.00–0.75	SOIL	—	1.03 (U)	—	0.514 (U)	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7583	12-610630	2.00–3.00	SOIL	—	1.04 (U)	—	0.522 (U)	—	—	—	—	—	—	—	0.00164 (J)	—	—	—
RE12-10-7584	12-610631	0.00–0.50	SOIL	—	1.07 (U)	—	0.535 (U)	—	—	—	—	—	—	—	—	—	2.55	—
RE12-10-7585	12-610631	2.00–3.00	QBT3	11300	1.08 (U)	125	—	—	11.6	5.28	5.97	1710 (J+)	—	—	—	1.08 (U)	—	18.8
RE12-10-7586	12-610632	0.00–0.75	SOIL	—	1.04 (U)	—	0.521 (U)	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7587	12-610632	2.00–3.00	QBT3	10300	1.07 (U)	275	—	2710	8.79	6.64	7.21	2310 (J+)	—	7.88	—	1.09 (U)	—	21.5
RE12-10-7590	12-610633	0.00–0.50	SOIL	—	1.07 (U)	—	—	—	—	12.1	—	—	1070	—	—	—	—	—
RE12-10-7591	12-610633	2.00–3.00	SOIL	—	1.11 (U)	—	0.554 (U)	—	23	—	—	—	—	—	0.000655 (J)	—	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] na = Not available.

[b] SSLs from NMED 2009, 108070, unless otherwise noted.

[c] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[d] — = Not detected or not detected above BV.

Table 4.7-1
Samples Collected and Analyses Requested at AOC C-12-003

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	TAL Metals
RE12-10-7596	12-610634	0.00–0.60	SOIL	10-1076	10-1075	10-1074	10-1076	10-1076	10-1076	10-1074	10-1075	10-1075
RE12-10-7597	12-610634	2.50–3.00	SOIL	10-1076	10-1075	10-1074	10-1076	10-1076	10-1076	10-1074	10-1075	10-1075
RE12-10-7598	12-610635	0.00–0.50	SOIL	10-1076	10-1075	10-1074	10-1076	10-1076	10-1076	—*	10-1075	10-1075
RE12-10-7599	12-610635	2.00–2.90	QBT3	10-1076	10-1075	10-1074	10-1076	10-1076	10-1076	—	10-1075	10-1075
RE12-10-7600	12-610636	0.00–0.50	SOIL	10-1076	10-1075	10-1074	10-1076	10-1076	10-1076	—	10-1075	10-1075
RE12-10-7601	12-610636	2.00–3.20	QBT3	10-1076	10-1075	10-1074	10-1076	10-1076	10-1076	—	10-1075	10-1075
RE12-10-7602	12-610637	0.00–0.50	SOIL	10-1076	10-1075	10-1074	10-1076	10-1076	10-1076	—	10-1075	10-1075
RE12-10-7603	12-610637	1.90–2.50	QBT3	10-1076	10-1075	10-1074	10-1076	10-1076	10-1076	—	10-1075	10-1075
RE12-10-7606	12-610638	0.00–0.50	SOIL	10-1076	10-1075	10-1074	10-1076	10-1076	10-1076	10-1074	10-1075	10-1075
RE12-10-7607	12-610638	2.00–2.70	QBT3	10-1076	10-1075	10-1074	10-1076	10-1076	10-1076	10-1074	10-1075	10-1075

Note: Numbers in analyte columns are request numbers.
* — = Analysis not requested.

Table 4.7-2
Inorganic Chemicals above BVs at AOC C-12-003

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Cadmium	Chromium	Cobalt	Perchlorate	Selenium	Uranium
QBT3 BV				**0.5**	**46**	**1.63**	**7.14**	**3.14**	**na**[a]	**0.3**	**2.4**
SOIL BV				**0.83**	**295**	**0.4**	**19.3**	**8.64**	**na**	**1.52**	**1.82**
Industrial SSL[b]				**454**	**224000**	**1120**	**2920**	**300**[c]	**795**	**5680**	**3410**
Residential SSL[b]				**31.3**	**15600**	**77.9**	**219**	**23**[c]	**54.8**	**391**	**235**
RE12-10-7596	12-610634	0.00–0.60	SOIL	2.37 (U)	—[d]	0.546 (U)	—	—	—	—	—
RE12-10-7597	12-610634	2.50–3.00	SOIL	2.74 (J)	—	0.523 (U)	—	—	0.0019 (J)	—	—
RE12-10-7598	12-610635	0.00–0.50	SOIL	1.79 (U)	—	0.543 (U)	40.7	—	—	—	—
RE12-10-7599	12-610635	2.00–2.90	QBT3	1.02 (U)	53.7 (J+)	—	—	—	—	1.08 (UJ)	—
RE12-10-7600	12-610636	0.00–0.50	SOIL	2.61 (U)	—	0.555 (U)	104	—	—	—	—
RE12-10-7601	12-610636	2.00–3.20	QBT3	1.55 (U)	57 (J+)	—	—	—	—	1.1 (UJ)	—
RE12-10-7602	12-610637	0.00–0.50	SOIL	1.9 (U)	—	0.535 (U)	—	—	—	—	—
RE12-10-7603	12-610637	1.90–2.50	QBT3	1.35 (U)	—	—	35.2	—	—	0.997 (UJ)	—
RE12-10-7606	12-610638	0.00–0.50	SOIL	2.24 (U)	—	0.555 (U)	—	—	—	—	2.35
RE12-10-7607	12-610638	2.00–2.70	QBT3	1.45 (U)	111 (J+)	—	37.2	3.44	—	1.03 (UJ)	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] na = Not available.

[b] SSLs from NMED 2009, 108070, unless otherwise noted.

[c] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[d] — = Not detected or not detected above BV.

Table 4.8-1
Samples Collected and Analyses Requested at AOC C-12-004

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	TAL Metals
RE12-10-7351	12-610569	0.00–0.50	SOIL	10-988	10-988	10-988	10-988	10-988	10-988	10-988	10-988	10-988
RE12-10-7352	12-610569	2.00–3.00	SOIL	10-989	10-990	10-989	10-989	10-989	10-989	10-989	10-990	10-990
RE12-10-7353	12-610570	0.00–0.75	SOIL	10-989	10-990	10-989	10-989	10-989	10-989	—*	10-990	10-990
RE12-10-7354	12-610570	1.75–2.70	QBT3	10-989	10-990	10-989	10-989	10-989	10-989	—	10-990	10-990
RE12-10-7355	12-610571	0.00–0.75	SOIL	10-989	10-990	10-989	10-989	10-989	10-989	—	10-990	10-990
RE12-10-7356	12-610571	2.00–2.50	QBT3	10-989	10-990	10-989	10-989	10-989	10-989	—	10-990	10-990
RE12-10-7357	12-610572	0.00–0.75	SOIL	10-989	10-990	10-989	10-989	10-989	10-989	—	10-990	10-990
RE12-10-7358	12-610572	2.00–2.50	SOIL	10-989	10-990	10-989	10-989	10-989	10-989	—	10-990	10-990
RE12-10-7359	12-610573	0.00–0.50	SOIL	10-989	10-990	10-989	10-989	10-989	10-989	—	10-990	10-990
RE12-10-7360	12-610573	2.00–2.50	QBT3	10-989	10-990	10-989	10-989	10-989	10-989	—	10-990	10-990

Note: Numbers in analyte columns are request numbers.

* — = Analysis not requested.

Table 4.8-2
Inorganic Chemicals above BVs at AOC C-12-004

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Barium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Nickel	Perchlorate	Selenium	Silver	Uranium	Vanadium	Zinc
QBT3 BV				**7340**	**0.5**	**46**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**14500**	**11.2**	**1690**	**6.58**	**na**[a]	**0.3**	**1**	**2.4**	**17**	**63.5**
SOIL BV				**29200**	**0.83**	**295**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**21500**	**22.3**	**4610**	**15.4**	**na**	**1.52**	**1**	**1.82**	**39.6**	**48.8**
Industrial SSL[b]				**1130000**	**454**	**224000**	**1120**	**na**	**2920**	**300**[c]	**45400**	**795000**	**800**	**na**	**22700**	**795**	**5680**	**5680**	**3410**	**5680**	**341000**
Residential SSL[b]				**78100**	**31.3**	**15600**	**77.9**	**na**	**219**	**23**[c]	**3130**	**54800**	**400**	**na**	**1560**	**54.8**	**391**	**391**	**235**	**391**	**23500**
RE12-10-7351	12-610569	0.00–0.50	SOIL	—[d]	1.02 (UJ)	—	0.832	—	—	—	28.1	—	—	—	—	—	—	2.56	3.86	—	—
RE12-10-7352	12-610569	2.00–3.00	SOIL	—	1.1 (UJ)	—	0.548 (U)	—	—	—	—	—	—	—	—	0.00117 (J)	—	—	—	—	—
RE12-10-7353	12-610570	0.00–0.75	SOIL	—	1.21 (UJ)	—	0.606 (U)	—	33.5	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7354	12-610570	1.75–2.70	QBT3	10800	1.07 (UJ)	166 (J-)	—	—	10.1	5.38	6.8	—	12.4	1880	—	—	1.07 (U)	—	—	26.7	—
RE12-10-7355	12-610571	0.00–0.75	SOIL	—	1.11 (UJ)	—	0.556 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE12-10-7356	12-610571	2.00–2.50	QBT3	12800	0.985 (UJ)	171 (J-)	—	3810	13.1	4.56	5.77	14700	—	2500	7.09	0.0012 (J)	1.11 (U)	—	—	19.2	—
RE12-10-7357	12-610572	0.00–0.75	SOIL	—	—	—	0.525 (U)	—	—	—	—	—	58.6	—	—	—	—	—	1.91 (U)	—	54.9
RE12-10-7358	12-610572	2.00–2.50	SOIL	—	1.12 (UJ)	—	0.562 (U)	—	—	—	—	—	29.7	—	—	0.00104 (J)	—	—	—	—	—
RE12-10-7359	12-610573	0.00–0.50	SOIL	—	1.01 (UJ)	—	0.505 (U)	—	—	—	—	—	—	—	—	—	—	—	2.86 (U)	—	—
RE12-10-7360	12-610573	2.00–2.50	QBT3	17100	1.11 (UJ)	143 (J-)	—	2300	11.6	6.49	7.29	15100	—	2320	8.43	—	1.12 (U)	—	—	24.9	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] na = Not available.
[b] SSLs from NMED 2009, 108070, unless otherwise noted.
[c] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).
[d] — = Not detected or not detected above BV.

Table 5.2-1
Samples Collected and Analyses Requested at AOC C-14-006

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Isotopic Plutonium	Isotopic Uranium	Nitrate	PCB	Perchlorate	SVOC	TAL Metals	VOC
RE14-10-7679	14-610661	0–0.5	SOIL	10-1385	10-1386	10-1384	10-1385	10-1385	10-1385	10-1386	10-1384	10-1386	10-1384	10-1386	10-1384
RE14-10-7680	14-610661	2–3.1	SOIL	10-1385	10-1386	10-1384	10-1385	10-1385	10-1385	10-1386	10-1384	10-1386	10-1384	10-1386	10-1384
RE14-10-7681	14-610662	0–0.5	SOIL	10-1385	10-1386	10-1384	10-1385	10-1385	10-1385	10-1386	—*	10-1386	10-1384	10-1386	10-1384
RE14-10-7682	14-610662	2–4.5	SOIL	10-1385	10-1386	10-1384	10-1385	10-1385	10-1385	10-1386	—	10-1386	10-1384	10-1386	10-1384
RE14-10-7683	14-610663	0–0.3	SOIL	10-1385	10-1386	10-1384	10-1385	10-1385	10-1385	10-1386	—	10-1386	10-1384	10-1386	10-1384
RE14-10-7684	14-610663	2–3.3	SOIL	10-1385	10-1386	10-1384	10-1385	10-1385	10-1385	10-1386	—	10-1386	10-1384	10-1386	10-1384
RE14-10-7685	14-610664	0–0.5	SOIL	10-1385	10-1386	10-1384	10-1385	10-1385	10-1385	10-1386	—	10-1386	10-1384	10-1386	10-1384
RE14-10-7686	14-610664	2–4	SOIL	10-1385	10-1386	10-1384	10-1385	10-1385	10-1385	10-1386	—	10-1386	10-1384	10-1386	10-1384
RE14-10-7687	14-610665	0–0.8	SOIL	10-1385	10-1386	10-1384	10-1385	10-1385	10-1385	10-1386	—	10-1386	10-1384	10-1386	10-1384
RE14-10-7688	14-610665	2.4–3.5	SOIL	10-1385	10-1386	10-1384	10-1385	10-1385	10-1385	10-1386	—	10-1386	10-1384	10-1386	10-1384

Note: Numbers in analyte columns are request numbers.
* — = Analysis not requested.

Table 5.2-2
Inorganic Chemicals above BVs at AOC C-14-006

Sample ID	Location ID	Depth (ft)	Media	Antimony	Cadmium	Chromium	Nitrate	Perchlorate	Uranium
Soil BV				**0.83**	**0.4**	**19.3**	**na**[a]	**na**	**1.82**
Industrial SSL[b]				**454**	**1120**	**2920**	**1820000**	**795**	**3410**
Residential SSL[b]				**31.3**	**77.9**	**219**	**125000**	**54.8**	**235**
RE14-10-7679	14-610661	0–0.5	SOIL	1.27 (UJ)	0.636 (U)	—[c]	1.49	—	—
RE14-10-7680	14-610661	2–3.1	SOIL	0.922 (J-)	0.543 (U)	—	1.3	0.00188 (J)	—
RE14-10-7681	14-610662	0–0.5	SOIL	1.09 (J-)	0.645 (U)	—	—	—	—
RE14-10-7682	14-610662	2–4.5	SOIL	0.873 (J-)	0.558 (U)	—	1.41	0.00125 (J)	—
RE14-10-7683	14-610663	0–0.3	SOIL	1.1 (J-)	0.653 (U)	—	1.82	0.00135 (J)	1.94
RE14-10-7684	14-610663	2–3.3	SOIL	—	0.568 (U)	—	1.56	—	—
RE14-10-7685	14-610664	0–0.5	SOIL	1.17 (UJ)	0.584 (U)	20.7	—	—	—
RE14-10-7686	14-610664	2–4	SOIL	—	0.629 (U)	—	1.56	0.00135 (J)	—
RE14-10-7687	14-610665	0–0.8	SOIL	—	0.662 (U)	—	—	—	—
RE14-10-7688	14-610665	2.4–3.5	SOIL	—	0.626 (U)	—	1.49	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] na = Not available.

[b] SSLs from NMED 2009, 108070.

[c] — = Not detected or not detected above BV.

Table 5.2-3
Organic Chemicals Detected at AOC C-14-006

Sample ID	Location ID	Depth (ft)	Media	Acetone	Isopropyltoluene[4-]	TATB	Toluene
Industrial SSL[a]				**851000**	**14900**[b]	**na**[c]	**57900**
Residential SSL[a]				**67500**	**3210b**	**na**	**5570**
RE14-10-7679	14-610661	0–0.5	SOIL	—[d]	—	1.2	—
RE14-10-7681	14-610662	0–0.5	SOIL	—	—	0.404 (J)	—
RE14-10-7683	14-610663	0–0.3	SOIL	0.00973 (J-)	0.00075 (J-)	11.3	0.00067 (J-)
RE14-10-7685	14-610664	0–0.5	SOIL	—	—	6.84	—
RE14-10-7687	14-610665	0–0.8	SOIL	0.00363 (J-)	0.00229 (J-)	1.61	0.000887 (J-)

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] SSLs from NMED 2009, 108070, unless otherwise noted.

[b] Isopropylbenzene used as a surrogate.

[c] na = Not available.

[d] — = Not detected.

Table 6.3-1
Samples Collected and Analyses Requested at AOC 15-004(d)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	TAL Metals	Uranium
AAB3451	15-02100	1.5–2	SOIL	—*	—	—	19509	—	—	—	—	18681	19509
AAB3461	15-02112	0–0.5	SOIL	—	—	—	19509	—	—	—	—	18681	19509
RE15-10-8112	15-610788	0–0.5	SOIL	10-1516	10-1517	10-1516	10-1516	10-1516	10-1516	10-1516	10-1517	10-1517	—
RE15-10-8113	15-610788	2–3	SOIL	10-1516	10-1517	10-1516	10-1516	10-1516	10-1516	10-1516	10-1517	10-1517	—
RE15-10-8114	15-610789	0–0.5	SOIL	10-1516	10-1517	10-1516	10-1516	10-1516	10-1516	—	10-1517	10-1517	—
RE15-10-8115	15-610789	2–3	SOIL	10-1516	10-1517	10-1516	10-1516	10-1516	10-1516	—	10-1517	10-1517	—
RE15-10-8116	15-610790	0–0.5	SOIL	10-1516	10-1517	10-1516	10-1516	10-1516	10-1516	—	10-1517	10-1517	—
RE15-10-8117	15-610790	2–3	SOIL	10-1516	10-1517	10-1516	10-1516	10-1516	10-1516	—	10-1517	10-1517	—
RE15-10-8118	15-610791	0–0.5	SOIL	10-1516	10-1517	10-1516	10-1516	10-1516	10-1516	—	10-1517	10-1517	—
RE15-10-8119	15-610791	2–3	SOIL	10-1516	10-1517	10-1516	10-1516	10-1516	10-1516	—	10-1517	10-1517	—

Note: Numbers in analyte columns are request numbers.

* — = Analysis not requested.

Table 6.3-2
Inorganic Chemicals above BVs at AOC 15-004(d)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Cadmium	Calcium	Chromium	Copper	Lead	Manganese	Mercury	Perchlorate	Uranium
Soil BV				**0.83**	**295**	**0.4**	**6120**	**19.3**	**14.7**	**22.3**	**671**	**0.1**	**na**[a]	**1.82**
Industrial SSL[b]				**454**	**224000**	**1120**	**na**	**2920**	**45400**	**800**	**145000**	**310**[c]	**795**	**3410**
Residential SSL[b]				**31.3**	**15600**	**77.9**	**na**	**219**	**3130**	**400**	**10700**	**23**[c]	**54.8**	**235**
AAB3451	15-02100	1.5–2	SOIL	3.9 (U)	—[d]	1 (U)	—	—	—	—	—	0.11 (U)	NA[e]	3.17
AAB3461	15-02112	0–0.5	SOIL	3.8 (U)	—	0.96 (U)	—	—	49.4	48.5	—	0.27 (J)	NA	66.3
RE15-10-8112	15-610788	0–0.5	SOIL	—	—	0.746 (U)	—	—	—	—	—	—	—	10.4
RE15-10-8113	15-610788	2–3	SOIL	—	—	0.55 (U)	—	—	—	—	—	—	0.000597 (J)	—
RE15-10-8114	15-610789	0–0.5	SOIL	1.77 (UJ)	—	0.883 (U)	—	—	29.9	35.8	797 (J)	—	—	23.8
RE15-10-8115	15-610789	2–3	SOIL	1.51 (J-)	—	0.584 (U)	—	21.3	—	—	—	—	—	—
RE15-10-8116	15-610790	0–0.5	SOIL	—	—	0.653 (U)	—	—	—	—	—	—	—	11.8
RE15-10-8117	15-610790	2–3	SOIL	—	—	0.531 (U)	—	—	—	—	—	—	0.000695 (J)	29.5
RE15-10-8118	15-610791	0–0.5	SOIL	—	—	0.674 (U)	—	—	—	—	—	—	—	18.9
RE15-10-8119	15-610791	2–3	SOIL	1.02 (J-)	405	0.561 (U)	12100	—	—	—	—	—	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] na = Not available.

[b] SSLs from NMED 2009, 108070, unless otherwise noted.

[c] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[d] — = Not detected or not detected above BV.

[e] NA = Not analyzed.

Table 6.3-3
Radionuclides Detected or Detected above BVs/FVs at AOC 15-004(d)

Sample ID	Location ID	Depth (ft)	Media	Cesium-137	Uranium-234	Uranium-235/236	Uranium-238
Soil BV[a]				**1.65**[b]	**2.59**	**0.2**	**2.29**
Industrial SAL[c]				**23**	**1500**	**na**[d]	**430**
Residential SAL[c]				**5.6**	**170**	**na**	**87**
RE15-10-8112	15-610788	0–0.5	SOIL	—[e]	—	—	3.73
RE15-10-8114	15-610789	0–0.5	SOIL	—	6.91	0.444	13.2
RE15-10-8116	15-610790	0–0.5	SOIL	—	7.53	0.456	8.42
RE15-10-8117	15-610790	2–3	SOIL	0.181	3.23	—	4.09
RE15-10-8118	15-610791	0–0.5	SOIL	—	3.99	0.28	5.53

Note: Results are in pCi/g.

[a] BVs/FVs are from LANL 1998, 059730.

[b] FV applies to soil and tuff samples collected from 0–1 ft only.

[c] SALs from LANL 2009, 107655.

[d] na = Not available.

[e] — = Not detected or not detected above BV/FV.

Table 6.4-1
Samples Collected and Analyses Requested at AOC 15-005(c)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	SVOC	TAL Metals	VOC
RE15-10-7300	15-610555	0–0.5	SED	10-1383	10-1383	10-1382	10-1383	10-1383	10-1383	10-1382	10-1383	10-1382	10-1383	10-1382
RE15-10-7301	15-610555	1–2	SED	10-1383	10-1383	10-1382	10-1383	10-1383	10-1383	10-1382	10-1383	10-1382	10-1383	10-1382
RE15-10-7302	15-610556	0–0.7	SED	10-1383	10-1383	10-1382	10-1383	10-1383	10-1383	10-1382	10-1383	10-1382	10-1383	10-1382
RE15-10-7303	15-610556	1–3	SED	10-1383	10-1383	10-1382	10-1383	10-1383	10-1383	10-1382	10-1383	10-1382	10-1383	10-1382
RE15-10-7304	15-610557	0–0.5	SED	10-1383	10-1383	10-1382	10-1383	10-1383	10-1383	10-1382	10-1383	10-1382	10-1383	10-1382
RE15-10-7305	15-610557	1–2	SED	10-1383	10-1383	10-1382	10-1383	10-1383	10-1383	10-1382	10-1383	10-1382	10-1383	10-1382
RE15-10-7306	15-610558	0–0.5	SOIL	10-1383	10-1383	10-1382	10-1383	10-1383	10-1383	10-1382	10-1383	10-1382	10-1383	10-1382
RE15-10-7307	15-610558	2–3	SOIL	10-1383	10-1383	10-1382	10-1383	10-1383	10-1383	10-1382	10-1383	10-1382	10-1383	10-1382
RE15-10-7308	15-610559	0–0.5	SOIL	10-1511	10-1511	10-1510	10-1511	10-1511	10-1511	10-1510	10-1511	10-1510	10-1511	10-1510
RE15-10-7309	15-610559	2–3.3	SOIL	10-1511	10-1511	10-1510	10-1511	10-1511	10-1511	10-1510	10-1511	10-1510	10-1511	10-1510
RE15-10-7310	15-610560	0–0.5	SOIL	10-1383	10-1383	10-1382	10-1383	10-1383	10-1383	—*	10-1383	10-1382	10-1383	10-1382
RE15-10-7311	15-610560	2–4	SOIL	10-1383	10-1383	10-1382	10-1383	10-1383	10-1383	—	10-1383	10-1382	10-1383	10-1382
RE15-10-7312	15-610561	0–0.5	SOIL	10-1511	10-1511	10-1510	10-1511	10-1511	10-1511	—	10-1511	10-1510	10-1511	10-1510
RE15-10-7313	15-610561	2–3	SOIL	10-1511	10-1511	10-1510	10-1511	10-1511	10-1511	—	10-1511	10-1510	10-1511	10-1510
RE15-10-7314	15-610562	0–0.5	SOIL	10-1511	10-1511	10-1510	10-1511	10-1511	10-1511	—	10-1511	10-1510	10-1511	10-1510
RE15-10-7315	15-610562	2–3	SOIL	10-1511	10-1511	10-1510	10-1511	10-1511	10-1511	—	10-1511	10-1510	10-1511	10-1510
RE15-10-7316	15-610563	0–0.7	SOIL	10-1511	10-1511	10-1510	10-1511	10-1511	10-1511	—	10-1511	10-1510	10-1511	10-1510
RE15-10-7317	15-610563	2–3	SOIL	10-1511	10-1511	10-1510	10-1511	10-1511	10-1511	—	10-1511	10-1510	10-1511	10-1510
RE15-10-7318	15-610564	0–0.7	SOIL	10-1511	10-1511	10-1510	10-1511	10-1511	10-1511	—	10-1511	10-1510	10-1511	10-1510
RE15-10-7319	15-610564	2–3	SOIL	10-1511	10-1511	10-1510	10-1511	10-1511	10-1511	—	10-1511	10-1510	10-1511	10-1510

Note: Numbers in analyte columns are request numbers.

* — = Analysis not requested.

Table 6.4-2
Inorganic Chemicals above BVs at AOC 15-005(c)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese	Perchlorate	Selenium	Uranium	Vanadium
Sediment BV				**0.83**	**127**	**0.4**	**10.5**	**4.73**	**11.2**	**13800**	**19.7**	**543**	**na**[a]	**0.3**	**2.22**	**19.7**
Soil BV				**0.83**	**295**	**0.4**	**19.3**	**8.64**	**14.7**	**21500**	**22.3**	**671**	**na**	**1.52**	**1.82**	**39.6**
Industrial SSL[b]				**454**	**224000**	**1120**	**2920**	**300**[c]	**45400**	**795000**	**800**	**145000**	**795**	**5680**	**3410**	**5680**
Residential SSL[b]				**31.3**	**15600**	**77.9**	**219**	**23**[c]	**3130**	**54800**	**400**	**10700**	**54.8**	**391**	**235**	**391**
RE15-10-7300	15-610555	0–0.5	SED	1.38 (U)	196	0.69 (U)	12.1 (J)	5.87	30.6	14800	—[d]	—	—	1.26 (U)	4.65	31.8
RE15-10-7301	15-610555	1–2	SED	1.17 (U)	184	0.584 (U)	10.9 (J)	5.34	11.8	—	—	—	—	1.16 (U)	—	25.2
RE15-10-7302	15-610556	0–0.7	SED	1.29 (U)	196	0.645 (U)	—	5.37	14.5	—	—	—	—	1.28 (U)	3.95	26.8
RE15-10-7303	15-610556	1–3	SED	1.17 (U)	214	0.585 (U)	10.7 (J)	5.88	—	14200	—	—	—	1.19 (U)	—	28.4
RE15-10-7304	15-610557	0–0.5	SED	1.25 (U)	176	0.624 (U)	—	5.12	—	—	—	—	—	1.27 (U)	4.62	26.5
RE15-10-7305	15-610557	1–2	SED	1.41 (U)	183	0.703 (U)	—	—	—	—	—	—	—	1.28 (U)	—	21.6
RE15-10-7306	15-610558	0–0.5	SOIL	1.17 (U)	—	0.585 (U)	—	—	—	—	—	—	—	—	6.14	—
RE15-10-7307	15-610558	2–3	SOIL	1.1 (U)	—	0.548 (U)	—	—	—	—	—	—	—	—	—	—
RE15-10-7308	15-610559	0–0.5	SOIL	—	—	0.644 (U)	—	—	—	—	63.8	—	—	—	7.73	—
RE15-10-7309	15-610559	2–3.3	SOIL	—	—	0.536 (U)	—	—	—	—	—	—	0.000892 (J)	—	—	—
RE15-10-7310	15-610560	0–0.5	SOIL	1.3 (U)	—	0.651 (U)	—	—	—	—	—	—	—	—	5.2	—
RE15-10-7311	15-610560	2–4	SOIL	1.25 (U)	—	0.623 (U)	—	—	—	—	—	—	—	—	2.15	—
RE15-10-7312	15-610561	0–0.5	SOIL	—	—	0.688 (U)	—	9.87	—	—	—	693	—	—	17.4	—
RE15-10-7313	15-610561	2–3	SOIL	—	—	0.552 (U)	—	—	—	—	—	—	0.000928 (J)	—	—	—
RE15-10-7314	15-610562	0–0.5	SOIL	—	—	0.711 (U)	—	—	—	—	—	—	—	—	8.52	—
RE15-10-7315	15-610562	2–3	SOIL	1.22	—	0.539 (U)	—	—	—	—	—	—	—	—	—	—
RE15-10-7316	15-610563	0–0.7	SOIL	0.869 (J)	—	0.767 (U)	—	—	—	—	—	—	—	—	6.4	—
RE15-10-7317	15-610563	2–3	SOIL	1.08 (U)	—	0.54 (U)	—	—	—	—	—	—	—	—	—	—
RE15-10-7318	15-610564	0–0.7	SOIL	0.895 (J)	—	0.56 (U)	—	—	—	—	69.6	—	0.00149 (J)	—	7.65	—
RE15-10-7319	15-610564	2–3	SOIL	0.905 (J)	—	0.557 (U)	—	—	—	—	—	—	0.000618 (J)	—	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] na = Not available.

[b] SSLs from NMED 2009, 108070, unless otherwise noted.

[c] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[d] — = Not detected or not detected above BV.

Table 6.4-3
Organic Chemicals Detected at AOC 15-005(c)

Sample ID	Location ID	Depth (ft)	Media	Acetone	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Bis(2-ethylhexyl)phthalate	Chrysene	Ethylbenzene	Fluoranthene	Indeno(1,2,3-cd)pyrene	Isopropyltoluene[4-]	Methylnaphthalene[2-]	Naphthalene	Phenanthrene	Pyrene	Toluene	Xylene[1,3-]+Xylene[1,4-]
Industrial SSL[a]				**851000**	**23.4**	**18300[b]**	**234**	**1370**	**2340**	**385**	**24400**	**23.4**	**14900[c]**	**4100[d]**	**252**	**20500**	**18300**	**57900**	**3610**
Residential SSL[a]				**67500**	**6.21**	**1720[b]**	**62.1**	**347**	**621**	**69.7**	**2290**	**6.21**	**3210[c]**	**310[d]**	**45**	**1830**	**1720**	**5570**	**1090**
RE15-10-7302	15-610556	0–0.7	SED	—[e]	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.000474 (J)
RE15-10-7303	15-610556	1–3	SED	—	—	—	—	—	—	0.00063 (J)	—	—	—	—	—	—	—	—	0.000556 (J)
RE15-10-7306	15-610558	0–0.5	SOIL	0.0144 (J)	—	—	—	—	—	0.000395 (J+)	—	—	0.00049 (J+)	—	—	—	—	0.000754 (J+)	0.000984 (J+)
RE15-10-7308	15-610559	0–0.5	SOIL	—	—	—	—	0.0995 (J)	—	—	—	—	—	—	—	—	—	—	—
RE15-10-7310	15-610560	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.000642 (J)
RE15-10-7312	15-610561	0–0.5	SOIL	0.0188 (J)	—	—	—	—	—	—	—	—	0.00151	—	—	—	—	—	0.000406 (J)
RE15-10-7314	15-610562	0–0.5	SOIL	—	0.12	0.0254 (J)	0.0463 (J)	—	0.0919	—	0.311	0.173	—	0.0123 (J)	0.0208 (J)	0.235	0.205	—	—
RE15-10-7315	15-610562	2–3	SOIL	—	—	—	—	—	—	—	0.0123 (J)	—	—	—	—	—	—	—	—
RE15-10-7316	15-610563	0–0.7	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.000538 (J)	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] SSLs from NMED 2009, 108070, unless otherwise noted.

[b] Pyrene used as a surrogate.

[c] Isopropylbenzene used as a surrogate.

[d] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[e] — = Not detected.

Table 6.4-4
Radionuclides Detected or Detected above BVs/FVs at AOC 15-005(c)

Sample ID	Location ID	Depth (ft)	Media	Uranium-234	Uranium-235/236	Uranium-238
Sediment BV[a]				**2.59**	**0.2**	**2.29**
Soil BV[a]				**2.59**	**0.2**	**2.29**
Industrial SAL[b]				**1500**	**na**[c]	**430**
Residential SAL[b]				**170**	**na**	**87**
RE15-10-7300	15-610555	0–0.5	SED	3.1	—[d]	3.85
RE15-10-7302	15-610556	0–0.7	SED	4.08	0.223	4.84
RE15-10-7304	15-610557	0–0.5	SED	—	—	3.03
RE15-10-7306	15-610558	0–0.5	SOIL	2.92	0.231	3.57
RE15-10-7308	15-610559	0–0.5	SOIL	3.62	0.215	4.59
RE15-10-7310	15-610560	0–0.5	SOIL	3.54	—	4.37
RE15-10-7312	15-610561	0–0.5	SOIL	7.59	0.405	7.64
RE15-10-7314	15-610562	0–0.5	SOIL	—	—	2.99
RE15-10-7316	15-610563	0–0.7	SOIL	—	—	2.95
RE15-10-7318	15-610564	0–0.7	SOIL	4.65	0.252	7.77

Note: Results are in pCi/g.

[a] BVs/FVs are from LANL 1998, 059730.

[b] SALs from LANL 2009, 107655.

[c] na = Not available.

[d] — = Not detected or not detected above BV/FV.

Table 6.5-1
Samples Collected and Analyses Requested at SWMU 15-008(b)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	TAL Metals	Uranium
AAB3503	15-02500	0–0.5	SOIL	—*	—	—	—	—	—	—	—	—	18681	19509
AAB3504	15-02500	1.5–2	SOIL	—	—	—	—	—	—	—	—	—	18681	19509
AAB3398	15-02501	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	18681	19509
AAB3530	15-02501	1.5–2	SOIL	—	—	—	—	—	—	—	—	—	18681	19509
AAB3355	15-02502	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	18681	19509
AAB3401	15-02502	1.5–2	SOIL	—	—	—	—	—	—	—	—	—	18681	19509
AAB3353	15-02503	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	18681	19509
AAB3352	15-02503	1.5–2	SOIL	—	—	—	—	—	—	—	—	—	18681	19509
RE15-10-7869	15-610704	0–0.5	SOIL	10-1393	10-1392	10-1392	10-1393	10-1393	10-1393	10-1393	10-1392	10-1392	10-1392	—
RE15-10-7870	15-610704	1–2.5	QBT3	10-1393	10-1392	10-1392	10-1393	10-1393	10-1393	10-1393	10-1392	10-1392	10-1392	—
RE15-10-7871	15-610705	0–0.5	SOIL	10-1393	10-1392	10-1392	10-1393	10-1393	10-1393	10-1393	10-1392	10-1392	10-1392	—
RE15-10-7872	15-610705	2–3	QBT3	10-1393	10-1392	10-1392	10-1393	10-1393	10-1393	10-1393	10-1392	10-1392	10-1392	—
RE15-10-7873	15-610706	0–0.5	SOIL	10-1393	10-1392	10-1392	10-1393	10-1393	10-1393	10-1393	10-1392	10-1392	10-1392	—
RE15-10-7874	15-610706	2–3.5	QBT3	10-1393	10-1392	10-1392	10-1393	10-1393	10-1393	10-1393	10-1392	10-1392	10-1392	—
RE15-10-7875	15-610707	0–0.5	SOIL	10-1379	10-1378	10-1378	10-1379	10-1379	10-1379	10-1379	10-1378	10-1378	10-1378	—
RE15-10-7876	15-610707	2.5–3.5	QBT3	10-1379	10-1378	10-1378	10-1379	10-1379	10-1379	10-1379	10-1378	10-1378	10-1378	—
RE15-10-7877	15-610708	0–0.5	SOIL	10-1379	10-1378	10-1378	10-1379	10-1379	10-1379	10-1379	10-1378	10-1378	10-1378	—
RE15-10-7878	15-610708	3–4	QBT3	10-1379	10-1378	10-1378	10-1379	10-1379	10-1379	10-1379	10-1378	10-1378	10-1378	—
RE15-10-7879	15-610709	0–0.5	SOIL	10-1379	10-1378	10-1378	10-1379	10-1379	10-1379	10-1379	10-1378	10-1378	10-1378	—
RE15-10-7880	15-610709	2.8–3.6	QBT3	10-1513	10-1512	10-1512	10-1513	10-1513	10-1513	10-1513	10-1512	10-1512	10-1512	—
RE15-10-7881	15-610710	0–0.5	SOIL	10-1472	10-1471	10-1470	10-1472	10-1472	10-1472	10-1472	10-1470	10-1471	10-1471	—

Table 6.5-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	TAL Metals	Uranium
RE15-10-7882	15-610710	1–1.6	QBT3	10-1472	10-1471	10-1470	10-1472	10-1472	10-1472	10-1472	10-1470	10-1471	10-1471	—
RE15-10-7883	15-610711	0–0.4	SOIL	10-1434	10-1433	10-1432	10-1434	10-1434	10-1434	10-1434	10-1432	10-1433	10-1433	—
RE15-10-7884	15-610711	3–3.8	QBT3	10-1434	10-1433	10-1432	10-1434	10-1434	10-1434	10-1434	10-1432	10-1433	10-1433	—
RE15-10-7885	15-610712	0–0.4	SOIL	10-1472	10-1471	10-1470	10-1472	10-1472	10-1472	10-1472	10-1470	10-1471	10-1471	—
RE15-10-7886	15-610712	3–3.5	QBT3	10-1472	10-1471	10-1470	10-1472	10-1472	10-1472	10-1472	10-1470	10-1471	10-1471	—
RE15-10-7887	15-610713	0–0.6	SOIL	10-1472	10-1471	10-1470	10-1472	10-1472	10-1472	10-1472	10-1470	10-1471	10-1471	—
RE15-10-7888	15-610713	3–4	QBT3	10-1472	10-1471	10-1470	10-1472	10-1472	10-1472	10-1472	10-1470	10-1471	10-1471	—
RE15-10-7889	15-610714	0–0.5	SOIL	10-1472	10-1471	10-1470	10-1472	10-1472	10-1472	10-1472	10-1470	10-1471	10-1471	—
RE15-10-7890	15-610714	2.5–3.5	QBT3	10-1472	10-1471	10-1470	10-1472	10-1472	10-1472	10-1472	10-1470	10-1471	10-1471	—
RE15-10-7891	15-610715	0–0.5	SOIL	10-1513	10-1512	10-1512	10-1513	10-1513	10-1513	10-1513	10-1512	10-1512	10-1512	—
RE15-10-7892	15-610715	3–4	QBT3	10-1513	10-1512	10-1512	10-1513	10-1513	10-1513	10-1513	10-1512	10-1512	10-1512	—
RE15-10-7893	15-610716	0–0.5	SED	10-2011	10-2010	10-2009	10-2011	10-2011	10-2011	10-2011	10-2009	10-2010	10-2010	—
RE15-10-7894	15-610716	1–2	SED	10-2011	10-2010	10-2009	10-2011	10-2011	10-2011	10-2011	10-2009	10-2010	10-2010	—
RE15-10-7895	15-610717	0–0.5	SED	10-2011	10-2010	10-2009	10-2011	10-2011	10-2011	10-2011	10-2009	10-2010	10-2010	—
RE15-10-7896	15-610717	1–2	QBT3	10-2011	10-2010	10-2009	10-2011	10-2011	10-2011	10-2011	10-2009	10-2010	10-2010	—
RE15-10-7897	15-610718	0–0.5	SED	10-2011	10-2010	10-2009	10-2011	10-2011	10-2011	10-2011	10-2009	10-2010	10-2010	—
RE15-10-7898	15-610718	1–2	SED	10-2011	10-2010	10-2009	10-2011	10-2011	10-2011	10-2011	10-2009	10-2010	10-2010	—
RE15-10-7899	15-610719	0–0.5	SED	10-2011	10-2010	10-2009	10-2011	10-2011	10-2011	10-2011	10-2009	10-2010	10-2010	—
RE15-10-7900	15-610719	1–1.5	QBT3	10-2011	10-2010	10-2009	10-2011	10-2011	10-2011	10-2011	10-2009	10-2010	10-2010	—
RE15-10-7901	15-610720	0–0.5	SOIL	10-2073	10-2072	10-2071	10-2073	10-2073	10-2073	10-2073	10-2071	10-2072	10-2072	—
RE15-10-7902	15-610720	1–2	SOIL	10-2073	10-2072	10-2071	10-2073	10-2073	10-2073	10-2073	10-2071	10-2072	10-2072	—
RE15-10-7903	15-610721	0–0.5	SOIL	10-1862	10-1861	10-1861	10-1862	10-1862	10-1862	10-1862	10-1861	10-1861	10-1861	—

Table 6.5-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	TAL Metals	Uranium
RE15-10-7904	15-610721	1–1.9	SOIL	10-1862	10-1861	10-1861	10-1862	10-1862	10-1862	10-1862	10-1861	10-1861	10-1861	—
RE15-10-7905	15-610722	0–0.5	SOIL	10-1393	10-1392	10-1392	10-1393	10-1393	10-1393	10-1393	—	10-1392	10-1392	—
RE15-10-7906	15-610722	3–3.8	QBT3	10-1393	10-1392	10-1392	10-1393	10-1393	10-1393	10-1393	—	10-1392	10-1392	—
RE15-10-7907	15-610723	0–0.5	SOIL	10-1393	10-1392	10-1392	10-1393	10-1393	10-1393	10-1393	—	10-1392	10-1392	—
RE15-10-7908	15-610723	2.9–3.5	QBT3	10-1393	10-1392	10-1392	10-1393	10-1393	10-1393	10-1393	—	10-1392	10-1392	—
RE15-10-7909	15-610724	0–0.5	SOIL	10-1393	10-1392	10-1392	10-1393	10-1393	10-1393	10-1393	—	10-1392	10-1392	—
RE15-10-7910	15-610724	3–3.6	QBT3	10-1393	10-1392	10-1392	10-1393	10-1393	10-1393	10-1393	—	10-1392	10-1392	—
RE15-10-7911	15-610725	0–0.3	SOIL	10-1393	10-1392	10-1392	10-1393	10-1393	10-1393	10-1393	—	10-1392	10-1392	—
RE15-10-7912	15-610725	3–4	QBT3	10-1393	10-1392	10-1392	10-1393	10-1393	10-1393	10-1393	—	10-1392	10-1392	—
RE15-10-7913	15-610726	0–0.3	SOIL	10-1393	10-1392	10-1392	10-1393	10-1393	10-1393	10-1393	—	10-1392	10-1392	—
RE15-10-7914	15-610726	2–3	QBT3	10-1391	10-1390	10-1390	10-1391	10-1391	10-1391	10-1391	—	10-1390	10-1390	—
RE15-10-7915	15-610727	0–0.4	SOIL	10-1391	10-1390	10-1390	10-1391	10-1391	10-1391	10-1391	—	10-1390	10-1390	—
RE15-10-7916	15-610727	2–3.1	QBT3	10-1391	10-1390	10-1390	10-1391	10-1391	10-1391	10-1391	—	10-1390	10-1390	—
RE15-10-7917	15-610728	0–0.6	SOIL	10-1391	10-1390	10-1390	10-1391	10-1391	10-1391	10-1391	—	10-1390	10-1390	—
RE15-10-7918	15-610728	1.3–3.6	QBT3	10-1391	10-1390	10-1390	10-1391	10-1391	10-1391	10-1391	—	10-1390	10-1390	—
RE15-10-7919	15-610729	0–0.5	SOIL	10-1391	10-1390	10-1390	10-1391	10-1391	10-1391	10-1391	—	10-1390	10-1390	—
RE15-10-7920	15-610729	2–3.3	QBT3	10-1391	10-1390	10-1390	10-1391	10-1391	10-1391	10-1391	—	10-1390	10-1390	—
RE15-10-7921	15-610730	0–0.5	SOIL	10-1391	10-1390	10-1390	10-1391	10-1391	10-1391	10-1391	—	10-1390	10-1390	—
RE15-10-7922	15-610730	2–3	QBT3	10-1391	10-1390	10-1390	10-1391	10-1391	10-1391	10-1391	—	10-1390	10-1390	—
RE15-10-7923	15-610731	0–0.5	QBT3	10-1379	10-1378	10-1378	10-1379	10-1379	10-1379	10-1379	10-1378	10-1378	10-1378	—
RE15-10-7924	15-610731	2–3	QBT3	10-1379	10-1378	10-1378	10-1379	10-1379	10-1379	10-1379	10-1378	10-1378	10-1378	—
RE15-10-7925	15-610732	0–0.5	SOIL	10-1379	10-1378	10-1378	10-1379	10-1379	10-1379	10-1379	10-1378	10-1378	10-1378	—

Table 6.5-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	TAL Metals	Uranium
RE15-10-7926	15-610732	2–2.8	QBT3	10-1379	10-1378	10-1378	10-1379	10-1379	10-1379	10-1379	10-1378	10-1378	10-1378	—
RE15-10-7927	15-610733	0–0.5	SOIL	10-1394	10-1394	10-1394	10-1394	10-1394	10-1394	10-1394	—	10-1394	10-1394	—
RE15-10-7928	15-610733	3–4	QBT3	10-1394	10-1394	10-1394	10-1394	10-1394	10-1394	10-1394	—	10-1394	10-1394	—
RE15-10-7929	15-610734	0–0.5	SOIL	10-1394	10-1394	10-1394	10-1394	10-1394	10-1394	10-1394	—	10-1394	10-1394	—
RE15-10-7930	15-610734	2.5–3.5	QBT3	10-1394	10-1394	10-1394	10-1394	10-1394	10-1394	10-1394	—	10-1394	10-1394	—
RE15-10-7931	15-610735	0–0.5	SOIL	10-1434	10-1433	10-1432	10-1434	10-1434	10-1434	10-1434	—	10-1433	10-1433	—
RE15-10-7932	15-610735	3–4	QBT3	10-1434	10-1433	10-1432	10-1434	10-1434	10-1434	10-1434	—	10-1433	10-1433	—
RE15-10-7933	15-610736	0–0.5	SOIL	10-1434	10-1433	10-1432	10-1434	10-1434	10-1434	10-1434	—	10-1433	10-1433	—
RE15-10-7934	15-610736	3–3.9	QBT3	10-1434	10-1433	10-1432	10-1434	10-1434	10-1434	10-1434	—	10-1433	10-1433	—
RE15-10-7935	15-610737	0–0.3	SOIL	10-1434	10-1433	10-1432	10-1434	10-1434	10-1434	10-1434	—	10-1433	10-1433	—
RE15-10-7936	15-610737	2.9–4	QBT3	10-1434	10-1433	10-1432	10-1434	10-1434	10-1434	10-1434	—	10-1433	10-1433	—
RE15-10-7937	15-610738	0–0.5	SOIL	10-1434	10-1433	10-1432	10-1434	10-1434	10-1434	10-1434	—	10-1433	10-1433	—
RE15-10-7938	15-610738	2.9–3.7	QBT3	10-1434	10-1433	10-1432	10-1434	10-1434	10-1434	10-1434	—	10-1433	10-1433	—
RE15-10-7939	15-610739	0–0.5	SOIL	10-1434	10-1433	10-1432	10-1434	10-1434	10-1434	10-1434	—	10-1433	10-1433	—
RE15-10-7940	15-610739	3–3.5	QBT3	10-1434	10-1433	10-1432	10-1434	10-1434	10-1434	10-1434	—	10-1433	10-1433	—
RE15-10-7941	15-610740	0–0.5	SOIL	10-1472	10-1471	10-1470	10-1472	10-1472	10-1472	10-1472	—	10-1471	10-1471	—
RE15-10-7942	15-610740	3–4	QBT3	10-1472	10-1471	10-1470	10-1472	10-1472	10-1472	10-1472	—	10-1471	10-1471	—
RE15-10-7943	15-610741	0–1	QBT3	10-1472	10-1471	10-1470	10-1472	10-1472	10-1472	10-1472	—	10-1471	10-1471	—
RE15-10-7944	15-610741	2.9–3.5	QBT3	10-1472	10-1471	10-1470	10-1472	10-1472	10-1472	10-1472	—	10-1471	10-1471	—
RE15-10-7945	15-610742	0–0.3	SOIL	10-1472	10-1471	10-1470	10-1472	10-1472	10-1472	10-1472	—	10-1471	10-1471	—
RE15-10-7946	15-610742	2.5–3.5	QBT3	10-1472	10-1471	10-1470	10-1472	10-1472	10-1472	10-1472	—	10-1471	10-1471	—
RE15-10-7947	15-610743	0–0.5	SOIL	10-1472	10-1471	10-1470	10-1472	10-1472	10-1472	10-1472	—	10-1471	10-1471	—

Table 6.5-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	TAL Metals	Uranium
RE15-10-7948	15-610743	3–3.9	QBT3	10-1472	10-1471	10-1470	10-1472	10-1472	10-1472	10-1472	—	10-1471	10-1471	—
RE15-10-7949	15-610744	0–0.5	SOIL	10-1472	10-1471	10-1470	10-1472	10-1472	10-1472	10-1472	—	10-1471	10-1471	—
RE15-10-7950	15-610744	1.5–1.7	SOIL	10-1472	10-1471	10-1470	10-1472	10-1472	10-1472	10-1472	—	10-1471	10-1471	—
RE15-10-7951	15-610745	0–0.5	QBT3	10-1472	10-1471	10-1470	10-1472	10-1472	10-1472	10-1472	—	10-1471	10-1471	—
RE15-10-7952	15-610745	2.5–3.5	QBT3	10-1475	10-1474	10-1473	10-1475	10-1475	10-1475	10-1475	—	10-1474	10-1474	—
RE15-10-7953	15-610746	0–0.8	SOIL	10-1475	10-1474	10-1473	10-1475	10-1475	10-1475	10-1475	—	10-1474	10-1474	—
RE15-10-7954	15-610746	3–3.4	QBT3	10-1475	10-1474	10-1473	10-1475	10-1475	10-1475	10-1475	—	10-1474	10-1474	—
RE15-10-7955	15-610747	0–0.5	SOIL	10-1475	10-1474	10-1473	10-1475	10-1475	10-1475	10-1475	—	10-1474	10-1474	—
RE15-10-7956	15-610747	3–3.7	QBT3	10-1475	10-1474	10-1473	10-1475	10-1475	10-1475	10-1475	—	10-1474	10-1474	—
RE15-10-7957	15-610748	0–1	SOIL	10-1515	10-1514	10-1514	10-1515	10-1515	10-1515	10-1515	—	10-1514	10-1514	—
RE15-10-7958	15-610748	3–4	SOIL	10-1515	10-1514	10-1514	10-1515	10-1515	10-1515	10-1515	—	10-1514	10-1514	—
RE15-10-7959	15-610749	0–0.7	SOIL	10-1515	10-1514	10-1514	10-1515	10-1515	10-1515	10-1515	—	10-1514	10-1514	—
RE15-10-7960	15-610749	3–3.6	QBT3	10-1515	10-1514	10-1514	10-1515	10-1515	10-1515	10-1515	—	10-1514	10-1514	—
RE15-10-7961	15-610750	0–0.5	SOIL	10-1515	10-1514	10-1514	10-1515	10-1515	10-1515	10-1515	—	10-1514	10-1514	—
RE15-10-7962	15-610750	3–4	QBT3	10-1513	10-1512	10-1512	10-1513	10-1513	10-1513	10-1513	—	10-1512	10-1512	—
RE15-10-7963	15-610751	0–0.5	SOIL	10-1513	10-1512	10-1512	10-1513	10-1513	10-1513	10-1513	—	10-1512	10-1512	—
RE15-10-7964	15-610751	3–4	QBT3	10-1513	10-1512	10-1512	10-1513	10-1513	10-1513	10-1513	—	10-1512	10-1512	—
RE15-10-7965	15-610752	0–0.5	SOIL	10-1513	10-1512	10-1512	10-1513	10-1513	10-1513	10-1513	—	10-1512	10-1512	—
RE15-10-7966	15-610752	3–4.2	QBT3	10-1515	10-1514	10-1514	10-1515	10-1515	10-1515	10-1515	—	10-1514	10-1514	—
RE15-10-7967	15-610753	0–0.5	SOIL	10-1513	10-1512	10-1512	10-1513	10-1513	10-1513	10-1513	—	10-1512	10-1512	—
RE15-10-7968	15-610753	3–3.5	QBT3	10-1513	10-1512	10-1512	10-1513	10-1513	10-1513	10-1513	—	10-1512	10-1512	—
RE15-10-7969	15-610754	0–0.5	SOIL	10-1515	10-1514	10-1514	10-1515	10-1515	10-1515	10-1515	—	10-1514	10-1514	—

Table 6.5-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	TAL Metals	Uranium
RE15-10-7970	15-610754	3–3.3	SOIL	10-1513	10-1512	10-1512	10-1513	10-1513	10-1513	10-1513	—	10-1512	10-1512	—
RE15-10-7971	15-610755	0–0.5	SOIL	10-1515	10-1514	10-1514	10-1515	10-1515	10-1515	10-1515	—	10-1514	10-1514	—
RE15-10-7972	15-610755	3–3.6	QBT3	10-1515	10-1514	10-1514	10-1515	10-1515	10-1515	10-1515	—	10-1514	10-1514	—
RE15-10-7973	15-610756	0–0.7	SOIL	10-1513	10-1512	10-1512	10-1513	10-1513	10-1513	10-1513	—	10-1512	10-1512	—
RE15-10-7974	15-610756	2.7–3.3	QBT3	10-1515	10-1514	10-1514	10-1515	10-1515	10-1515	10-1515	—	10-1514	10-1514	—
RE15-10-7975	15-610757	0–0.3	SOIL	10-1513	10-1512	10-1512	10-1513	10-1513	10-1513	10-1513	—	10-1512	10-1512	—
RE15-10-7976	15-610757	3–3.6	QBT3	10-1513	10-1512	10-1512	10-1513	10-1513	10-1513	10-1513	—	10-1512	10-1512	—
RE15-10-7977	15-610758	0–0.6	SOIL	10-1513	10-1512	10-1512	10-1513	10-1513	10-1513	10-1513	—	10-1512	10-1512	—
RE15-10-7978	15-610758	1–2	SOIL	10-1513	10-1512	10-1512	10-1513	10-1513	10-1513	10-1513	—	10-1512	10-1512	—
RE15-10-7979	15-610759	0–0.5	SOIL	10-1515	10-1514	10-1514	10-1515	10-1515	10-1515	10-1515	—	10-1514	10-1514	—
RE15-10-7980	15-610759	3–3.7	QBT3	10-1515	10-1514	10-1514	10-1515	10-1515	10-1515	10-1515	—	10-1514	10-1514	—
RE15-10-7981	15-610760	0–0.5	SOIL	10-1570	10-1570	10-1570	10-1570	10-1570	10-1570	10-1570	—	10-1570	10-1570	—
RE15-10-7982	15-610760	3–3.5	QBT3	10-1570	10-1570	10-1570	10-1570	10-1570	10-1570	10-1570	—	10-1570	10-1570	—
RE15-10-7983	15-610761	0–0.5	SOIL	10-1570	10-1570	10-1570	10-1570	10-1570	10-1570	10-1570	—	10-1570	10-1570	—
RE15-10-7984	15-610761	3–3.7	QBT3	10-1570	10-1570	10-1570	10-1570	10-1570	10-1570	10-1570	—	10-1570	10-1570	—
RE15-10-7985	15-610762	0–0.4	SOIL	10-1570	10-1570	10-1570	10-1570	10-1570	10-1570	10-1570	—	10-1570	10-1570	—
RE15-10-7987	15-610763	0–0.3	SOIL	10-1747	10-1747	10-1747	10-1747	10-1747	10-1747	10-1747	—	10-1747	10-1747	—
RE15-10-7988	15-610763	2.5–3.5	QBT3	10-1747	10-1747	10-1747	10-1747	10-1747	10-1747	10-1747	—	10-1747	10-1747	—
RE15-10-7989	15-610764	0–0.5	SOIL	10-1747	10-1747	10-1747	10-1747	10-1747	10-1747	10-1747	—	10-1747	10-1747	—
RE15-10-7990	15-610764	3–4	QBT3	10-1747	10-1747	10-1747	10-1747	10-1747	10-1747	10-1747	—	10-1747	10-1747	—
RE15-10-7991	15-610765	0–0.5	SOIL	10-1747	10-1747	10-1747	10-1747	10-1747	10-1747	10-1747	—	10-1747	10-1747	—
RE15-10-7992	15-610765	3–4	QBT3	10-1747	10-1747	10-1747	10-1747	10-1747	10-1747	10-1747	—	10-1747	10-1747	—

Table 6.5-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	TAL Metals	Uranium
RE15-10-7993	15-610766	0–0.7	SOIL	10-1862	10-1861	10-1861	10-1862	10-1862	10-1862	10-1862	—	10-1861	10-1861	—
RE15-10-7994	15-610766	1–2	SOIL	10-1862	10-1861	10-1861	10-1862	10-1862	10-1862	10-1862	—	10-1861	10-1861	—
RE15-10-7995	15-610767	0–1	SED	10-1862	10-1861	10-1861	10-1862	10-1862	10-1862	10-1862	—	10-1861	10-1861	—
RE15-10-7996	15-610767	1–1.8	SED	10-1862	10-1861	10-1861	10-1862	10-1862	10-1862	10-1862	—	10-1861	10-1861	—
RE15-10-7997	15-610768	0–0.7	SED	10-1862	10-1861	10-1861	10-1862	10-1862	10-1862	10-1862	—	10-1861	10-1861	—
RE15-10-7998	15-610768	1–1.5	SED	10-1862	10-1861	10-1861	10-1862	10-1862	10-1862	10-1862	—	10-1861	10-1861	—
RE15-10-7999	15-610769	0–0.7	SOIL	10-1862	10-1861	10-1861	10-1862	10-1862	10-1862	10-1862	—	10-1861	10-1861	—
RE15-10-8000	15-610769	1–2	SOIL	10-1862	10-1861	10-1861	10-1862	10-1862	10-1862	10-1862	—	10-1861	10-1861	—
RE15-10-8001	15-610770	0–0.8	SED	10-2011	10-2010	10-2009	10-2011	10-2011	10-2011	10-2011	—	10-2010	10-2010	—
RE15-10-8002	15-610770	1–2	QBT3	10-2011	10-2010	10-2009	10-2011	10-2011	10-2011	10-2011	—	10-2010	10-2010	—
RE15-10-8003	15-610771	0–0.5	SED	10-2011	10-2010	10-2009	10-2011	10-2011	10-2011	10-2011	—	10-2010	10-2010	—
RE15-10-8004	15-610771	1–2	SOIL	10-2011	10-2010	10-2009	10-2011	10-2011	10-2011	10-2011	—	10-2010	10-2010	—
RE15-10-8005	15-610772	0–0.5	SOIL	10-2011	10-2010	10-2009	10-2011	10-2011	10-2011	10-2011	—	10-2010	10-2010	—
RE15-10-8006	15-610772	1–2	SOIL	10-2011	10-2010	10-2009	10-2011	10-2011	10-2011	10-2011	—	10-2010	10-2010	—
RE15-10-8007	15-610773	0–0.8	SED	10-2011	10-2010	10-2009	10-2011	10-2011	10-2011	10-2011	—	10-2010	10-2010	—
RE15-10-8008	15-610773	1–2	SOIL	10-2011	10-2010	10-2009	10-2011	10-2011	10-2011	10-2011	—	10-2010	10-2010	—
RE15-10-8009	15-610774	0–0.5	SED	10-2011	10-2010	10-2009	10-2011	10-2011	10-2011	10-2011	—	10-2010	10-2010	—
RE15-10-8010	15-610774	1–2	QBT3	10-2011	10-2010	10-2009	10-2011	10-2011	10-2011	10-2011	—	10-2010	10-2010	—
RE15-10-8011	15-610775	0–0.5	SED	10-2011	10-2010	10-2009	10-2011	10-2011	10-2011	10-2011	—	10-2010	10-2010	—
RE15-10-8012	15-610775	1–2	QBT3	10-2011	10-2010	10-2009	10-2011	10-2011	10-2011	10-2011	—	10-2010	10-2010	—
RE15-10-8013	15-610776	0–0.5	SED	10-2014	10-2013	10-2012	10-2014	10-2014	10-2014	10-2014	—	10-2013	10-2013	—
RE15-10-8014	15-610776	1–2	QBT3	10-2014	10-2013	10-2012	10-2014	10-2014	10-2014	10-2014	—	10-2013	10-2013	—

Table 6.5-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	TAL Metals	Uranium
RE15-10-8015	15-610777	0–0.5	SED	10-2014	10-2013	10-2012	10-2014	10-2014	10-2014	10-2014	—	10-2013	10-2013	—
RE15-10-8016	15-610777	0.5–2	SOIL	10-2014	10-2013	10-2012	10-2014	10-2014	10-2014	10-2014	—	10-2013	10-2013	—
RE15-10-8017	15-610778	0–0.5	SED	10-2014	10-2013	10-2012	10-2014	10-2014	10-2014	10-2014	—	10-2013	10-2013	—
RE15-10-8018	15-610778	1–2	SED	10-2014	10-2013	10-2012	10-2014	10-2014	10-2014	10-2014	—	10-2013	10-2013	—
RE15-10-8019	15-610779	0–0.5	SOIL	10-2014	10-2013	10-2012	10-2014	10-2014	10-2014	10-2014	—	10-2013	10-2013	—
RE15-10-8020	15-610779	1–2	QBT3	10-2014	10-2013	10-2012	10-2014	10-2014	10-2014	10-2014	—	10-2013	10-2013	—
RE15-10-8021	15-610780	0–0.5	SOIL	10-2014	10-2013	10-2012	10-2014	10-2014	10-2014	10-2014	—	10-2013	10-2013	—
RE15-10-8022	15-610780	1–2	QBT3	10-2014	10-2013	10-2012	10-2014	10-2014	10-2014	10-2014	—	10-2013	10-2013	—
RE15-10-8023	15-610781	0–0.5	SOIL	10-2014	10-2013	10-2012	10-2014	10-2014	10-2014	10-2014	—	10-2013	10-2013	—
RE15-10-8024	15-610781	1–2	SOIL	10-2014	10-2013	10-2012	10-2014	10-2014	10-2014	10-2014	—	10-2013	10-2013	—
RE15-10-8025	15-610782	0–0.5	SOIL	10-2014	10-2013	10-2012	10-2014	10-2014	10-2014	10-2014	—	10-2013	10-2013	—
RE15-10-8026	15-610782	1–2	SOIL	10-2014	10-2013	10-2012	10-2014	10-2014	10-2014	10-2014	—	10-2013	10-2013	—
RE15-10-8027	15-610783	0–0.5	SOIL	10-2073	10-2072	10-2071	10-2073	10-2073	10-2073	10-2073	—	10-2072	10-2072	—
RE15-10-8028	15-610783	1–2	SOIL	10-2073	10-2072	10-2071	10-2073	10-2073	10-2073	10-2073	—	10-2072	10-2072	—
RE15-10-8029	15-610784	0–0.5	SOIL	10-2073	10-2072	10-2071	10-2073	10-2073	10-2073	10-2073	—	10-2072	10-2072	—
RE15-10-8030	15-610784	1–2	SOIL	10-2073	10-2072	10-2071	10-2073	10-2073	10-2073	10-2073	—	10-2072	10-2072	—
RE15-10-8031	15-610785	0–0.5	SOIL	10-2073	10-2072	10-2071	10-2073	10-2073	10-2073	10-2073	—	10-2072	10-2072	—
RE15-10-8032	15-610785	1–2	SOIL	10-2073	10-2072	10-2071	10-2073	10-2073	10-2073	10-2073	—	10-2072	10-2072	—

Note: Numbers in analyte columns are request numbers.

* — = Analysis not requested.

Table 6.5-2
Inorganic Chemicals above BVs at SWMU 15-008(b)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Perchlorate	Selenium	Silver	Uranium	Vanadium	Zinc
Qbt 2, 3, 4 BV				**7340**	**0.5**	**2.79**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**0.5**	**14500**	**11.2**	**1690**	**482**	**0.1**	**6.58**	**na**[a]	**0.3**	**1**	**2.4**	**17**	**63.5**
Sediment BV				**15400**	**0.83**	**3.98**	**127**	**1.31**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**0.82**	**13800**	**19.7**	**2370**	**543**	**0.1**	**9.38**	**na**	**0.3**	**1**	**2.22**	**19.7**	**60.2**
Soil BV				**29200**	**0.83**	**8.17**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**0.5**	**21500**	**22.3**	**4610**	**671**	**0.1**	**15.4**	**na**	**1.52**	**1**	**1.82**	**39.6**	**48.8**
Industrial SSL[b]				**1130000**	**454**	**17.7**	**224000**	**2260**	**1120**	**na**	**2920**	**300**[c]	**45400**	**22700**	**795000**	**800**	**na**	**145000**	**310**[c]	**22700**	**795**	**5680**	**5680**	**3410**	**5680**	**341000**
Residential SSL[b]				**78100**	**31.3**	**3.9**	**15600**	**156**	**77.9**	**na**	**219**	**23**[c]	**3130**	**1560**	**54800**	**400**	**na**	**10700**	**23**[c]	**1560**	**54.8**	**391**	**391**	**235**	**391**	**23500**
AAB3503	15-02500	0–0.5	SOIL	—[d]	4.5 (U)	—	—	3.3	0.43 (U)	—	—	—	900	NA[e]	—	413	—	—	0.11 (U)	—	NA	—	—	310	—	77.6
AAB3504	15-02500	1.5–2	SOIL	—	3.9 (U)	—	—	—	0.43 (U)	—	—	—	—	NA	—	—	—	—	0.11 (U)	—	NA	—	—	19.4	—	—
AAB3398	15-02501	0–0.5	SOIL	—	3.9 (U)	—	—	10.6	0.43 (U)	—	—	—	1040	NA	—	77.9	—	—	0.11 (U)	—	NA	—	—	282	—	71.7
AAB3530	15-02501	1.5–2	SOIL	—	3.9 (U)	—	—	—	0.44 (U)	—	—	—	—	NA	—	—	—	—	0.11 (U)	—	NA	—	—	93	—	—
AAB3355	15-02502	0–0.5	SOIL	—	3.7 (U)	—	—	35.5	0.41 (U)	—	20.2	—	550	NA	—	175	—	—	—	15.9	NA	—	—	659	—	60.1
AAB3401	15-02502	1.5–2	SOIL	—	4 (U)	—	—	11.9	0.45 (U)	—	—	—	784	NA	—	67	—	—	1.1 (J)	—	NA	—	1.1 (U)	303	—	—
AAB3353	15-02503	0–0.5	SOIL	—	8.6 (U)	—	—	17.1	0.59 (U)	—	—	—	4110	NA	—	1250	—	—	0.12 (J)	—	NA	—	—	400	—	71.2
AAB3352	15-02503	1.5–2	SOIL	—	4 (U)	—	—	—	0.44 (U)	—	—	—	—	NA	—	—	—	—	0.11 (U)	—	NA	—	—	31.8	—	—
RE15-10-7869	15-610704	0–0.5	SOIL	—	1.31 (UJ)	—	—	3.07 (J+)	0.654 (U)	—	—	—	—	—	—	64.2 (J-)	—	—	—	—	—	—	—	69.6 (J)	—	—
RE15-10-7870	15-610704	1–2.5	QBT3	—	1.14 (UJ)	—	—	—	—	—	—	9.38	—	—	—	—	—	—	—	—	—	1.15 (U)	—	3.75 (J)	—	—
RE15-10-7871	15-610705	0–0.5	SOIL	—	2.07 (J-)	—	—	4.12 (J+)	0.547 (U)	—	—	—	—	—	—	147 (J-)	—	—	—	21 (J-)	—	—	—	66.9 (J)	—	—
RE15-10-7872	15-610705	2–3	QBT3	—	1.66 (J-)	—	117	4.55 (J+)	—	—	—	—	—	—	—	157 (J-)	—	—	—	—	—	1.07 (U)	—	82.3 (J)	—	—
RE15-10-7873	15-610706	0–0.5	SOIL	—	1.13 (J-)	—	—	3.56 (J+)	—	—	—	—	—	—	—	95.1 (J-)	—	—	—	—	—	—	—	71.1 (J)	—	53.3
RE15-10-7874	15-610706	2–3.5	QBT3	—	1 (UJ)	—	—	—	—	—	—	4.66	—	—	—	17.1 (J-)	—	—	—	—	—	1.01 (U)	—	13.3 (J)	—	—
RE15-10-7875	15-610707	0–0.5	SOIL	—	—	—	—	2.12	0.59 (U)	—	—	—	225 (J+)	—	—	63.5	—	—	—	—	—	—	—	87.7	—	—
RE15-10-7876	15-610707	2.5–3.5	QBT3	—	0.997 (U)	—	—	—	—	—	8.96	3.6	15.7 (J+)	—	—	26.1	—	—	—	—	—	0.975 (UJ)	—	3.88	—	—
RE15-10-7877	15-610708	0–0.5	SOIL	—	1.49	—	—	2.57	0.537 (U)	—	—	—	131 (J+)	—	—	85.4	—	—	—	—	—	—	—	46.4	—	—
RE15-10-7878	15-610708	3–4	QBT3	—	1.01 (U)	—	—	—	—	—	21.4	3.85	—	—	—	—	—	—	—	—	—	1.02 (UJ)	—	—	—	—
RE15-10-7879	15-610709	0–0.5	SOIL	—	4.33	—	—	—	0.752 (U)	—	—	—	110 (J+)	—	—	977	—	—	—	—	—	—	—	14.8	—	—
RE15-10-7880	15-610709	2.8–3.6	QBT3	—	1.07 (U)	—	—	—	—	—	8.57 (J)	4.77 (J)	—	—	—	34.4 (J-)	—	—	—	—	—	1.04 (U)	—	—	—	—
RE15-10-7881	15-610710	0–0.5	SOIL	—	1.25 (U)	—	—	2.82	0.731 (U)	—	—	—	16.7	—	—	—	—	—	—	—	—	1.53 (U)	—	29.5	—	51.6
RE15-10-7882	15-610710	1–1.6	QBT3	—	0.968 (U)	—	—	—	—	—	25.7	6.65	4.87	—	—	—	—	—	—	—	—	1.11 (U)	—	—	—	—
RE15-10-7883	15-610711	0–0.4	SOIL	—	1.58 (U)	—	—	—	0.717 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.58	—	—
RE15-10-7884	15-610711	3–3.8	QBT3	—	—	—	46.2 (J)	—	—	—	11.1	3.49	—	—	—	—	—	—	—	—	—	0.992 (UJ)	—	—	—	—
RE15-10-7885	15-610712	0–0.4	SOIL	—	1.76 (U)	—	—	—	7.98	—	—	10.1	118	—	—	43.8	—	—	—	—	—	—	—	39.8	—	72.4
RE15-10-7886	15-610712	3–3.5	QBT3	—	0.694 (U)	—	—	—	—	—	10.1	14.8	5.92	—	—	—	—	—	—	—	—	1.03 (U)	—	—	—	—
RE15-10-7887	15-610713	0–0.6	SOIL	—	1.09 (U)	—	—	—	0.725 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.54	—	—
RE15-10-7888	15-610713	3–4	QBT3	7810	0.878 (U)	—	118 (J-)	—	—	4570	7.42	8.4	7.27	—	—	—	1710 (J+)	—	—	7.47 (J-)	0.00123 (J)	0.67 (J)	—	—	—	—
RE15-10-7889	15-610714	0–0.5	SOIL	—	5.16 (J)	—	—	4.94	0.768 (U)	—	—	—	813	—	—	128	—	—	—	—	—	1.59 (U)	—	104	—	57.5

Table 6.5-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Perchlorate	Selenium	Silver	Uranium	Vanadium	Zinc
Qbt 2, 3, 4 BV				**7340**	**0.5**	**2.79**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**0.5**	**14500**	**11.2**	**1690**	**482**	**0.1**	**6.58**	**na**[a]	**0.3**	**1**	**2.4**	**17**	**63.5**
Sediment BV				**15400**	**0.83**	**3.98**	**127**	**1.31**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**0.82**	**13800**	**19.7**	**2370**	**543**	**0.1**	**9.38**	**na**	**0.3**	**1**	**2.22**	**19.7**	**60.2**
Soil BV				**29200**	**0.83**	**8.17**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**0.5**	**21500**	**22.3**	**4610**	**671**	**0.1**	**15.4**	**na**	**1.52**	**1**	**1.82**	**39.6**	**48.8**
Industrial SSL[b]				**1130000**	**454**	**17.7**	**224000**	**2260**	**1120**	**na**	**2920**	**300**[c]	**45400**	**22700**	**795000**	**800**	**na**	**145000**	**310**[c]	**22700**	**795**	**5680**	**5680**	**3410**	**5680**	**341000**
Residential SSL[b]				**78100**	**31.3**	**3.9**	**15600**	**156**	**77.9**	**na**	**219**	**23**[c]	**3130**	**1560**	**54800**	**400**	**na**	**10700**	**23**[c]	**1560**	**54.8**	**391**	**391**	**235**	**391**	**23500**
RE15-10-7890	15-610714	2.5–3.5	QBT3	—	1.84 (U)	—	80.1 (J-)	1.29	—	—	14.8	6.97	54.6	—	—	24.5	—	—	—	6.99 (J-)	—	0.573 (J)	—	17.1	—	—
RE15-10-7891	15-610715	0–0.5	SOIL	—	1.31	—	—	2.95	—	27600	—	—	280	—	—	117 (J-)	—	—	—	—	—	—	—	213 (J+)	—	—
RE15-10-7892	15-610715	3–4	QBT3	—	0.974 (U)	—	—	—	—	2880	23.8 (J)	3.53 (J)	7.36	—	—	—	—	—	—	—	0.000571 (J)	0.984 (U)	—	6.79 (J+)	—	—
RE15-10-7893	15-610716	0–0.5	SED	—	1.26 (UJ)	—	—	—	0.629 (U)	—	34.2	—	—	—	—	31.3	—	—	—	—	—	1.37 (U)	—	16.2	—	—
RE15-10-7894	15-610716	1–2	SED	—	1.16 (UJ)	—	—	—	—	—	22	—	—	—	—	—	—	—	—	—	—	1.35 (U)	—	14.9	—	—
RE15-10-7895	15-610717	0–0.5	SED	—	1.05 (UJ)	—	—	1.32	0.523 (U)	—	—	—	—	—	—	—	—	—	—	—	—	1.03 (U)	—	2.38	—	—
RE15-10-7896	15-610717	1–2	QBT3	—	1.02 (UJ)	—	—	1.33	—	—	10.4	—	5.68	—	—	—	—	—	—	—	—	1.05 (U)	—	—	—	—
RE15-10-7897	15-610718	0–0.5	SED	—	1.09 (UJ)	—	—	2.65	0.544 (U)	—	14.5	—	33.3	—	14300	32.5	—	—	—	11.9	—	1.07 (U)	—	36.5	20.8	—
RE15-10-7898	15-610718	1–2	SED	—	1 (UJ)	4.96	—	2.91	0.5 (U)	—	23.3	—	18.1	—	15600	—	—	—	—	16.9	0.000616 (J)	1.11 (U)	—	15.5	23.1	—
RE15-10-7899	15-610719	0–0.5	SED	—	1.22 (UJ)	—	—	—	0.611 (U)	—	15.6	—	—	—	22300	—	2870 (J+)	—	—	—	—	1.04 (U)	—	4.21	34.8	90
RE15-10-7900	15-610719	1–1.5	QBT3	—	1.05 (UJ)	—	—	—	—	—	17.8	3.47	6.27	—	15300	—	—	—	—	7.1	—	0.999 (U)	—	—	23.8	—
RE15-10-7901	15-610720	0–0.5	SOIL	—	1.48 (U)	—	—	—	0.581 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17.2	—	—
RE15-10-7902	15-610720	1–2	SOIL	—	1.07 (U)	—	—	—	0.535 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.07	—	—
RE15-10-7903	15-610721	0–0.5	SOIL	—	1.18 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.11	—	65 (J)
RE15-10-7904	15-610721	1–1.9	SOIL	—	1.06 (U)	—	—	—	—	—	26.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	53.7 (J)
RE15-10-7905	15-610722	0–0.5	SOIL	—	5.43 (J-)	—	—	2.75 (J+)	0.615 (U)	7200 (J+)	—	—	—	—	—	644 (J-)	—	—	—	—	—	—	—	30.9 (J)	—	—
RE15-10-7906	15-610722	3–3.8	QBT3	—	1.11 (UJ)	—	—	—	—	—	—	—	—	—	—	15.4 (J-)	—	—	—	—	—	1.07 (U)	—	5.34 (J)	—	—
RE15-10-7907	15-610723	0–0.5	SOIL	—	1.16 (J-)	—	—	4.84 (J+)	0.618 (U)	—	—	—	—	—	—	179 (J-)	—	—	—	—	—	—	—	118 (J)	—	—
RE15-10-7908	15-610723	2.9–3.5	QBT3	—	1.96 (J-)	5.91	48.2	3.17 (J+)	—	—	—	5.93	—	—	—	170 (J-)	—	—	—	—	—	1.07 (U)	—	403 (J)	—	—
RE15-10-7909	15-610724	0–0.5	SOIL	—	0.93 (J-)	—	—	6.73 (J+)	—	—	—	—	—	—	—	266 (J-)	—	—	—	—	—	—	—	132 (J)	—	—
RE15-10-7910	15-610724	3–3.6	QBT3	—	1.19 (J-)	—	—	3.27 (J+)	—	—	—	3.17	—	—	—	75.4 (J-)	—	—	—	—	—	1.1 (U)	—	62.6 (J)	—	—
RE15-10-7911	15-610725	0–0.3	SOIL	—	5.54 (J-)	—	—	16.5 (J+)	0.569	—	—	—	—	—	—	274 (J-)	—	—	—	—	—	—	2	348 (J)	—	54.8
RE15-10-7912	15-610725	3–4	QBT3	—	2.27 (J-)	—	85.5	2.15 (J+)	—	8790 (J+)	—	—	—	—	—	79.1 (J-)	—	—	—	—	—	1.12 (U)	—	163 (J)	—	—
RE15-10-7913	15-610726	0–0.3	SOIL	—	1.21 (UJ)	—	—	—	0.605 (U)	—	—	—	—	—	—	—	—	—	—	16.2 (J-)	—	—	—	27.2 (J)	—	—
RE15-10-7914	15-610726	2–3	QBT3	—	1.07 (U)	—	93.6 (J-)	—	—	2250	7.79 (J)	8.49 (J)	6.43	—	15000	—	—	—	—	—	—	1.05 (UJ)	—	5.45	—	—
RE15-10-7915	15-610727	0–0.4	SOIL	—	2.16 (U)	—	—	5.87	—	—	—	—	451	—	—	125	—	—	—	—	—	—	1.15	73.1	—	56.1 (J)
RE15-10-7916	15-610727	2–3.1	QBT3	—	1.03 (U)	—	—	—	—	—	—	—	7.13	—	—	—	—	—	—	—	—	0.977 (UJ)	—	8.75	—	—
RE15-10-7917	15-610728	0–0.6	SOIL	—	1.2 (U)	—	—	—	0.6 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.5	—	—
RE15-10-7918	15-610728	1.3–3.6	QBT3	—	1.08 (U)	—	88.2 (J-)	—	—	2480	19.6 (J)	—	—	—	—	—	—	—	—	7.97 (J-)	0.00181 (J)	1.07 (UJ)	—	—	—	—
RE15-10-7919	15-610729	0–0.5	SOIL	—	1.15 (U)	—	—	2.95	0.577 (U)	—	—	—	156	—	—	36.1	—	—	—	—	—	—	—	38.2	—	—

Table 6.5-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Perchlorate	Selenium	Silver	Uranium	Vanadium	Zinc
Qbt 2, 3, 4 BV				**7340**	**0.5**	**2.79**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**0.5**	**14500**	**11.2**	**1690**	**482**	**0.1**	**6.58**	**na**[a]	**0.3**	**1**	**2.4**	**17**	**63.5**
Sediment BV				**15400**	**0.83**	**3.98**	**127**	**1.31**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**0.82**	**13800**	**19.7**	**2370**	**543**	**0.1**	**9.38**	**na**	**0.3**	**1**	**2.22**	**19.7**	**60.2**
Soil BV				**29200**	**0.83**	**8.17**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**0.5**	**21500**	**22.3**	**4610**	**671**	**0.1**	**15.4**	**na**	**1.52**	**1**	**1.82**	**39.6**	**48.8**
Industrial SSL[b]				**1130000**	**454**	**17.7**	**224000**	**2260**	**1120**	**na**	**2920**	**300**[c]	**45400**	**22700**	**795000**	**800**	**na**	**145000**	**310**[c]	**22700**	**795**	**5680**	**5680**	**3410**	**5680**	**341000**
Residential SSL[b]				**78100**	**31.3**	**3.9**	**15600**	**156**	**77.9**	**na**	**219**	**23**[c]	**3130**	**1560**	**54800**	**400**	**na**	**10700**	**23**[c]	**1560**	**54.8**	**391**	**391**	**235**	**391**	**23500**
RE15-10-7920	15-610729	2–3.3	QBT3	—	—	—	—	1.29	—	—	7.83 (J)	—	47.6	—	—	25.8	—	—	—	—	—	1.04 (UJ)	1.23	26.1	—	—
RE15-10-7921	15-610730	0–0.5	SOIL	—	2.2 (U)	—	—	2.32	—	—	—	—	260	—	—	91.8	—	—	—	—	—	—	—	30.9	—	—
RE15-10-7922	15-610730	2–3	QBT3	7490	0.836 (U)	—	71.8 (J-)	1.6	—	—	9.58 (J)	5.92 (J)	726	—	19900	65.8	—	—	—	7.35 (J-)	0.000587 (J)	1.04 (UJ)	1.26	23.5	—	—
RE15-10-7923	15-610731	0–0.5	QBT3	—	2.45	—	48.9 (J)	1.68	—	—	—	—	307 (J+)	—	—	71.7	—	—	—	—	—	1.03 (UJ)	—	81.3	—	—
RE15-10-7924	15-610731	2–3	QBT3	—	0.575 (J)	—	—	—	—	—	12.7	5.43	6.51 (J+)	—	—	—	—	—	—	—	—	0.951 (UJ)	—	10.5	—	—
RE15-10-7925	15-610732	0–0.5	SOIL	—	3.53	—	—	47.5	0.583 (U)	—	—	—	289 (J+)	—	—	241	—	—	—	—	—	—	—	276	—	52.4
RE15-10-7926	15-610732	2–2.8	QBT3	—	0.947 (J)	—	—	—	—	—	14.7	4.1	8.38 (J+)	—	—	—	—	—	—	—	—	0.961 (UJ)	—	54.5	—	—
RE15-10-7927	15-610733	0–0.5	SOIL	—	—	—	—	5.83	1.17	—	—	—	526	—	—	102	—	—	—	—	—	—	—	84.6	—	56.8
RE15-10-7928	15-610733	3–4	QBT3	—	1.01 (U)	—	—	—	—	—	8.03 (J)	—	5.69	—	—	—	—	—	—	—	—	1.04 (U)	—	—	—	—
RE15-10-7929	15-610734	0–0.5	SOIL	—	1.37 (U)	—	—	2.06	1.6	—	—	—	73.3	—	—	102	—	—	—	—	—	—	—	31.8	—	—
RE15-10-7930	15-610734	2.5–3.5	QBT3	—	1.13 (U)	—	47.3	—	—	—	14.1 (J)	6.48	44.7	—	15900	15.8	—	—	—	—	—	1.07 (U)	—	8.68	—	—
RE15-10-7931	15-610735	0–0.5	SOIL	—	0.959 (U)	—	—	—	0.603 (U)	—	19.9	—	—	—	—	—	—	—	—	—	—	—	—	2.26	—	—
RE15-10-7932	15-610735	3–4	QBT3	—	0.868 (U)	—	77.7 (J)	—	—	—	18.4	3.52	—	—	—	—	—	—	—	—	—	0.963 (UJ)	—	—	—	—
RE15-10-7933	15-610736	0–0.5	SOIL	—	—	—	—	—	0.563 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.8	—	—
RE15-10-7934	15-610736	3–3.9	QBT3	8850	0.894 (U)	—	123 (J)	—	—	2620 (J)	28.3	4.42	5.24	—	—	—	1740 (J+)	—	—	7.26	0.00243	1.05 (UJ)	—	—	—	—
RE15-10-7935	15-610737	0–0.3	SOIL	—	2.52 (J)	—	—	2.47	0.633 (U)	—	25.2	—	552	—	—	123 (J)	—	—	—	—	—	—	1.68	141	—	52.9
RE15-10-7936	15-610737	2.9–4	QBT3	—	1.04 (U)	—	—	—	—	—	14.1	—	6.48	—	—	—	—	—	—	—	—	0.911 (UJ)	—	—	—	—
RE15-10-7937	15-610738	0–0.5	SOIL	—	1.09 (U)	—	—	—	0.653 (U)	—	—	9.4	33	—	—	30.5 (J)	—	738	—	—	—	—	—	27.7	—	—
RE15-10-7938	15-610738	2.9–3.7	QBT3	—	—	—	—	—	—	—	41.3	—	—	—	—	—	—	—	—	—	—	0.966 (UJ)	—	—	—	—
RE15-10-7939	15-610739	0–0.5	SOIL	—	0.884 (U)	—	—	—	0.618 (U)	—	21.1	—	23.1	—	—	—	—	—	—	—	—	—	—	16.5	—	—
RE15-10-7940	15-610739	3–3.5	QBT3	—	0.927 (U)	—	55.2 (J)	—	—	3040 (J)	27.7	—	—	—	—	—	—	—	—	7.31	0.00081 (J)	1 (UJ)	—	—	—	—
RE15-10-7941	15-610740	0–0.5	SOIL	—	0.893 (U)	—	—	—	—	—	—	—	16.6	—	—	24.3	—	—	—	—	—	—	—	26.5	—	—
RE15-10-7942	15-610740	3–4	QBT3	—	0.578 (U)	—	63.4 (J-)	—	—	—	8.83	4.28	—	—	—	—	—	—	—	—	—	1.11 (U)	—	—	—	—
RE15-10-7943	15-610741	0–1	QBT3	—	0.797 (U)	—	—	—	—	—	20	4.12	—	—	—	—	—	—	—	—	—	1.05 (U)	—	—	—	—
RE15-10-7944	15-610741	2.9–3.5	QBT3	—	0.825 (U)	—	59.1 (J-)	—	—	—	25.8	9.43	6.02	—	—	—	—	—	—	7.46 (J-)	—	1.05 (U)	—	—	—	—
RE15-10-7945	15-610742	0–0.3	SOIL	—	1.5 (U)	—	—	—	—	—	—	—	37	—	—	26.3	—	—	—	—	—	1.63 (U)	—	46.3	—	—
RE15-10-7946	15-610742	2.5–3.5	QBT3	—	—	—	—	—	—	—	15.8	17.1	5.87	—	—	—	—	—	—	—	—	1.05 (U)	—	—	—	—
RE15-10-7947	15-610743	0–0.5	SOIL	—	3.82 (U)	—	—	3.22	0.614 (J)	—	—	—	143	—	—	121	—	—	—	—	—	1.55 (U)	—	71.5	—	68.7
RE15-10-7948	15-610743	3–3.9	QBT3	—	1.97 (U)	—	67.5 (J-)	—	—	—	15.3	3.61	29.4	—	—	22.6	—	—	—	—	—	1 (U)	—	11.8	—	—
RE15-10-7949	15-610744	0–0.5	SOIL	—	2.25 (U)	—	—	—	0.419 (J)	—	—	—	88.6	—	—	55.2	—	—	—	—	—	1.54 (U)	—	48.8	—	63.6

Table 6.5-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Perchlorate	Selenium	Silver	Uranium	Vanadium	Zinc
Qbt 2, 3, 4 BV				**7340**	**0.5**	**2.79**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**0.5**	**14500**	**11.2**	**1690**	**482**	**0.1**	**6.58**	**na**[a]	**0.3**	**1**	**2.4**	**17**	**63.5**
Sediment BV				**15400**	**0.83**	**3.98**	**127**	**1.31**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**0.82**	**13800**	**19.7**	**2370**	**543**	**0.1**	**9.38**	**na**	**0.3**	**1**	**2.22**	**19.7**	**60.2**
Soil BV				**29200**	**0.83**	**8.17**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**0.5**	**21500**	**22.3**	**4610**	**671**	**0.1**	**15.4**	**na**	**1.52**	**1**	**1.82**	**39.6**	**48.8**
Industrial SSL[b]				**1130000**	**454**	**17.7**	**224000**	**2260**	**1120**	**na**	**2920**	**300**[c]	**45400**	**22700**	**795000**	**800**	**na**	**145000**	**310**[c]	**22700**	**795**	**5680**	**5680**	**3410**	**5680**	**341000**
Residential SSL[b]				**78100**	**31.3**	**3.9**	**15600**	**156**	**77.9**	**na**	**219**	**23**[c]	**3130**	**1560**	**54800**	**400**	**na**	**10700**	**23**[c]	**1560**	**54.8**	**391**	**391**	**235**	**391**	**23500**
RE15-10-7950	15-610744	1.5–1.7	SOIL	—	—	—	—	—	0.619 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.41	—	—
RE15-10-7951	15-610745	0–0.5	QBT3	—	0.902 (U)	—	—	—	—	—	—	11.9	5.03	—	—	—	—	—	—	—	—	1.17 (U)	—	—	—	—
RE15-10-7952	15-610745	2.5–3.5	QBT3	—	1.04 (U)	—	48.8	—	—	—	24 (J)	5.01	—	—	—	—	—	—	—	—	—	1.01 (U)	—	—	—	—
RE15-10-7953	15-610746	0–0.8	SOIL	—	256	—	—	12.2 (J)	0.448 (J)	—	—	—	686 (J+)	—	—	138000 (J)	—	—	—	—	—	—	2.52	362	—	125
RE15-10-7954	15-610746	3–3.4	QBT3	—	5.04	—	48.8	1.37 (J)	—	—	13.4 (J)	—	115 (J+)	—	—	578 (J)	—	—	—	7.19 (J)	—	1.05 (U)	—	84.4	—	—
RE15-10-7955	15-610747	0–0.5	SOIL	—	5.53	—	—	6.85 (J)	—	—	—	—	1200 (J+)	—	—	203 (J)	—	—	—	—	—	—	1.06	183	—	64.7
RE15-10-7956	15-610747	3–3.7	QBT3	—	0.528 (J)	2.82	54.6	29.1 (J)	—	2290	11.2 (J)	—	73.9 (J+)	—	—	23.9 (J)	—	—	—	7.17 (J)	0.000923 (J)	0.64 (J)	—	69.8	—	—
RE15-10-7957	15-610748	0–1	SOIL	—	7.9	—	—	7.22	0.636 (U)	—	—	—	36400	—	—	473	—	—	—	—	—	—	6.95	364	—	13300
RE15-10-7958	15-610748	3–4	SOIL	—	6.77	—	—	4.31	0.574 (U)	—	—	—	622	—	—	283	—	—	—	—	—	—	—	515	—	91.3
RE15-10-7959	15-610749	0–0.7	SOIL	—	9.56	—	—	7.52	0.568 (U)	—	—	—	618	—	—	777	—	—	—	—	—	—	1.05	249	—	90.6
RE15-10-7960	15-610749	3–3.6	QBT3	—	4.1	—	—	4.02	—	—	11.5 (J)	16.5	187	—	—	257	—	—	—	—	—	1.03 (UJ)	—	143	—	—
RE15-10-7961	15-610750	0–0.5	SOIL	—	1.91	—	—	—	0.538 (U)	—	—	—	531	—	—	166	—	—	—	—	—	—	—	49.3	—	—
RE15-10-7962	15-610750	3–4	QBT3	—	0.95 (U)	—	47.8	—	—	—	—	8.03 (J)	30	—	—	32.9 (J-)	—	—	—	—	0.000689 (J)	1.02 (UJ)	—	17 (J+)	—	—
RE15-10-7963	15-610751	0–0.5	SOIL	—	1.2 (U)	—	—	—	—	—	—	—	29	—	—	—	—	—	—	—	—	—	—	7.41 (J+)	—	—
RE15-10-7964	15-610751	3–4	QBT3	8080 (J+)	1.03 (U)	—	78.8	—	—	—	13.5 (J)	5.37 (J)	4.95	—	—	—	—	—	—	7.05 (J)	—	1.05 (UJ)	—	—	17.5	—
RE15-10-7965	15-610752	0–0.5	SOIL	—	1.05 (J)	—	—	—	—	—	—	—	49.2	—	—	113 (J-)	—	—	—	—	—	—	—	71.2 (J+)	—	—
RE15-10-7966	15-610752	3–4.2	QBT3	—	—	—	—	1.59	—	—	8.43 (J)	4.86	1410	—	—	—	—	—	—	—	—	1.07 (UJ)	—	11.2	—	—
RE15-10-7967	15-610753	0–0.5	SOIL	—	4.62	—	—	11.9	0.438 (J)	—	31.7 (J)	—	2200	—	—	363 (J-)	—	—	—	—	—	—	1.87	295 (J+)	—	75.1
RE15-10-7968	15-610753	3–3.5	QBT3	—	1.34	—	—	1.23 (J)	—	—	33.9 (J)	3.43 (J)	116	—	—	25.3 (J-)	—	—	—	—	—	1.03 (UJ)	—	37.7 (J+)	—	—
RE15-10-7969	15-610754	0–0.5	SOIL	—	1.63	—	—	—	0.543 (U)	—	55.8 (J)	—	103	—	—	406	—	—	—	—	—	—	—	5.37	—	—
RE15-10-7970	15-610754	3–3.3	SOIL	—	1.05 (U)	—	—	—	0.525 (U)	—	—	—	22.1	—	—	33.3 (J-)	—	—	—	—	—	—	—	4.23 (J+)	—	56.9
RE15-10-7971	15-610755	0–0.5	SOIL	—	1.49	—	—	—	0.647 (U)	—	—	—	1010	—	—	155	—	—	—	—	—	—	—	45.9	—	—
RE15-10-7972	15-610755	3–3.6	QBT3	—	1.06 (U)	—	52.6	—	—	—	9.12 (J)	7.2	6.67	—	—	—	—	—	—	—	—	1.07 (UJ)	—	8.19	—	—
RE15-10-7973	15-610756	0–0.7	SOIL	—	—	—	—	—	0.549 (U)	—	20.1 (J)	—	19.5	—	—	145 (J-)	—	—	—	—	—	—	—	9.61 (J+)	—	—
RE15-10-7974	15-610756	2.7–3.3	QBT3	—	0.987 (U)	—	—	—	—	—	15 (J)	3.33	—	—	—	—	—	—	—	—	—	1 (UJ)	—	—	—	—
RE15-10-7975	15-610757	0–0.3	SOIL	—	1.21 (U)	—	—	1.84 (J)	1.17	—	—	—	45.6	—	—	46.4 (J-)	—	—	—	—	—	—	—	45.7 (J+)	—	—
RE15-10-7976	15-610757	3–3.6	QBT3	—	1 (U)	—	—	—	—	—	7.19 (J)	10.1 (J)	21	—	—	16.4 (J)	—	—	—	—	—	1.02 (UJ)	—	5.33 (J+)	—	—
RE15-10-7977	15-610758	0–0.6	SOIL	—	1.53 (U)	—	—	5.26 (J)	—	—	—	—	—	—	—	33.1 (J-)	—	—	—	—	—	—	—	16.6 (J+)	—	—
RE15-10-7978	15-610758	1–2	SOIL	—	1.15 (U)	—	—	—	0.575 (U)	—	—	9.04 (J)	—	—	—	—	—	—	—	—	—	—	—	2.68 (J+)	—	—
RE15-10-7979	15-610759	0–0.5	SOIL	—	—	—	—	—	0.595 (U)	—	—	—	20.3	—	—	64.2	—	—	—	—	—	—	—	11.4	—	—

Table 6.5-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Perchlorate	Selenium	Silver	Uranium	Vanadium	Zinc
Qbt 2, 3, 4 BV				**7340**	**0.5**	**2.79**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**0.5**	**14500**	**11.2**	**1690**	**482**	**0.1**	**6.58**	**na**[a]	**0.3**	**1**	**2.4**	**17**	**63.5**
Sediment BV				**15400**	**0.83**	**3.98**	**127**	**1.31**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**0.82**	**13800**	**19.7**	**2370**	**543**	**0.1**	**9.38**	**na**	**0.3**	**1**	**2.22**	**19.7**	**60.2**
Soil BV				**29200**	**0.83**	**8.17**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**0.5**	**21500**	**22.3**	**4610**	**671**	**0.1**	**15.4**	**na**	**1.52**	**1**	**1.82**	**39.6**	**48.8**
Industrial SSL[b]				**1130000**	**454**	**17.7**	**224000**	**2260**	**1120**	**na**	**2920**	**300**[c]	**45400**	**22700**	**795000**	**800**	**na**	**145000**	**310**[c]	**22700**	**795**	**5680**	**5680**	**3410**	**5680**	**341000**
Residential SSL[b]				**78100**	**31.3**	**3.9**	**15600**	**156**	**77.9**	**na**	**219**	**23**[c]	**3130**	**1560**	**54800**	**400**	**na**	**10700**	**23**[c]	**1560**	**54.8**	**391**	**391**	**235**	**391**	**23500**
RE15-10-7980	15-610759	3–3.7	QBT3	—	0.729 (J)	—	—	—	—	—	16 (J)	3.59	—	—	—	—	—	—	—	—	0.00138 (J)	0.973 (UJ)	—	—	—	—
RE15-10-7981	15-610760	0–0.5	SOIL	—	1.37 (U)	—	—	—	0.631 (U)	—	—	8.87	—	—	—	26.4	—	—	—	—	—	—	—	9.1	—	—
RE15-10-7982	15-610760	3–3.5	QBT3	10200	0.811 (U)	3.38	171	1.26	—	3370	9.79	5	7.77	—	—	11.5	2170 (J+)	—	—	9.25	0.000859 (J)	1.19 (UJ)	—	—	—	—
RE15-10-7983	15-610761	0–0.5	SOIL	—	1.27 (UJ)	—	—	—	0.635 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.12	—	—
RE15-10-7984	15-610761	3–3.7	QBT3	—	1 (UJ)	—	—	—	—	—	—	4.67	—	—	—	—	—	—	—	—	—	1 (UJ)	—	—	—	—
RE15-10-7985	15-610762	0–0.4	SOIL	—	1.43 (U)	—	—	—	—	9490	—	—	25.4	0.555	—	42.8	—	—	—	—	—	1.86 (UJ)	—	57.8	—	63.7
RE15-10-7987	15-610763	0–0.3	SOIL	—	1.37 (U)	—	—	—	0.425 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.7	—	—
RE15-10-7988	15-610763	2.5–3.5	QBT3	—	1.1 (U)	—	52.2	—	—	—	10.5	4.41	5.56	—	—	—	—	—	—	12.3 (J+)	—	1.1 (U)	—	—	—	—
RE15-10-7989	15-610764	0–0.5	SOIL	—	1.22 (U)	—	—	—	0.402 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.09	—	—
RE15-10-7990	15-610764	3–4	QBT3	—	1.08 (U)	—	—	—	—	—	—	4.04	—	—	—	—	—	—	—	11.3 (J+)	—	1.08 (U)	—	—	—	—
RE15-10-7991	15-610765	0–0.5	SOIL	—	1.29 (U)	—	—	—	0.436 (U)	—	—	12.9	—	—	—	—	—	—	—	—	—	—	—	2.8	—	—
RE15-10-7992	15-610765	3–4	QBT3	—	1.29 (U)	—	—	—	—	—	8.69	5.19	6.08	—	—	—	—	—	—	17 (J+)	—	1.08 (U)	—	—	—	—
RE15-10-7993	15-610766	0–0.7	SOIL	—	1.14 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.08	—	—
RE15-10-7994	15-610766	1–2	SOIL	—	1.07 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-7995	15-610767	0–1	SED	—	1.23 (U)	—	—	—	—	—	—	—	15.6	—	—	—	—	—	—	—	—	1.34 (U)	—	19.3	—	—
RE15-10-7996	15-610767	1–1.8	SED	—	1.08 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.02 (U)	—	6.46	—	—
RE15-10-7997	15-610768	0–0.7	SED	—	1.24 (U)	—	—	—	—	—	—	—	15.9	—	—	—	—	—	—	—	—	1.19 (U)	—	27.3	—	—
RE15-10-7998	15-610768	1–1.5	SED	—	1.11 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.1 (U)	—	4.02	—	—
RE15-10-7999	15-610769	0–0.7	SOIL	—	1.03 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	15.5	—	—
RE15-10-8000	15-610769	1–2	SOIL	—	1.05 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.000589 (J)	—	—	—	—	—
RE15-10-8001	15-610770	0–0.8	SED	—	—	—	—	2.2	—	—	31.6	—	43.8	—	—	27.1	—	—	—	—	—	1.31 (U)	—	47.9	—	—
RE15-10-8002	15-610770	1–2	QBT3	—	1.02 (UJ)	—	—	—	—	—	11.8	—	5.27	—	—	—	—	—	—	—	—	1.06 (U)	—	—	—	—
RE15-10-8003	15-610771	0–0.5	SED	—	1.24 (UJ)	—	—	7.96	0.62 (U)	—	10.6	—	20.9	—	—	—	—	—	—	9.93	—	1.24 (U)	—	103	—	—
RE15-10-8004	15-610771	1–2	SOIL	—	1.12 (UJ)	—	—	—	0.562 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.82	—	—
RE15-10-8005	15-610772	0–0.5	SOIL	—	1.02 (J-)	—	—	3.81	0.824	—	—	—	88.9	—	—	57.3	—	—	—	—	—	—	—	59	—	54.8
RE15-10-8006	15-610772	1–2	SOIL	—	0.968 (UJ)	—	—	—	0.484 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8007	15-610773	0–0.8	SED	—	1.28 (UJ)	—	—	—	—	—	17.6	9.34	47.3	—	20300	48.4	—	765	—	—	—	1.14 (U)	—	28.4	27.6	83.9
RE15-10-8008	15-610773	1–2	SOIL	—	1.03 (UJ)	—	—	—	0.513 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8009	15-610774	0–0.5	SED	—	3.45 (J-)	—	—	7.37	0.422 (J)	—	—	—	175	—	—	97.7	—	—	—	—	—	1.26 (U)	—	348	—	—
RE15-10-8010	15-610774	1–2	QBT3	—	1 (UJ)	—	82 (J)	—	—	—	7.4 (J)	—	17.2	—	—	12.4	—	—	—	—	—	1.09 (U)	—	13.7	—	—

Table 6.5-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Perchlorate	Selenium	Silver	Uranium	Vanadium	Zinc
Qbt 2, 3, 4 BV				**7340**	**0.5**	**2.79**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**0.5**	**14500**	**11.2**	**1690**	**482**	**0.1**	**6.58**	**na**[a]	**0.3**	**1**	**2.4**	**17**	**63.5**
Sediment BV				**15400**	**0.83**	**3.98**	**127**	**1.31**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**0.82**	**13800**	**19.7**	**2370**	**543**	**0.1**	**9.38**	**na**	**0.3**	**1**	**2.22**	**19.7**	**60.2**
Soil BV				**29200**	**0.83**	**8.17**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**0.5**	**21500**	**22.3**	**4610**	**671**	**0.1**	**15.4**	**na**	**1.52**	**1**	**1.82**	**39.6**	**48.8**
Industrial SSL[b]				**1130000**	**454**	**17.7**	**224000**	**2260**	**1120**	**na**	**2920**	**300**[c]	**45400**	**22700**	**795000**	**800**	**na**	**145000**	**310**[c]	**22700**	**795**	**5680**	**5680**	**3410**	**5680**	**341000**
Residential SSL[b]				**78100**	**31.3**	**3.9**	**15600**	**156**	**77.9**	**na**	**219**	**23**[c]	**3130**	**1560**	**54800**	**400**	**na**	**10700**	**23**[c]	**1560**	**54.8**	**391**	**391**	**235**	**391**	**23500**
RE15-10-8011	15-610775	0–0.5	SED	—	1.02 (UJ)	—	—	1.7	0.511 (U)	—	—	—	20.1	—	—	—	—	—	—	—	—	1.05 (U)	3.27	39.3	—	—
RE15-10-8012	15-610775	1–2	QBT3	—	0.894 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.913 (U)	—	—	—	—
RE15-10-8013	15-610776	0–0.5	SED	—	1.08 (UJ)	—	—	6.27	—	—	—	—	64.4 (J)	—	—	23 (J)	—	—	—	—	—	1.07 (UJ)	—	33.7	—	—
RE15-10-8014	15-610776	1–2	QBT3	—	0.953 (UJ)	—	50.5	1.56	—	—	—	—	6.83 (J)	—	—	—	—	—	—	—	—	0.728 (U)	—	—	—	—
RE15-10-8015	15-610777	0–0.5	SED	—	1.46 (UJ)	—	—	1.68	0.949	—	—	—	91.4 (J)	—	—	27.6 (J)	—	—	—	—	—	1.45 (UJ)	—	32.6	—	—
RE15-10-8016	15-610777	0.5–2	SOIL	—	0.932 (UJ)	—	—	—	0.466 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8017	15-610778	0–0.5	SED	—	—	—	—	4.41	—	—	—	—	50.2 (J)	—	—	34.8 (J)	—	—	—	—	—	1.2 (UJ)	—	126	—	—
RE15-10-8018	15-610778	1–2	SED	—	1.06 (UJ)	—	—	1.35	0.528 (U)	—	—	—	—	—	—	—	—	—	—	—	—	1.07 (UJ)	—	189	—	—
RE15-10-8019	15-610779	0–0.5	SOIL	—	1.06 (UJ)	—	—	—	—	—	—	—	16.3 (J)	—	—	—	—	—	—	—	0.000629 (J)	—	—	9.2	—	—
RE15-10-8020	15-610779	1–2	QBT3	—	1 (UJ)	—	—	—	—	—	7.2 (J)	—	5.2 (J)	—	—	—	—	—	—	—	0.000569 (J)	1.01 (UJ)	—	—	—	—
RE15-10-8021	15-610780	0–0.5	SOIL	—	1.1 (UJ)	—	—	—	0.401 (J)	—	—	—	16.3 (J)	—	—	—	—	—	—	—	—	—	—	11.3	—	—
RE15-10-8022	15-610780	1–2	QBT3	—	0.944 (UJ)	—	—	—	—	—	9.69 (J)	—	—	—	—	—	—	—	—	—	—	0.937 (UJ)	—	—	—	—
RE15-10-8023	15-610781	0–0.5	SOIL	—	1.11 (UJ)	—	—	—	0.555 (U)	—	25.5 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8024	15-610781	1–2	SOIL	—	1.09 (UJ)	—	344	1.9	0.544 (U)	—	35.2 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8025	15-610782	0–0.5	SOIL	—	1.31 (UJ)	—	—	—	—	—	24.4 (J)	—	—	—	—	—	—	—	—	—	—	—	—	2.09	—	66.5 (J+)
RE15-10-8026	15-610782	1–2	SOIL	—	0.968 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00213 (J)	—	—	—	—	—
RE15-10-8027	15-610783	0–0.5	SOIL	—	1.21 (U)	—	—	—	0.411 (J)	—	36.4	—	—	—	—	—	—	—	—	—	—	—	—	2.22	—	—
RE15-10-8028	15-610783	1–2	SOIL	—	1.04 (U)	—	—	—	0.521 (U)	—	20.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8029	15-610784	0–0.5	SOIL	—	1.25 (U)	—	—	—	0.626 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.57	—	—
RE15-10-8030	15-610784	1–2	SOIL	—	1.05 (U)	—	—	—	0.523 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.44	—	—
RE15-10-8031	15-610785	0–0.5	SOIL	—	1.16 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	18.5	—	—
RE15-10-8032	15-610785	1–2	SOIL	—	1.08 (U)	—	—	—	0.538 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] na = Not available.

[b] SSLs from NMED 2009, 108070, unless otherwise noted.

[c] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[d] — = Not detected or not detected above BV.

[e] NA = Not analyzed.

Table 6.5-3
Organic Chemicals Detected at SWMU 15-008(b)

Sample ID	Location ID	Depth (ft)	Media	Aroclor-1242	Aroclor-1254	Aroclor-1260	Aroclor-1268	HMX	RDX	TATB	Trinitrotoluene[2,4,6-]
Industrial SSL[a]				**8.26**	**8.26**	**8.26**	**na**[b]	**34200**	**174**	**na**	**469**
Residential SSL[a]				**2.22**	**1.12**	**2.22**	**na**	**3060**	**44.2**	**na**	**35.9**
RE15-10-7869	15-610704	0–0.5	SOIL	—[c]	0.007	0.0068	NA[d]	—	—	—	—
RE15-10-7871	15-610705	0–0.5	SOIL	—	0.0231	0.0163	NA	15.4 (J)	7.72 (J)	28.6	0.185 (J)
RE15-10-7872	15-610705	2–3	QBT3	—	0.0043	0.0024 (J)	NA	0.182 (J)	—	4.78	—
RE15-10-7873	15-610706	0–0.5	SOIL	0.282	0.143	0.0608	NA	—	—	—	—
RE15-10-7874	15-610706	2–3.5	QBT3	—	0.0029 (J)	0.0032 (J)	NA	—	—	—	—
RE15-10-7875	15-610707	0–0.5	SOIL	—	0.0071	0.0054	NA	—	—	—	—
RE15-10-7876	15-610707	2.5–3.5	QBT3	—	0.0021 (J)	—	NA	—	—	—	—
RE15-10-7877	15-610708	0–0.5	SOIL	—	0.0332	0.0515	NA	2.3 (J-)	—	0.782 (J-)	—
RE15-10-7879	15-610709	0–0.5	SOIL	—	0.0129	0.0076	NA	—	—	—	—
RE15-10-7883	15-610711	0–0.4	SOIL	—	0.0039 (J)	—	NA	—	—	—	—
RE15-10-7885	15-610712	0–0.4	SOIL	—	0.0034 (J)	—	NA	—	—	—	—
RE15-10-7889	15-610714	0–0.5	SOIL	—	0.0368	0.0233	0.0205	9.53	—	—	—
RE15-10-7890	15-610714	2.5–3.5	QBT3	—	0.0029 (J)	0.0031 (J)	0.0045	—	—	—	—
RE15-10-7891	15-610715	0–0.5	SOIL	—	0.0111	0.0083	0.0079	—	—	—	—
RE15-10-7894	15-610716	1–2	SED	—	0.0022 (J)	—	NA	—	—	—	—
RE15-10-7897	15-610718	0–0.5	SED	—	0.0093	0.0072	NA	—	—	—	—
RE15-10-7898	15-610718	1–2	SED	—	0.0035 (J)	0.0026 (J)	NA	—	—	—	—
RE15-10-7902	15-610720	1–2	SOIL	—	0.0083	0.0053	NA	—	—	—	—
RE15-10-7905	15-610722	0–0.5	SOIL	NA	NA	NA	NA	1.22 (J)	—	6.06	—

Table 6.5-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aroclor-1242	Aroclor-1254	Aroclor-1260	Aroclor-1268	HMX	RDX	TATB	Trinitrotoluene[2,4,6-]
Industrial SSL[a]				**8.26**	**8.26**	**8.26**	**na**[b]	**34200**	**174**	**na**	**469**
Residential SSL[a]				**2.22**	**1.12**	**2.22**	**na**	**3060**	**44.2**	**na**	**35.9**
RE15-10-7909	15-610724	0–0.5	SOIL	NA	NA	NA	NA	—	—	12.9	—
RE15-10-7911	15-610725	0–0.3	SOIL	NA	NA	NA	NA	0.315 (J)	—	—	—
RE15-10-7912	15-610725	3–4	QBT3	NA	NA	NA	NA	0.198 (J)	—	—	—
RE15-10-7915	15-610727	0–0.4	SOIL	NA	NA	NA	NA	16.1 (J)	0.242 (J)	7.39	—
RE15-10-7923	15-610731	0–0.5	QBT3	—	0.0089	0.0066	NA	—	—	—	—
RE15-10-7925	15-610732	0–0.5	SOIL	—	0.0126	0.0101	NA	0.279 (J-)	—	—	—
RE15-10-7935	15-610737	0–0.3	SOIL	NA	NA	NA	NA	0.576	—	—	—
RE15-10-7953	15-610746	0–0.8	SOIL	NA	NA	NA	NA	0.193 (J)	—	0.5 (J+)	—
RE15-10-7961	15-610750	0–0.5	SOIL	NA	NA	NA	NA	0.263 (J)	—	0.625 (J)	—
RE15-10-7965	15-610752	0–0.5	SOIL	NA	NA	NA	NA	35.3 (J)	0.423 (J)	5.31	—
RE15-10-7966	15-610752	3–4.2	QBT3	NA	NA	NA	NA	1.43	0.135 (J)	0.331 (J)	—
RE15-10-7967	15-610753	0–0.5	SOIL	NA	NA	NA	NA	0.205 (J)	—	3.77	—
RE15-10-7969	15-610754	0–0.5	SOIL	NA	NA	NA	NA	10.9	2.16	8.49	0.205 (J)
RE15-10-7970	15-610754	3–3.3	SOIL	NA	NA	NA	NA	0.158 (J)	0.559	0.812 (J)	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] SSLs from NMED 2009, 108070, unless otherwise noted.

[b] na = Not available.

[c] — = Not detected.

[d] NA = Not analyzed.

Table 6.5-4
Radionuclides Detected or Detected above BVs/FVs at SWMU 15-008(b)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Plutonium-239/240	Tritium	Uranium-234	Uranium-235/236	Uranium-238
Qbt 2, 3, 4 BV[a]				**na[b]**	**na**	**na**	**na**	**1.98**	**0.09**	**1.93**
Sediment BV[a]				**0.04**	**0.9**	**0.068**	**0.093**	**2.59**	**0.2**	**2.29**
Soil BV[a]				**0.013[c]**	**1.65[c]**	**0.054[c]**	**na**	**2.59**	**0.2**	**2.29**
Industrial SAL[d]				**180**	**23**	**210**	**440000**	**1500**	**87**	**430**
Residential SAL[d]				**30**	**5.6**	**33**	**750**	**170**	**17**	**87**
RE15-10-7869	15-610704	0–0.5	SOIL	—[e]	—	—	2.64713	7.18 (J)	0.933	43.7 (J)
RE15-10-7870	15-610704	1–2.5	QBT3	—	—	—	1.13664	—	0.0952	3.8 (J)
RE15-10-7871	15-610705	0–0.5	SOIL	0.0314	—	—	3.31526	6.1 (J)	0.799	42.1 (J)
RE15-10-7872	15-610705	2–3	QBT3	—	—	—	1.08595	—	0.117	5.04 (J)
RE15-10-7873	15-610706	0–0.5	SOIL	—	—	—	2.85446	5.39 (J)	1.11	36.8 (J)
RE15-10-7874	15-610706	2–3.5	QBT3	—	—	—	1.35357	—	0.15	7.18 (J)
RE15-10-7875	15-610707	0–0.5	SOIL	—	—	—	0.127207	6.17	0.831	34.9
RE15-10-7876	15-610707	2.5–3.5	QBT3	—	—	—	0.0757801	—	—	—
RE15-10-7877	15-610708	0–0.5	SOIL	—	—	—	1.2608	6.55	0.594	25.2
RE15-10-7879	15-610709	0–0.5	SOIL	—	—	—	—	3.87	0.318	13.8
RE15-10-7880	15-610709	2.8–3.6	QBT3	—	—	—	0.0163784	—	—	—
RE15-10-7881	15-610710	0–0.5	SOIL	0.0258	—	—	—	2.98	0.305	11.3
RE15-10-7882	15-610710	1–1.6	QBT3	—	—	—	0.0295714	—	—	—
RE15-10-7883	15-610711	0–0.4	SOIL	—	—	—	—	—	—	2.73
RE15-10-7885	15-610712	0–0.4	SOIL	—	—	0.056	0.895531	3.43	0.345	15.3
RE15-10-7886	15-610712	3–3.5	QBT3	—	—	—	0.0282941	—	—	—
RE15-10-7888	15-610713	3–4	QBT3	—	—	—	0.0629007	—	—	—

Table 6.5-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Plutonium-239/240	Tritium	Uranium-234	Uranium-235/236	Uranium-238
Qbt 2, 3, 4 BV[a]				**na**[b]	**na**	**na**	**na**	**1.98**	**0.09**	**1.93**
Sediment BV[a]				**0.04**	**0.9**	**0.068**	**0.093**	**2.59**	**0.2**	**2.29**
Soil BV[a]				**0.013**[c]	**1.65**[c]	**0.054**[c]	**na**	**2.59**	**0.2**	**2.29**
Industrial SAL[d]				**180**	**23**	**210**	**440000**	**1500**	**87**	**430**
Residential SAL[d]				**30**	**5.6**	**33**	**750**	**170**	**17**	**87**
RE15-10-7889	15-610714	0–0.5	SOIL	—	—	—	3.85746	7.77	0.978	44.6
RE15-10-7890	15-610714	2.5–3.5	QBT3	—	—	—	1.079	—	0.199	9.16
RE15-10-7891	15-610715	0–0.5	SOIL	—	—	—	7.55405	19.6	1.83	77
RE15-10-7892	15-610715	3–4	QBT3	—	—	—	0.276036	—	—	2.42
RE15-10-7893	15-610716	0–0.5	SED	—	—	—	0.321611	—	—	6.21
RE15-10-7894	15-610716	1–2	SED	—	—	—	0.1207	—	—	—
RE15-10-7895	15-610717	0–0.5	SED	—	—	—	0.0957122	—	—	—
RE15-10-7896	15-610717	1–2	QBT3	—	—	—	0.0329059	—	—	—
RE15-10-7897	15-610718	0–0.5	SED	—	—	—	29.7709	5	0.669	30
RE15-10-7898	15-610718	1–2	SED	—	—	—	4.15035	—	0.205	10.5
RE15-10-7899	15-610719	0–0.5	SED	—	—	—	0.146794	3.26	0.245	7.13
RE15-10-7900	15-610719	1–1.5	QBT3	—	—	—	0.0346088	—	—	—
RE15-10-7901	15-610720	0–0.5	SOIL	—	—	—	0.27473	4.43	0.253	9.08
RE15-10-7902	15-610720	1–2	SOIL	—	0.183	0.0191	0.0476872	—	—	2.32
RE15-10-7903	15-610721	0–0.5	SOIL	—	—	—	0.144417	—	—	4.89
RE15-10-7904	15-610721	1–1.9	SOIL	—	—	—	0.0253408	—	—	—
RE15-10-7905	15-610722	0–0.5	SOIL	—	—	—	3.15013	2.6 (J)	0.391	16.9 (J)

Table 6.5-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Plutonium-239/240	Tritium	Uranium-234	Uranium-235/236	Uranium-238
Qbt 2, 3, 4 BV[a]				**na**[b]	**na**	**na**	**na**	**1.98**	**0.09**	**1.93**
Sediment BV[a]				**0.04**	**0.9**	**0.068**	**0.093**	**2.59**	**0.2**	**2.29**
Soil BV[a]				**0.013**[c]	**1.65**[c]	**0.054**[c]	**na**	**2.59**	**0.2**	**2.29**
Industrial SAL[d]				**180**	**23**	**210**	**440000**	**1500**	**87**	**430**
Residential SAL[d]				**30**	**5.6**	**33**	**750**	**170**	**17**	**87**
RE15-10-7906	15-610722	3–3.8	QBT3	—	—	—	0.543235	—	0.114	3.35 (J)
RE15-10-7907	15-610723	0–0.5	SOIL	—	—	0.0921	17.707	18.1 (J)	1.91	108 (J)
RE15-10-7908	15-610723	2.9–3.5	QBT3	—	—	—	9.53183	18.4 (J)	3.25	188 (J)
RE15-10-7909	15-610724	0–0.5	SOIL	—	—	—	19.8907	15.2 (J)	2.16	112 (J)
RE15-10-7910	15-610724	3–3.6	QBT3	—	—	—	13.1706	4.55 (J)	0.741	32.6 (J)
RE15-10-7911	15-610725	0–0.3	SOIL	0.0611	—	0.268	26.8636	35.2 (J)	4.89	245 (J)
RE15-10-7912	15-610725	3–4	QBT3	—	—	—	12.704	9.61 (J)	1.23	80 (J)
RE15-10-7913	15-610726	0–0.3	SOIL	—	—	—	0.925616	—	—	2.5 (J)
RE15-10-7914	15-610726	2–3	QBT3	—	—	—	0.62019	—	—	2.63
RE15-10-7915	15-610727	0–0.4	SOIL	—	—	—	1.51193	8.54	1.28	68
RE15-10-7916	15-610727	2–3.1	QBT3	—	—	—	0.220343	—	—	3.46
RE15-10-7918	15-610728	1.3–3.6	QBT3	—	—	—	0.084591	—	—	—
RE15-10-7919	15-610729	0–0.5	SOIL	—	—	—	5.5186	4.81	0.65	29.4
RE15-10-7920	15-610729	2–3.3	QBT3	—	—	—	1.25496	2.07	0.207	10.3
RE15-10-7921	15-610730	0–0.5	SOIL	—	—	—	4.17932	4.94	0.606	29.2
RE15-10-7922	15-610730	2–3	QBT3	—	0.091	—	2.27522	3.27	0.471	16.6
RE15-10-7923	15-610731	0–0.5	QBT3	—	0.125	—	1.81737	11 (J+)	1.47 (J+)	73.1 (J+)
RE15-10-7924	15-610731	2–3	QBT3	—	—	—	0.0910139	—	0.131	4.16

Table 6.5-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Plutonium-239/240	Tritium	Uranium-234	Uranium-235/236	Uranium-238
Qbt 2, 3, 4 BV[a]				**na**[b]	**na**	**na**	**na**	**1.98**	**0.09**	**1.93**
Sediment BV[a]				**0.04**	**0.9**	**0.068**	**0.093**	**2.59**	**0.2**	**2.29**
Soil BV[a]				**0.013**[c]	**1.65**[c]	**0.054**[c]	**na**	**2.59**	**0.2**	**2.29**
Industrial SAL[d]				**180**	**23**	**210**	**440000**	**1500**	**87**	**430**
Residential SAL[d]				**30**	**5.6**	**33**	**750**	**170**	**17**	**87**
RE15-10-7925	15-610732	0–0.5	SOIL	—	—	—	10.275	17.1 (J+)	2.12 (J+)	110 (J+)
RE15-10-7926	15-610732	2–2.8	QBT3	—	—	—	1.9	4.51	0.485	28.2
RE15-10-7927	15-610733	0–0.5	SOIL	—	—	—	0.596842	8.62	1.01	43.6
RE15-10-7928	15-610733	3–4	QBT3	—	—	—	0.110539	—	—	—
RE15-10-7929	15-610734	0–0.5	SOIL	—	—	—	0.361356	3.02	—	11.1
RE15-10-7930	15-610734	2.5–3.5	QBT3	—	—	—	0.334944	—	—	4.97
RE15-10-7931	15-610735	0–0.5	SOIL	—	—	—	0.0573438	—	—	—
RE15-10-7932	15-610735	3–4	QBT3	—	—	—	0.0214802	—	—	—
RE15-10-7933	15-610736	0–0.5	SOIL	—	—	—	0.047738	2.72	—	4.68
RE15-10-7934	15-610736	3–3.9	QBT3	—	—	—	0.0902448	—	—	—
RE15-10-7935	15-610737	0–0.3	SOIL	—	—	—	4.23194	16.8	1.44	72.1
RE15-10-7936	15-610737	2.9–4	QBT3	—	—	—	0.198873	—	—	—
RE15-10-7937	15-610738	0–0.5	SOIL	—	—	—	0.0580945	—	—	4.53
RE15-10-7940	15-610739	3–3.5	QBT3	—	—	—	0.0404719	—	—	—
RE15-10-7941	15-610740	0–0.5	SOIL	—	—	—	0.50941	3.95	0.242	9.59
RE15-10-7942	15-610740	3–4	QBT3	—	—	—	0.0447744	—	—	—
RE15-10-7944	15-610741	2.9–3.5	QBT3	—	—	—	0.0398613	—	—	—
RE15-10-7945	15-610742	0–0.3	SOIL	0.0211	1.69	0.0773	0.956634	4.14	0.343	15.9

Table 6.5-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Plutonium-239/240	Tritium	Uranium-234	Uranium-235/236	Uranium-238
Qbt 2, 3, 4 BV[a]				**na**[b]	**na**	**na**	**na**	**1.98**	**0.09**	**1.93**
Sediment BV[a]				**0.04**	**0.9**	**0.068**	**0.093**	**2.59**	**0.2**	**2.29**
Soil BV[a]				**0.013**[c]	**1.65**[c]	**0.054**[c]	**na**	**2.59**	**0.2**	**2.29**
Industrial SAL[d]				**180**	**23**	**210**	**440000**	**1500**	**87**	**430**
Residential SAL[d]				**30**	**5.6**	**33**	**750**	**170**	**17**	**87**
RE15-10-7946	15-610742	2.5–3.5	QBT3	—	—	—	0.0290305	—	—	—
RE15-10-7947	15-610743	0–0.5	SOIL	—	—	—	0.817053	5.17	0.547	23.6
RE15-10-7948	15-610743	3–3.9	QBT3	—	0.484	—	0.442245	2.28	0.19	7.11
RE15-10-7949	15-610744	0–0.5	SOIL	—	—	—	2.35703	6.41	0.594	28.1
RE15-10-7950	15-610744	1.5–1.7	SOIL	—	—	—	0.0678928	—	—	—
RE15-10-7951	15-610745	0–0.5	QBT3	—	—	—	0.124362	—	—	—
RE15-10-7952	15-610745	2.5–3.5	QBT3	—	—	—	0.0240183	—	—	—
RE15-10-7953	15-610746	0–0.8	SOIL	—	—	0.0576	73.2084	43.4	6.57	291
RE15-10-7954	15-610746	3–3.4	QBT3	—	—	—	4.95556	5.1	0.499	27.9
RE15-10-7955	15-610747	0–0.5	SOIL	—	—	—	41.4878	7.34	0.822	31.6
RE15-10-7956	15-610747	3–3.7	QBT3	—	—	—	7.98082	7.74	0.736	35
RE15-10-7957	15-610748	0–1	SOIL	0.0769	—	0.333	70.5855	36.4	4.95	269
RE15-10-7958	15-610748	3–4	SOIL	—	0.155	—	199.169	—	—	—
RE15-10-7959	15-610749	0–0.7	SOIL	—	—	0.113	4.57105	24.5	3.67	181
RE15-10-7960	15-610749	3–3.6	QBT3	0.0731	—	0.303	12.4035	11	1.08	57.7
RE15-10-7961	15-610750	0–0.5	SOIL	—	—	—	4.58406	4.46	0.551	23.1
RE15-10-7962	15-610750	3–4	QBT3	—	—	—	0.583208	—	—	—
RE15-10-7963	15-610751	0–0.5	SOIL	—	—	—	0.359798	—	—	2.99

Table 6.5-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Plutonium-239/240	Tritium	Uranium-234	Uranium-235/236	Uranium-238
Qbt 2, 3, 4 BV[a]				**na**[b]	**na**	**na**	**na**	**1.98**	**0.09**	**1.93**
Sediment BV[a]				**0.04**	**0.9**	**0.068**	**0.093**	**2.59**	**0.2**	**2.29**
Soil BV[a]				**0.013**[c]	**1.65**[c]	**0.054**[c]	**na**	**2.59**	**0.2**	**2.29**
Industrial SAL[d]				**180**	**23**	**210**	**440000**	**1500**	**87**	**430**
Residential SAL[d]				**30**	**5.6**	**33**	**750**	**170**	**17**	**87**
RE15-10-7964	15-610751	3–4	QBT3	—	—	—	0.0714132	—	—	—
RE15-10-7965	15-610752	0–0.5	SOIL	—	—	—	1.78913	8.51	0.83	35.3
RE15-10-7966	15-610752	3–4.2	QBT3	—	—	—	0.688142	—	—	—
RE15-10-7967	15-610753	0–0.5	SOIL	—	—	0.0723	24.2958	21.5	2.75	150
RE15-10-7968	15-610753	3–3.5	QBT3	—	—	—	8.53587	3.24	0.363	19.4
RE15-10-7969	15-610754	0–0.5	SOIL	—	—	—	3.62124	—	0.305	14.7
RE15-10-7970	15-610754	3–3.3	SOIL	—	—	—	0.473684	—	—	—
RE15-10-7971	15-610755	0–0.5	SOIL	—	—	—	0.353023	—	0.278	13.1
RE15-10-7972	15-610755	3–3.6	QBT3	—	—	—	0.321233	—	—	—
RE15-10-7973	15-610756	0–0.7	SOIL	—	—	—	0.245153	—	—	—
RE15-10-7974	15-610756	2.7–3.3	QBT3	—	—	—	0.0275802	—	—	—
RE15-10-7975	15-610757	0–0.3	SOIL	—	—	0.0549	0.362819	—	—	6.11
RE15-10-7976	15-610757	3–3.6	QBT3	—	0.099	—	0.304299	—	—	2.16
RE15-10-7977	15-610758	0–0.6	SOIL	—	—	—	0.169085	—	—	—
RE15-10-7978	15-610758	1–2	SOIL	—	0.142	—	—	—	—	—
RE15-10-7979	15-610759	0–0.5	SOIL	—	—	—	0.412443	—	—	4.15
RE15-10-7980	15-610759	3–3.7	QBT3	—	—	—	0.0274642	—	—	—
RE15-10-7981	15-610760	0–0.5	SOIL	—	—	—	0.112	—	—	3.75

Table 6.5-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Plutonium-239/240	Tritium	Uranium-234	Uranium-235/236	Uranium-238
Qbt 2, 3, 4 BV[a]				**na**[b]	**na**	**na**	**na**	**1.98**	**0.09**	**1.93**
Sediment BV[a]				**0.04**	**0.9**	**0.068**	**0.093**	**2.59**	**0.2**	**2.29**
Soil BV[a]				**0.013**[c]	**1.65**[c]	**0.054**[c]	**na**	**2.59**	**0.2**	**2.29**
Industrial SAL[d]				**180**	**23**	**210**	**440000**	**1500**	**87**	**430**
Residential SAL[d]				**30**	**5.6**	**33**	**750**	**170**	**17**	**87**
RE15-10-7982	15-610760	3–3.5	QBT3	—	—	—	0.0388571	—	—	—
RE15-10-7983	15-610761	0–0.5	SOIL	—	—	—	0.0663333	—	—	—
RE15-10-7985	15-610762	0–0.4	SOIL	0.0271	1.96	0.0789	0.219692	6.18	0.591	22.6
RE15-10-7987	15-610763	0–0.3	SOIL	—	—	—	0.126212	4.53	0.34	13.3
RE15-10-7988	15-610763	2.5–3.5	QBT3	—	—	—	0.0344493	—	—	—
RE15-10-7989	15-610764	0–0.5	SOIL	—	—	—	0.162	—	—	3.68
RE15-10-7990	15-610764	3–4	QBT3	—	—	—	0.112174	—	0.0915	—
RE15-10-7992	15-610765	3–4	QBT3	—	—	—	0.0377415	—	—	—
RE15-10-7993	15-610766	0–0.7	SOIL	—	—	—	0.0955436	—	—	3.9
RE15-10-7995	15-610767	0–1	SED	—	—	—	0.211407	3.58	0.397	12.3
RE15-10-7996	15-610767	1–1.8	SED	—	—	—	0.118137	—	0.223	7.39
RE15-10-7997	15-610768	0–0.7	SED	—	—	—	0.155026	4.65	0.426	15.8
RE15-10-7998	15-610768	1–1.5	SED	—	—	—	—	—	—	2.69
RE15-10-7999	15-610769	0–0.7	SOIL	—	—	—	0.0766796	—	—	7.29
RE15-10-8001	15-610770	0–0.8	SED	—	—	—	2.19042	4.84	0.42	20.3
RE15-10-8002	15-610770	1–2	QBT3	—	—	—	0.082883	—	—	—
RE15-10-8003	15-610771	0–0.5	SED	—	—	—	1.73851	4.37	0.488	25.1
RE15-10-8004	15-610771	1–2	SOIL	—	—	—	0.275601	—	—	2.48 (J-)

Table 6.5-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Plutonium-239/240	Tritium	Uranium-234	Uranium-235/236	Uranium-238
Qbt 2, 3, 4 BV[a]				**na**[b]	**na**	**na**	**na**	**1.98**	**0.09**	**1.93**
Sediment BV[a]				**0.04**	**0.9**	**0.068**	**0.093**	**2.59**	**0.2**	**2.29**
Soil BV[a]				**0.013**[c]	**1.65**[c]	**0.054**[c]	**na**	**2.59**	**0.2**	**2.29**
Industrial SAL[d]				**180**	**23**	**210**	**440000**	**1500**	**87**	**430**
Residential SAL[d]				**30**	**5.6**	**33**	**750**	**170**	**17**	**87**
RE15-10-8005	15-610772	0–0.5	SOIL	—	—	—	1.00074	6.82	0.756	32.8
RE15-10-8006	15-610772	1–2	SOIL	—	—	—	0.0375447	—	—	—
RE15-10-8007	15-610773	0–0.8	SED	—	—	—	0.492653	21.1 (J+)	1.72 (J+)	87.6 (J+)
RE15-10-8008	15-610773	1–2	SOIL	—	—	—	0.033275	—	—	—
RE15-10-8009	15-610774	0–0.5	SED	—	—	—	22.3941	18.1 (J+)	1.94 (J+)	92 (J+)
RE15-10-8010	15-610774	1–2	QBT3	—	—	—	1.44653	4.09	0.268	11.2
RE15-10-8011	15-610775	0–0.5	SED	—	—	—	4.84256	2.79	0.355	15.5
RE15-10-8012	15-610775	1–2	QBT3	—	—	—	0.52867	—	—	—
RE15-10-8013	15-610776	0–0.5	SED	—	—	—	0.759361	4.71	0.479	19.4
RE15-10-8014	15-610776	1–2	QBT3	—	—	—	0.0674197	—	—	—
RE15-10-8015	15-610777	0–0.5	SED	—	—	—	0.618692	3.18	0.375	15.5
RE15-10-8016	15-610777	0.5–2	SOIL	—	—	—	0.0527688	—	—	—
RE15-10-8017	15-610778	0–0.5	SED	—	—	—	11.7372	13.8 (J+)	1.72 (J+)	91.1 (J+)
RE15-10-8018	15-610778	1–2	SED	—	—	—	1.68869	11.1 (J+)	1.61 (J+)	70.8 (J+)
RE15-10-8019	15-610779	0–0.5	SOIL	—	—	—	0.112951	—	—	5.53
RE15-10-8020	15-610779	1–2	QBT3	—	—	—	0.0121905	—	—	—
RE15-10-8021	15-610780	0–0.5	SOIL	—	—	—	0.313516	—	—	5.45
RE15-10-8022	15-610780	1–2	QBT3	—	—	—	0.0564152	—	—	—

Table 6.5-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Plutonium-239/240	Tritium	Uranium-234	Uranium-235/236	Uranium-238
Qbt 2, 3, 4 BV[a]				**na**[b]	**na**	**na**	**na**	**1.98**	**0.09**	**1.93**
Sediment BV[a]				**0.04**	**0.9**	**0.068**	**0.093**	**2.59**	**0.2**	**2.29**
Soil BV[a]				**0.013**[c]	**1.65**[c]	**0.054**[c]	**na**	**2.59**	**0.2**	**2.29**
Industrial SAL[d]				**180**	**23**	**210**	**440000**	**1500**	**87**	**430**
Residential SAL[d]				**30**	**5.6**	**33**	**750**	**170**	**17**	**87**
RE15-10-8025	15-610782	0–0.5	SOIL	—	—	—	0.13013	—	—	2.4
RE15-10-8026	15-610782	1–2	SOIL	—	—	—	0.0242091	—	—	—
RE15-10-8027	15-610783	0–0.5	SOIL	—	—	—	0.084643	—	—	4.73
RE15-10-8029	15-610784	0–0.5	SOIL	—	—	—	—	—	—	3.39
RE15-10-8030	15-610784	1–2	SOIL	—	0.352	—	0.296453	2.75	—	5.3
RE15-10-8031	15-610785	0–0.5	SOIL	—	—	—	0.0830276	—	—	5.16

Note: Results are in pCi/g. Data qualifiers are presented in Appendix A.

[a] BVs/FVs are from LANL 1998, 059730.

[b] na = Not available.

[c] FV applies to soil and tuff samples collected from 0–1 ft only.

[d] SALs from LANL 2009, 107655.

[e] — = Not detected or not detected above BV/FV.

Table 6.6-1
Samples Collected and Analyses Requested at AOC 15-008(g)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	TAL Metals
RE15-10-7332	15-610565	0–0.5	SOIL	10-1566	10-1565	10-1564	10-1566	10-1566	10-1566	10-1566	10-1564	10-1565	10-1565
RE15-10-7333	15-610565	2–2.5	SOIL	10-1566	10-1565	10-1564	10-1566	10-1566	10-1566	10-1566	10-1564	10-1565	10-1565
RE15-10-7334	15-610566	0–0.5	SOIL	10-1566	10-1565	10-1564	10-1566	10-1566	10-1566	10-1566	—*	10-1565	10-1565
RE15-10-7335	15-610566	2–4	QBT3	10-1566	10-1565	10-1564	10-1566	10-1566	10-1566	10-1566	—	10-1565	10-1565
RE15-10-7336	15-610567	0–0.5	SOIL	10-1566	10-1565	10-1564	10-1566	10-1566	10-1566	10-1566	—	10-1565	10-1565
RE15-10-7337	15-610567	2–3	SOIL	10-1566	10-1565	10-1564	10-1566	10-1566	10-1566	10-1566	—	10-1565	10-1565
RE15-10-7338	15-610568	0–0.5	SOIL	10-1566	10-1565	10-1564	10-1566	10-1566	10-1566	10-1566	—	10-1565	10-1565
RE15-10-7339	15-610568	2–3	QBT3	10-1566	10-1565	10-1564	10-1566	10-1566	10-1566	10-1566	—	10-1565	10-1565

Note: Numbers in analyte columns are request numbers.

* — = Analysis not requested.

Table 6.6-2
Inorganic Chemicals above BVs at AOC 15-008(g)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Cadmium	Calcium	Chromium	Cobalt	Copper	Lead	Selenium	Uranium
Qbt 2, 3, 4 BV				**0.5**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**11.2**	**0.3**	**2.4**
Soil BV				**0.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**22.3**	**1.52**	**1.82**
Industrial SSL[a]				**454**	**1120**	**na**[b]	**2920**	**300**[c]	**45400**	**800**	**5680**	**3410**
Residential SSL[a]				**31.3**	**77.9**	**na**	**219**	**23**[c]	**3130**	**400**	**391**	**235**
RE15-10-7332	15-610565	0–0.5	SOIL	1.02 (U)	0.508 (U)	—[d]	—	—	34.6 (J)	32.7	—	—
RE15-10-7333	15-610565	2–2.5	SOIL	1.06 (U)	0.528 (U)	—	—	—	—	—	—	7.77
RE15-10-7334	15-610566	0–0.5	SOIL	1.24 (U)	0.621 (U)	—	25.4	—	41.3 (J)	—	—	3.7
RE15-10-7335	15-610566	2–4	QBT3	1.27	—	2810 (J)	—	—	—	—	1.13 (U)	4.26
RE15-10-7336	15-610567	0–0.5	SOIL	1.08 (U)	0.539 (U)	—	—	—	—	—	—	2.39
RE15-10-7337	15-610567	2–3	SOIL	1.01 (U)	0.505 (U)	—	—	—	—	—	—	—
RE15-10-7338	15-610568	0–0.5	SOIL	3.77	0.618 (U)	—	—	14	21.7 (J)	370	—	3.8
RE15-10-7339	15-610568	2–3	QBT3	1.15 (U)	—	—	—	—	—	—	1.13 (U)	4.03

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] SSLs from NMED 2009, 108070, unless otherwise noted.

[b] na = Not available.

[c] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[d] — = Not detected or not detected above BV.

Table 6.6-3
Organic Chemicals Detected at AOC 15-008(g)

Sample ID	Location ID	Depth (ft)	Media	TATB
Industrial SSL[a]				**na**[b]
Residential SSL[a]				**na**
RE15-10-7332	15-610565	0–0.5	SOIL	20.8
RE15-10-7333	15-610565	2–2.5	SOIL	0.554 (J)
RE15-10-7334	15-610566	0–0.5	SOIL	0.327 (J)
RE15-10-7335	15-610566	2–4	QBT3	5.28
RE15-10-7337	15-610567	2–3	SOIL	27.3
RE15-10-7339	15-610568	2–3	QBT3	16.6

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] SSLs from NMED 2009, 108070.

[b] na= Not available.

Table 6.6-4
Radionuclides Detected or Detected above BVs/FVs at AOC 15-008(g)

Sample ID	Location ID	Depth (ft)	Media	Tritium	Uranium-238
Qbt 2, 3, 4 BV[a]				**na**[b]	**1.93**
Soil BV[a]				**na**	**2.29**
Industrial SAL[c]				**440000**	**430**
Residential SAL[c]				**750**	**87**
RE15-10-7332	15-610565	0–0.5	SOIL	0.0162294	—[d]
RE15-10-7333	15-610565	2–2.5	SOIL	—	2.48
RE15-10-7334	15-610566	0–0.5	SOIL	—	4.14
RE15-10-7335	15-610566	2–4	QBT3	0.0373636	—
RE15-10-7338	15-610568	0–0.5	SOIL	—	2.95
RE15-10-7339	15-610568	2–3	QBT3	0.025925	—

Note: Results are in pCi/g.

[a] BVs/FVs are from LANL 1998, 059730.

[b] na = Not available.

[c] SALs from LANL 2009, 107655.

[d] — = Not detected or not detected above BV/FV.

Table 6.7-1
Samples Collected and Analyses Requested at SWMU 15-007(c)

Sample ID	Location ID	Depth (ft)	Media	Cyanide (Total)	Explosive Compounds	Tritium	PCB	Perchlorate	TAL Metals
RE15-10-8126	15-610792	0–0.5	SOIL	10-1543	10-1543	—*	10-1543	10-1543	10-1543
RE15-10-8127	15-610792	1–2	SOIL	10-1543	10-1543	—	10-1543	10-1543	10-1543
RE15-10-8128	15-610793	0–0.5	SOIL	10-1543	10-1543	—	10-1543	10-1543	10-1543
RE15-10-8129	15-610793	1–2	SOIL	10-1543	10-1543	—	10-1543	10-1543	10-1543
RE15-10-8130	15-610794	0–0.5	SOIL	10-1543	10-1543	—	10-1543	10-1543	10-1543
RE15-10-8131	15-610794	1–2	QBT3	10-1543	10-1543	—	10-1543	10-1543	10-1543
RE15-10-8134	15-610796	0–0.5	SOIL	10-1543	10-1543	—	—	10-1543	10-1543
RE15-10-8135	15-610796	1–2	SOIL	10-1543	10-1543	—	—	10-1543	10-1543
RE15-10-8136	15-610797	0–0.5	SOIL	10-1543	10-1543	—	—	10-1543	10-1543
RE15-10-8137	15-610797	1–1.5	SOIL	10-1543	10-1543	—	—	10-1543	10-1543
RE15-10-8138	15-610798	0–0.5	SOIL	10-1543	10-1543	—	—	10-1543	10-1543
RE15-10-8139	15-610798	1–2	QBT3	10-1543	10-1543	—	—	10-1543	10-1543
RE15-10-8140	15-610799	0–0.5	SOIL	10-1543	10-1543	—	—	10-1543	10-1543
RE15-10-8141	15-610799	1–2	SOIL	10-1543	10-1543	—	—	10-1543	10-1543
RE15-10-8142	15-610800	0–0.5	SOIL	10-1543	10-1543	—	—	10-1543	10-1543
RE15-10-8143	15-610800	1–2	SOIL	10-1543	10-1543	—	—	10-1543	10-1543
RE15-10-8144	15-610801	0–0.5	SOIL	10-1543	10-1543	—	—	10-1543	10-1543
RE15-10-8145	15-610801	1–2	QBT3	10-1543	10-1543	—	—	10-1543	10-1543
RE15-10-8147	15-610802	0–0.5	SOIL	10-1543	10-1543	—	—	10-1543	10-1543
RE15-10-8146	15-610802	1–2	SOIL	10-1543	10-1543	—	—	10-1543	10-1543
RE15-10-8148	15-610803	0–0.5	SOIL	10-1544	10-1544	—	—	10-1544	10-1544
RE15-10-8149	15-610803	1–2.1	SOIL	10-1544	10-1544	—	—	10-1544	10-1544
RE15-10-8151	15-610804	0–0.5	SOIL	10-1544	10-1544	—	—	10-1544	10-1544
RE15-10-8150	15-610804	1–2	SOIL	10-1544	10-1544	—	—	10-1544	10-1544
RE15-10-8153	15-610805	0–0.5	SOIL	10-1544	10-1544	—	—	10-1544	10-1544
RE15-10-8152	15-610805	1–2	SOIL	10-1544	10-1544	—	—	10-1544	10-1544
RE15-10-8154	15-610806	0–0.5	SOIL	10-1544	10-1544	—	—	10-1544	10-1544
RE15-10-8155	15-610806	1–2	SOIL	10-1544	10-1544	—	—	10-1544	10-1544
RE15-10-8156	15-610807	0–0.5	SOIL	10-1544	10-1544	—	—	10-1544	10-1544
RE15-10-8157	15-610807	1–2	QBT3	10-1544	10-1544	—	—	10-1544	10-1544
RE15-10-8158	15-610808	0–0.5	SOIL	10-1544	10-1544	—	—	10-1544	10-1544
RE15-10-8159	15-610808	1–2	QBT3	10-1544	10-1544	—	—	10-1544	10-1544

Table 6.7-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Cyanide (Total)	Explosive Compounds	Tritium	PCB	Perchlorate	TAL Metals
RE15-10-8160	15-610809	0–0.5	SOIL	10-1544	10-1544	—	—	10-1544	10-1544
RE15-10-8161	15-610809	1–1.5	QBT3	10-1544	10-1544	—	—	10-1544	10-1544
RE15-10-8162	15-610810	0–0.5	SOIL	10-1544	10-1544	—	—	10-1544	10-1544
RE15-10-8163	15-610810	1–2	SOIL	10-1544	10-1544	—	—	10-1544	10-1544
RE15-10-8164	15-610811	0–0.5	SOIL	10-1544	10-1544	—	—	10-1544	10-1544
RE15-10-8165	15-610811	1–2	SOIL	10-1544	10-1544	—	—	10-1544	10-1544
RE15-10-8166	15-610812	0–0.5	SOIL	10-1544	10-1544	—	—	10-1544	10-1544
RE15-10-8167	15-610812	1–1.5	SOIL	10-1544	10-1544	—	—	10-1544	10-1544
RE15-10-8168	15-610813	0–0.5	SOIL	10-1545	10-1545	—	—	10-1545	10-1545
RE15-10-8169	15-610813	1–1.5	SOIL	10-1545	10-1545	—	—	10-1545	10-1545
RE15-10-8170	15-610814	0–0.5	SOIL	10-1545	10-1545	—	—	10-1545	10-1545
RE15-10-8171	15-610814	1–2	QBT3	10-1545	10-1545	—	—	10-1545	10-1545
RE15-10-8174	15-610816	3.5–5	QBT3	10-1665	10-1665	10-1665	10-1665	10-1665	10-1665
RE15-10-8175	15-610816	17.5–20	QBT3	10-1665	10-1665	10-1665	10-1665	10-1665	10-1665
RE15-10-8176	15-610816	34–35	QBT3	10-1665	10-1665	10-1665	10-1665	10-1665	10-1665
RE15-10-8177	15-610816	49–50	QBT3	10-1665	10-1665	10-1665	10-1665	10-1665	10-1665
RE15-10-8178	15-610816	65–66	QBT3	10-1665	10-1665	10-1665	10-1665	10-1665	10-1665
RE15-10-8179	15-610816	79–80	QBT3	10-1704	10-1703	10-1705	10-1703	10-1704	10-1704
RE15-10-8180	15-610816	94–95	QBT3	10-1704	10-1703	10-1705	10-1703	10-1704	10-1704
RE15-10-8181	15-610816	109–110	QBT3	10-1704	10-1703	10-1705	10-1703	10-1704	10-1704
RE15-10-8182	15-610816	124–125	QBT2	10-1704	10-1703	10-1705	10-1703	10-1704	10-1704
RE15-10-8183	15-610816	139–140	QBT2	10-1704	10-1703	10-1705	10-1703	10-1704	10-1704
RE15-10-8184	15-610816	154–155	QBT2	10-1704	10-1703	10-1705	10-1703	10-1704	10-1704
RE15-10-8185	15-610816	169–170	QBT1G	10-1704	10-1703	10-1705	10-1703	10-1704	10-1704
RE15-10-8210	15-610816	181.5–182.5	QBT1G	10-1704	10-1703	10-1705	10-1703	10-1704	10-1704
RE15-10-8186	15-610817	4–5	QBT3	10-1863	10-1864	10-1864	10-1864	10-1863	10-1863
RE15-10-8187	15-610817	18–20	QBT3	10-1863	10-1864	10-1864	10-1864	10-1863	10-1863
RE15-10-8188	15-610817	34–35	QBT3	10-1863	10-1864	10-1864	—	10-1863	10-1863
RE15-10-8189	15-610817	49–50	QBT3	10-1863	10-1864	10-1864	—	10-1863	10-1863
RE15-10-8190	15-610817	64–65	QBT3	10-1863	10-1864	10-1864	10-1864	10-1863	10-1863
RE15-10-8191	15-610817	79–80	QBT3	10-1863	10-1864	10-1864	—	10-1863	10-1863
RE15-10-8192	15-610817	94–95	QBT3	10-1863	10-1864	10-1864	—	10-1863	10-1863
RE15-10-8193	15-610817	109–110	QBT3	10-1863	10-1864	10-1864	—	10-1863	10-1863
RE15-10-8194	15-610817	124–126	QBT2	10-1863	10-1864	10-1864	—	10-1863	10-1863

Table 6.7-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Cyanide (Total)	Explosive Compounds	Tritium	PCB	Perchlorate	TAL Metals
RE15-10-8195	15-610817	139–140	QBT2	10-1863	10-1864	10-1864	—	10-1863	10-1863
RE15-10-8196	15-610817	156–157.5	QBT2	10-1863	10-1864	10-1864	—	10-1863	10-1863
RE15-10-8197	15-610817	171.5–172.5	QBT1G	10-1863	10-1864	10-1864	—	10-1863	10-1863
RE15-10-8211	15-610817	181.5–182.5	QBT1G	10-1863	10-1864	10-1864	10-1864	10-1863	10-1863
RE15-10-8198	15-610818	4–5	QBT3	10-1848	10-1848	10-1848	10-1848	10-1848	10-1848
RE15-10-8199	15-610818	19–20	QBT3	10-1848	10-1848	10-1848	—	10-1848	10-1848
RE15-10-8200	15-610818	34–35	QBT3	10-1848	10-1848	10-1848	—	10-1848	10-1848
RE15-10-8201	15-610818	49–50	QBT3	10-1848	10-1848	10-1848	—	10-1848	10-1848
RE15-10-8202	15-610818	63.5–65	QBT3	10-1909	10-1908	10-1910	10-1908	10-1909	10-1909
RE15-10-8203	15-610818	79–80	QBT3	10-1909	10-1908	10-1910	10-1908	10-1909	10-1909
RE15-10-8204	15-610818	94–95	QBT3	10-1909	10-1908	10-1910	10-1908	10-1909	10-1909
RE15-10-8205	15-610818	109–110	QBT3	10-1909	10-1908	10-1910	10-1908	10-1909	10-1909
RE15-10-8206	15-610818	124–130	QBT2	10-1909	10-1908	10-1910	10-1908	10-1909	10-1909
RE15-10-8207	15-610818	139–140	QBT2	10-1909	10-1908	10-1910	10-1908	10-1909	10-1909
RE15-10-8208	15-610818	154–155	QBT2	10-1909	10-1908	10-1910	10-1908	10-1909	10-1909
RE15-10-8209	15-610818	169–170	QBT1G	10-1909	10-1908	10-1910	10-1908	10-1909	10-1909
RE15-10-8212	15-610818	180–182.5	QBT1G	10-1909	10-1908	10-1910	10-1908	10-1909	10-1909

Note: Numbers in analyte columns are request numbers.

* — = Analysis not requested.

Table 6.7-2
Inorganic Chemicals above BVs at SWMU 15-007(c)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Nickel	Perchlorate	Selenium	Silver	Vanadium	Zinc
Qbt 1g, Qct, Qbo BV				**3560**	**0.5**	**0.56**	**25.7**	**1.44**	**0.4**	**1900**	**2.6**	**8.89**	**3.96**	**3700**	**13.5**	**739**	**189**	**2**	**na**[a]	**0.3**	**1**	**4.59**	**40**
Qbt 2, 3, 4 BV				**7340**	**0.5**	**2.79**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**14500**	**11.2**	**1690**	**482**	**6.58**	**na**	**0.3**	**1**	**17**	**63.5**
Soil BV				**29200**	**0.83**	**8.17**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**21500**	**22.3**	**4610**	**671**	**15.4**	**na**	**1.52**	**1**	**39.6**	**48.8**
Industrial SSL[b]				**1130000**	**454**	**17.7**	**224000**	**2260**	**1120**	**na**	**2920**	**300**[c]	**45400**	**795000**	**800**	**na**	**145000**	**22700**	**795**	**5680**	**5680**	**5680**	**341000**
Residential SSL[b]				**78100**	**31.3**	**3.9**	**15600**	**156**	**77.9**	**na**	**219**	**23**[c]	**3130**	**54800**	**400**	**na**	**10700**	**1560**	**54.8**	**391**	**391**	**391**	**23500**
RE15-10-8126	15-610792	0–0.5	SOIL	—[d]	1.24 (U)	—	—	—	0.595 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8127	15-610792	1–2	SOIL	—	—	—	—	—	0.543 (U)	—	23.4	—	—	—	—	—	—	—	—	—	—	—	54.5
RE15-10-8128	15-610793	0–0.5	SOIL	—	—	—	—	—	0.579 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8129	15-610793	1–2	SOIL	—	0.898 (U)	—	—	—	0.573 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8130	15-610794	0–0.5	SOIL	—	0.987 (U)	—	—	—	0.578 (U)	—	—	—	—	—	44.7	—	—	—	—	—	14.7	—	—
RE15-10-8131	15-610794	1–2	QBT3	10800	0.846 (U)	3.2 (J)	158	—	—	3510	13.1	5.39 (J)	6.48 (J)	—	12.6	2120	—	9.69 (J)	—	1.11 (UJ)	—	24.7	—
RE15-10-8134	15-610796	0–0.5	SOIL	—	0.976 (U)	—	—	—	0.531 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8135	15-610796	1–2	SOIL	—	1.12 (UJ)	—	—	—	0.559 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8136	15-610797	0–0.5	SOIL	—	1.02 (U)	—	—	—	0.527 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8137	15-610797	1–1.5	SOIL	—	1.85 (U)	—	—	—	0.55 (U)	—	151	—	—	—	—	—	—	16.8	—	—	—	—	54.3
RE15-10-8138	15-610798	0–0.5	SOIL	—	—	—	—	—	0.529 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8139	15-610798	1–2	QBT3	13400	1.18 (U)	—	150	—	—	—	14.4	4.62 (J)	6.81 (J)	—	12.1	2060	—	8.06 (J)	—	1.02 (UJ)	—	23.9	—
RE15-10-8140	15-610799	0–0.5	SOIL	—	—	—	—	—	0.557 (U)	—	22.5	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8141	15-610799	1–2	SOIL	—	—	—	—	—	0.538 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8142	15-610800	0–0.5	SOIL	—	0.903 (U)	—	—	—	0.623 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8143	15-610800	1–2	SOIL	—	1.09 (U)	—	—	—	0.552 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8144	15-610801	0–0.5	SOIL	—	1.45 (UJ)	—	—	—	0.727 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8145	15-610801	1–2	QBT3	7630	0.919 (U)	—	125	—	—	—	10.1	5.83 (J)	6.57 (J)	—	—	1860	—	6.92 (J)	—	1.04 (UJ)	—	24.3	—
RE15-10-8147	15-610802	0–0.5	SOIL	—	1.17 (U)	—	—	—	0.779 (U)	—	23.2	—	—	—	150	—	—	—	—	—	—	—	108
RE15-10-8146	15-610802	1–2	SOIL	—	1.29 (U)	—	—	—	0.568 (U)	—	—	—	—	—	200	—	—	—	—	—	—	—	77.5
RE15-10-8148	15-610803	0–0.5	SOIL	—	1.51 (U)	—	—	—	—	—	21.7	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8149	15-610803	1–2.1	SOIL	—	1.08 (U)	—	—	—	—	—	42.5	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8151	15-610804	0–0.5	SOIL	—	1.32 (U)	—	—	—	—	—	41.4	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8150	15-610804	1–2	SOIL	—	1.11 (U)	—	—	—	—	—	22.7	—	—	—	—	—	—	—	0.000619 (J)	—	—	—	—
RE15-10-8153	15-610805	0–0.5	SOIL	—	1.27 (U)	—	—	—	—	—	23.2	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8152	15-610805	1–2	SOIL	—	1.24 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8154	15-610806	0–0.5	SOIL	—	1.29 (U)	—	—	—	0.635 (J)	—	—	—	—	—	35.7 (J+)	—	—	—	—	—	—	—	—
RE15-10-8155	15-610806	1–2	SOIL	—	1.15 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8156	15-610807	0–0.5	SOIL	—	1.24 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8157	15-610807	1–2	QBT3	20800	1.1 (U)	—	223 (J+)	—	—	2790	14	7.48 (J)	10.2 (J)	17300	15.7 (J+)	3080 (J+)	—	9.82	0.000579 (J)	1.08 (U)	—	33.1	—

Table 6.7-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Nickel	Perchlorate	Selenium	Silver	Vanadium	Zinc
Qbt 1g, Qct, Qbo BV				**3560**	**0.5**	**0.56**	**25.7**	**1.44**	**0.4**	**1900**	**2.6**	**8.89**	**3.96**	**3700**	**13.5**	**739**	**189**	**2**	**na**[a]	**0.3**	**1**	**4.59**	**40**
Qbt 2, 3, 4 BV				**7340**	**0.5**	**2.79**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**14500**	**11.2**	**1690**	**482**	**6.58**	**na**	**0.3**	**1**	**17**	**63.5**
Soil BV				**29200**	**0.83**	**8.17**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**21500**	**22.3**	**4610**	**671**	**15.4**	**na**	**1.52**	**1**	**39.6**	**48.8**
Industrial SSL[b]				**1130000**	**454**	**17.7**	**224000**	**2260**	**1120**	**na**	**2920**	**300**[c]	**45400**	**795000**	**800**	**na**	**145000**	**22700**	**795**	**5680**	**5680**	**5680**	**341000**
Residential SSL[b]				**78100**	**31.3**	**3.9**	**15600**	**156**	**77.9**	**na**	**219**	**23**[c]	**3130**	**54800**	**400**	**na**	**10700**	**1560**	**54.8**	**391**	**391**	**391**	**23500**
RE15-10-8158	15-610808	0–0.5	SOIL	—	1.16 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8159	15-610808	1–2	QBT3	16600	1.08 (U)	3.01	174 (J+)	—	—	2710	13.6	5.64 (J)	8.26 (J)	15900	13.3 (J)	2660 (J+)	—	9.31	—	1.1 (U)	—	30.1	—
RE15-10-8160	15-610809	0–0.5	SOIL	—	1.16 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8161	15-610809	1–1.5	QBT3	—	1.08 (U)	—	106 (J+)	—	—	3390	11.1	4.61 (J)	7.78 (J)	—	—	1830 (J+)	—	—	—	1.13 (U)	—	—	—
RE15-10-8162	15-610810	0–0.5	SOIL	—	1.3 (U)	—	—	—	—	—	—	—	—	—	28.3 (J+)	—	—	—	—	—	—	—	—
RE15-10-8163	15-610810	1–2	SOIL	—	1.14 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8164	15-610811	0–0.5	SOIL	—	1.21 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8165	15-610811	1–2	SOIL	—	1.08 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8166	15-610812	0–0.5	SOIL	—	1.22 (U)	—	—	—	0.609 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8167	15-610812	1–1.5	SOIL	—	1.13 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8168	15-610813	0–0.5	SOIL	—	1.16 (UJ)	—	—	—	—	—	—	—	—	—	45.9 (J)	—	—	—	—	—	—	—	—
RE15-10-8169	15-610813	1–1.5	SOIL	—	1.76	—	—	—	—	—	—	—	—	—	180 (J)	—	—	—	—	2.11 (U)	—	—	—
RE15-10-8170	15-610814	0–0.5	SOIL	—	243	—	—	—	—	—	—	—	—	—	63700 (J)	—	—	—	0.000831 (J)	—	—	—	206 (J+)
RE15-10-8171	15-610814	1–2	QBT3	15100	—	—	180 (J+)	—	—	2240 (J+)	15.5	6.75	8.99	14700	90.6 (J)	2400 (J+)	—	9.15	0.0017 (J)	1.05 (U)	—	30.9 (J)	—
RE15-10-8174	15-610816	3.5–5	QBT3	—	1.05 (UJ)	—	173 (J+)	—	—	2930	—	4.72	5.26	—	11.6	—	614	—	0.000576 (J)	1.03 (U)	—	—	—
RE15-10-8175	15-610816	17.5–20	QBT3	—	0.993 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	0.000838 (J)	0.977 (U)	—	—	—
RE15-10-8176	15-610816	34–35	QBT3	—	1.05 (UJ)	—	—	1.37	—	—	—	—	—	—	—	—	—	—	0.00462	1.05 (U)	—	—	—
RE15-10-8177	15-610816	49–50	QBT3	—	5 (UJ)	—	—	1.36	—	—	—	—	—	—	—	—	—	—	0.00141 (J)	0.933 (U)	—	—	—
RE15-10-8178	15-610816	65–66	QBT3	—	4.87 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	0.000587 (J)	0.975 (U)	—	—	—
RE15-10-8179	15-610816	79–80	QBT3	—	0.99 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.01 (UJ)	—	—	—
RE15-10-8180	15-610816	94–95	QBT3	—	0.95 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.985 (UJ)	—	—	—
RE15-10-8181	15-610816	109–110	QBT3	—	1.01 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.02 (UJ)	—	—	—
RE15-10-8182	15-610816	124–125	QBT2	—	1.01 (U)	—	—	—	—	—	24.8	—	—	—	—	—	—	—	—	0.944 (UJ)	—	—	—
RE15-10-8183	15-610816	139–140	QBT2	—	0.947 (U)	—	—	1.54 (J-)	—	—	11.3	—	5.13	—	—	—	—	—	—	1 (UJ)	—	—	—
RE15-10-8184	15-610816	154–155	QBT2	—	1.03 (U)	—	—	8.68 (J-)	—	—	—	—	—	—	—	—	—	—	—	1.03 (UJ)	—	—	—
RE15-10-8185	15-610816	169–170	QBT1G	4670	1.07 (U)	0.728 (J-)	—	3.14 (J-)	—	—	4.04	—	—	6590	—	—	243	2.5 (J-)	—	1.05 (UJ)	—	4.98	44.4
RE15-10-8210	15-610816	181.5–182.5	QBT1G	3990	1.01 (U)	0.714 (J-)	—	2.46 (J-)	—	—	4.61	—	—	7600	—	777 (J+)	297	2.43 (J-)	—	1.07 (UJ)	—	5.7	50.3
RE15-10-8186	15-610817	4–5	QBT3	—	0.996 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.01 (U)	—	—	—
RE15-10-8187	15-610817	18–20	QBT3	—	5.13 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.998 (U)	—	—	—
RE15-10-8188	15-610817	34–35	QBT3	—	0.997 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00213	0.961 (U)	—	—	—
RE15-10-8189	15-610817	49–50	QBT3	—	4.67 (UJ)	—	—	—	—	—	15.4 (J-)	—	—	—	—	—	—	—	0.000533 (J)	0.939 (U)	—	—	—

Table 6.7-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Nickel	Perchlorate	Selenium	Silver	Vanadium	Zinc
Qbt 1g, Qct, Qbo BV				**3560**	**0.5**	**0.56**	**25.7**	**1.44**	**0.4**	**1900**	**2.6**	**8.89**	**3.96**	**3700**	**13.5**	**739**	**189**	**2**	**na**[a]	**0.3**	**1**	**4.59**	**40**
Qbt 2, 3, 4 BV				**7340**	**0.5**	**2.79**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**14500**	**11.2**	**1690**	**482**	**6.58**	**na**	**0.3**	**1**	**17**	**63.5**
Soil BV				**29200**	**0.83**	**8.17**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**21500**	**22.3**	**4610**	**671**	**15.4**	**na**	**1.52**	**1**	**39.6**	**48.8**
Industrial SSL[b]				**1130000**	**454**	**17.7**	**224000**	**2260**	**1120**	**na**	**2920**	**300**[c]	**45400**	**795000**	**800**	**na**	**145000**	**22700**	**795**	**5680**	**5680**	**5680**	**341000**
Residential SSL[b]				**78100**	**31.3**	**3.9**	**15600**	**156**	**77.9**	**na**	**219**	**23**[c]	**3130**	**54800**	**400**	**na**	**10700**	**1560**	**54.8**	**391**	**391**	**391**	**23500**
RE15-10-8190	15-610817	64–65	QBT3	—	4.71 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.965 (U)	—	—	—
RE15-10-8191	15-610817	79–80	QBT3	—	4.53 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1 (U)	—	—	—
RE15-10-8192	15-610817	94–95	QBT3	—	4.88 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.955 (U)	—	—	—
RE15-10-8193	15-610817	109–110	QBT3	—	0.941 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.997 (U)	—	—	—
RE15-10-8194	15-610817	124–126	QBT2	—	0.993 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.979 (U)	—	—	—
RE15-10-8195	15-610817	139–140	QBT2	—	4.87 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.96 (U)	—	—	—
RE15-10-8196	15-610817	156–157.5	QBT2	—	0.953 (UJ)	—	—	—	—	—	16.1 (J-)	—	—	—	—	—	—	—	—	0.986 (U)	—	—	—
RE15-10-8197	15-610817	171.5–172.5	QBT1G	—	4.79 (UJ)	—	—	—	0.479 (U)	—	—	—	—	5970	—	—	266	—	—	0.987 (U)	—	—	46
RE15-10-8211	15-610817	181.5–182.5	QBT1G	—	4.69 (UJ)	—	—	—	0.469 (U)	—	—	—	—	6270	—	—	317	—	—	0.941 (U)	—	—	52.4
RE15-10-8198	15-610818	4–5	QBT3	—	0.903 (U)	—	—	—	—	—	—	—	—	—	25.7	—	—	—	—	0.946 (U)	—	—	—
RE15-10-8199	15-610818	19–20	QBT3	—	0.934 (U)	—	—	—	—	—	—	—	—	—	17.9	—	—	—	—	0.965 (U)	—	—	—
RE15-10-8200	15-610818	34–35	QBT3	—	0.91 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.988 (U)	—	—	—
RE15-10-8201	15-610818	49–50	QBT3	—	0.936 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.99 (U)	—	—	—
RE15-10-8202	15-610818	63.5–65	QBT3	—	1 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.918 (U)	—	—	—
RE15-10-8203	15-610818	79–80	QBT3	—	0.976 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.982 (U)	—	—	—
RE15-10-8204	15-610818	94–95	QBT3	—	1.01 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.985 (U)	—	—	—
RE15-10-8205	15-610818	109–110	QBT3	—	1 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.962 (U)	—	—	—
RE15-10-8206	15-610818	124–130	QBT2	—	1.01 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.982 (U)	—	—	—
RE15-10-8207	15-610818	139–140	QBT2	—	0.964 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.01 (U)	—	—	—
RE15-10-8208	15-610818	154–155	QBT2	—	1.02 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.993 (U)	—	—	—
RE15-10-8209	15-610818	169–170	QBT1G	—	1.01 (U)	—	—	—	0.505 (U)	—	10.6 (J)	—	—	5950	—	—	334	—	—	0.957 (U)	—	—	41
RE15-10-8212	15-610818	180–182.5	QBT1G	—	0.988 (U)	—	—	—	0.494 (U)	—	—	—	—	5980	—	—	322	—	—	0.986 (U)	—	—	46.8

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] na = Not available.

[b] SSLs from NMED 2009, 108070, unless otherwise noted.

[c] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[d] — = Not detected or not detected above BV.

Table 6.7-3
Organic Chemicals Detected at SWMU 15-007(c)

Sample ID	Location ID	Depth (ft)	Media	Aroclor-1242	Aroclor-1254	TATB
Industrial SSL[a]				**8.26**	**8.26**	**na**[b]
Residential SSL[a]				**2.22**	**1.12**	**na**
RE15-10-8128	15-610793	0–0.5	SOIL	—[c]	—	0.496 (J+)
RE15-10-8130	15-610794	0–0.5	SOIL	—	0.0055	—
RE15-10-8166	15-610812	0–0.5	SOIL	NAc	NA	0.443 (J)
RE15-10-8168	15-610813	0–0.5	SOIL	NA	NA	0.36 (J)
RE15-10-8198	15-610818	4–5	QBT3	0.0034	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.
[a] SSLs from NMED 2009, 108070.
[b] na = Not available.
[c] — = Not detected.

Table 6.7-4
Radionuclides Detected or Detected above BVs/FVs at SWMU 15-007(c)

Sample ID	Location ID	Depth (ft)	Media	Tritium
Qbt 1g, Qct, Qbo BV[a]				**na**[b]
Qbt 2, 3, 4 BV[a]				**na**
Industrial SAL[c]				**440000**
Residential SAL[c]				**750**
RE15-10-8174	15-610816	3.5–5	QBT3	1.42153
RE15-10-8176	15-610816	34–35	QBT3	37.5957
RE15-10-8177	15-610816	49–50	QBT3	132.751
RE15-10-8178	15-610816	65–66	QBT3	53.8462
RE15-10-8179	15-610816	79–80	QBT3	5.73469
RE15-10-8180	15-610816	94–95	QBT3	3.72098
RE15-10-8181	15-610816	109–110	QBT3	4.37589
RE15-10-8182	15-610816	124–125	QBT2	3.8736
RE15-10-8183	15-610816	139–140	QBT2	5.39193
RE15-10-8184	15-610816	154–155	QBT2	6.26272
RE15-10-8185	15-610816	169–170	QBT1G	10.2611
RE15-10-8210	15-610816	181.5–182.5	QBT1G	46.7033
RE15-10-8187	15-610817	18–20	QBT3	2.2829
RE15-10-8188	15-610817	34–35	QBT3	3.01576
RE15-10-8189	15-610817	49–50	QBT3	38.6
RE15-10-8190	15-610817	64–65	QBT3	127
RE15-10-8191	15-610817	79–80	QBT3	14.7
RE15-10-8195	15-610817	139–140	QBT2	0.440833
RE15-10-8197	15-610817	171.5–172.5	QBT1G	0.327441

Table 6.7-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Tritium
Qbt 1g, Qct, Qbo BV[a]				**na**[b]
Qbt 2, 3, 4 BV[a]				**na**
Industrial SAL[c]				**440000**
Residential SAL[c]				**750**
RE15-10-8198	15-610818	4–5	QBT3	7.45
RE15-10-8199	15-610818	19–20	QBT3	476
RE15-10-8200	15-610818	34–35	QBT3	180
RE15-10-8201	15-610818	49–50	QBT3	80.6
RE15-10-8202	15-610818	63.5–65	QBT3	17.6327
RE15-10-8203	15-610818	79–80	QBT3	6.02
RE15-10-8204	15-610818	94–95	QBT3	5.16904
RE15-10-8205	15-610818	109–110	QBT3	5.62055
RE15-10-8206	15-610818	124–130	QBT2	2.18858
RE15-10-8207	15-610818	139–140	QBT2	0.842784
RE15-10-8208	15-610818	154–155	QBT2	1.1485
RE15-10-8209	15-610818	169–170	QBT1G	2.59531
RE15-10-8212	15-610818	180–182.5	QBT1G	1.93401

Note: Results are in pCi/g.

[a] BVs/FVs are from LANL 1998, 059730.

[b] na = Not available.

[c] SALs from LANL 2009, 107655.

Table 6.7-5
Samples Collected and Analyses Requested at SWMU 15-007(d)

Sample ID	Location ID	Depth (ft)	Media	Cyanide (Total)	Explosive Compounds	Tritium	PCB	Perchlorate	TAL Metals
RE15-10-8240	15-610819	4–5	QBT3	10-1912	10-1911	10-1913	10-1911	10-1912	10-1912
RE15-10-8241	15-610819	19–20	QBT3	10-1912	10-1911	10-1913	10-1911	10-1912	10-1912
RE15-10-8242	15-610819	33–35	QBT3	10-1912	10-1911	10-1913	10-1911	10-1912	10-1912
RE15-10-8243	15-610819	49–50	QBT3	10-1912	10-1911	10-1913	10-1911	10-1912	10-1912
RE15-10-8244	15-610819	64–65	QBT3	10-1912	10-1911	10-1913	10-1911	10-1912	10-1912
RE15-10-8245	15-610819	79–80	QBT3	10-1912	10-1911	10-1913	10-1911	10-1912	10-1912
RE15-10-8246	15-610819	104–105	QBT3	10-1912	10-1911	10-1913	10-1911	10-1912	10-1912
RE15-10-8247	15-610819	109–110	QBT3	10-1957	10-1956	10-1958	10-1956	10-1957	10-1957
RE15-10-8248	15-610819	123.5–125	QBT2	10-1957	10-1956	10-1958	10-1956	10-1957	10-1957
RE15-10-8249	15-610819	138.5–140	QBT2	10-1957	10-1956	10-1958	10-1956	10-1957	10-1957
RE15-10-8250	15-610819	154–155	QBT2	10-1957	10-1956	10-1958	10-1956	10-1957	10-1957
RE15-10-8251	15-610819	169–170	QBT1G	10-1957	10-1956	10-1958	10-1956	10-1957	10-1957
RE15-10-8264	15-610819	181.5–182.5	QBT1G	10-1957	10-1956	10-1958	10-1956	10-1957	10-1957
RE15-10-8252	15-610820	4–5	QBT3	10-1957	10-1956	10-1958	10-1956	10-1957	10-1957
RE15-10-8253	15-610820	18–20	QBT3	10-1957	10-1956	10-1958	10-1956	10-1957	10-1957
RE15-10-8254	15-610820	34–35	QBT3	10-1957	10-1956	10-1958	10-1956	10-1957	10-1957
RE15-10-8255	15-610820	48.5–50	QBT3	10-1973	10-1972	10-1974	10-1972	10-1973	10-1973
RE15-10-8256	15-610820	63.5–65	QBT3	10-1973	10-1972	10-1974	10-1972	10-1973	10-1973
RE15-10-8257	15-610820	79–80	QBT3	10-1973	10-1972	10-1974	10-1972	10-1973	10-1973
RE15-10-8258	15-610820	93.5–95	QBT3	10-1973	10-1972	10-1974	10-1972	10-1973	10-1973
RE15-10-8259	15-610820	108.5–110	QBT3	10-1973	10-1972	10-1974	10-1972	10-1973	10-1973
RE15-10-8260	15-610820	124–125	QBT2	10-1973	10-1972	10-1974	10-1972	10-1973	10-1973
RE15-10-8261	15-610820	138.5–140	QBT2	10-1973	10-1972	10-1974	10-1972	10-1973	10-1973
RE15-10-8262	15-610820	153.5–155	QBT2	10-1973	10-1972	10-1974	10-1972	10-1973	10-1973
RE15-10-8263	15-610820	168.5–170	QBT2	10-1973	10-1972	10-1974	10-1972	10-1973	10-1973
RE15-10-8265	15-610820	178–180	QBT1V	10-1973	10-1972	10-1974	10-1972	10-1973	10-1973

Note: Numbers in analyte columns are request numbers.

Table 6.7-6
Inorganic Chemicals above BVs at SWMU 15-007(d)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Beryllium	Cadmium	Chromium	Iron	Manganese	Perchlorate	Selenium	Zinc
Qbt 1g, Qct, Qbo BV				**0.5**	**1.44**	**0.4**	**2.6**	**3700**	**189**	**na**[a]	**0.3**	**40**
Qbt 1v BV				**0.5**	**1.7**	**0.4**	**2.24**	**9900**	**408**	**na**	**0.3**	**84.6**
Qbt 2, 3, 4 BV				**0.5**	**1.21**	**1.63**	**7.14**	**14500**	**482**	**na**	**0.3**	**63.5**
Industrial SSL[b]				**454**	**2260**	**1120**	**2920**	**795000**	**145000**	**795**	**5680**	**341000**
Residential SSL[b]				**31.3**	**156**	**77.9**	**219**	**54800**	**10700**	**54.8**	**391**	**23500**
RE15-10-8240	15-610819	4–5	QBT3	0.991 (UJ)	—[c]	—	—	—	—	—	0.965 (U)	—
RE15-10-8241	15-610819	19–20	QBT3	1 (UJ)	—	—	—	—	—	—	1.01 (U)	—
RE15-10-8242	15-610819	33–35	QBT3	0.98 (UJ)	—	—	—	—	—	—	0.992 (U)	—
RE15-10-8243	15-610819	49–50	QBT3	0.99 (UJ)	—	—	—	—	—	—	0.99 (U)	—
RE15-10-8244	15-610819	64–65	QBT3	1.02 (UJ)	—	—	—	—	—	—	1.01 (U)	—
RE15-10-8245	15-610819	79–80	QBT3	0.958 (UJ)	—	—	—	—	—	—	0.96 (U)	—
RE15-10-8246	15-610819	104–105	QBT3	4.69 (UJ)	—	—	—	—	—	—	0.964 (U)	—
RE15-10-8247	15-610819	109–110	QBT3	1.01 (U)	—	—	—	—	—	—	0.961 (U)	—
RE15-10-8248	15-610819	123.5–125	QBT2	0.95 (U)	—	—	—	—	—	—	0.968 (U)	—
RE15-10-8249	15-610819	138.5–140	QBT2	0.963 (U)	—	—	9.27	—	—	—	0.549 (J)	—
RE15-10-8250	15-610819	154–155	QBT2	0.968 (U)	—	—	—	—	—	—	0.928 (U)	—
RE15-10-8251	15-610819	169–170	QBT1G	1.02 (U)	—	0.512 (U)	—	5910	268 (J)	—	1 (U)	40.8
RE15-10-8264	15-610819	181.5–182.5	QBT1G	1.01 (U)	—	0.504 (U)	—	5890	282 (J)	—	0.513 (J)	42.4
RE15-10-8252	15-610820	4–5	QBT3	0.998 (U)	—	—	—	—	—	—	1 (U)	—
RE15-10-8253	15-610820	18–20	QBT3	0.947 (U)	—	—	—	—	—	0.00212	1.01 (U)	—
RE15-10-8254	15-610820	34–35	QBT3	0.964 (U)	1.67	—	—	—	—	0.00237	1.02 (U)	—
RE15-10-8255	15-610820	48.5–50	QBT3	0.998 (U)	—	—	—	—	—	—	1 (U)	—
RE15-10-8256	15-610820	63.5–65	QBT3	1 (U)	—	—	—	—	—	—	0.972 (U)	—

Table 6.7-6 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Beryllium	Cadmium	Chromium	Iron	Manganese	Perchlorate	Selenium	Zinc
Qbt 1g, Qct, Qbo BV				**0.5**	**1.44**	**0.4**	**2.6**	**3700**	**189**	**na**[a]	**0.3**	**40**
Qbt 1v BV				**0.5**	**1.7**	**0.4**	**2.24**	**9900**	**408**	**na**	**0.3**	**84.6**
Qbt 2, 3, 4 BV				**0.5**	**1.21**	**1.63**	**7.14**	**14500**	**482**	**na**	**0.3**	**63.5**
Industrial SSL[b]				**454**	**2260**	**1120**	**2920**	**795000**	**145000**	**795**	**5680**	**341000**
Residential SSL[b]				**31.3**	**156**	**77.9**	**219**	**54800**	**10700**	**54.8**	**391**	**23500**
RE15-10-8257	15-610820	79–80	QBT3	0.963 (U)	—	—	—	—	—	—	0.989 (U)	—
RE15-10-8258	15-610820	93.5–95	QBT3	0.978 (U)	—	—	—	—	—	—	0.98 (U)	—
RE15-10-8259	15-610820	108.5–110	QBT3	0.992 (U)	—	—	—	—	—	—	1 (U)	—
RE15-10-8260	15-610820	124–125	QBT2	1 (U)	—	—	18.7	—	—	—	0.935 (U)	—
RE15-10-8261	15-610820	138.5–140	QBT2	0.985 (U)	—	—	12	—	—	—	1.02 (U)	—
RE15-10-8262	15-610820	153.5–155	QBT2	0.968 (U)	—	—	—	—	—	—	1.01 (U)	—
RE15-10-8263	15-610820	168.5–170	QBT2	0.965 (U)	—	—	—	—	—	—	0.961 (U)	—
RE15-10-8265	15-610820	178–180	QBT1V	1 (U)	—	0.501 (U)	3	—	—	—	0.989 (U)	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] na = Not available.

[b] SSLs from NMED 2009, 108070.

[c] — = Not detected or not detected above BV.

Table 6.7-7
Organic Chemicals Detected at SWMU 15-007(d)

Sample ID	Location ID	Depth (ft)	Media	Aroclor-1242	Aroclor-1254
Industrial SSL*				**8.26**	**8.26**
Residential SSL*				**2.22**	**1.12**
RE15-10-8245	15-610819	79–80	QBT3	0.0032 (J)	0.0018 (J)

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.
* SSLs from NMED 2009, 108070.

Table 6.7-8
Radionuclides Detected or Detected above BVs/FVs at SWMU 15-007(d)

Sample ID	Location ID	Depth (ft)	Media	Tritium
Qbt 1g, Qct, Qbo BV[a]				**na**[b]
Qbt 1v BV[a]				**na**
Qbt 2, 3, 4 BV[a]				**na**
Industrial SAL[c]				**440000**
Residential SAL[c]				**750**
RE15-10-8240	15-610819	4–5	QBT3	6.11064
RE15-10-8241	15-610819	19–20	QBT3	50.7
RE15-10-8242	15-610819	33–35	QBT3	60.2
RE15-10-8243	15-610819	49–50	QBT3	53.4918
RE15-10-8244	15-610819	64–65	QBT3	16.3538
RE15-10-8245	15-610819	79–80	QBT3	13.1
RE15-10-8246	15-610819	104–105	QBT3	5.13604
RE15-10-8247	15-610819	109–110	QBT3	5.97586
RE15-10-8248	15-610819	123.5–125	QBT2	4.67582
RE15-10-8249	15-610819	138.5–140	QBT2	4.5686
RE15-10-8250	15-610819	154–155	QBT2	7.37832
RE15-10-8251	15-610819	169–170	QBT1G	9.99733
RE15-10-8264	15-610819	181.5–182.5	QBT1G	15.2175
RE15-10-8252	15-610820	4–5	QBT3	1.6434
RE15-10-8253	15-610820	18–20	QBT3	113.984
RE15-10-8254	15-610820	34–35	QBT3	82.1367
RE15-10-8255	15-610820	48.5–50	QBT3	6.17004
RE15-10-8256	15-610820	63.5–65	QBT3	59.6296
RE15-10-8257	15-610820	79–80	QBT3	13.7
RE15-10-8258	15-610820	93.5–95	QBT3	5.12277
RE15-10-8259	15-610820	108.5–110	QBT3	7.26974
RE15-10-8260	15-610820	124–125	QBT2	0.0134701
RE15-10-8261	15-610820	138.5–140	QBT2	4.56329
RE15-10-8262	15-610820	153.5–155	QBT2	14.2806
RE15-10-8263	15-610820	168.5–170	QBT2	6.38971
RE15-10-8265	15-610820	178–180	QBT1V	4.76578

Note: Results are in pCi/g.

[a] BVs/FVs are from LANL 1998, 059730.

[b] na = Not available.

[c] SALs from LANL 2009, 107655.

Table 6.8-1
Samples Collected and Analyses Requested at SWMU 15-009(b)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	Nitrate	PCB	Perchlorate	SVOC	TAL Metals	VOC
RE15-10-8300	15-610829	0-0.3	SED	10-1569	10-1568	10-1567	10-1569	10-1569	10-1569	10-1569	10-1568	10-1567	10-1568	10-1567	10-1568	10-1567
RE15-10-8301	15-610829	1-2	QBT3	10-1569	10-1568	10-1567	10-1569	10-1569	10-1569	10-1569	10-1568	10-1567	10-1568	10-1567	10-1568	10-1567
RE15-10-8302	15-610830	7-8	FILL	10-1952	10-1951	10-1950	10-1952	10-1952	10-1952	10-1952	10-1951	10-1950	10-1951	10-1950	10-1951	10-1950
RE15-10-8303	15-610830	12-13	FILL	10-1952	10-1951	10-1950	10-1952	10-1952	10-1952	10-1952	10-1951	10-1950	10-1951	10-1950	10-1951	10-1950
RE15-10-8305	15-610831	0-1	SED	10-1569	10-1568	10-1567	10-1569	10-1569	10-1569	10-1569	10-1568	—*	10-1568	10-1567	10-1568	10-1567
RE15-10-8304	15-610831	1-2	SED	10-1569	10-1568	10-1567	10-1569	10-1569	10-1569	10-1569	10-1568	—	10-1568	10-1567	10-1568	10-1567
RE15-10-8306	15-610832	0-1	SED	10-1569	10-1568	10-1567	10-1569	10-1569	10-1569	10-1569	10-1568	—	10-1568	10-1567	10-1568	10-1567
RE15-10-8307	15-610832	1-1.5	SOIL	10-1569	10-1568	10-1567	10-1569	10-1569	10-1569	10-1569	10-1568	—	10-1568	10-1567	10-1568	10-1567
RE15-10-8308	15-610833	0-0.5	SED	10-1569	10-1568	10-1567	10-1569	10-1569	10-1569	10-1569	10-1568	—	10-1568	10-1567	10-1568	10-1567
RE15-10-8309	15-610833	1-2	QBT3	10-1569	10-1568	10-1567	10-1569	10-1569	10-1569	10-1569	10-1568	—	10-1568	10-1567	10-1568	10-1567
RE15-10-8310	15-610834	15-16	FILL	10-1952	10-1951	10-1950	10-1952	10-1952	10-1952	10-1952	10-1951	—	10-1951	10-1950	10-1951	10-1950
RE15-10-8311	15-610834	17-18	QBT3	10-1952	10-1951	10-1950	10-1952	10-1952	10-1952	10-1952	10-1951	—	10-1951	10-1950	10-1951	10-1950
RE15-10-8312	15-610835	7-8	FILL	10-1952	10-1951	10-1950	10-1952	10-1952	10-1952	10-1952	10-1951	—	10-1951	10-1950	10-1951	10-1950
RE15-10-8313	15-610835	12-13	FILL	10-1952	10-1951	10-1950	10-1952	10-1952	10-1952	10-1952	10-1951	—	10-1951	10-1950	10-1951	10-1950
RE15-10-8314	15-610836	7-8	FILL	10-1952	10-1951	10-1950	10-1952	10-1952	10-1952	10-1952	10-1951	—	10-1951	10-1950	10-1951	10-1950
RE15-10-8315	15-610836	12-13	FILL	10-1952	10-1951	10-1950	10-1952	10-1952	10-1952	10-1952	10-1951	—	10-1951	10-1950	10-1951	10-1950
RE15-10-8316	15-610837	47.5-50	QBT3	10-1984	10-1983	10-1982	10-1984	10-1984	10-1984	10-1984	10-1983	10-1982	10-1983	10-1982	10-1983	10-1982
RE15-10-8317	15-610837	58.5-60	QBT3	10-1984	10-1983	10-1982	10-1984	10-1984	10-1984	10-1984	10-1983	10-1982	10-1983	10-1982	10-1983	10-1982
RE15-10-8318	15-610837	68.5-70	QBT3	10-1984	10-1983	10-1982	10-1984	10-1984	10-1984	10-1984	10-1983	10-1982	10-1983	10-1982	10-1983	10-1982
RE15-10-8319	15-610837	78.5-80	QBT3	10-1984	10-1983	10-1982	10-1984	10-1984	10-1984	10-1984	10-1983	10-1982	10-1983	10-1982	10-1983	10-1982

Note: Numbers in analyte columns are request numbers.
* — = Analysis not requested.

Table 6.8-2
Inorganic Chemicals above BVs at SWMU 15-009(b)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Cadmium	Calcium	Chromium	Copper	Cyanide (Total)	Lead	Nitrate	Perchlorate	Selenium	Uranium	Zinc
Qbt 2, 3, 4 BV				**0.5**	**46**	**1.63**	**2200**	**7.14**	**4.66**	**0.5**	**11.2**	**na**[a]	**na**	**0.3**	**2.4**	**63.5**
Sediment BV				**0.83**	**127**	**0.4**	**4420**	**10.5**	**11.2**	**0.82**	**19.7**	**na**	**na**	**0.3**	**2.22**	**60.2**
Soil BV				**0.83**	**295**	**0.4**	**6120**	**19.3**	**14.7**	**0.5**	**22.3**	**na**	**na**	**1.52**	**1.82**	**48.8**
Industrial SSL[b]				**454**	**224000**	**1120**	**na**	**2920**	**45400**	**22700**	**800**	**1820000**	**795**	**5680**	**3410**	**341000**
Residential SSL[b]				**31.3**	**15600**	**77.9**	**na**	**219**	**3130**	**1560**	**400**	**125000**	**54.8**	**391**	**235**	**23500**
RE15-10-8300	15-610829	0–0.3	SED	1.44 (UJ)	—[c]	0.721 (U)	—	—	—	—	—	—	—	1.27 (U)	—	—
RE15-10-8301	15-610829	1–2	QBT3	0.787 (U)	—	—	—	8.69 (J)	—	—	—	1.3 (J-)	0.000892 (J)	1.06 (U)	2.62 (J)	—
RE15-10-8302	15-610830	7–8	FILL	—	—	—	6640 (J+)	—	—	—	—	—	—	—	1.95 (J)	114
RE15-10-8303	15-610830	12–13	FILL	1 (U)	—	—	—	—	—	—	—	—	—	—	—	53.1
RE15-10-8305	15-610831	0–1	SED	1.34 (U)	134	0.757 (U)	—	—	17.8	1.22	28.2	—	—	1.59 (U)	615 (J)	—
RE15-10-8304	15-610831	1–2	SED	1.17 (UJ)	—	0.584 (U)	—	—	—	—	—	1.75 (J-)	—	0.669 (U)	52 (J)	—
RE15-10-8306	15-610832	0–1	SED	1.12 (U)	—	0.621 (U)	—	—	—	—	—	2.76 (J-)	—	1.26 (U)	13.7 (J)	—
RE15-10-8307	15-610832	1–1.5	SOIL	—	—	0.556 (U)	—	—	—	—	—	—	—	—	3.62 (J)	—
RE15-10-8308	15-610833	0–0.5	SED	—	—	0.644 (U)	—	14 (J)	—	—	—	—	—	1.38 (U)	10.6 (J)	—
RE15-10-8309	15-610833	1–2	QBT3	0.813 (U)	83.6	—	—	19.1 (J)	5.52	—	—	—	—	1.12 (U)	3.07 (J)	—
RE15-10-8310	15-610834	15–16	FILL	—	—	—	—	—	—	—	—	—	0.000621 (J)	—	2.32 (J)	54.4
RE15-10-8311	15-610834	17–18	QBT3	0.994 (U)	—	—	—	—	—	—	—	—	—	0.996 (UJ)	—	—
RE15-10-8312	15-610835	7–8	FILL	—	—	—	—	—	—	—	—	—	—	—	2.48 (J)	76.4
RE15-10-8313	15-610835	12–13	FILL	—	—	—	—	—	—	—	—	—	—	—	4.7 (J)	—
RE15-10-8314	15-610836	7–8	FILL	0.981 (U)	—	—	—	—	—	—	—	—	0.00247	—	—	—
RE15-10-8315	15-610836	12–13	FILL	0.972 (U)	—	—	—	—	—	—	—	—	0.00106 (J)	—	—	—
RE15-10-8316	15-610837	47.5–50	QBT3	1.01 (UJ)	—	—	—	—	—	—	—	—	—	1 (U)	—	—
RE15-10-8317	15-610837	58.5–60	QBT3	1.06 (UJ)	—	—	—	—	—	—	—	—	—	1.05 (U)	—	—
RE15-10-8318	15-610837	68.5–70	QBT3	1.02 (UJ)	—	—	—	—	—	—	—	—	—	1.02 (U)	—	—
RE15-10-8319	15-610837	78.5–80	QBT3	0.998 (UJ)	—	—	—	—	—	—	—	—	—	0.985 (U)	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] na = Not available.

[b] SSLs from NMED 2009, 108070, unless otherwise noted.

[c] — = Not detected or not detected above BV.

Table 6.8-3
Organic Chemicals Detected at SWMU 15-009(b)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Anthracene	Aroclor-1242	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Butanone[2-]	Chrysene
Industrial SSL[a]				**36700**	**18300[b]**	**851000**	**183000**	**8.26**	**8.26**	**8.26**	**23.4**	**2.34**	**23.4**	**18300[b]**	**369000**	**2340**
Residential SSL[a]				**3440**	**1720[b]**	**67500**	**17200**	**2.22**	**1.12**	**2.22**	**6.21**	**0.621**	**6.21**	**1720[b]**	**39600**	**621**
RE15-10-8300	15-610829	0–0.3	SED	—[e]	—	0.00798 (J)	—	—	—	—	—	—	—	—	—	—
RE15-10-8302	15-610830	7–8	FILL	—	0.0203 (J)	0.131	0.0406	0.0272	0.0312	0.0131	0.128	0.136	0.269	0.0637	0.0024 (J)	0.122
RE15-10-8303	15-610830	12–13	FILL	—	—	—	0.0119 (J)	—	—	—	0.0512	0.05	0.0993	0.0246 (J)	—	0.0463
RE15-10-8305	15-610831	0–1	SED	—	—	0.0141 (J)	—	NA[b]	NA	NA	—	—	—	—	—	—
RE15-10-8308	15-610833	0–0.5	SED	—	—	—	—	NA	NA	NA	—	—	—	—	—	—
RE15-10-8310	15-610834	15–16	FILL	0.0389	—	0.0226	0.0937	NA	NA	NA	0.211	0.227	0.419	0.0903	—	0.21
RE15-10-8311	15-610834	17–18	QBT3	—	—	0.00428 (J)	—	NA	NA	NA	0.0227 (J)	0.0189 (J)	0.0386	—	—	0.0153 (J)
RE15-10-8312	15-610835	7–8	FILL	—	0.022 (J)	0.036	0.0475	NA	NA	NA	0.133	0.134	0.269	0.0571	—	0.154
RE15-10-8313	15-610835	12–13	FILL	—	0.0163 (J)	0.0221	0.0299 (J)	NA	NA	NA	0.103	0.106	0.217	0.0507	—	0.104
RE15-10-8314	15-610836	7–8	FILL	—	—	—	—	NA	NA	NA	—	—	—	—	—	—
RE15-10-8315	15-610836	12–13	FILL	—	—	—	—	NA	NA	NA	—	0.0202 (J)	0.0421	—	—	—

Table 6.8-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Isopropyltoluene[4-]	Methylene Chloride	Methylnaphthalene[2-]	Naphthalene	Phenanthrene	Pyrene	Toluene	Trimethylbenzene[1,2,4-]	Xylene[1,2-]	Xylene[1,3-]+Xylene[1,4-]
Industrial SSL[a]				**24400**	**24400**	**23.4**	**14900**[c]	**1090**	**4100**[d]	**252**	**20500**	**18300**	**57900**	**260**[d]	**31500**	**3610**
Residential SSL[a]				**2290**	**2290**	**6.21**	**3210**[c]	**199**	**310**[d]	**45**	**1830**	**1720**	**5570**	**62**[d]	**9550**	**1090**
RE15-10-8300	15-610829	0–0.3	SED	—	—	—	0.0167	—	—	—	—	—	—	—	—	—
RE15-10-8302	15-610830	7–8	FILL	0.299	0.0164 (J)	0.0652	0.00316	0.0024 (J)	—	—	0.182	0.256	0.0102	0.000538 (J)	0.000574 (J)	0.000702 (J)
RE15-10-8303	15-610830	12–13	FILL	0.119	—	0.0252 (J)	0.000314 (J)	—	—	—	0.0617	0.0926	0.000504 (J)	—	—	—
RE15-10-8305	15-610831	0–1	SED	—	—	—	0.00855 (J+)	—	—	—	—	—	0.00112 (J+)	—	—	—
RE15-10-8308	15-610833	0–0.5	SED	—	—	—	0.000942 (J)	—	—	—	—	—	—	—	—	—
RE15-10-8310	15-610834	15–16	FILL	0.456	0.0362	0.0867	0.00109	—	0.00864 (J)	0.0337 (J)	0.302	0.43	0.000704 (J)	—	—	—
RE15-10-8311	15-610834	17–18	QBT3	0.0365	—	—	—	—	—	—	—	0.0301 (J)	0.000321 (J)	—	—	—
RE15-10-8312	15-610835	7–8	FILL	0.368	0.0243 (J)	0.0567	0.0061	—	—	—	0.238	0.286	0.00445	0.000651 (J)	0.000349 (J)	0.00047 (J)
RE15-10-8313	15-610835	12–13	FILL	0.244	0.0105 (J)	0.0504	0.00159	—	—	—	0.13	0.201	0.00276	—	—	—
RE15-10-8314	15-610836	7–8	FILL	—	—	—	0.000427 (J)	—	—	—	—	—	—	—	—	—
RE15-10-8315	15-610836	12–13	FILL	0.039	—	—	—	—	—	—	—	0.0315 (J)	0.000323 (J)	—	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] SSLs from NMED 2009, 108070, unless otherwise noted.

[b] Pyrene used as a surrogate.

[c] Isopropylbenzene used as a surrogate.

[d] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[e] — = Not detected.

Table 6.8-4
Radionuclides Detected or Detected above BVs/FVs at SWMU 15-009(b)

Sample ID	Location ID	Depth (ft)	Media	Cesium-137	Plutonium-239/240	Tritium	Uranium-234	Uranium-235/236	Uranium-238
Qbt 2, 3, 4 BV[a]				**na**[b]	**na**	**na**	**1.98**	**0.09**	**1.93**
Sediment BV[a]				**0.9**	**0.068**	**0.093**	**2.59**	**0.2**	**2.29**
Soil BV[a]				**1.65**[c]	**0.054**[c]	**na**	**2.59**	**0.2**	**2.29**
Industrial SAL[d]				**23**	**210**	**440000**	**1500**	**87**	**430**
Residential SAL[d]				**5.6**	**33**	**750**	**170**	**17**	**87**
RE15-10-8301	15-610829	1–2	QBT3	—[e]	—	0.0430596	—	—	—
RE15-10-8302	15-610830	7–8	FILL	0.099	—	0.0950559	—	—	—
RE15-10-8303	15-610830	12–13	FILL	—	—	0.0602375	—	—	—
RE15-10-8305	15-610831	0–1	SED	2.54	0.134	—	303	20.3	311
RE15-10-8304	15-610831	1–2	SED	—	—	—	89.1 (J+)	5.24 (J+)	92.3 (J+)
RE15-10-8306	15-610832	0–1	SED	—	—	0.101157	8.26	0.525	10.1
RE15-10-8307	15-610832	1–1.5	SOIL	0.177	—	0.12314	2.63	—	2.82
RE15-10-8308	15-610833	0–0.5	SED	—	—	—	2.74	0.207	5.14
RE15-10-8309	15-610833	1–2	QBT3	—	—	0.0334362	—	—	—
RE15-10-8310	15-610834	15–16	FILL	—	—	0.117058	—	—	—
RE15-10-8311	15-610834	17–18	QBT3	—	—	0.0557807	—	—	—
RE15-10-8312	15-610835	7–8	FILL	0.14	—	0.103374	—	—	—
RE15-10-8313	15-610835	12–13	FILL	—	—	0.0804315	—	—	—
RE15-10-8314	15-610836	7–8	FILL	—	—	0.151001	—	—	—
RE15-10-8315	15-610836	12–13	FILL	—	—	0.144884	—	—	—
RE15-10-8316	15-610837	47.5–50	QBT3	—	—	0.190571	—	—	—
RE15-10-8317	15-610837	58.5–60	QBT3	—	—	0.263321	—	—	—
RE15-10-8318	15-610837	68.5–70	QBT3	—	—	0.106778	—	—	—
RE15-10-8319	15-610837	78.5–80	QBT3	—	—	0.0310637	—	—	—

Notes: Results are in pCi/g. Data qualifiers are presented in Appendix A.

[a] BVs/FVs are from LANL 1998, 059730.

[b] na = Not available.

[c] FV applies to soil and tuff samples collected from 0–1 ft only.

[d] SALs from LANL 2009, 107655.

[e] — = Not detected or not detected above BV/FV.

Table 6.9-1
Samples Collected and Analyses Requested at SWMU 15-009(c)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	Nitrate	PCB	Perchlorate	PEST	SVOC	TAL Metals	VOC
RE15-98-0029	15-03458	0–0.5	SOIL	—*	—	4661R	4662R	4662R	—	4662R	—	4659R	—	4659R	4659R	4660R	4659R
RE15-98-0030	15-03458	1–1.33	SOIL	—	—	4661R	4662R	4662R	—	4662R	—	4659R	—	4659R	4659R	4660R	4659R
RE15-98-0031	15-03458	2–2.5	SOIL	—	—	4661R	4662R	4662R	—	4662R	—	4659R	—	4659R	4659R	4660R	4659R
RE15-98-0032	15-03459	0–0.5	SOIL	—	—	4661R	4662R	4662R	—	4662R	—	4659R	—	4659R	—	4660R	4659R
RE15-98-0033	15-03459	1.17–1.67	SOIL	—	—	4661R	4662R	4662R	—	4662R	—	4659R	—	4659R	4659R	4660R	4659R
RE15-98-0034	15-03459	2.33–2.83	SOIL	—	—	4661R	4662R	4662R	—	4662R	—	4659R	—	4659R	4659R	4660R	4659R
RE15-98-0035	15-03460	0–0.5	SOIL	—	—	4661R	4662R	4662R	—	4662R	—	4659R	—	4659R	4659R	4660R	4659R
RE15-98-0036	15-03460	1.33–1.83	SOIL	—	—	4661R	4662R	4662R	—	4662R	—	4659R	—	4659R	4659R	4660R	4659R
RE15-98-0037	15-03471	0–0.5	SOIL	—	—	4661R	4662R	4662R	—	4662R	—	4659R	—	4659R	4659R	4660R	4659R
RE15-10-8336	15-610838	0–0.5	SED	10-1622	10-1621	10-1620	10-1622	10-1622	10-1622	10-1622	10-1621	10-1620	10-1621	—	10-1620	10-1621	10-1620
RE15-10-8337	15-610838	1–1.5	QBT3	10-1622	10-1621	10-1620	10-1622	10-1622	10-1622	10-1622	10-1621	10-1620	10-1621	—	10-1620	10-1621	10-1620
RE15-10-8338	15-610839	0–0.8	QBT3	10-1622	10-1621	10-1620	10-1622	10-1622	10-1622	10-1622	10-1621	10-1620	10-1621	—	10-1620	10-1621	10-1620
RE15-10-8339	15-610839	1–2.5	QBT3	10-1622	10-1621	10-1620	10-1622	10-1622	10-1622	10-1622	10-1621	10-1620	10-1621	—	10-1620	10-1621	10-1620
RE15-10-8340	15-610840	0–1	SED	10-1760	10-1759	10-1758	10-1760	10-1760	10-1760	10-1760	10-1759	10-1758	10-1759	—	10-1758	10-1759	10-1758
RE15-10-8341	15-610840	1–1.5	QBT3	10-1760	10-1759	10-1758	10-1760	10-1760	10-1760	10-1760	10-1759	10-1758	10-1759	—	10-1758	10-1759	10-1758
RE15-10-8342	15-610841	3–3.5	FILL	10-1907	10-1906	10-1905	10-1907	10-1907	10-1907	10-1907	10-1906	10-1905	10-1906	—	10-1905	10-1906	10-1905
RE15-10-8343	15-610841	8–8.5	FILL	10-1907	10-1906	10-1905	10-1907	10-1907	10-1907	10-1907	10-1906	10-1905	10-1906	—	10-1905	10-1906	10-1905
RE15-10-8345	15-610842	2–2.5	FILL	10-1907	10-1906	10-1905	10-1907	10-1907	10-1907	10-1907	10-1906	—	10-1906	—	10-1905	10-1906	10-1905
RE15-10-8344	15-610842	7–7.5	FILL	10-1907	10-1906	10-1905	10-1907	10-1907	10-1907	10-1907	10-1906	—	10-1906	—	10-1905	10-1906	10-1905
RE15-10-8346	15-610843	10.5–11	FILL	10-1907	10-1906	10-1905	10-1907	10-1907	10-1907	10-1907	10-1906	—	10-1906	—	10-1905	10-1906	10-1905
RE15-10-8347	15-610843	15.5–16	QBT3	10-1907	10-1906	10-1905	10-1907	10-1907	10-1907	10-1907	10-1906	—	10-1906	—	10-1905	10-1906	10-1905
RE15-10-8348	15-610844	3–4	FILL	10-1969	10-1969	10-1969	10-1969	10-1969	10-1969	10-1969	10-1969	—	10-1969	—	10-1969	10-1969	10-1969
RE15-10-8349	15-610844	8–9	QBT3	10-1969	10-1969	10-1969	10-1969	10-1969	10-1969	10-1969	10-1969	—	10-1969	—	10-1969	10-1969	10-1969
RE15-10-8350	15-610845	0–0.7	QBT3	10-1622	10-1621	10-1620	10-1622	10-1622	10-1622	10-1622	10-1621	—	10-1621	—	10-1620	10-1621	10-1620
RE15-10-8351	15-610845	1–1.2	QBT3	10-1622	10-1621	10-1620	10-1622	10-1622	10-1622	10-1622	10-1621	—	10-1621	—	10-1620	10-1621	10-1620
RE15-10-8352	15-610846	0–0.5	QBT3	10-1622	10-1621	10-1620	10-1622	10-1622	10-1622	10-1622	10-1621	—	10-1621	—	10-1620	10-1621	10-1620
RE15-10-8353	15-610846	1–2	QBT3	10-1622	10-1621	10-1620	10-1622	10-1622	10-1622	10-1622	10-1621	—	10-1621	—	10-1620	10-1621	10-1620
RE15-10-8354	15-610847	0–0.7	SED	10-1622	10-1621	10-1620	10-1622	10-1622	10-1622	10-1622	10-1621	—	10-1621	—	10-1620	10-1621	10-1620
RE15-10-8355	15-610847	1–2	QBT3	10-1622	10-1621	10-1620	10-1622	10-1622	10-1622	10-1622	10-1621	—	10-1621	—	10-1620	10-1621	10-1620
RE15-10-8356	15-610848	0–0.8	SOIL	10-1622	10-1621	10-1620	10-1622	10-1622	10-1622	10-1622	10-1621	—	10-1621	—	10-1620	10-1621	10-1620
RE15-10-8357	15-610848	1–2	QBT3	10-1622	10-1621	10-1620	10-1622	10-1622	10-1622	10-1622	10-1621	—	10-1621	—	10-1620	10-1621	10-1620
RE15-10-8358	15-610849	0–0.8	SED	10-1625	10-1624	10-1623	10-1625	10-1625	10-1625	10-1625	10-1624	—	10-1624	—	10-1623	10-1624	10-1623

Table 6.9-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	Nitrate	PCB	Perchlorate	PEST	SVOC	TAL Metals	VOC
RE15-10-8359	15-610849	1–2	SOIL	10-1625	10-1624	10-1623	10-1625	10-1625	10-1625	10-1625	10-1624	—	10-1624	—	10-1623	10-1624	10-1623
RE15-10-8360	15-610850	0–0.9	SED	10-1625	10-1624	10-1623	10-1625	10-1625	10-1625	10-1625	10-1624	—	10-1624	—	10-1623	10-1624	10-1623
RE15-10-8361	15-610850	1–2	SED	10-1625	10-1624	10-1623	10-1625	10-1625	10-1625	10-1625	10-1624	—	10-1624	—	10-1623	10-1624	10-1623
RE15-10-8362	15-610851	0–0.7	SED	10-1625	10-1624	10-1623	10-1625	10-1625	10-1625	10-1625	10-1624	—	10-1624	—	10-1623	10-1624	10-1623
RE15-10-8363	15-610851	1–2	SOIL	10-1666	10-1666	10-1666	10-1666	10-1666	10-1666	10-1666	10-1666	—	10-1666	—	10-1666	10-1666	10-1666
RE15-10-8364	15-610852	0–0.5	SED	10-1760	10-1759	10-1758	10-1760	10-1760	10-1760	10-1760	10-1759	—	10-1759	—	10-1758	10-1759	10-1758
RE15-10-8365	15-610852	1–1.7	SED	10-1760	10-1759	10-1758	10-1760	10-1760	10-1760	10-1760	10-1759	—	10-1759	—	10-1758	10-1759	10-1758
RE15-10-8366	15-610853	0–0.5	SED	10-1760	10-1759	10-1758	10-1760	10-1760	10-1760	10-1760	10-1759	—	10-1759	—	10-1758	10-1759	10-1758
RE15-10-8367	15-610853	1–1.5	SED	10-1760	10-1759	10-1758	10-1760	10-1760	10-1760	10-1760	10-1759	—	10-1759	—	10-1758	10-1759	10-1758
RE15-10-8368	15-610854	0–0.5	SED	10-1760	10-1759	10-1758	10-1760	10-1760	10-1760	10-1760	10-1759	—	10-1759	—	10-1758	10-1759	10-1758

Note: Numbers in analyte columns are request numbers.

* — = Analysis not requested.

Table 6.9-2
Inorganic Chemicals above BVs at SWMU 15-009(c)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Beryllium	Cadmium	Calcium	Chromium	Cyanide (Total)	Lead	Mercury	Nitrate	Perchlorate	Selenium	Silver	Uranium	Zinc
Qbt 2, 3, 4 BV				**0.5**	**1.21**	**1.63**	**2200**	**7.14**	**0.5**	**11.2**	**0.1**	**na**[a]	**na**	**0.3**	**1**	**2.4**	**63.5**
Sediment BV				**0.83**	**1.31**	**0.4**	**4420**	**10.5**	**0.82**	**19.7**	**0.1**	**na**	**na**	**0.3**	**1**	**2.22**	**60.2**
Soil BV				**0.83**	**1.83**	**0.4**	**6120**	**19.3**	**0.5**	**22.3**	**0.1**	**na**	**na**	**1.52**	**1**	**1.82**	**48.8**
Industrial SSL[b]				**454**	**2260**	**1120**	**na**	**2920**	**22700**	**800**	**310**[c]	**1820000**	**795**	**5680**	**5680**	**3410**	**341000**
Residential SSL[b]				**31.3**	**156**	**77.9**	**na**	**219**	**1560**	**400**	**23**[c]	**125000**	**54.8**	**391**	**391**	**235**	**23500**
RE15-98-0029	15-03458	0–0.5	SOIL	10 (U)	—[d]	0.51 (U)	—	—	NA[e]	—	—	NA	NA	—	2 (U)	NA	—
RE15-98-0030	15-03458	1–1.33	SOIL	11 (U)	—	0.54 (U)	—	—	NA	—	0.11 (U)	NA	NA	—	2.2 (U)	NA	—
RE15-98-0031	15-03458	2–2.5	SOIL	11 (U)	—	0.54 (U)	—	—	NA	—	0.11 (U)	NA	NA	—	2.2 (U)	NA	—
RE15-98-0032	15-03459	0–0.5	SOIL	10 (U)	—	0.52 (U)	—	—	NA	—	—	NA	NA	—	2.1 (U)	NA	—
RE15-98-0033	15-03459	1.17–1.67	SOIL	10 (U)	—	0.51 (U)	—	—	NA	—	—	NA	NA	—	2 (U)	NA	—
RE15-98-0034	15-03459	2.33–2.83	SOIL	10 (U)	—	0.52 (U)	—	—	NA	—	—	NA	NA	—	2.1 (U)	NA	—
RE15-98-0035	15-03460	0–0.5	SOIL	11 (U)	—	0.53 (U)	—	—	NA	—	0.11 (U)	NA	NA	—	2.1 (U)	NA	—
RE15-98-0036	15-03460	1.33–1.83	SOIL	11 (U)	—	0.53 (U)	—	—	NA	—	0.11 (U)	NA	NA	—	2.1 (U)	NA	—
RE15-98-0037	15-03471	0–0.5	SOIL	10 (U)	2.4	0.5 (U)	—	—	NA	—	—	NA	NA	—	2 (U)	NA	—
RE15-10-8336	15-610838	0–0.5	SED	—	—	0.566 (U)	—	—	—	—	—	—	—	1.13 (U)	—	—	—
RE15-10-8337	15-610838	1–1.5	QBT3	0.751 (U)	—	—	—	23.6	—	—	—	1.3	—	1.03 (U)	—	3.3	—
RE15-10-8338	15-610839	0–0.8	QBT3	0.69 (U)	—	—	—	14.5	—	—	—	—	—	1.22 (U)	—	4	—
RE15-10-8339	15-610839	1–2.5	QBT3	—	—	—	—	9.12	—	—	—	—	—	1.01 (U)	—	—	—
RE15-10-8340	15-610840	0–1	SED	1.27 (U)	—	—	—	15.7	—	—	—	—	—	1.3 (U)	—	—	—
RE15-10-8341	15-610840	1–1.5	QBT3	1.04 (U)	—	—	—	14.2	—	—	—	—	—	1.07 (U)	—	—	—
RE15-10-8342	15-610841	3–3.5	FILL	1.05 (UJ)	—	—	—	—	—	—	—	—	—	—	—	—	53.8 (J+)
RE15-10-8343	15-610841	8–8.5	FILL	1 (UJ)	—	—	—	—	—	—	—	1.64	0.000645 (J)	—	—	—	49.4 (J+)
RE15-10-8345	15-610842	2–2.5	FILL	1.04 (UJ)	—	—	6730	—	1.69	—	—	2.24	0.00136 (J)	—	—	8.19	—
RE15-10-8344	15-610842	7–7.5	FILL	1.01 (UJ)	—	—	—	—	—	—	—	2.14	0.0011 (J)	—	—	—	—
RE15-10-8346	15-610843	10.5–11	FILL	1.08 (UJ)	—	—	—	—	—	130	—	1.22	0.000598 (J)	—	—	3.27	56.3 (J+)
RE15-10-8347	15-610843	15.5–16	QBT3	0.998 (UJ)	—	—	—	—	—	—	—	—	—	1.02 (UJ)	—	—	—
RE15-10-8348	15-610844	3–4	FILL	—	—	—	—	—	—	—	—	1.1	0.000599 (J)	—	—	—	—
RE15-10-8349	15-610844	8–9	QBT3	0.602 (J)	—	—	—	—	—	—	—	1.21	0.000562 (J)	1.05 (UJ)	—	—	—
RE15-10-8350	15-610845	0–0.7	QBT3	1.2 (U)	—	—	—	12.8	—	—	—	—	—	1.25 (U)	—	—	—
RE15-10-8351	15-610845	1–1.2	QBT3	0.677 (U)	—	—	—	13.8	—	—	—	—	—	1.1 (U)	—	3.22	—
RE15-10-8352	15-610846	0–0.5	QBT3	1.06 (U)	—	—	—	13.6	—	—	—	—	—	1.23 (U)	—	—	—
RE15-10-8353	15-610846	1–2	QBT3	0.577 (U)	—	—	—	7.3	—	—	—	—	—	1.11 (U)	—	3.53	—
RE15-10-8354	15-610847	0–0.7	SED	—	—	0.581 (U)	—	—	—	—	—	—	—	1.19 (U)	—	2.82	—
RE15-10-8355	15-610847	1–2	QBT3	0.852 (U)	—	—	—	—	—	—	—	—	—	1.11 (U)	—	—	—

Table 6.9-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Beryllium	Cadmium	Calcium	Chromium	Cyanide (Total)	Lead	Mercury	Nitrate	Perchlorate	Selenium	Silver	Uranium	Zinc
Qbt 2, 3, 4 BV				**0.5**	**1.21**	**1.63**	**2200**	**7.14**	**0.5**	**11.2**	**0.1**	**na**[a]	**na**	**0.3**	**1**	**2.4**	**63.5**
Sediment BV				**0.83**	**1.31**	**0.4**	**4420**	**10.5**	**0.82**	**19.7**	**0.1**	**na**	**na**	**0.3**	**1**	**2.22**	**60.2**
Soil BV				**0.83**	**1.83**	**0.4**	**6120**	**19.3**	**0.5**	**22.3**	**0.1**	**na**	**na**	**1.52**	**1**	**1.82**	**48.8**
Industrial SSL[b]				**454**	**2260**	**1120**	**na**	**2920**	**22700**	**800**	**310**[c]	**1820000**	**795**	**5680**	**5680**	**3410**	**341000**
Residential SSL[b]				**31.3**	**156**	**77.9**	**na**	**219**	**1560**	**400**	**23**[c]	**125000**	**54.8**	**391**	**391**	**235**	**23500**
RE15-10-8356	15-610848	0–0.8	SOIL	—	—	0.574 (U)	—	—	—	—	—	—	0.000642 (J)	—	—	3.62	—
RE15-10-8357	15-610848	1–2	QBT3	0.763 (U)	—	—	—	10.5	—	—	—	—	—	0.97 (U)	—	—	—
RE15-10-8358	15-610849	0–0.8	SED	1.18 (U)	—	0.59 (U)	—	—	—	—	—	—	—	1.09 (U)	—	2.61	—
RE15-10-8359	15-610849	1–2	SOIL	1.03 (U)	—	0.513 (U)	—	—	—	—	—	—	—	—	—	3.58	—
RE15-10-8360	15-610850	0–0.9	SED	1.27 (U)	—	0.635 (U)	—	21.9	—	—	—	—	—	1.28 (U)	—	3.99	—
RE15-10-8361	15-610850	1–2	SED	1.17 (U)	—	0.587 (U)	—	12.6	—	—	—	—	—	1.16 (U)	—	4.08	—
RE15-10-8362	15-610851	0–0.7	SED	1.26 (U)	—	0.63 (U)	—	—	—	—	—	—	—	1.27 (U)	—	—	—
RE15-10-8363	15-610851	1–2	SOIL	1.19 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8364	15-610852	0–0.5	SED	1.25 (U)	—	—	—	—	—	—	—	—	—	1.24 (U)	—	4.29	—
RE15-10-8365	15-610852	1–1.7	SED	1.19 (U)	—	—	—	12.6	—	—	—	—	—	1.17 (U)	—	3.55	—
RE15-10-8366	15-610853	0–0.5	SED	1.16 (U)	—	—	—	—	—	—	—	—	—	1.17 (U)	—	4.11	—
RE15-10-8367	15-610853	1–1.5	SED	1.24 (U)	—	—	—	—	—	—	—	—	—	1.24 (U)	—	2.83	—
RE15-10-8368	15-610854	0–0.5	SED	1.28 (U)	—	—	—	13	—	—	—	—	—	1.29 (U)	—	8.8	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] na = Not available.

[b] SSLs from NMED 2009, 108070, unless otherwise noted.

[c] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[d] — = Not detected or not detected above BV.

[e] NA = Not analyzed.

Table 6.9-3
Organic Chemicals Detected at SWMU 15-009(c)

Sample ID	Location ID	Depth (ft)	Media	Acetone	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Bis(2-ethylhexyl)phthalate	Chrysene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Isopropyltoluene[4-]	Phenanthrene	Pyrene	Toluene	Trimethylbenzene[1,2,4-]	Xylene[1,3-]+Xylene[1,4-]
Industrial SSL[a]				**851000**	**183000**	**23.4**	**2.34**	**23.4**	**18300[b]**	**1370**	**2340**	**24400**	**24400**	**23.4**	**14900[c]**	**20500**	**18300**	**57900**	**260[d]**	**3610**
Residential SSL[a]				**67500**	**17200**	**6.21**	**0.621**	**6.21**	**1720[b]**	**347**	**621**	**2290**	**2290**	**6.21**	**3210[c]**	**1830**	**1720**	**5570**	**62[d]**	**1090**
RE15-10-8338	15-610839	0–0.8	QBT3	—[e]	—	—	—	—	—	—	—	—	—	—	0.000477 (J)	—	—	—	—	—
RE15-10-8339	15-610839	1–2.5	QBT3	0.0208	—	—	—	—	—	—	—	—	—	—	0.000553 (J)	—	—	0.000362 (J)	—	—
RE15-10-8341	15-610840	1–1.5	QBT3	0.00574 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8342	15-610841	3–3.5	FILL	—	0.0128 (J)	0.0626	0.0384	0.072	0.0226 (J)	—	0.0527	0.127	—	0.0208 (J)	—	0.0812	0.0783	—	—	—
RE15-10-8343	15-610841	8–8.5	FILL	—	—	0.0183 (J)	—	0.0153 (J)	—	—	—	0.0249 (J)	—	—	—	0.0165 (J)	0.0169 (J)	—	—	—
RE15-10-8345	15-610842	2–2.5	FILL	—	—	0.0292 (J)	0.0149 (J)	0.0286 (J)	—	—	0.0202 (J)	0.0508	—	—	—	0.0346 (J)	0.0359	—	—	—
RE15-10-8346	15-610843	10.5–11	FILL	—	0.031 (J)	0.101	0.0596	0.111	0.0346 (J)	—	0.0814	0.226	0.0154 (J)	0.0324 (J)	—	0.189	0.152	—	—	—
RE15-10-8349	15-610844	8–9	QBT3	—	—	—	0.0117 (J)	0.0222 (J)	—	—	—	0.023 (J)	—	—	—	—	0.0198 (J)	—	—	—	—
RE15-10-8356	15-610848	0–0.8	SOIL	—	—	—	—	—	—	—	—	—	—	—	0.00295	—	—	0.00383	—	0.000422 (J)
RE15-10-8359	15-610849	1–2	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.000328 (J)	—	—
RE15-10-8361	15-610850	1–2	SED	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.000393 (J)	—	—
RE15-10-8362	15-610851	0–0.7	SED	0.0527	—	—	—	—	—	0.105 (J)	—	—	—	—	0.00428	—	—	0.0122	0.00049 (J)	0.000572 (J)
RE15-10-8363	15-610851	1–2	SOIL	—	—	—	—	—	—	—	—	—	—	—	0.00128	—	—	0.00206	—	—
RE15-10-8364	15-610852	0–0.5	SED	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.000438 (J)	—	—
RE15-10-8365	15-610852	1–1.7	SED	0.00406 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8367	15-610853	1–1.5	SED	0.00213 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] SSLs from NMED 2009, 108070, unless otherwise noted.

[b] Pyrene used as a surrogate.

[c] Isopropylbenzene used as a surrogate.

[d] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[e] — = Not detected.

Table 6.9-4
Radionuclides Detected or Detected above BVs/FVs at SWMU 15-009(c)

Sample ID	Location ID	Depth (ft)	Media	Tritium	Uranium-234	Uranium-235/236	Uranium-238
Qbt 2, 3, 4 BV[a]				**na**[b]	**1.98**	**0.09**	**1.93**
Sediment BV[a]				**0.093**	**2.59**	**0.2**	**2.29**
Soil BV[a]				**na**	**2.59**	**0.2**	**2.29**
Industrial SAL[c]				**440000**	**1500**	**na**	**430**
Residential SAL[c]				**750**	**170**	**na**	**87**
RE15-10-8337	15-610838	1–1.5	QBT3	0.026377	—[d]	—	—
RE15-10-8339	15-610839	1–2.5	QBT3	0.0634763	—	—	3.33
RE15-10-8341	15-610840	1–1.5	QBT3	0.173379	—	—	—
RE15-10-8342	15-610841	3–3.5	FILL	0.0177526	—	—	—
RE15-10-8343	15-610841	8–8.5	FILL	0.010856	—	—	—
RE15-10-8345	15-610842	2–2.5	FILL	0.011553	—	—	—
RE15-10-8344	15-610842	7–7.5	FILL	0.0200962	—	—	—
RE15-10-8346	15-610843	10.5–11	FILL	0.0353128	—	—	—
RE15-10-8347	15-610843	15.5–16	QBT3	0.00701481	—	—	—
RE15-10-8348	15-610844	3–4	FILL	0.0123333	—	—	—
RE15-10-8349	15-610844	8–9	QBT3	0.018232	—	—	—
RE15-10-8350	15-610845	0–0.7	QBT3	0.168519	—	—	—
RE15-10-8353	15-610846	1–2	QBT3	0.0407931	2.33	0.221	7.96
RE15-10-8354	15-610847	0–0.7	SED	—	—	—	2.94
RE15-10-8355	15-610847	1–2	QBT3	0.0599359	—	—	—
RE15-10-8356	15-610848	0–0.8	SOIL	0.0654865	—	—	2.7
RE15-10-8357	15-610848	1–2	QBT3	0.0456768	—	—	—
RE15-10-8358	15-610849	0–0.8	SED	—	—	—	2.56
RE15-10-8359	15-610849	1–2	SOIL	0.0557413	—	—	—
RE15-10-8361	15-610850	1–2	SED	—	13.9	0.78	15.1
RE15-10-8364	15-610852	0–0.5	SED	—	—	—	2.93
RE15-10-8366	15-610853	0–0.5	SED	—	2.75	—	3.93
RE15-10-8367	15-610853	1–1.5	SED	—	—	—	3.43
RE15-10-8368	15-610854	0–0.5	SED	0.10734	—	—	3.45

Note: Results are in pCi/g.
[a] BVs/FVs are from LANL 1998, 059730.
[b] na= Not available.
[c] SALs from LANL 2009, 107655.
[d] — = Not detected or not detected above BV/FV.

Table 6.10-1
Samples Collected and Analyses Requested at SWMU 15-009(h)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	Nitrate	PCB	Perchlorate	SVOC	TAL Metals	VOC
RE15-10-8386	15-610855	6–7.5	FILL	10-1981	10-1981	10-1981	10-1981	10-1981	10-1981	10-1981	10-1981	10-1981	10-1981	10-1981	10-1981	10-1981
RE15-10-8387	15-610855	8.4–9.2	QBT3	10-1981	10-1981	10-1981	10-1981	10-1981	10-1981	10-1981	10-1981	10-1981	10-1981	10-1981	10-1981	10-1981
RE15-10-8388	15-610856	6–7	FILL	10-2070	10-2069	10-2068	10-2070	10-2070	10-2070	10-2070	10-2069	10-2068	10-2069	10-2068	10-2069	10-2068
RE15-10-8389	15-610856	11–13	FILL	10-2070	10-2069	10-2068	10-2070	10-2070	10-2070	10-2070	10-2069	10-2068	10-2069	10-2068	10-2069	10-2068
RE15-10-8390	15-610857	6.5–8	FILL	10-2070	10-2069	10-2068	10-2070	10-2070	10-2070	10-2070	10-2069	—*	10-2069	10-2068	10-2069	10-2068
RE15-10-8391	15-610857	11.5–13	FILL	10-2070	10-2069	10-2068	10-2070	10-2070	10-2070	10-2070	10-2069	—	10-2069	10-2068	10-2069	10-2068
RE15-10-8392	15-610858	5.7–6.5	FILL	10-2070	10-2069	10-2068	10-2070	10-2070	10-2070	10-2070	10-2069	—	10-2069	10-2068	10-2069	10-2068
RE15-10-8393	15-610858	6.6–8.1	QBT3	10-2091	10-2090	10-2089	10-2091	10-2091	10-2091	10-2091	10-2090	—	10-2090	10-2089	10-2090	10-2089
RE15-10-8394	15-610859	4.8–6	SOIL	10-2091	10-2090	10-2089	10-2091	10-2091	10-2091	10-2091	10-2090	—	10-2090	10-2089	10-2090	10-2089
RE15-10-8395	15-610859	6–7.1	QBT3	10-2091	10-2090	10-2089	10-2091	10-2091	10-2091	10-2091	10-2090	—	10-2090	10-2089	10-2090	10-2089
RE15-10-8396	15-610860	4.8–7	FILL	10-2091	10-2090	10-2089	10-2091	10-2091	10-2091	10-2091	10-2090	—	10-2090	10-2089	10-2090	10-2089
RE15-10-8397	15-610860	7–7.3	FILL	10-2091	10-2090	10-2089	10-2091	10-2091	10-2091	10-2091	10-2090	—	10-2090	10-2089	10-2090	10-2089
RE15-10-8398	15-610861	4.8–6.1	FILL	10-2091	10-2090	10-2089	10-2091	10-2091	10-2091	10-2091	10-2090	—	10-2090	10-2089	10-2090	10-2089
RE15-10-8399	15-610861	6.1–7	FILL	10-2091	10-2090	10-2089	10-2091	10-2091	10-2091	10-2091	10-2090	—	10-2090	10-2089	10-2090	10-2089

Note: Numbers in analyte columns are request numbers.
* — = Analysis not requested.

Table 6.10-2
Inorganic Chemicals above BVs at SWMU 15-009(h)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Cadmium	Calcium	Chromium	Mercury	Nickel	Nitrate	Perchlorate	Selenium	Uranium	Zinc
Qbt 2, 3, 4 BV				**0.5**	**46**	**1.63**	**2200**	**7.14**	**0.1**	**6.58**	**na**[a]	**na**	**0.3**	**2.4**	**63.5**
Soil BV				**0.83**	**295**	**0.4**	**6120**	**19.3**	**0.1**	**15.4**	**na**	**na**	**1.52**	**1.82**	**48.8**
Industrial SSL[b]				**454**	**224000**	**1120**	**na**	**2920**	**310**[c]	**22700**	**1820000**	**795**	**5680**	**3410**	**341000**
Residential SSL[b]				**31.3**	**15600**	**77.9**	**na**	**219**	**23**[c]	**1560**	**125000**	**54.8**	**391**	**235**	**23500**
RE15-10-8386	15-610855	6–7.5	FILL	1.04 (UJ)	—[d]	0.518 (U)	—	—	—	—	1.26	—	—	3.15 (J)	—
RE15-10-8387	15-610855	8.4–9.2	QBT3	1.03 (UJ)	68.8	—	—	32	—	—	1.08	—	1.05 (U)	—	—
RE15-10-8388	15-610856	6–7	FILL	1 (U)	—	0.5 (U)	—	—	—	—	1.88	—	—	5.66	—
RE15-10-8389	15-610856	11–13	FILL	1 (U)	—	—	—	—	—	—	1.71	—	—	3.1	—
RE15-10-8390	15-610857	6.5–8	FILL	1.06 (U)	—	—	—	—	0.118	—	9.71	—	—	6.41	—
RE15-10-8391	15-610857	11.5–13	FILL	1.12 (U)	—	—	—	—	—	—	10.2	—	—	4.05	86.5 (J+)
RE15-10-8392	15-610858	5.7–6.5	FILL	1.1 (U)	—	0.551 (U)	—	19.8	—	—	—	—	—	—	—
RE15-10-8393	15-610858	6.6–8.1	QBT3	1.11 (UJ)	70.9	—	—	36.1	—	7.31	—	—	1.23 (UJ)	—	—
RE15-10-8394	15-610859	4.8–6	SOIL	1.09 (UJ)	—	0.546 (U)	—	—	—	—	—	0.0015 (J)	—	—	—
RE15-10-8395	15-610859	6–7.1	QBT3	0.992 (UJ)	—	—	—	18.6	—	—	—	0.000907 (J)	0.919 (UJ)	—	—
RE15-10-8396	15-610860	4.8–7	FILL	1.03 (UJ)	—	0.514 (U)	—	—	—	—	1.57 (J-)	0.000681 (J)	—	3.91	—
RE15-10-8397	15-610860	7–7.3	FILL	0.994 (UJ)	—	0.497 (U)	45400	—	—	—	1.93 (J-)	0.000631 (J)	—	5.28	—
RE15-10-8398	15-610861	4.8–6.1	FILL	1.08 (UJ)	—	0.538 (U)	—	—	—	—	—	0.000737 (J)	—	4.06	—
RE15-10-8399	15-610861	6.1–7	FILL	1.1 (UJ)	—	0.55 (U)	—	23	—	—	—	0.00123 (J)	—	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] na = Not available.

[b] SSLs from NMED 2009, 108070, unless otherwise noted.

[c] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[d] — = Not detected or not detected above BV.

Table 6.10-3
Organic Chemicals Detected at SWMU 15-009(h)

Sample ID	Location ID	Depth (ft)	Media	Plutonium-239/240	Tritium	Uranium-234	Uranium-235/236	Uranium-238
Qbt 2, 3, 4 BV[a]				**na**[b]	**na**	**1.98**	**0.09**	**1.93**
Soil BV[a]				**0.054**[c]	**na**	**2.59**	**0.2**	**2.29**
Industrial SAL[d]				**210**	**440000**	**1500**	**87**	**430**
Residential SAL[d]				**33**	**750**	**170**	**17**	**87**
RE15-10-8386	15-610855	6–7.5	FILL	—[e]	19.5793	—	—	—
RE15-10-8387	15-610855	8.4–9.2	QBT3	—	0.0230901	—	—	—
RE15-10-8388	15-610856	6–7	FILL	—	—	—	—	2.98 (J+)
RE15-10-8390	15-610857	6.5–8	FILL	—	—	2.74 (J+)	0.291 (J+)	3.96 (J+)
RE15-10-8391	15-610857	11.5–13	FILL	—	—	—	—	3.11
RE15-10-8394	15-610859	4.8–6	SOIL	—	0.0365151	—	—	—
RE15-10-8395	15-610859	6–7.1	QBT3	—	0.0159164	—	—	—
RE15-10-8396	15-610860	4.8–7	FILL	—	0.042446	—	—	—
RE15-10-8397	15-610860	7–7.3	FILL	—	—	—	—	2.68
RE15-10-8399	15-610861	6.1–7	FILL	0.0286	0.047436	—	—	—

Notes: Results are in pCi/g. Data qualifiers are presented in Appendix A.
[a] BVs/FVs are from LANL 1998, 059730.
[b] na = Not available.
[c] FV applies to soil and tuff samples collected from 0–1 ft only.
[d] SALs from LANL 2009, 107655.
[e] — = Not detected or not detected above BV/FV.

Table 6.10-4
Radionuclides Detected or Detected above BVs/FVs at SWMU 15-009(h)

Sample ID	Location ID	Depth (ft)	Media	Acetone	Ethylbenzene	Hexanone[2-]
Industrial SSL[a]				**851000**	**385**	**1400**[b]
Residential SSL[a]				**67500**	**69.7**	**210**[b]
RE15-10-8394	15-610859	4.8–6	SOIL	0.00919 (J)	—[c]	0.00201 (J)
RE15-10-8398	15-610861	4.8–6.1	FILL	0.00719 (J)	—	—
RE15-10-8399	15-610861	6.1–7	FILL	—	0.00117	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.
[a] SSLs from NMED 2009, 108070, unless otherwise noted.
[b] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).
[c] — = Not detected.

Table 6.11-1
Samples Collected and Analyses Requested at SWMU 15-010(b)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	Nitrate	PCB	Perchlorate	SVOC	TAL Metals	VOC
RE15-10-8410	15-610863	0–0.5	SED	10-1326	10-1325	10-1324	10-1326	10-1326	10-1326	10-1326	10-1325	10-1324	10-1325	10-1324	10-1325	10-1324
RE15-10-8411	15-610863	1–2	SED	10-1326	10-1325	10-1324	10-1326	10-1326	10-1326	10-1326	10-1325	10-1324	10-1325	10-1324	10-1325	10-1324
RE15-10-8412	15-610864	0–0.5	SED	10-1326	10-1325	10-1324	10-1326	10-1326	10-1326	10-1326	10-1325	10-1324	10-1325	10-1324	10-1325	10-1324
RE15-10-8413	15-610864	1–2	SED	10-1326	10-1325	10-1324	10-1326	10-1326	10-1326	10-1326	10-1325	10-1324	10-1325	10-1324	10-1325	10-1324
RE15-10-8416	15-610866	0–0.7	SED	10-1326	10-1325	10-1324	10-1326	10-1326	10-1326	10-1326	10-1325	—*	10-1325	10-1324	10-1325	10-1324
RE15-10-8417	15-610866	1–1.7	SED	10-1326	10-1325	10-1324	10-1326	10-1326	10-1326	10-1326	10-1325	—	10-1325	10-1324	10-1325	10-1324
RE15-10-8418	15-610867	0–0.8	SED	10-1326	10-1325	10-1324	10-1326	10-1326	10-1326	10-1326	10-1325	—	10-1325	10-1324	10-1325	10-1324
RE15-10-8420	15-610868	0–0.6	SED	10-1326	10-1325	10-1324	10-1326	10-1326	10-1326	10-1326	10-1325	—	10-1325	10-1324	10-1325	10-1324
RE15-10-8421	15-610868	1–2	SED	10-1326	10-1325	10-1324	10-1326	10-1326	10-1326	10-1326	10-1325	—	10-1325	10-1324	10-1325	10-1324
RE15-10-8422	15-610869	0–0.6	SED	10-1326	10-1325	10-1324	10-1326	10-1326	10-1326	10-1326	10-1325	—	10-1325	10-1324	10-1325	10-1324
RE15-10-8423	15-610869	1–2	SED	10-1326	10-1325	10-1324	10-1326	10-1326	10-1326	10-1326	10-1325	—	10-1325	10-1324	10-1325	10-1324
RE15-10-8424	15-610870	0–0.7	SED	10-1326	10-1325	10-1324	10-1326	10-1326	10-1326	10-1326	10-1325	—	10-1325	10-1324	10-1325	10-1324
RE15-10-8425	15-610870	1–1.6	SED	10-1326	10-1325	10-1324	10-1326	10-1326	10-1326	10-1326	10-1325	—	10-1325	10-1324	10-1325	10-1324
RE15-10-8426	15-610871	0–0.5	SED	10-1380	10-1381	10-1380	10-1380	10-1380	10-1380	10-1380	10-1381	—	10-1381	10-1380	10-1381	10-1380
RE15-10-8427	15-610871	1–2	QBT3	10-1380	10-1381	10-1380	10-1380	10-1380	10-1380	10-1380	10-1381	—	10-1381	10-1380	10-1381	10-1380
RE15-10-8428	15-610872	0–0.5	SED	10-1380	10-1381	10-1380	10-1380	10-1380	10-1380	10-1380	10-1381	—	10-1381	10-1380	10-1381	10-1380
RE15-10-8429	15-610872	1–1.8	QBT3	10-1380	10-1381	10-1380	10-1380	10-1380	10-1380	10-1380	10-1381	—	10-1381	10-1380	10-1381	10-1380

Note: Numbers in analyte columns are request numbers.
*— = Analysis not requested.

Table 6.11-2
Inorganic Chemicals above BVs at SWMU 15-010(b)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Barium	Cadmium	Calcium	Chromium	Copper	Iron	Manganese	Mercury	Nitrate	Perchlorate	Selenium	Uranium	Vanadium	Zinc
Qbt 2, 3, 4 BV				**0.5**	**46**	**1.63**	**2200**	**7.14**	**4.66**	**14500**	**482**	**0.1**	**na**[a]	**na**	**0.3**	**2.4**	**17**	**63.5**
Sediment BV				**0.83**	**127**	**0.4**	**4420**	**10.5**	**11.2**	**13800**	**543**	**0.1**	**na**	**na**	**0.3**	**2.22**	**19.7**	**60.2**
Industrial SSL[b]				**454**	**224000**	**1120**	**na**	**2920**	**45400**	**795000**	**145000**	**310**	**1820000**	**795**	**5680**	**3410**	**5680**	**341000**
Residential SSL[b]				**31.3**	**15600**	**77.9**	**na**	**219**	**3130**	**54800**	**10700**	**23**	**125000**	**54.8**	**391**	**235**	**391**	**23500**
RE15-10-8410	15-610863	0–0.5	SED	1.33 (U)	143 (J-)	0.666 (U)	4480	—[c]	—	—	574	—	—	—	1.33 (U)	13.3 (J-)	—	—
RE15-10-8411	15-610863	1–2	SED	1.16 (U)	—	0.581 (U)	—	18.2	—	—	—	—	—	—	1.13 (U)	—	—	—
RE15-10-8412	15-610864	0–0.5	SED	1.07 (U)	—	0.534 (U)	—	—	—	—	—	0.163	—	—	1.08 (U)	3.15 (J-)	—	—
RE15-10-8413	15-610864	1–2	SED	1.12 (U)	—	0.559 (U)	—	—	—	—	—	0.222	—	—	1.09 (U)	5.44 (J-)	—	—
RE15-10-8416	15-610866	0–0.7	SED	1.07 (U)	—	0.536 (U)	—	—	—	—	—	—	—	—	1.09 (U)	—	—	—
RE15-10-8417	15-610866	1–1.7	SED	1.06 (U)	—	0.528 (U)	—	—	—	19100	—	—	—	—	1.05 (U)	—	23.7	70.6
RE15-10-8418	15-610867	0–0.8	SED	1.07 (U)	—	0.537 (U)	—	—	—	14600	—	—	1.47 (J-)	—	1.09 (U)	—	—	—
RE15-10-8420	15-610868	0–0.6	SED	1.35 (U)	—	0.673 (U)	—	12.8	—	—	—	0.226	—	—	1.38 (U)	—	—	—
RE15-10-8421	15-610868	1–2	SED	1.1 (U)	—	0.552 (U)	—	—	—	18900	—	—	1.39 (J-)	—	1.12 (U)	—	22	72.9
RE15-10-8422	15-610869	0–0.6	SED	1.09 (U)	—	0.543 (U)	—	—	16.9	—	—	0.688	—	—	1.1 (U)	3.97 (J-)	—	—
RE15-10-8423	15-610869	1–2	SED	1.09 (U)	—	0.547 (U)	—	—	11.7	—	—	0.252	—	0.000762 (J+)	1.07 (U)	—	—	—
RE15-10-8424	15-610870	0–0.7	SED	1.1 (U)	—	0.549 (U)	—	10.7	—	—	—	—	—	—	1.1 (U)	—	—	—
RE15-10-8425	15-610870	1–1.6	SED	1.07 (U)	—	0.534 (U)	—	—	—	—	—	—	—	—	1.08 (U)	—	—	—
RE15-10-8426	15-610871	0–0.5	SED	1.13 (U)	—	0.566 (U)	—	—	—	—	—	—	1.65 (J-)	—	0.72 (J)	—	—	—
RE15-10-8427	15-610871	1–2	QBT3	1.01 (U)	—	—	—	—	—	—	—	—	—	—	0.579 (J)	—	—	—
RE15-10-8428	15-610872	0–0.5	SED	1.18 (U)	—	0.589 (U)	—	—	—	—	—	—	—	0.000598 (J)	1.11 (U)	4.98	—	—
RE15-10-8429	15-610872	1–1.8	QBT3	1.02 (U)	—	—	—	11.6 (J)	—	—	—	—	—	—	0.971 (U)	—	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] na = Not available.

[b] SSLs from NMED 2009, 108070, unless otherwise noted.

[c] — = Not detected or not detected above BV.

Table 6.11-3
Organic Chemicals Detected at SWMU 15-010(b)

Sample ID	Location ID	Depth (ft)	Media	Acetone	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Bis(2-ethylhexyl)phthalate	Chrysene	Dichloroethene[1,1-]	Di-n-butylphthalate	Fluoranthene	Methylene Chloride	Phenanthrene	Pyrene	Styrene	Tetrachloroethene	Toluene	Xylene[1,3-]+Xylene[1,4-]
Industrial SSL[a]				**851000**	**8.26**	**8.26**	**23.4**	**2.34**	**23.4**	**234**	**1370**	**2340**	**2220**	**68400**	**24400**	**1090**	**20500**	**18300**	**51200**	**36.4**	**57900**	**3610**
Residential SSaL				**67500**	**1.12**	**2.22**	**6.21**	**0.621**	**6.21**	**62.1**	**347**	**621**	**618**	**6110**	**2290**	**199**	**1830**	**1720**	**8970**	**6.99**	**5570**	**1090**
RE15-10-8410	15-610863	0–0.5	SED	—[b]	—	—	—	—	—	—	—	—	—	—	—	0.0029 (J+)	—	—	—	—	—	—
RE15-10-8411	15-610863	1–2	SED	0.689 (J)	—	—	—	—	—	—	—	—	—	—	—	0.00434 (J)	—	—	0.000555 (J)	—	0.0185	0.000732 (J)
RE15-10-8412	15-610864	0–0.5	SED	0.00285 (J)	0.0046	0.0025 (J)	0.0252 (J)	0.0313 (J)	0.0362	0.0132 (J)	—	0.0402	—	3.64	0.0655	—	0.0923	0.114	—	0.000584 (J+)	—	0.0004 (J+)
RE15-10-8413	15-610864	1–2	SED	0.0544 (J-)	0.0065	—	—	—	—	—	—	—	—	0.353 (J)	—	0.00418 (J-)	—	0.0222 (J)	—	—	0.00144 (J-)	—
RE15-10-8420	15-610868	0–0.6	SED	—	NAb	NA	—	—	—	—	—	—	—	—	—	—	—	0.0165 (J)	—	—	0.000501 (J)	—
RE15-10-8422	15-610869	0–0.6	SED	0.00411 (J)	NA	NA	0.0213 (J)	0.0194 (J)	—	—	—	0.0174 (J)	—	0.206 (J)	0.0201 (J)	0.00371 (J)	0.0158 (J)	0.0514	—	—	0.000618 (J)	—
RE15-10-8423	15-610869	1–2	SED	—	NA	NA	0.0144 (J)	0.0128 (J)	—	—	—	0.0124 (J)	—	0.244 (J)	0.0182 (J)	—	0.0149 (J)	0.0384	—	—	—	—
RE15-10-8424	15-610870	0–0.7	SED	—	NA	NA	—	—	—	—	0.17 (J)	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8426	15-610871	0–0.5	SED	—	NA	NA	—	—	—	—	0.117 (J)	—	—	—	—	—	—	—	—	—	—	—
RE15-10-8427	15-610871	1–2	QBT3	0.00526 (J)	NA	NA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00249	—
RE15-10-8428	15-610872	0–0.5	SED	0.0133 (J)	NA	NA	—	—	—	—	—	—	0.00037 (J+)	0.756	—	0.00275 (J+)	—	—	—	—	0.00723 (J+)	—
RE15-10-8429	15-610872	1–1.8	QBT3	0.00217 (J)	NA	NA	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] SSLs from NMED 2009, 108070, unless otherwise noted.

[b] — = Not detected.

Table 6.11-4
Radionuclides Detected or Detected above BVs/FVs at SWMU 15-010(b)

Sample ID	Location ID	Depth (ft)	Media	Cesium-137	Plutonium-239/240	Uranium-234	Uranium-235/236	Uranium-238
Sediment BV[a]				**0.9**	**0.068**	**2.59**	**0.2**	**2.29**
Industrial SAL[b]				**23**	**210**	**1500**	**na**[c]	**430**
Residential SAL[b]				**5.6**	**33**	**170**	**na**	**87**
RE15-10-8410	15-610863	0–0.5	SED	2.34	0.121	4.93 (J+)	0.386 (J+)	6.93 (J+)
RE15-10-8413	15-610864	1–2	SED	—[d]	—	—	—	3.02
RE15-10-8428	15-610872	0–0.5	SED	0.983	—	—	—	2.39

Notes: Results are in pCi/g. Data qualifiers are presented in Appendix A.

[a] BVs/FVs are from LANL 1998, 059730.

[b] SALs from LANL 2009, 107655.

[c] na = Not available.

[d] — = Not detected or not detected above BV/FV.

Table 6.12-1
Samples Collected and Analyses Requested at AOC 15-014(h)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	SVOC	TAL Metals	VOC
RE15-10-7160	15-610501	0–0.5	SED	10-1289	10-1288	10-1287	10-1289	10-1289	10-1289	10-1289	10-1287	10-1288	10-1287	10-1288	10-1287
RE15-10-7161	15-610501	1–2.2	SED	10-1289	10-1288	10-1287	10-1289	10-1289	10-1289	10-1289	10-1287	10-1288	10-1287	10-1288	10-1287
RE15-10-7162	15-610502	0–0.5	SED	10-1289	10-1288	10-1287	10-1289	10-1289	10-1289	10-1289	10-1287	10-1288	10-1287	10-1288	10-1287
RE15-10-7163	15-610502	1–2.5	QBT3	10-1289	10-1288	10-1287	10-1289	10-1289	10-1289	10-1289	10-1287	10-1288	10-1287	10-1288	10-1287
RE15-10-7164	15-610503	2–3.9	SOIL	10-1305	10-1306	10-1304	10-1305	10-1305	10-1305	10-1305	10-1304	10-1306	10-1304	10-1306	10-1304
RE15-10-7165	15-610503	7–8.8	SOIL	10-1305	10-1306	10-1304	10-1305	10-1305	10-1305	10-1305	10-1304	10-1306	10-1304	10-1306	10-1304
RE15-10-7166	15-610504	0–1	SED	10-1305	10-1306	10-1304	10-1305	10-1305	10-1305	10-1305	10-1304	10-1306	10-1304	10-1306	10-1304
RE15-10-7167	15-610504	1–2.2	SED	10-1305	10-1306	10-1304	10-1305	10-1305	10-1305	10-1305	10-1304	10-1306	10-1304	10-1306	10-1304
RE15-10-7168	15-610505	0–0.5	SED	10-1305	10-1306	10-1304	10-1305	10-1305	10-1305	10-1305	10-1304	10-1306	10-1304	10-1306	10-1304
RE15-10-7169	15-610505	1–2.1	QBT3	10-1305	10-1306	10-1304	10-1305	10-1305	10-1305	10-1305	10-1304	10-1306	10-1304	10-1306	10-1304
RE15-10-7170	15-610506	0–0.7	SED	10-1305	10-1306	10-1304	10-1305	10-1305	10-1305	10-1305	10-1304	10-1306	10-1304	10-1306	10-1304
RE15-10-7171	15-610506	1–2.1	SOIL	10-1305	10-1306	10-1304	10-1305	10-1305	10-1305	10-1305	10-1304	10-1306	10-1304	10-1306	10-1304
RE15-10-7172	15-610507	0–0.7	SOIL	10-1289	10-1288	10-1287	10-1289	10-1289	10-1289	10-1289	10-1287	10-1288	10-1287	10-1288	10-1287
RE15-10-7173	15-610507	1–2.6	SOIL	10-1289	10-1288	10-1287	10-1289	10-1289	10-1289	10-1289	10-1287	10-1288	10-1287	10-1288	10-1287
RE15-10-7174	15-610508	0–1	SOIL	10-1289	10-1288	10-1287	10-1289	10-1289	10-1289	10-1289	10-1287	10-1288	10-1287	10-1288	10-1287
RE15-10-7175	15-610508	1–2	QBT3	10-1289	10-1288	10-1287	10-1289	10-1289	10-1289	10-1289	10-1287	10-1288	10-1287	10-1288	10-1287
RE15-10-7176	15-610509	0–0.6	SOIL	10-1305	10-1306	10-1304	10-1305	10-1305	10-1305	10-1305	—*	10-1306	10-1304	10-1306	10-1304
RE15-10-7177	15-610509	1–2	SOIL	10-1305	10-1306	10-1304	10-1305	10-1305	10-1305	10-1305	—	10-1306	10-1304	10-1306	10-1304
RE15-10-7178	15-610510	0–0.5	SED	10-1305	10-1306	10-1304	10-1305	10-1305	10-1305	10-1305	—	10-1306	10-1304	10-1306	10-1304
RE15-10-7179	15-610510	1–2	SOIL	10-1305	10-1306	10-1304	10-1305	10-1305	10-1305	10-1305	—	10-1306	10-1304	10-1306	10-1304
RE15-10-7180	15-610511	0–1	SED	10-1305	10-1306	10-1304	10-1305	10-1305	10-1305	10-1305	—	10-1306	10-1304	10-1306	10-1304
RE15-10-7181	15-610511	1–1.9	SOIL	10-1305	10-1306	10-1304	10-1305	10-1305	10-1305	10-1305	—	10-1306	10-1304	10-1306	10-1304
RE15-10-7182	15-610512	0–0.6	SED	10-1305	10-1306	10-1304	10-1305	10-1305	10-1305	10-1305	—	10-1306	10-1304	10-1306	10-1304
RE15-10-7183	15-610512	1–1.8	QBT3	10-1305	10-1306	10-1304	10-1305	10-1305	10-1305	10-1305	—	10-1306	10-1304	10-1306	10-1304
RE15-10-7184	15-610513	0–0.7	SED	10-1302	10-1306	10-1301	10-1302	10-1302	10-1302	10-1302	—	10-1306	10-1301	10-1306	10-1301
RE15-10-7185	15-610513	1–2	SOIL	10-1302	10-1306	10-1301	10-1302	10-1302	10-1302	10-1302	—	10-1306	10-1301	10-1306	10-1301
RE15-10-7186	15-610514	0–0.5	SED	10-1302	10-1303	10-1301	10-1302	10-1302	10-1302	10-1302	—	10-1303	10-1301	10-1303	10-1301
RE15-10-7187	15-610514	1–2	SOIL	10-1302	10-1303	10-1301	10-1302	10-1302	10-1302	10-1302	—	10-1303	10-1301	10-1303	10-1301
RE15-10-7188	15-610515	0–0.8	SED	10-1302	10-1303	10-1301	10-1302	10-1302	10-1302	10-1302	—	10-1303	10-1301	10-1303	10-1301
RE15-10-7189	15-610515	1–2.2	SOIL	10-1302	10-1303	10-1301	10-1302	10-1302	10-1302	10-1302	—	10-1303	10-1301	10-1303	10-1301
RE15-10-7190	15-610516	0–0.7	SED	10-1302	10-1303	10-1301	10-1302	10-1302	10-1302	10-1302	—	10-1303	10-1301	10-1303	10-1301
RE15-10-7191	15-610516	1–2	SED	10-1302	10-1303	10-1301	10-1302	10-1302	10-1302	10-1302	—	10-1303	10-1301	10-1303	10-1301

Table 6.12-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	PCB	Perchlorate	SVOC	TAL Metals	VOC
RE15-10-7192	15-610517	0–0.5	SED	10-1302	10-1303	10-1301	10-1302	10-1302	10-1302	10-1302	—	10-1303	10-1301	10-1303	10-1301
RE15-10-7193	15-610517	1–2	SED	10-1302	10-1303	10-1301	10-1302	10-1302	10-1302	10-1302	—	10-1303	10-1301	10-1303	10-1301
RE15-10-7194	15-610518	0–1	SED	10-1302	10-1303	10-1301	10-1302	10-1302	10-1302	10-1302	—	10-1303	10-1301	10-1303	10-1301
RE15-10-7195	15-610518	1–2	SOIL	10-1302	10-1303	10-1301	10-1302	10-1302	10-1302	10-1302	—	10-1303	10-1301	10-1303	10-1301
RE15-10-7196	15-610519	0–0.5	SED	10-1302	10-1303	10-1301	10-1302	10-1302	10-1302	10-1302	—	10-1303	10-1301	10-1303	10-1301
RE15-10-7197	15-610519	1–2	SED	10-1302	10-1303	10-1301	10-1302	10-1302	10-1302	10-1302	—	10-1303	10-1301	10-1303	10-1301
RE15-10-7198	15-610520	0–0.5	SED	10-1329	10-1328	10-1327	10-1329	10-1329	10-1329	10-1329	—	10-1328	10-1327	10-1328	10-1327
RE15-10-7199	15-610520	1–2.4	SOIL	10-1329	10-1328	10-1327	10-1329	10-1329	10-1329	10-1329	—	10-1328	10-1327	10-1328	10-1327
RE15-10-7200	15-610521	0–0.5	SED	10-1329	10-1328	10-1327	10-1329	10-1329	10-1329	10-1329	—	10-1328	10-1327	10-1328	10-1327
RE15-10-7201	15-610521	2–3.7	SOIL	10-1329	10-1328	10-1327	10-1329	10-1329	10-1329	10-1329	—	10-1328	10-1327	10-1328	10-1327
RE15-10-7202	15-610522	2–3.9	SOIL	10-1329	10-1328	10-1327	10-1329	10-1329	10-1329	10-1329	—	10-1328	10-1327	10-1328	10-1327
RE15-10-7203	15-610522	6–6.7	SOIL	10-1329	10-1328	10-1327	10-1329	10-1329	10-1329	10-1329	—	10-1328	10-1327	10-1328	10-1327
RE15-10-7204	15-610523	0–0.5	SED	10-1329	10-1328	10-1327	10-1329	10-1329	10-1329	10-1329	—	10-1328	10-1327	10-1328	10-1327
RE15-10-7205	15-610523	1–1.5	SOIL	10-1329	10-1328	10-1327	10-1329	10-1329	10-1329	10-1329	—	10-1328	10-1327	10-1328	10-1327
RE15-10-7206	15-610524	0–0.7	SED	10-1329	10-1328	10-1327	10-1329	10-1329	10-1329	10-1329	—	10-1328	10-1327	10-1328	10-1327
RE15-10-7207	15-610524	1–2.1	QBT3	10-1329	10-1328	10-1327	10-1329	10-1329	10-1329	10-1329	—	10-1328	10-1327	10-1328	10-1327
RE15-10-7208	15-610525	0–0.5	SED	10-1329	10-1328	10-1327	10-1329	10-1329	10-1329	10-1329	—	10-1328	10-1327	10-1328	10-1327
RE15-10-7209	15-610525	1–1.4	SED	10-1329	10-1328	10-1327	10-1329	10-1329	10-1329	10-1329	—	10-1328	10-1327	10-1328	10-1327
RE15-10-7210	15-610526	2–2.9	SOIL	10-1329	10-1328	10-1327	10-1329	10-1329	10-1329	10-1329	—	10-1328	10-1327	10-1328	10-1327
RE15-10-7211	15-610526	6–6.7	QBT3	10-1329	10-1328	10-1327	10-1329	10-1329	10-1329	10-1329	—	10-1328	10-1327	10-1328	10-1327

Note: Numbers in analyte columns are request numbers.
*— = Analysis not requested.

Table 6.12-2
Inorganic Chemicals above BVs at AOC 15-014(h)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Perchlorate	Selenium	Silver	Uranium	Vanadium	Zinc
Qbt 2, 3, 4 BV				**7340**	**0.5**	**2.79**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**0.5**	**14500**	**11.2**	**1690**	**482**	**0.1**	**6.58**	**na**[a]	**0.3**	**1**	**2.4**	**17**	**63.5**
Sediment BV				**15400**	**0.83**	**3.98**	**127**	**1.31**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**0.82**	**13800**	**19.7**	**2370**	**543**	**0.1**	**9.38**	**na**	**0.3**	**1**	**2.22**	**19.7**	**60.2**
Soil BV				**29200**	**0.83**	**8.17**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**0.5**	**21500**	**22.3**	**4610**	**671**	**0.1**	**15.4**	**na**	**1.52**	**1**	**1.82**	**39.6**	**48.8**
Industrial SSL[b]				**1130000**	**454**	**17.7**	**224000**	**2260**	**1120**	**na**	**2920**	**300**[c]	**45400**	**227000**	**795000**	**800**	**na**	**145000**	**310**	**22700**	**795**	**5680**	**5680**	**3410**	**5680**	**341000**
Residential SSL[b]				**78100**	**31.3**	**3.9**	**15600**	**156**	**77.9**	**na**	**219**	**23**[c]	**3130**	**1560**	**54800**	**400**	**na**	**10700**	**23**	**1560**	**54.8**	**391**	**391**	**235**	**391**	**23500**
RE15-10-7160	15-610501	0–0.5	SED	—[d]	1.25 (U)	—	180	—	—	—	15.1 (J-)	4.96	26.6	—	—	25.9	—	—	0.644	9.94	0.000831 (J)	1.23 (U)	8.47	—	25.8	68.4
RE15-10-7161	15-610501	1–2.2	SED	—	1.07 (U)	—	152	—	—	—	20.7 (J-)	4.92	15	—	—	—	—	—	0.106	10.5	—	1.1 (U)	3.67	—	26	—
RE15-10-7162	15-610502	0–0.5	SED	—	—	—	138	—	0.463 (J)	—	25.3 (J-)	6.1	24.3	—	15300	25.1	—	—	1.54	9.5	—	1.06 (U)	21	3.57	29.1	60.6
RE15-10-7163	15-610502	1–2.5	QBT3	—	—	—	55.4	—	—	—	48.9 (J-)	—	7.8	—	—	12.2	—	—	0.542	9.61	—	1.06 (U)	4.12	—	—	—
RE15-10-7164	15-610503	2–3.9	SOIL	—	1.2 (U)	—	—	—	0.597 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	7.63	—	—	—
RE15-10-7165	15-610503	7–8.8	SOIL	—	1.11 (U)	—	—	—	0.592 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	1.9	—	—	—
RE15-10-7166	15-610504	0–1	SED	—	1.57 (U)	—	180	—	0.715 (U)	—	29.6	—	—	—	—	—	—	—	—	—	0.00158 (J)	1.36 (UJ)	—	2.81	21.6	—
RE15-10-7167	15-610504	1–2.2	SED	—	0.963 (U)	—	163	—	0.641 (U)	—	12.4	6.69	—	—	14800	—	—	—	—	—	—	1.24 (UJ)	—	—	28.4	—
RE15-10-7168	15-610505	0–0.5	SED	—	0.987 (U)	—	195	—	0.616 (U)	—	13.1	4.87	—	—	—	—	—	—	—	—	0.000895 (J)	1.2 (UJ)	—	4.86	25.2	—
RE15-10-7169	15-610505	1–2.1	QBT3	10700	0.817 (U)	—	193	—	—	—	11.2	8.24	7.2	—	—	14.7	1830 (J+)	574	—	6.66	—	1.05 (UJ)	—	—	30.8	—
RE15-10-7170	15-610506	0–0.7	SED	—	0.836 (U)	—	169	—	0.64 (U)	—	—	4.89	11.9	—	—	22.4	—	—	—	—	0.000686 (J)	1.26 (UJ)	—	11	24.7	—
RE15-10-7171	15-610506	1–2.1	SOIL	—	—	—	—	—	0.519 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-7172	15-610507	0–0.7	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00065 (J)	—	—	3.51	—	—
RE15-10-7173	15-610507	1–2.6	SOIL	—	1.1 (U)	—	—	—	0.552 (U)	—	—	—	—	—	—	—	—	—	—	—	0.0011 (J)	—	—	—	—	—
RE15-10-7174	15-610508	0–1	SOIL	—	1.18 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.0012 (J)	—	—	4.81	—	—
RE15-10-7175	15-610508	1–2	QBT3	9680	1.1 (U)	—	106	—	—	—	24.2 (J-)	5.91	6.2	—	—	12.5	1730	—	—	8.81	0.00284	1.1 (U)	—	—	21.4	—
RE15-10-7176	15-610509	0–0.6	SOIL	—	1 (U)	—	—	—	0.524 (U)	—	—	—	—	—	—	—	—	—	—	—	0.00119 (J)	—	—	3.28	—	—
RE15-10-7177	15-610509	1–2	SOIL	—	1.12 (U)	—	—	—	0.538 (U)	—	—	—	—	—	—	—	—	—	—	—	0.00116 (J)	—	—	—	—	—
RE15-10-7178	15-610510	0–0.5	SED	—	—	—	138	—	0.613 (U)	—	12.2	4.74	—	—	—	22.9	—	—	0.119	—	0.00127 (J)	1.25 (UJ)	—	3.47	23.3	—
RE15-10-7179	15-610510	1–2	SOIL	—	0.848 (U)	—	—	—	0.6 (U)	—	23.2	—	—	—	—	22.8	—	—	0.171	—	0.000752 (J)	—	—	3.8	—	—
RE15-10-7180	15-610511	0–1	SED	—	0.912 (U)	—	—	—	0.576 (U)	—	10.6	—	—	—	—	—	—	—	—	—	—	1.13 (UJ)	—	—	24.1	—
RE15-10-7181	15-610511	1–1.9	SOIL	—	—	—	—	—	0.563 (U)	—	21.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-7182	15-610512	0–0.6	SED	—	1.17 (U)	—	144	—	0.583 (U)	—	—	—	—	—	—	—	—	—	—	—	—	1.2 (UJ)	—	2.38	—	—
RE15-10-7183	15-610512	1–1.8	QBT3	—	1.18 (U)	—	89.4	—	—	—	21.1	3.19	—	—	—	—	—	—	—	—	—	1.13 (UJ)	—	—	—	—
RE15-10-7184	15-610513	0–0.7	SED	—	—	—	150	—	0.594 (U)	—	15.3	5.06	—	—	—	30.5	—	—	0.185	—	0.000616 (J)	1.17 (UJ)	—	2.8	25.5	—
RE15-10-7185	15-610513	1–2	SOIL	—	0.967 (U)	—	—	—	0.545 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-7186	15-610514	0–0.5	SED	—	1.13 (U)	—	—	—	0.564 (U)	—	—	—	—	—	—	—	—	—	—	—	—	1.15 (U)	—	—	—	—

Table 6.12-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Perchlorate	Selenium	Silver	Uranium	Vanadium	Zinc
Qbt 2, 3, 4 BV				**7340**	**0.5**	**2.79**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**0.5**	**14500**	**11.2**	**1690**	**482**	**0.1**	**6.58**	**na**[a]	**0.3**	**1**	**2.4**	**17**	**63.5**
Sediment BV				**15400**	**0.83**	**3.98**	**127**	**1.31**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**0.82**	**13800**	**19.7**	**2370**	**543**	**0.1**	**9.38**	**na**	**0.3**	**1**	**2.22**	**19.7**	**60.2**
Soil BV				**29200**	**0.83**	**8.17**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**0.5**	**21500**	**22.3**	**4610**	**671**	**0.1**	**15.4**	**na**	**1.52**	**1**	**1.82**	**39.6**	**48.8**
Industrial SSL[b]				**1130000**	**454**	**17.7**	**224000**	**2260**	**1120**	**na**	**2920**	**300**[c]	**45400**	**227000**	**795000**	**800**	**na**	**145000**	**310**	**22700**	**795**	**5680**	**5680**	**3410**	**5680**	**341000**
Residential SSL[b]				**78100**	**31.3**	**3.9**	**15600**	**156**	**77.9**	**na**	**219**	**23**[c]	**3130**	**1560**	**54800**	**400**	**na**	**10700**	**23**	**1560**	**54.8**	**391**	**391**	**235**	**391**	**23500**
RE15-10-7187	15-610514	1–2	SOIL	—	1.09 (U)	—	—	—	0.543 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	1.08	3.2	—	—
RE15-10-7188	15-610515	0–0.8	SED	—	1.09 (U)	—	162	—	0.544 (U)	—	12.5	5.21	—	—	15000	32.4	—	—	0.692	9.67	0.000889 (J)	1.1 (U)	—	4.11	29.5	—
RE15-10-7189	15-610515	1–2.2	SOIL	—	1.09 (U)	—	—	—	0.546 (U)	—	—	—	—	—	—	—	—	—	—	—	0.000646 (J)	—	—	—	—	—
RE15-10-7190	15-610516	0–0.7	SED	—	1.33 (U)	—	149	—	0.666 (U)	—	22.2	4.82	—	—	—	—	—	—	—	—	—	1.33 (U)	—	4.85	20	—
RE15-10-7191	15-610516	1–2	SED	—	1.12 (U)	—	—	1.33	0.559 (U)	—	—	—	—	—	—	—	—	—	—	—	—	1.15 (U)	—	—	—	—
RE15-10-7192	15-610517	0–0.5	SED	—	1.43 (U)	—	—	—	0.716 (U)	—	—	—	—	—	—	—	—	—	—	—	—	1.5 (U)	1.68	5.93	—	—
RE15-10-7193	15-610517	1–2	SED	—	—	—	—	—	0.59 (U)	—	27.9	—	—	—	—	—	—	—	—	—	—	1.18 (U)	1.83	2.67	22.3	—
RE15-10-7194	15-610518	0–1	SED	—	1.2 (U)	—	—	—	0.598 (U)	—	—	—	—	—	—	—	—	—	—	—	—	1.23 (U)	—	6.67	—	—
RE15-10-7195	15-610518	1–2	SOIL	—	1.07 (U)	—	—	—	0.533 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-7196	15-610519	0–0.5	SED	—	1.2 (U)	—	—	—	0.598 (U)	—	—	6.83	—	—	—	—	—	610	—	—	—	1.18 (U)	—	3.42	20.5	—
RE15-10-7197	15-610519	1–2	SED	—	0.939 (U)	—	—	—	0.581 (U)	—	43.3	—	—	—	—	—	—	—	—	—	—	1.12 (U)	—	—	—	—
RE15-10-7198	15-610520	0–0.5	SED	—	1.28 (U)	—	140	—	—	—	—	—	—	2.84 (J-)	—	27.4	—	—	—	—	—	1.28 (U)	—	13.9	20.4	—
RE15-10-7199	15-610520	1–2.4	SOIL	—	1.09 (U)	—	—	—	0.545 (U)	—	21.4	—	—	—	—	—	—	—	—	—	0.000829 (J)	—	1.02	—	—	—
RE15-10-7200	15-610521	0–0.5	SED	—	1.32 (U)	—	157	—	0.658 (U)	—	16.1	5.69	—	—	—	—	—	—	—	—	—	1.32 (U)	—	3.76	25.7	—
RE15-10-7201	15-610521	2–3.7	SOIL	—	1.05 (U)	—	—	—	0.523 (U)	—	—	—	—	—	—	—	—	—	—	—	0.000617 (J)	—	—	—	—	—
RE15-10-7202	15-610522	2–3.9	SOIL	—	1.17 (U)	—	—	—	0.586 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-7203	15-610522	6–6.7	SOIL	—	1.2 (U)	—	—	—	0.601 (U)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-7204	15-610523	0–0.5	SED	—	1.18 (U)	—	137	—	0.928	—	15.2	5.1	34.5	—	—	48.9	—	—	0.678	—	—	1.19 (U)	3.2	7.55	25	126
RE15-10-7205	15-610523	1–1.5	SOIL	—	1.1 (U)	—	—	—	1.54	—	26.3	—	53.6	3.25 (J-)	—	80.2	—	—	1.34	—	—	—	5.42	9.66	—	125
RE15-10-7206	15-610524	0–0.7	SED	—	1.25 (U)	4.45	150	—	0.625 (U)	—	—	—	—	—	—	—	—	—	—	10.8 (J)	—	1.25 (U)	—	—	23.5	—
RE15-10-7207	15-610524	1–2.1	QBT3	9540	1.04 (U)	—	111	—	—	—	10.3	—	5.45	—	—	—	1730 (J+)	—	—	7.58 (J)	—	1.06 (U)	—	—	17.8	—
RE15-10-7208	15-610525	0–0.5	SED	—	1.27 (U)	—	—	—	0.637 (U)	—	—	—	13.8	—	—	—	—	—	—	—	0.00138 (J)	1.29 (U)	—	—	—	—
RE15-10-7209	15-610525	1–1.4	SED	—	1.14 (U)	—	158	—	0.568 (U)	—	36	6.07	—	—	16900	—	—	—	—	12.1 (J)	—	1.14 (U)	1.14	—	29.1	—
RE15-10-7210	15-610526	2–2.9	SOIL	—	1.11 (U)	—	—	—	0.554 (U)	8490 (J)	—	9.41	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-7211	15-610526	6–6.7	QBT3	—	1.19 (U)	—	49.4	—	—	2240 (J)	12.4	—	—	—	—	—	—	—	—	—	—	1.2 (U)	—	—	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] na = Not available.

[b] SSLs from NMED 2009, 108070, unless otherwise noted.

[c] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[d] — = Not detected or not detected above BV.

Table 6.12-3
Organic Chemicals Detected at AOC 15-014(h)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acetone	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzoic Acid	Bis(2-ethylhexyl)phthalate	Chloroform	Chrysene	Dichloroethene[1,1-]
Industrial SSL[a]				**36700**	**851000**	**183000**	**8.26**	**8.26**	**23.4**	**2.34**	**23.4**	**18300**	**2500000**	**1370**	**31.9**	**2340**	**2220**
Residential SSL				**3440**	**67500**	**17200**	**1.12**	**2.22**	**6.21**	**0.621**	**6.21**	**1720**	**245000**	**347**	**5.72**	**621**	**618**
RE15-10-7160	15-610501	0–0.5	SED	—[b]	—	—	0.114	0.0385	0.0216 (J)	0.0144 (J)	0.0312 (J)	—	—	—	—	0.0172 (J)	—
RE15-10-7161	15-610501	1–2.2	SED	—	—	—	0.0052	0.0033 (J)	—	—	—	—	—	—	—	—	—
RE15-10-7162	15-610502	0–0.5	SED	—	—	—	0.704	0.258	—	—	—	—	—	—	—	0.0112 (J)	—
RE15-10-7163	15-610502	1–2.5	QBT3	—	—	—	0.114	0.0369	—	—	—	—	—	—	—	—	—
RE15-10-7166	15-610504	0–1	SED	—	0.0295 (J)	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-7168	15-610505	0–0.5	SED	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-7169	15-610505	1–2.1	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-7170	15-610506	0–0.7	SED	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-7171	15-610506	1–2.1	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-7172	15-610507	0–0.7	SOIL	—	—	—	—	—	—	—	—	—	1.01 (J)	—	—	—	—
RE15-10-7173	15-610507	1–2.6	SOIL	—	0.00535 (J)	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-7174	15-610508	0–1	SOIL	0.232	—	—	—	—	—	—	—	—	—	0.343 (J)	—	—	—
RE15-10-7175	15-610508	1–2	QBT3	0.121	0.00839 (J)	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-7179	15-610510	1–2	SOIL	—	—	—	NA[c]	NA	—	—	—	—	—	—	—	—	—
RE15-10-7184	15-610513	0–0.7	SED	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE15-10-7185	15-610513	1–2	SOIL	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE15-10-7187	15-610514	1–2	SOIL	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE15-10-7188	15-610515	0–0.8	SED	—	—	—	NA	NA	—	—	—	—	—	0.0959 (J)	—	—	—
RE15-10-7189	15-610515	1–2.2	SOIL	—	—	—	NA	NA	—	—	—	—	—	—	0.000687 (J)	—	—
RE15-10-7190	15-610516	0–0.7	SED	—	0.0037 (J)	—	NA	NA	—	—	—	—	—	—	—	—	—
RE15-10-7191	15-610516	1–2	SED	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE15-10-7193	15-610517	1–2	SED	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE15-10-7194	15-610518	0–1	SED	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE15-10-7195	15-610518	1–2	SOIL	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE15-10-7196	15-610519	0–0.5	SED	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE15-10-7197	15-610519	1–2	SED	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE15-10-7198	15-610520	0–0.5	SED	0.0373 (J)	—	—	NA	NA	—	—	—	—	0.401 (J)	—	—	—	0.000772 (J+)

Table 6.12-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acetone	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzoic Acid	Bis(2-ethylhexyl)phthalate	Chloroform	Chrysene	Dichloroethene[1,1-]
Industrial SSL[a]				**36700**	**851000**	**183000**	**8.26**	**8.26**	**23.4**	**2.34**	**23.4**	**18300**	**2500000**	**1370**	**31.9**	**2340**	**2220**
Residential SSL				**3440**	**67500**	**17200**	**1.12**	**2.22**	**6.21**	**0.621**	**6.21**	**1720**	**245000**	**347**	**5.72**	**621**	**618**
RE15-10-7199	15-610520	1–2.4	SOIL	—	—	—	NA[c]	NA	—	—	—	—	—	—	—	—	—
RE15-10-7200	15-610521	0–0.5	SED	—	—	—	NA	NA	—	—	—	—	0.392 (J)	—	—	—	—
RE15-10-7202	15-610522	2–3.9	SOIL	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE15-10-7204	15-610523	0–0.5	SED	0.0388 (J)	0.00335 (J)	0.011 (J)	NA	NA	0.0625	0.0905	0.255	0.0652 (J)	—	—	—	0.107	—
RE15-10-7205	15-610523	1–1.5	SOIL	0.0268 (J)	—	—	NA	NA	0.0155 (J)	—	0.0473	—	—	0.0793 (J)	—	0.0279 (J)	—
RE15-10-7208	15-610525	0–0.5	SED	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE15-10-7209	15-610525	1–1.4	SED	0.053	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE15-10-7210	15-610526	2–2.9	SOIL	—	0.00531 (J)	—	NA	NA	—	0.0196 (J)	0.0373 (J)	0.0269 (J)	—	—	—	0.0299 (J)	—

Table 6.12-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Di-n-butylphthalate	Di-n-octylphthalate	Ethylbenzene	Fluoranthene	Indeno(1,2,3-cd)pyrene	Isopropyltoluene[4-]	Methylene Chloride	Phenanthrene	Pyrene	Tetrachloroethene	Toluene	Trimethylbenzene[1,2,4-]	Xylene[1,2-]	Xylene[1,3-]+Xylene[1,4-]
Industrial SSL[a]				**68400**	**25000**	**385**	**24400**	**23.4**	**14900**[d]	**1090**	**20500**	**18300**	**36.4**	**57900**	**260**[e]	**31500**	**3610**
Residential SSL				**6110**	**2400**	**69.7**	**2290**	**6.21**	**3210**[d]	**199**	**1830**	**1720**	**6.99**	**5570**	**62**[e]	**9550**	**1090**
RE15-10-7160	15-610501	0–0.5	SED	—	—	—	0.0183 (J)	0.13	—	—	—	0.0179 (J)	—	—	—	—	—
RE15-10-7161	15-610501	1–2.2	SED	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-7162	15-610502	0–0.5	SED	0.129 (J)	—	—	0.0231 (J)	—	—	—	0.014 (J)	0.0164 (J)	—	—	—	—	—
RE15-10-7163	15-610502	1–2.5	QBT3	0.093 (J)	—	—	—	—	—	—	—	—	—	—	—	—	0.000375 (J)
RE15-10-7166	15-610504	0–1	SED	—	—	—	—	—	0.0425	0.00587 (J)	—	—	—	0.00145 (J)	—	—	0.00107 (J)
RE15-10-7168	15-610505	0–0.5	SED	—	—	—	—	—	—	—	—	—	0.00104 (J+)	—	—	—	—
RE15-10-7169	15-610505	1–2.1	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	0.000483 (J)
RE15-10-7170	15-610506	0–0.7	SED	—	—	—	—	—	—	0.00341 (J)	—	—	—	—	—	—	—
RE15-10-7171	15-610506	1–2.1	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	0.000369 (J)
RE15-10-7172	15-610507	0–0.7	SOIL	—	—	—	—	—	—	0.00443 (J)	—	—	—	0.000546 (J)	—	—	—
RE15-10-7173	15-610507	1–2.6	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	0.000599 (J)
RE15-10-7174	15-610508	0–1	SOIL	—	—	—	—	—	—	0.00319 (J)	—	—	—	—	—	—	—
RE15-10-7175	15-610508	1–2	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-7179	15-610510	1–2	SOIL	—	—	—	—	—	—	0.00472 (J)	—	—	—	0.000464 (J)	—	—	—
RE15-10-7184	15-610513	0–0.7	SED	—	—	—	—	—	—	—	—	—	0.000905 (J+)	—	—	—	0.00046 (J+)
RE15-10-7185	15-610513	1–2	SOIL	—	—	—	—	—	—	—	—	—	0.000453 (J)	—	—	—	0.000635 (J)
RE15-10-7187	15-610514	1–2	SOIL	—	—	—	—	—	—	—	—	—	0.000505 (J+)	—	—	—	—
RE15-10-7188	15-610515	0–0.8	SED	—	1.43	0.00076 (J+)	—	—	—	—	—	—	0.000733 (J+)	—	—	—	0.000962 (J+)
RE15-10-7189	15-610515	1–2.2	SOIL	—	—	—	—	—	—	—	—	—	0.000578 (J)	0.00153	—	—	0.000761 (J)
RE15-10-7190	15-610516	0–0.7	SED	—	—	—	—	—	0.00079 (J)	0.00941 (J+)	—	—	0.00155 (J+)	0.00117 (J+)	—	—	0.00114 (J+)
RE15-10-7191	15-610516	1–2	SED	—	—	—	—	—	—	—	—	—	0.000458 (J)	—	—	—	0.00043 (J)
RE15-10-7193	15-610517	1–2	SED	—	—	0.000489 (J)	—	—	—	—	—	—	0.000415 (J)	0.000796 (J)	—	—	0.000406 (J)
RE15-10-7194	15-610518	0–1	SED	—	—	—	—	—	—	—	—	—	0.000799 (J)	—	—	—	—
RE15-10-7195	15-610518	1–2	SOIL	—	—	—	—	—	—	—	—	—	0.000404 (J)	—	—	—	0.000783 (J)
RE15-10-7196	15-610519	0–0.5	SED	—	—	—	—	—	0.000447 (J)	—	—	—	—	0.000685 (J)	—	—	0.000574 (J)
RE15-10-7197	15-610519	1–2	SED	—	—	—	—	—	—	—	—	—	0.00042 (J)	0.000405 (J)	—	—	0.000789 (J)
RE15-10-7198	15-610520	0–0.5	SED	—	—	—	—	—	0.000812 (J+)	0.00462 (J+)	—	—	0.000668 (J+)	0.000524 (J+)	—	—	—
RE15-10-7199	15-610520	1–2.4	SOIL	—	—	—	—	—	—	—	—	—	—	0.000394 (J)	0.000383 (J)	0.000371 (J)	0.000743 (J)
RE15-10-7200	15-610521	0–0.5	SED	—	—	—	—	—	—	—	—	—	—	0.000466 (J-)	—	—	—
RE15-10-7202	15-610522	2–3.9	SOIL	—	—	—	—	—	—	—	—	—	—	0.000421 (J)	—	—	0.000397 (J)
RE15-10-7204	15-610523	0–0.5	SED	—	—	—	0.0468	0.0633 (J)	—	—	0.0164 (J)	0.0733	0.000452 (J)	0.000635 (J)	—	—	—

Table 6.12-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Di-n-butylphthalate	Di-n-octylphthalate	Ethylbenzene	Fluoranthene	Indeno(1,2,3-cd)pyrene	Isopropyltoluene[4-]	Methylene Chloride	Phenanthrene	Pyrene	Tetrachloroethene	Toluene	Trimethylbenzene[1,2,4-]	Xylene[1,2-]	Xylene[1,3-]+Xylene[1,4-]
Industrial SSL[a]				**68400**	**25000**	**385**	**24400**	**23.4**	**14900**[d]	**1090**	**20500**	**18300**	**36.4**	**57900**	**260**[e]	**31500**	**3610**
Residential SSL				**6110**	**2400**	**69.7**	**2290**	**6.21**	**3210**[d]	**199**	**1830**	**1720**	**6.99**	**5570**	**62**[e]	**9550**	**1090**
RE15-10-7205	15-610523	1–1.5	SOIL	—	—	—	0.0185 (J)	—	0.000741 (J-)	—	0.0112 (J)	0.0266 (J)	—	0.00244 (J-)	—	—	0.000619 (J-)
RE15-10-7208	15-610525	0–0.5	SED	—	—	—	0.0139 (J)	—	0.00362	—	—	—	—	—	—	—	—
RE15-10-7209	15-610525	1–1.4	SED	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE15-10-7210	15-610526	2–2.9	SOIL	—	—	—	0.025 (J)	—	—	—	0.0182 (J)	0.0328 (J)	—	0.000929 (J)	—	0.00036 (J)	0.000883 (J)

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] SSLs from NMED 2009, 108070, unless otherwise noted.

[b] — = Not detected.

[c] NA = Not analyzed.

[d] Isopropylbenzene used as a surrogate.

[e] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

Table 6.12-4
Radionuclides Detected or Detected above BVs/FVs at AOC 15-014(h)

Sample ID	Location ID	Depth (ft)	Media	Cesium-137	Plutonium-238	Plutonium-239/240	Tritium	Uranium-234	Uranium-235/236	Uranium-238
Qbt 2, 3, 4 BV[a]				**na**[b]	**na**	**na**	**na**	**1.98**	**0.09**	**1.93**
Sediment BV[a]				**0.9**	**0.006**	**0.068**	**0.093**	**2.59**	**0.2**	**2.29**
Soil BV[a]				**1.65c**	**0.023**[c]	**0.054**[c]	**na**	**2.59**	**0.2**	**2.29**
Industrial SAL[d]				**23**	**240**	**210**	**440000**	**1500**	**na**	**430**
Residential SAL[d]				**5.6**	**37**	**33**	**750**	**170**	**na**	**87**
RE15-10-7162	15-610502	0–0.5	SED	—[e]	—	—	—	—	—	2.69
RE15-10-7163	15-610502	1–2.5	QBT3	—	—	—	0.020885	—	—	—
RE15-10-7168	15-610505	0–0.5	SED	—	—	—	—	3.56	0.219	4.44
RE15-10-7170	15-610506	0–0.7	SED	—	—	—	—	2.8	—	3.58
RE15-10-7172	15-610507	0–0.7	SOIL	—	—	0.0622	—	—	—	2.72
RE15-10-7174	15-610508	0–1	SOIL	—	—	—	—	—	—	2.6
RE15-10-7176	15-610509	0–0.6	SOIL	—	—	—	0.0123661	—	—	—
RE15-10-7177	15-610509	1–2	SOIL	0.339	—	0.0194	—	—	—	—
RE15-10-7178	15-610510	0–0.5	SED	—	—	—	—	—	—	2.73
RE15-10-7179	15-610510	1–2	SOIL	0.45	—	—	—	—	—	2.86
RE15-10-7180	15-610511	0–1	SED	—	0.0599	—	—	—	—	—
RE15-10-7185	15-610513	1–2	SOIL	0.288	—	—	—	—	—	—
RE15-10-7187	15-610514	1–2	SOIL	0.334	—	—	—	—	—	—
RE15-10-7189	15-610515	1–2.2	SOIL	0.13	—	—	—	—	—	—
RE15-10-7190	15-610516	0–0.7	SED	—	—	—	—	—	—	3.05
RE15-10-7192	15-610517	0–0.5	SED	—	—	—	—	—	—	3.22
RE15-10-7196	15-610519	0–0.5	SED	—	—	—	—	—	—	3.32
RE15-10-7198	15-610520	0–0.5	SED	1.53	—	—	—	4.17	—	5.21
RE15-10-7199	15-610520	1–2.4	SOIL	—	—	—	0.0364505	—	—	—
RE15-10-7201	15-610521	2–3.7	SOIL	—	—	—	0.0274285	—	—	—
RE15-10-7204	15-610523	0–0.5	SED	—	—	—	—	—	—	3.58

Table 6.12-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Cesium-137	Plutonium-238	Plutonium-239/240	Tritium	Uranium-234	Uranium-235/236	Uranium-238
Qbt 2, 3, 4 BV[a]				**na**[b]	**na**	**na**	**na**	**1.98**	**0.09**	**1.93**
Sediment BV[a]				**0.9**	**0.006**	**0.068**	**0.093**	**2.59**	**0.2**	**2.29**
Soil BV[a]				**1.65c**	**0.023**[c]	**0.054**[c]	**na**	**2.59**	**0.2**	**2.29**
Industrial SAL[d]				**23**	**240**	**210**	**440000**	**1500**	**na**	**430**
Residential SAL[d]				**5.6**	**37**	**33**	**750**	**170**	**na**	**87**
RE15-10-7205	15-610523	1–1.5	SOIL	0.514	—	0.029	0.100017	2.98	0.23	4.21
RE15-10-7207	15-610524	1–2.1	QBT3	—	—	—	0.0280974	—	—	—
RE15-10-7210	15-610526	2–2.9	SOIL	—	—	—	0.0445575	—	—	—
RE15-10-7211	15-610526	6–6.7	QBT3	—	—	—	0.883301	—	—	—

Note: Results are in pCi/g.

[a] BVs/FVs are from LANL 1998, 059730.

[b] na = Not available.

[c] FV applies to soil and tuff samples collected from 0–1 ft only.

[d] SALs from LANL 2009, 107655

[e] — = Not detected or not detected above BV/FV.

Table 7.2-1
Samples Collected and Analyses Requested at SWMU 36-002

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	Nitrate	PCB	Perchlorate	SVOC	TAL Metals	VOC
RE36-10-8448	36-610876	7.5–10	QBT2	10-2094	10-2093	10-2092	10-2094	10-2094	10-2094	10-2094	10-2093	10-2092	10-2093	10-2092	10-2093	10-2092
RE36-10-8449	36-610876	15–16	QBT2	10-2094	10-2093	10-2092	10-2094	10-2094	10-2094	10-2094	10-2093	10-2092	10-2093	10-2092	10-2093	10-2092
RE36-10-8450	36-610877	9–10	QBT2	10-2094	10-2093	10-2092	10-2094	10-2094	10-2094	10-2094	10-2093	10-2092	10-2093	10-2092	10-2093	10-2092
RE36-10-8451	36-610877	14–15	QBT2	10-2094	10-2093	10-2092	10-2094	10-2094	10-2094	10-2094	10-2093	10-2092	10-2093	10-2092	10-2093	10-2092
RE36-10-8452	36-610878	4–5	QBT2	10-2094	10-2093	10-2092	10-2094	10-2094	10-2094	10-2094	10-2093	—*	10-2093	10-2092	10-2093	10-2092
RE36-10-8453	36-610878	9–10	QBT2	10-2094	10-2093	10-2092	10-2094	10-2094	10-2094	10-2094	10-2093	—	10-2093	10-2092	10-2093	10-2092

Note: Numbers in analyte columns are request numbers.
* — = Analysis not requested.

Table 7.2-2
Inorganic Chemicals above BVs at SWMU 36-002

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Barium	Beryllium	Calcium	Chromium	Cobalt	Copper	Lead	Magnesium	Manganese	Nickel	Perchlorate	Selenium
Qbt 2, 3, 4 BV				**7340**	**0.5**	**46**	**1.21**	**2200**	**7.14**	**3.14**	**4.66**	**11.2**	**1690**	**482**	**6.58**	**na**[a]	**0.3**
Industrial SSL[b]				**1130000**	**454**	**224000**	**2260**	**na**	**2920**	**300**[c]	**45400**	**800**	**na**	**145000**	**22700**	**795**	**5680**
Residential SSL[b]				**78100**	**31.3**	**15600**	**156**	**na**	**219**	**23**[c]	**3130**	**400**	**na**	**10700**	**1560**	**54.8**	**391**
RE36-10-8448	36-610876	7.5–10	QBT2	—[d]	1.02 (UJ)	—	—	—	—	—	—	—	—	—	—	—	0.969 (UJ)
RE36-10-8449	36-610876	15–16	QBT2	—	0.857 (UJ)	—	—	—	—	—	—	—	—	497	—	—	0.884 (UJ)
RE36-10-8450	36-610877	9–10	QBT2	13800	1.07 (UJ)	82.2	2.69	4700	9.64	—	9.92	13	3080	—	10.6	0.00127 (J)	1.02 (UJ)
RE36-10-8451	36-610877	14–15	QBT2	—	1.01 (UJ)	—	—	—	—	—	—	—	—	—	—	—	0.999 (UJ)
RE36-10-8452	36-610878	4–5	QBT2	—	0.913 (UJ)	84.6	—	—	—	4.2	5.98	—	1730	—	6.82	0.00232	0.922 (UJ)
RE36-10-8453	36-610878	9–10	QBT2	—	0.997 (UJ)	63.7	—	—	8.38	—	—	—	—	—	—	0.00377	1.02 (UJ)

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.
[a] na = Not available.
[b] SSLs from NMED 2009, 108070, unless otherwise noted.
[c] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).
[d] — = Not detected or not detected above BV.

Table 7.2-3
Organic Chemicals Detected at SWMU 36-002

Sample ID	Location ID	Depth (ft)	Media	Ethylbenzene
Industrial SSL*				**385**
Residential SSL*				**69.7**
RE36-10-8450	36-610877	9–10	QBT2	0.000482 (J)

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.
* SSLs from NMED 2009, 108070, unless otherwise noted.

Table 7.2-4
Radionuclides Detected or Detected above BVs/FVs at SWMU 36-002

Sample ID	Location ID	Depth (ft)	Media	Plutonium-238	Tritium
Qbt 2, 3, 4 BV[a]				**na**[b]	**na**
Industrial SAL[c]				**240**	**440000**
Residential SAL[c]				**37**	**750**
RE36-10-8452	36-610878	4–5	QBT2	0.033	—[d]
RE36-10-8453	36-610878	9–10	QBT2	—	0.0100606

Note: Results are in pCi/g.
[a] BVs/FVs are from LANL 1998, 059730.
[b] na = Not available.
[c] SALs from LANL 2009, 107655.
[d] — = Not detected or not detected above BV/FV.

Table 7.3-1
Samples Collected and Analyses Requested at SWMU 36-003(a)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	Nitrate	PCB	Perchlorate	SVOC	TAL Metals	VOC
RE36-10-8462	36-610879	49–50	QBT2	10-2026	10-2025	10-2024	10-2026	10-2026	10-2026	10-2026	10-2025	10-2024	10-2025	10-2024	10-2025	10-2024
RE36-10-8463	36-610879	59–60	QBT2	10-2026	10-2025	10-2024	10-2026	10-2026	10-2026	10-2026	10-2025	10-2024	10-2025	10-2024	10-2025	10-2024
RE36-10-8486	36-610879	69–70	QBT2	10-2026	10-2025	10-2024	10-2026	10-2026	10-2026	10-2026	10-2025	10-2024	10-2025	10-2024	10-2025	10-2024
RE36-10-8487	36-610879	77.5–80	QBT2	10-2026	10-2025	10-2024	10-2026	10-2026	10-2026	10-2026	10-2025	10-2024	10-2025	10-2024	10-2025	10-2024
RE36-10-8464	36-610880	3–4	QBT2	10-2139	10-2138	10-2137	10-2139	10-2139	10-2139	10-2139	10-2138	10-2137	10-2138	10-2137	10-2138	10-2137
RE36-10-8466	36-610881	1.5–2.5	SOIL	10-2202	10-2202	10-2202	10-2202	10-2202	10-2202	10-2202	10-2202	10-2202	10-2202	10-2202	10-2202	10-2202
RE36-10-8470	36-610882	5–5.6	QBT2	10-2029	10-2028	10-2027	10-2029	10-2029	10-2029	10-2029	10-2028	—*	10-2028	10-2027	10-2028	10-2027
RE36-10-8471	36-610882	5.6–6.1	QBT2	10-2139	10-2138	10-2137	10-2139	10-2139	10-2139	10-2139	10-2138	—	10-2138	10-2137	10-2138	10-2137
RE36-10-8474	36-610884	0.5–1	SOIL	10-2029	10-2028	10-2027	10-2029	10-2029	10-2029	10-2029	10-2028	—	10-2028	10-2027	10-2028	10-2027
RE36-10-8475	36-610884	1–2.5	QBT2	10-2139	10-2138	10-2137	10-2139	10-2139	10-2139	10-2139	10-2138	—	10-2138	10-2137	10-2138	10-2137
RE36-10-8476	36-610885	1.5–2.5	QBT3	10-2029	10-2028	10-2027	10-2029	10-2029	10-2029	10-2029	10-2028	—	10-2028	10-2027	10-2028	10-2027
RE36-10-8477	36-610885	2.5–3	QBT2	10-2139	10-2138	10-2137	10-2139	10-2139	10-2139	10-2139	10-2138	—	10-2138	10-2137	10-2138	10-2137
RE36-10-8478	36-610886	1.5–2.3	SOIL	10-2029	10-2028	10-2027	10-2029	10-2029	10-2029	10-2029	10-2028	—	10-2028	10-2027	10-2028	10-2027
RE36-10-8479	36-610886	2.3–3.9	QBT2	10-2139	10-2138	10-2137	10-2139	10-2139	10-2139	10-2139	10-2138	—	10-2138	10-2137	10-2138	10-2137
RE36-10-8480	36-610887	1.5–2	SOIL	10-2029	10-2028	10-2027	10-2029	10-2029	10-2029	10-2029	10-2028	—	10-2028	10-2027	10-2028	10-2027
RE36-10-8481	36-610887	2–4	QBT2	10-2139	10-2138	10-2137	10-2139	10-2139	10-2139	10-2139	10-2138	—	10-2138	10-2137	10-2138	10-2137
RE36-10-8482	36-610888	2–3.5	SOIL	10-2029	10-2028	10-2027	10-2029	10-2029	10-2029	10-2029	10-2028	—	10-2028	10-2027	10-2028	10-2027
RE36-10-8483	36-610888	7–8	QBT3	10-2029	10-2028	10-2027	10-2029	10-2029	10-2029	10-2029	10-2028	—	10-2028	10-2027	10-2028	10-2027
RE36-10-8484	36-610889	2–3	SOIL	10-2139	10-2138	10-2137	10-2139	10-2139	10-2139	10-2139	10-2138	—	10-2138	10-2137	10-2138	10-2137
RE36-10-8485	36-610889	3–4.2	SOIL	10-2139	10-2138	10-2137	10-2139	10-2139	10-2139	10-2139	10-2138	—	10-2138	10-2137	10-2138	10-2137

* — = Analysis not requested.

Table 7.3-2
Inorganic Chemicals above BVs at SWMU 36-003(a)

Sample ID	Location ID	Depth (ft)	Media	Antimony	Beryllium	Cadmium	Chromium	Cobalt	Copper	Nickel	Nitrate	Perchlorate	Selenium	Sodium	Zinc
Qbt 2, 3, 4 BV				**0.5**	**1.21**	**1.63**	**7.14**	**3.14**	**4.66**	**6.58**	**na**[a]	**na**	**0.3**	**2770**	**63.5**
Soil BV				**0.83**	**1.83**	**0.4**	**19.3**	**8.64**	**14.7**	**15.4**	**na**	**na**	**1.52**	**915**	**48.8**
Industrial SSL[b]				**454**	**2260**	**1120**	**2920**	**300**[c]	**45400**	**22700**	**1820000**	**795**	**5680**	**na**	**341000**
Residential SSL[b]				**31.3**	**156**	**77.9**	**219**	**23**[c]	**3130**	**1560**	**125000**	**54.8**	**391**	**na**	**23500**
RE36-10-8462	36-610879	49–50	QBT2	0.944 (UJ)	—[d]	—	—	—	—	—	1.77 (J-)	—	1 (U)	—	—
RE36-10-8463	36-610879	59–60	QBT2	1.01 (UJ)	—	—	—	—	—	—	2.87 (J-)	—	0.93 (U)	—	—
RE36-10-8486	36-610879	69–70	QBT2	0.957 (UJ)	—	—	14.5	—	—	—	2.04 (J-)	—	0.99 (U)	—	—
RE36-10-8487	36-610879	77.5–80	QBT2	1.01 (UJ)	—	—	—	—	—	—	2.27 (J-)	—	1.01 (U)	—	—
RE36-10-8464	36-610880	3–4	QBT2	1.05 (UJ)	—	—	8.37	6.75	5.36	—	1.27	—	1.03 (U)	—	—
RE36-10-8466	36-610881	1.5–2.5	SOIL	1.08 (U)	—	0.541 (U)	—	—	—	—	—	—	—	1720 (J-)	—
RE36-10-8470	36-610882	5–5.6	QBT2	1.03 (U)	—	—	12 (J)	3.32	—	—	2.38 (J-)	—	0.991 (U)	—	—
RE36-10-8471	36-610882	5.6–6.1	QBT2	1.08 (UJ)	—	—	59.1	4.06	—	—	2.27	—	1.09 (U)	—	—
RE36-10-8474	36-610884	0.5–1	SOIL	1.11 (U)	—	0.557 (U)	—	—	—	—	1.92 (J-)	—	—	—	—
RE36-10-8475	36-610884	1–2.5	QBT2	1.07 (UJ)	—	—	13.4	—	—	—	2.24	0.000811 (J)	1.05 (U)	—	—
RE36-10-8476	36-610885	1.5–2.5	QBT3	1.01 (U)	—	—	—	—	—	—	—	—	1.04 (U)	—	—
RE36-10-8477	36-610885	2.5–3	QBT2	1.1 (UJ)	—	—	13.3	—	—	—	—	—	1.07 (U)	—	—
RE36-10-8478	36-610886	1.5–2.3	SOIL	0.99 (U)	—	0.495 (U)	—	—	—	—	1.62 (J-)	—	—	—	—
RE36-10-8479	36-610886	2.3–3.9	QBT2	1.07 (UJ)	—	—	—	—	—	—	1.48	0.000631 (J)	1.03 (U)	—	—
RE36-10-8480	36-610887	1.5–2	SOIL	1.07 (U)	—	0.534 (U)	—	—	—	—	—	—	—	—	—
RE36-10-8481	36-610887	2–4	QBT2	1.1 (UJ)	—	—	10.8	—	—	—	—	0.000683 (J)	1.1 (U)	—	—
RE36-10-8482	36-610888	2–3.5	SOIL	0.984 (U)	—	0.492 (U)	—	—	—	—	1.68 (J-)	—	—	—	—
RE36-10-8483	36-610888	7–8	QBT3	1.02 (U)	—	—	7.18 (J)	—	—	—	—	—	0.986 (U)	—	—
RE36-10-8484	36-610889	2–3	SOIL	1.18 (UJ)	—	0.591 (U)	27.1	—	—	—	1.38	0.000796 (J)	—	924	—
RE36-10-8485	36-610889	3–4.2	SOIL	1.29 (UJ)	5.57	0.644 (U)	42.1	—	—	39.9	1.47	0.00229 (J)	—	1300	50.5

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] na = Not available.

[b] SSLs from NMED 2009, 108070, unless otherwise noted.

[c] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[d] — = Not detected or not detected above BV.

Table 7.3-3
Organic Chemicals Detected at SWMU 36-003(a)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Fluoranthene	Indeno(1,2,3-cd)pyrene	Isopropyltoluene[4-]	Phenanthrene	Pyrene	RDX	Trimethylbenzene[1,2,4-]
Industrial SSL[a]				**36700**	**183000**	**23.4**	**2.34**	**23.4**	**18300**[b]	**234**	**2340**	**24400**	**23.4**	**14900**[c]	**20500**	**18300**	**174**	**260**[d]
Residential SSL[a]				**3440**	**17200**	**6.21**	**0.621**	**6.21**	**1720**[b]	**62.1**	**621**	**2290**	**6.21**	**3210**[c]	**1830**	**1720**	**44.2**	**62d**
RE36-10-8464	36-610880	3–4	QBT2	—[e]	0.046 (J)	0.106 (J)	0.0863 (J)	0.155	—	—	0.106 (J)	0.235	—	—	0.221	0.211	—	0.000343 (J)
RE36-10-8466	36-610881	1.5–2.5	SOIL	—	—	—	—	—	—	—	—	0.0123 (J)	—	—	—	0.0231 (J)	—	—
RE36-10-8470	36-610882	5–5.6	QBT2	—	—	—	—	—	—	—	—	0.0151 (J)	—	—	0.08	0.0123 (J)	—	—
RE36-10-8471	36-610882	5.6–6.1	QBT2	—	—	—	—	—	—	—	—	—	—	0.00811	—	—	—	—
RE36-10-8475	36-610884	1–2.5	QBT2	—	—	—	—	—	—	—	—	—	—	0.000603 (J)	—	—	—	—
RE36-10-8481	36-610887	2–4	QBT2	0.193	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-8482	36-610888	2–3.5	SOIL	—	0.011 (J)	0.106	0.106	0.176	0.0509	0.0684	0.145	0.148	0.0525	—	0.125	0.151	0.184 (J)	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.
[a] SSLs from NMED 2009, 108070, unless otherwise noted.
[b] Pyrene used as a surrogate.
[c] Isopropylbenzene used as a surrogate.
[d] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).
[e] — = Not detected.

Table 7.3-4
Radionuclides Detected or Detected above BVs/FVs at SWMU 36-003(a)

Sample ID	Location ID	Depth (ft)	Media	Uranium-235/236
Qbt 2, 3, 4 BV[a]				**0.09**
Industrial SAL[b]				**87**
Residential SAL[b]				**17**
RE36-10-8487	36-610879	77.5–80	QBT2	0.0957

Note: Results are in pCi/g.
[a] BVs/FVs are from LANL 1998, 059730.
[b] SALs from LANL 2009, 107655.

Table 7.4-1
Samples Collected and Analyses Requested at SWMU 36-008

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	Nitrate	PCB	Perchlorate	SVOC	TAL Metals	VOC
RE36-10-7403	36-610574	0–0.5	SOIL	10-2123	10-2122	10-2121	10-2123	10-2123	10-2123	10-2123	10-2122	10-2121	10-2122	10-2121	10-2122	10-2121
RE36-10-7404	36-610574	2–2.5	SOIL	10-2123	10-2122	10-2121	10-2123	10-2123	10-2123	10-2123	10-2122	10-2121	10-2122	10-2121	10-2122	10-2121
RE36-10-7405	36-610575	0–0.5	SOIL	10-2123	10-2122	10-2121	10-2123	10-2123	10-2123	10-2123	10-2122	10-2121	10-2122	10-2121	10-2122	10-2121
RE36-10-7406	36-610575	2–2.5	SOIL	10-2123	10-2122	10-2121	10-2123	10-2123	10-2123	10-2123	10-2122	10-2121	10-2122	10-2121	10-2122	10-2121
RE36-10-7407	36-610576	0–0.5	SOIL	10-2195	10-2194	10-2193	10-2195	10-2195	10-2195	10-2195	10-2194	10-2193	10-2194	10-2193	10-2194	10-2193
RE36-10-7413	36-610579	0–0.5	FILL	10-2076	10-2075	10-2074	10-2076	10-2076	10-2076	10-2076	10-2075	10-2074	10-2075	10-2074	10-2075	10-2074
RE36-10-7414	36-610579	2–3	QBT3	10-2076	10-2075	10-2074	10-2076	10-2076	10-2076	10-2076	10-2075	10-2074	10-2075	10-2074	10-2075	10-2074
RE36-10-7415	36-610580	0–0.5	SOIL	10-2152	10-2151	10-2150	10-2152	10-2152	10-2152	10-2152	10-2151	10-2150	10-2151	10-2150	10-2151	10-2150
RE36-10-7416	36-610580	2–3	SOIL	10-2152	10-2151	10-2150	10-2152	10-2152	10-2152	10-2152	10-2151	10-2150	10-2151	10-2150	10-2151	10-2150
RE36-10-7417	36-610581	0–0.5	SOIL	10-2152	10-2151	10-2150	10-2152	10-2152	10-2152	10-2152	10-2151	10-2150	10-2151	10-2150	10-2151	10-2150
RE36-10-7418	36-610581	2–3	SOIL	10-2152	10-2151	10-2150	10-2152	10-2152	10-2152	10-2152	10-2151	10-2150	10-2151	10-2150	10-2151	10-2150
RE36-10-7419	36-610582	0–0.5	SOIL	10-2152	10-2151	10-2150	10-2152	10-2152	10-2152	10-2152	10-2151	10-2150	10-2151	10-2150	10-2151	10-2150
RE36-10-7420	36-610582	2–3	SOIL	10-2152	10-2151	10-2150	10-2152	10-2152	10-2152	10-2152	10-2151	10-2150	10-2151	10-2150	10-2151	10-2150
RE36-10-7421	36-610583	0–0.5	SOIL	10-2195	10-2194	10-2193	10-2195	10-2195	10-2195	10-2195	10-2194	10-2193	10-2194	10-2193	10-2194	10-2193
RE36-10-7422	36-610583	2–3	SOIL	10-2195	10-2194	10-2193	10-2195	10-2195	10-2195	10-2195	10-2194	10-2193	10-2194	10-2193	10-2194	10-2193
RE36-10-7423	36-610584	0–0.5	SOIL	10-1916	10-1915	10-1914	10-1916	10-1916	10-1916	10-1916	10-1915	—[a]	10-1915	10-1914	10-1915	10-1914
RE36-10-7424	36-610584	2–3	QBT3	10-1916	10-1915	10-1914	10-1916	10-1916	10-1916	10-1916	10-1915	—	10-1915	10-1914	10-1915	10-1914
RE36-10-7425	36-610585	0–1	SOIL	10-2123	10-2122	10-2121	10-2123	10-2123	10-2123	10-2123	10-2122	—	10-2122	10-2121	10-2122	10-2121
RE36-10-7426	36-610585	2–3	SOIL	10-2123	10-2122	10-2121	10-2123	10-2123	10-2123	10-2123	10-2122	—	10-2122	10-2121	10-2122	10-2121
RE36-10-7427	36-610586	0–0.5	SOIL	10-1916	10-1915	10-1914	10-1916	10-1916	10-1916	10-1916	10-1915	—	10-1915	10-1914	10-1915	10-1914
RE36-10-7428	36-610586	2–3	SOIL	10-1916	10-1915	10-1914	10-1916	10-1916	10-1916	10-1916	10-1915	—	10-1915	10-1914	10-1915	10-1914
RE36-10-7429	36-610587	0–0.5	SOIL	10-2123	10-2122	10-2121	10-2123	10-2123	10-2123	10-2123	10-2122	—	10-2122	10-2121	10-2122	10-2121
RE36-10-7431	36-610588	0–0.5	SOIL	10-2123	10-2122	10-2121	10-2123	10-2123	10-2123	10-2123	10-2122	—	10-2122	10-2121	10-2122	10-2121
RE36-10-7432	36-610588	2–2.5	SOIL	10-2123	10-2122	10-2121	10-2123	10-2123	10-2123	10-2123	10-2122	—	10-2122	10-2121	10-2122	10-2121
RE36-10-7433	36-610589	0–0.5	SOIL	10-2123	10-2122	10-2121	10-2123	10-2123	10-2123	10-2123	10-2122	—	10-2122	10-2121	10-2122	10-2121
RE36-10-7434	36-610589	1–2	SOIL	10-2123	10-2122	10-2121	10-2123	10-2123	10-2123	10-2123	10-2122	—	10-2122	10-2121	10-2122	10-2121
RE36-10-7435	36-610590	0–0.5	SED	10-2195	10-2194	10-2193	10-2195	10-2195	10-2195	10-2195	10-2194	—	10-2194	10-2193	10-2194	10-2193
RE36-10-7436	36-610590	2–3	SOIL	10-2195	10-2194	10-2193	10-2195	10-2195	10-2195	10-2195	10-2194	—	10-2194	10-2193	10-2194	10-2193
RE36-10-7437	36-610591	0–0.5	SED	10-2195	10-2194	10-2193	10-2195	10-2195	10-2195	10-2195	10-2194	—	10-2194	10-2193	10-2194	10-2193
RE36-10-7438	36-610591	2–3	QBT3	10-2195	10-2194	10-2193	10-2195	10-2195	10-2195	10-2195	10-2194	—	10-2194	10-2193	10-2194	10-2193
RE36-10-7439	36-610592	0–0.5	SOIL	10-2195	10-2194	10-2193	10-2195	10-2195	10-2195	10-2195	10-2194	—	10-2194	10-2193	10-2194	10-2193
RE36-10-7440	36-610592	2–3	SOIL	10-2195	10-2194	10-2193	10-2195	10-2195	10-2195	10-2195	10-2194	—	10-2194	10-2193	10-2194	10-2193

Table 7.4-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	Nitrate	PCB	Perchlorate	SVOC	TAL Metals	VOC
RE36-10-7441	36-610593	0–0.5	SOIL	10-2195	10-2194	10-2193	10-2195	10-2195	10-2195	10-2195	10-2194	—	10-2194	10-2193	10-2194	10-2193
RE36-10-7442	36-610593	2–3	SOIL	10-2195	10-2194	10-2193	10-2195	10-2195	10-2195	10-2195	10-2194	—	10-2194	10-2193	10-2194	10-2193
RE36-10-7443	36-610594	0–0.5	SOIL	10-2195	10-2194	10-2193	10-2195	10-2195	10-2195	10-2195	10-2194	—	10-2194	10-2193	10-2194	10-2193
RE36-10-7444	36-610594	2–3	SOIL	10-2195	10-2194	10-2193	10-2195	10-2195	10-2195	10-2195	10-2194	—	10-2194	10-2193	10-2194	10-2193
RE36-10-7445	36-610595	0–0.5	SOIL	10-2195	10-2194	10-2193	10-2195	10-2195	10-2195	10-2195	10-2194	—	10-2194	10-2193	10-2194	10-2193
RE36-10-7447	36-610596	0–0.5	SOIL	10-2195	10-2194	10-2193	10-2195	10-2195	10-2195	10-2195	10-2194	—	10-2194	10-2193	10-2194	10-2193
RE36-10-7448	36-610596	2–3	SOIL	10-2195	10-2194	10-2193	10-2195	10-2195	10-2195	10-2195	10-2194	—	10-2194	10-2193	10-2194	10-2193
RE36-10-7449	36-610597	0–0.5	SOIL	10-2195	10-2194	10-2193	10-2195	10-2195	10-2195	10-2195	10-2194	—	10-2194	10-2193	10-2194	10-2193
RE36-10-7450	36-610597	2–3	SOIL	10-2195	10-2194	10-2193	10-2195	10-2195	10-2195	10-2195	10-2194	—	10-2194	10-2193	10-2194	10-2193
RE36-10-7451	36-610598	0–0.5	SOIL	10-2195	10-2194	10-2193	10-2195	10-2195	10-2195	10-2195	10-2194	—	10-2194	10-2193	10-2194	10-2193
RE36-10-7452	36-610598	2–3	SOIL	10-2195	10-2194	10-2193	10-2195	10-2195	10-2195	10-2195	10-2194	—	10-2194	10-2193	10-2194	10-2193
RE36-10-7453	36-610599	0–0.5	SOIL	10-2136	10-2135	10-2134	10-2136	10-2136	10-2136	10-2136	10-2135	—	10-2135	10-2134	10-2135	10-2134
RE36-10-7454	36-610599	0.5–1	QBT2	10-2136	10-2135	10-2134	10-2136	10-2136	10-2136	10-2136	10-2135	—	10-2135	10-2134	10-2135	10-2134
RE36-10-7455	36-610600	0–0.5	SOIL	10-2136	10-2135	10-2134	10-2136	10-2136	10-2136	10-2136	10-2135	—	10-2135	10-2134	10-2135	10-2134
RE36-10-7456	36-610600	1–2	QBT2	10-2136	10-2135	10-2134	10-2136	10-2136	10-2136	10-2136	10-2135	—	10-2135	10-2134	10-2135	10-2134
RE36-10-7457	36-610601	0–0.5	SOIL	10-2136	10-2135	10-2134	10-2136	10-2136	10-2136	10-2136	10-2135	—	10-2135	10-2134	10-2135	10-2134
RE36-10-7458	36-610601	2–3	SOIL	10-2136	10-2135	10-2134	10-2136	10-2136	10-2136	10-2136	10-2135	—	10-2135	10-2134	10-2135	10-2134
RE36-10-7459	36-610602	0–0.5	SOIL	10-2136	10-2135	10-2134	10-2136	10-2136	10-2136	10-2136	10-2135	—	10-2135	10-2134	10-2135	10-2134
RE36-10-7460	36-610602	1.5–2.6	QBT2	10-2136	10-2135	10-2134	10-2136	10-2136	10-2136	10-2136	10-2135	—	10-2135	10-2134	10-2135	10-2134
RE36-10-7461	36-610603	0–0.5	FILL	10-2076	10-2075	10-2074	10-2076	10-2076	10-2076	10-2076	10-2075	—	10-2075	10-2074	10-2075	10-2074
RE36-10-7462	36-610603	2–3	SOIL	10-2076	10-2075	10-2074	10-2076	10-2076	10-2076	10-2076	10-2075	—	10-2075	10-2074	10-2075	10-2074
RE36-10-7463	36-610604	0–0.5	SOIL	10-2076	10-2075	10-2074	10-2076	10-2076	10-2076	10-2076	10-2075	—	10-2075	10-2074	10-2075	10-2074
RE36-10-7464	36-610604	2–3	SOIL	10-2076	10-2075	10-2074	10-2076	10-2076	10-2076	10-2076	10-2075	—	10-2075	10-2074	10-2075	10-2074
RE36-10-7465	36-610605	0–0.5	FILL	10-2076	10-2075	10-2074	10-2076	10-2076	10-2076	10-2076	10-2075	—	10-2075	10-2074	10-2075	10-2074
RE36-10-7466	36-610605	2–3	FILL	10-2076	10-2075	10-2074	10-2076	10-2076	10-2076	10-2076	10-2075	—	10-2075	10-2074	10-2075	10-2074
RE36-10-7467	36-610606	0–0.5	SED	10-2076	10-2075	10-2074	10-2076	10-2076	10-2076	10-2076	10-2075	—	10-2075	10-2074	10-2075	10-2074
RE36-10-7468	36-610606	2–2.9	SED	10-2076	10-2075	10-2074	10-2076	10-2076	10-2076	10-2076	10-2075	—	10-2075	10-2074	10-2075	10-2074
RE36-10-7469	36-610607	0–0.5	SED	10-2076	10-2075	10-2074	10-2076	10-2076	10-2076	10-2076	10-2075	—	10-2075	10-2074	10-2075	10-2074
RE36-10-7470	36-610607	2–3	SOIL	10-2076	10-2075	10-2074	10-2076	10-2076	10-2076	10-2076	10-2075	—	10-2075	10-2074	10-2075	10-2074
RE36-10-7471	36-610608	0–0.8	FILL	10-2076	10-2075	10-2074	10-2076	10-2076	10-2076	10-2076	10-2075	—	10-2075	10-2074	10-2075	10-2074
RE36-10-7472	36-610608	2–3	FILL	10-2076	10-2075	10-2074	10-2076	10-2076	10-2076	10-2076	10-2075	—	10-2075	10-2074	10-2075	10-2074
RE36-10-7473	36-610609	0–0.5	SED	10-2076	10-2075	10-2074	10-2076	10-2076	10-2076	10-2076	10-2075	—	10-2075	10-2074	10-2075	10-2074
RE36-10-7475	36-610610	0–0.5	SED	10-2076	10-2075	10-2074	10-2076	10-2076	10-2076	10-2076	10-2075	—	10-2075	10-2074	10-2075	10-2074
RE36-10-7476	36-610610	2–3	SOIL	10-2076	10-2075	10-2074	10-2076	10-2076	10-2076	10-2076	10-2075	—	10-2075	10-2074	10-2075	10-2074

Table 7.4-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	Nitrate	PCB	Perchlorate	SVOC	TAL Metals	VOC
RE36-10-7477	36-610611	0–0.5	SOIL	10-2152	10-2151	10-2150	10-2152	10-2152	10-2152	10-2152	10-2151	—	10-2151	10-2150	10-2151	10-2150
RE36-10-7478	36-610611	2–3	SOIL	10-2152	10-2151	10-2150	10-2152	10-2152	10-2152	10-2152	10-2151	—	10-2151	10-2150	10-2151	10-2150
RE36-10-7479	36-610612	0–0.5	SOIL	10-2152	10-2151	10-2150	10-2152	10-2152	10-2152	10-2152	10-2151	—	10-2151	10-2150	10-2151	10-2150
RE36-10-7480	36-610612	2–3	SOIL	10-2152	10-2151	10-2150	10-2152	10-2152	10-2152	10-2152	10-2151	—	10-2151	10-2150	10-2151	10-2150
RE36-10-7481	36-610613	0–0.5	SOIL	10-2152	10-2151	10-2150	10-2152	10-2152	10-2152	10-2152	10-2151	—	10-2151	10-2150	10-2151	10-2150
RE36-10-7482	36-610613	2–3	SOIL	10-2152	10-2151	10-2150	10-2152	10-2152	10-2152	10-2152	10-2151	—	10-2151	10-2150	10-2151	10-2150
RE36-10-7483	36-610614	0–0.5	SOIL	10-2152	10-2151	10-2150	10-2152	10-2152	10-2152	10-2152	10-2151	—	10-2151	10-2150	10-2151	10-2150
RE36-10-7484	36-610614	2–3	SOIL	10-2152	10-2151	10-2150	10-2152	10-2152	10-2152	10-2152	10-2151	—	10-2151	10-2150	10-2151	10-2150
RE36-10-7485	36-610615	0–0.5	SOIL	10-2152	10-2151	10-2150	10-2152	10-2152	10-2152	10-2152	10-2151	—	10-2151	10-2150	10-2151	10-2150
RE36-10-7486	36-610615	2–3	SOIL	10-2152	10-2151	10-2150	10-2152	10-2152	10-2152	10-2152	10-2151	—	10-2151	10-2150	10-2151	10-2150
RE36-10-7487	36-610616	0–0.5	SOIL	10-2152	10-2151	10-2150	10-2152	10-2152	10-2152	10-2152	10-2151	—	10-2151	10-2150	10-2151	10-2150
RE36-10-7488	36-610616	2–3	SOIL	10-2152	10-2151	10-2150	10-2152	10-2152	10-2152	10-2152	10-2151	—	10-2151	10-2150	10-2151	10-2150
RE36-10-7489	36-610617	0–0.5	SOIL	10-2152	10-2151	10-2150	10-2152	10-2152	10-2152	10-2152	10-2151	—	10-2151	10-2150	10-2151	10-2150
RE36-10-7490	36-610617	2–3	SOIL	10-2152	10-2151	10-2150	10-2152	10-2152	10-2152	10-2152	10-2151	—	10-2151	10-2150	10-2151	10-2150
RE36-10-7491	36-610618	0–0.5	SOIL	10-2156	10-2155	10-2154	10-2156	10-2156	10-2156	10-2156	10-2155	—	10-2155	10-2154	10-2155	10-2154
RE36-10-7492	36-610618	2–3	SOIL	10-2156	10-2155	10-2154	10-2156	10-2156	10-2156	10-2156	10-2155	—	10-2155	10-2154	10-2155	10-2154
RE36-10-7493	36-610619	0–0.5	SOIL	10-2156	10-2155	10-2154	10-2156	10-2156	10-2156	10-2156	10-2155	—	10-2155	10-2154	10-2155	10-2154
RE36-10-7494	36-610619	2–3	SOIL	10-2156	10-2155	10-2154	10-2156	10-2156	10-2156	10-2156	10-2155	—	10-2155	10-2154	10-2155	10-2154
RE36-10-7495	36-610620	0–0.5	SOIL	10-2156	10-2155	10-2154	10-2156	10-2156	10-2156	10-2156	10-2155	—	10-2155	10-2154	10-2155	10-2154
RE36-10-7496	36-610620	2–3	SOIL	10-2156	10-2155	10-2154	10-2156	10-2156	10-2156	10-2156	10-2155	—	10-2155	10-2154	10-2155	10-2154
RE36-10-7497	36-610621	0–0.5	SOIL	10-2156	10-2155	10-2154	10-2156	10-2156	10-2156	10-2156	10-2155	—	10-2155	10-2154	10-2155	10-2154
RE36-10-7498	36-610621	2–3	SOIL	10-2156	10-2155	10-2154	10-2156	10-2156	10-2156	10-2156	10-2155	—	10-2155	10-2154	10-2155	10-2154
RE36-10-7499	36-610622	0–0.5	SOIL	10-2156	10-2155	10-2154	10-2156	10-2156	10-2156	10-2156	10-2155	—	10-2155	10-2154	10-2155	10-2154
RE36-10-7500	36-610622	2–3	SOIL	10-2156	10-2155	10-2154	10-2156	10-2156	10-2156	10-2156	10-2155	—	10-2155	10-2154	10-2155	10-2154
RE36-10-7501	36-610623	0–0.5	SOIL	10-2197	10-2197	10-2196	10-2197	10-2197	10-2197	10-2197	10-2197	—	10-2197	10-2196	10-2197	10-2196
RE36-10-8273	36-610821[b]	0–0.5	SED	10-2201	10-2200	10-2199	10-2201	10-2201	10-2201	10-2201	10-2200	10-2199	10-2200	10-2199	10-2200	10-2199
RE36-10-8274	36-610821[b]	2–3	SOIL	10-2201	10-2200	10-2199	10-2201	10-2201	10-2201	10-2201	10-2200	10-2199	10-2200	10-2199	10-2200	10-2199
RE36-10-8275	36-610822[b]	0–0.5	SED	10-2201	10-2200	10-2199	10-2201	10-2201	10-2201	10-2201	10-2200	10-2199	10-2200	10-2199	10-2200	10-2199
RE36-10-8276	36-610822[b]	2–3	SED	10-2201	10-2200	10-2199	10-2201	10-2201	10-2201	10-2201	10-2200	10-2199	10-2200	10-2199	10-2200	10-2199
RE36-10-8277	36-610823[b]	0–0.5	SED	10-2201	10-2200	10-2199	10-2201	10-2201	10-2201	10-2201	10-2200	10-2199	10-2200	10-2199	10-2200	10-2199
RE36-10-8278	36-610823[b]	2–3	SED	10-2201	10-2200	10-2199	10-2201	10-2201	10-2201	10-2201	10-2200	10-2199	10-2200	10-2199	10-2200	10-2199
RE36-10-8279	36-610824[b]	0–0.5	SOIL	10-2201	10-2200	10-2199	10-2201	10-2201	10-2201	10-2201	10-2200	10-2199	10-2200	10-2199	10-2200	10-2199
RE36-10-8280	36-610824[b]	2–3	SOIL	10-2201	10-2200	10-2199	10-2201	10-2201	10-2201	10-2201	10-2200	10-2199	10-2200	10-2199	10-2200	10-2199
RE36-10-8281	36-610825[b]	0–1	SOIL	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124

Table 7.4-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	Nitrate	PCB	Perchlorate	SVOC	TAL Metals	VOC
RE36-10-8282	36-610825[b]	2–2.5	QBT3	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124
RE36-10-8283	36-610826[b]	0–0.5	SOIL	10-2141	10-2141	10-2140	10-2141	10-2141	10-2141	10-2141	10-2141	10-2140	10-2141	10-2140	10-2141	10-2140
RE36-10-8284	36-610826[b]	2–3	SOIL	10-2141	10-2141	10-2140	10-2141	10-2141	10-2141	10-2141	10-2141	10-2140	10-2141	10-2140	10-2141	10-2140
RE36-10-8285	36-610827[b]	0–0.5	SOIL	10-2141	10-2141	10-2140	10-2141	10-2141	10-2141	10-2141	10-2141	10-2140	10-2141	10-2140	10-2141	10-2140
RE36-10-8286	36-610827[b]	2–3	SOIL	10-2141	10-2141	10-2140	10-2141	10-2141	10-2141	10-2141	10-2141	10-2140	10-2141	10-2140	10-2141	10-2140
RE36-10-8287	36-610828[b]	0–0.5	SED	10-2201	10-2200	10-2199	10-2201	10-2201	10-2201	10-2201	10-2200	10-2199	10-2200	10-2199	10-2200	10-2199
RE36-10-8288	36-610828[b]	2–3	SOIL	10-2201	10-2200	10-2199	10-2201	10-2201	10-2201	10-2201	10-2200	10-2199	10-2200	10-2199	10-2200	10-2199

Note: Numbers in analyte columns are request numbers.

[a] — = Analysis not requested.

[b] Sample location associated with SWMU C-36-003.

Table 7.4-2
Inorganic Chemicals above BVs at SWMU 36-008

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Lead
Qbt 2, 3, 4 BV				**7340**	**0.5**	**2.79**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**0.5**	**11.2**
Sediment BV				**15400**	**0.83**	**3.98**	**127**	**1.31**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**0.82**	**19.7**
Soil BV				**29200**	**0.83**	**8.17**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**0.5**	**22.3**
Industrial SSL[a]				**1130000**	**454**	**17.7**	**224000**	**2260**	**1120**	**na**[b]	**2920**	**300**[c]	**45400**	**22700**	**800**
Residential SSL[a]				**78100**	**31.3**	**3.9**	**15600**	**156**	**77.9**	**na**	**219**	**23**[c]	**3130**	**1560**	**400**
RE36-10-7403	36-610574	0–0.5	SOIL	—[d]	5.62 (U)	—	—	—	—	—	—	—	23.6	—	—
RE36-10-7404	36-610574	2–2.5	SOIL	—	5.46 (U)	—	—	—	—	—	—	—	—	—	—
RE36-10-7405	36-610575	0–0.5	SOIL	—	1.17 (U)	—	—	—	—	—	—	—	—	0.98	—
RE36-10-7406	36-610575	2–2.5	SOIL	—	1.06 (U)	—	—	—	—	—	—	—	—	—	—
RE36-10-7407	36-610576	0–0.5	SOIL	—	1.18 (U)	—	—	—	—	—	—	—	—	0.572	—
RE36-10-7413	36-610579	0–0.5	FILL	—	1 (U)	—	—	—	0.436 (J)	—	57.8	—	88.2 (J+)	0.868	41.6
RE36-10-7414	36-610579	2–3	QBT3	—	1.11 (U)	—	—	—	—	—	9.78	—	18.5 (J+)	—	11.9
RE36-10-7415	36-610580	0–0.5	SOIL	—	1.71 (U)	—	—	—	—	8490	—	—	—	0.633	—
RE36-10-7416	36-610580	2–3	SOIL	—	1.12 (U)	—	—	—	0.562 (U)	—	—	—	—	—	—
RE36-10-7417	36-610581	0–0.5	SOIL	—	—	—	—	—	0.578 (U)	—	22.2	—	—	—	—
RE36-10-7418	36-610581	2–3	SOIL	—	1.21 (U)	—	—	—	0.603 (U)	—	—	—	—	—	—
RE36-10-7419	36-610582	0–0.5	SOIL	—	1.19 (U)	—	—	—	0.596 (U)	—	—	—	—	—	—
RE36-10-7420	36-610582	2–3	SOIL	—	1.09 (U)	—	—	—	0.545 (U)	—	—	—	—	—	—
RE36-10-7421	36-610583	0–0.5	SOIL	—	1.16 (U)	—	—	—	0.578 (U)	—	—	—	—	—	—
RE36-10-7422	36-610583	2–3	SOIL	—	1.05 (U)	—	—	—	0.524 (U)	—	—	—	—	—	—
RE36-10-7423	36-610584	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-7424	36-610584	2–3	QBT3	11000 (J+)	1.06 (U)	3.2	153	—	—	6350	13.2	5.34	7.32	—	—
RE36-10-7425	36-610585	0–1	SOIL	—	1.14 (U)	—	—	—	—	—	—	—	—	—	—
RE36-10-7426	36-610585	2–3	SOIL	—	1.14 (U)	—	—	—	—	—	—	—	—	—	—
RE36-10-7427	36-610586	0–0.5	SOIL	—	1.42 (U)	—	—	—	—	—	—	—	—	0.659	—
RE36-10-7428	36-610586	2–3	SOIL	—	1.02 (U)	—	—	—	—	—	—	—	—	—	—
RE36-10-7429	36-610587	0–0.5	SOIL	—	1.4 (U)	—	—	—	—	—	—	—	—	—	—
RE36-10-7431	36-610588	0–0.5	SOIL	—	1.13 (U)	—	—	—	0.902 (J)	—	—	—	4870	—	202
RE36-10-7432	36-610588	2–2.5	SOIL	—	1.13 (U)	—	—	—	—	—	—	—	31	—	106
RE36-10-7433	36-610589	0–0.5	SOIL	—	1.34 (U)	—	—	—	0.51 (U)	—	—	—	—	0.577	27.1
RE36-10-7434	36-610589	1–2	SOIL	—	1.29 (U)	—	—	—	—	—	—	—	—	0.534	—
RE36-10-7435	36-610590	0–0.5	SED	—	1.43 (U)	—	—	—	0.713 (U)	—	—	—	—	—	—
RE36-10-7436	36-610590	2–3	SOIL	—	1.24 (U)	—	—	—	0.62 (U)	—	—	—	—	—	—
RE36-10-7437	36-610591	0–0.5	SED	—	1.11 (U)	—	—	—	0.557 (U)	—	—	—	—	0.875	—

Table 7.4-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Lead
Qbt 2, 3, 4 BV				**7340**	**0.5**	**2.79**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**0.5**	**11.2**
Sediment BV				**15400**	**0.83**	**3.98**	**127**	**1.31**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**0.82**	**19.7**
Soil BV				**29200**	**0.83**	**8.17**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**0.5**	**22.3**
Industrial SSL[a]				**1130000**	**454**	**17.7**	**224000**	**2260**	**1120**	**na**[b]	**2920**	**300**[c]	**45400**	**22700**	**800**
Residential SSL[a]				**78100**	**31.3**	**3.9**	**15600**	**156**	**77.9**	**na**	**219**	**23**[c]	**3130**	**1560**	**400**
RE36-10-7438	36-610591	2–3	QBT3	—	0.989 (U)	—	—	—	—	—	12.2	—	—	—	—
RE36-10-7439	36-610592	0–0.5	SOIL	—	1.19 (U)	—	—	—	0.593 (U)	—	—	—	—	—	—
RE36-10-7440	36-610592	2–3	SOIL	—	1.03 (U)	—	—	—	0.514 (U)	—	—	—	—	—	—
RE36-10-7441	36-610593	0–0.5	SOIL	—	1.22 (U)	—	—	—	0.612 (U)	—	—	—	—	—	—
RE36-10-7442	36-610593	2–3	SOIL	—	1.08 (U)	—	—	—	0.539 (U)	—	—	—	—	—	—
RE36-10-7443	36-610594	0–0.5	SOIL	—	1.29 (U)	—	—	—	0.643 (U)	—	—	—	—	—	—
RE36-10-7444	36-610594	2–3	SOIL	—	1.19 (U)	—	—	—	0.596 (U)	—	32.7	11.3	—	—	—
RE36-10-7445	36-610595	0–0.5	SOIL	—	1.27 (U)	—	—	—	—	—	—	—	—	0.621	—
RE36-10-7447	36-610596	0–0.5	SOIL	—	1.25 (U)	—	—	—	0.626 (U)	—	—	—	—	1.78	—
RE36-10-7448	36-610596	2–3	SOIL	—	1.2 (U)	—	—	—	0.602 (U)	—	—	—	—	0.888	—
RE36-10-7449	36-610597	0–0.5	SOIL	—	1.18 (U)	—	—	—	0.591 (U)	—	—	—	—	—	—
RE36-10-7450	36-610597	2–3	SOIL	—	1.1 (U)	—	—	—	0.549 (U)	—	—	—	—	—	—
RE36-10-7451	36-610598	0–0.5	SOIL	—	1.57 (U)	—	—	—	0.786 (U)	—	21.5	—	—	2.88	—
RE36-10-7452	36-610598	2–3	SOIL	—	1.22 (U)	—	—	—	0.612 (U)	—	23.2	—	—	4.24	—
RE36-10-7453	36-610599	0–0.5	SOIL	—	1.76 (U)	—	—	—	0.882 (U)	—	—	—	—	—	—
RE36-10-7454	36-610599	0.5–1	QBT2	—	1.06 (U)	—	—	—	—	—	11.7	—	—	—	—
RE36-10-7455	36-610600	0–0.5	SOIL	—	1.26 (U)	—	—	—	0.63 (U)	—	—	—	—	0.596	—
RE36-10-7456	36-610600	1–2	QBT2	—	1.07 (U)	—	54.2	—	—	—	13.5	—	—	—	—
RE36-10-7457	36-610601	0–0.5	SOIL	—	1.21 (U)	—	—	—	0.607 (U)	—	—	—	—	1.1	—
RE36-10-7458	36-610601	2–3	SOIL	—	1.14 (U)	—	—	—	0.572 (U)	—	—	—	—	—	—
RE36-10-7459	36-610602	0–0.5	SOIL	—	1.2 (U)	—	—	—	0.601 (U)	—	—	—	—	1.31	—
RE36-10-7460	36-610602	1.5–2.6	QBT2	—	1.05 (U)	—	—	2.44	—	—	17.9	—	—	—	—
RE36-10-7461	36-610603	0–0.5	FILL	—	1.06 (U)	—	—	—	—	—	—	—	—	—	—
RE36-10-7462	36-610603	2–3	SOIL	—	1.05 (U)	—	—	—	—	—	—	—	420 (J+)	—	35.4
RE36-10-7463	36-610604	0–0.5	SOIL	—	0.919 (U)	—	—	—	—	—	—	—	—	—	—
RE36-10-7464	36-610604	2–3	SOIL	—	0.998 (U)	—	—	—	—	—	—	—	—	—	—
RE36-10-7465	36-610605	0–0.5	FILL	—	1.19 (U)	—	—	—	0.411 (J)	—	—	—	37.9 (J+)	—	65
RE36-10-7466	36-610605	2–3	FILL	—	1.12 (U)	—	—	—	—	—	—	—	76.5 (J+)	—	45.3
RE36-10-7467	36-610606	0–0.5	SED	—	1.15 (U)	—	—	—	1.23	4780 (J-)	—	—	20.9 (J+)	—	59.7
RE36-10-7468	36-610606	2–2.9	SED	—	1.31 (U)	—	—	—	0.895	—	—	—	15.1 (J+)	—	53.5

Table 7.4-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Lead
Qbt 2, 3, 4 BV				**7340**	**0.5**	**2.79**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**0.5**	**11.2**
Sediment BV				**15400**	**0.83**	**3.98**	**127**	**1.31**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**0.82**	**19.7**
Soil BV				**29200**	**0.83**	**8.17**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**0.5**	**22.3**
Industrial SSL[a]				**1130000**	**454**	**17.7**	**224000**	**2260**	**1120**	**na**[b]	**2920**	**300**[c]	**45400**	**22700**	**800**
Residential SSL[a]				**78100**	**31.3**	**3.9**	**15600**	**156**	**77.9**	**na**	**219**	**23**[c]	**3130**	**1560**	**400**
RE36-10-7469	36-610607	0–0.5	SED	—	1.09 (U)	—	—	—	—	—	—	—	33.5 (J+)	—	75.7
RE36-10-7470	36-610607	2–3	SOIL	—	1.09 (U)	—	—	—	—	—	—	—	16.1 (J+)	—	23.2
RE36-10-7471	36-610608	0–0.8	FILL	—	1.43 (U)	—	—	—	0.642 (J)	—	99	—	33.3 (J+)	—	26.7
RE36-10-7472	36-610608	2–3	FILL	—	1.25 (U)	—	—	—	—	—	—	—	—	—	—
RE36-10-7473	36-610609	0–0.5	SED	—	1.27 (U)	—	—	—	—	6260 (J-)	15.6	—	12.8 (J+)	—	—
RE36-10-7475	36-610610	0–0.5	SED	—	1.3 (U)	—	—	—	0.554 (J)	—	—	—	87.4 (J+)	—	39.4
RE36-10-7476	36-610610	2–3	SOIL	—	1.19 (U)	—	—	—	—	—	—	—	—	—	—
RE36-10-7477	36-610611	0–0.5	SOIL	—	1.21 (U)	—	—	—	0.607 (U)	—	—	—	—	—	—
RE36-10-7478	36-610611	2–3	SOIL	—	1.1 (U)	—	—	—	0.549 (U)	—	—	—	—	—	—
RE36-10-7479	36-610612	0–0.5	SOIL	—	1.36 (U)	—	—	—	0.679 (U)	—	22	—	—	—	—
RE36-10-7480	36-610612	2–3	SOIL	—	1.1 (U)	—	—	—	0.552 (U)	—	—	—	—	—	—
RE36-10-7481	36-610613	0–0.5	SOIL	—	—	—	—	—	—	—	20	—	—	—	—
RE36-10-7482	36-610613	2–3	SOIL	—	1.1 (U)	—	—	—	0.579 (U)	—	47.3	—	—	—	—
RE36-10-7483	36-610614	0–0.5	SOIL	—	1.31 (U)	—	—	—	0.654 (U)	—	—	—	—	—	—
RE36-10-7484	36-610614	2–3	SOIL	—	1.15 (U)	—	—	—	0.577 (U)	—	—	—	—	—	—
RE36-10-7485	36-610615	0–0.5	SOIL	—	1.34 (U)	—	—	—	0.669 (U)	—	—	—	—	—	—
RE36-10-7486	36-610615	2–3	SOIL	—	—	—	—	—	0.632 (U)	—	20.6	—	—	—	—
RE36-10-7487	36-610616	0–0.5	SOIL	—	1.32 (U)	—	—	—	0.659 (U)	—	—	—	—	—	—
RE36-10-7488	36-610616	2–3	SOIL	—	1.06 (U)	—	—	—	0.529 (U)	—	—	—	—	—	—
RE36-10-7489	36-610617	0–0.5	SOIL	—	1.42 (U)	—	—	—	0.709 (U)	—	29.9	—	—	—	—
RE36-10-7490	36-610617	2–3	SOIL	—	1.2 (U)	—	—	—	0.601 (U)	—	21.4	—	—	—	—
RE36-10-7491	36-610618	0–0.5	SOIL	—	1.53 (U)	—	—	—	0.764 (U)	—	—	—	—	0.697	—
RE36-10-7492	36-610618	2–3	SOIL	—	1.2 (U)	—	—	—	0.598 (U)	—	—	—	—	—	—
RE36-10-7493	36-610619	0–0.5	SOIL	—	1.3 (U)	—	—	—	0.648 (U)	—	—	—	—	0.591	—
RE36-10-7494	36-610619	2–3	SOIL	—	1.13 (U)	—	—	—	0.564 (U)	—	—	—	—	—	—
RE36-10-7495	36-610620	0–0.5	SOIL	—	1.26 (U)	—	—	—	—	—	—	—	—	—	—
RE36-10-7496	36-610620	2–3	SOIL	—	1.02 (U)	—	—	—	0.512 (U)	—	—	—	—	—	—
RE36-10-7497	36-610621	0–0.5	SOIL	—	1.46 (U)	—	—	—	0.73 (U)	—	—	—	—	—	—
RE36-10-7498	36-610621	2–3	SOIL	—	1.24 (U)	—	—	—	—	—	—	—	—	—	—
RE36-10-7499	36-610622	0–0.5	SOIL	—	1.18 (U)	—	—	—	0.588 (U)	—	—	—	—	—	—

Table 7.4-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Cyanide (Total)	Lead
Qbt 2, 3, 4 BV				**7340**	**0.5**	**2.79**	**46**	**1.21**	**1.63**	**2200**	**7.14**	**3.14**	**4.66**	**0.5**	**11.2**
Sediment BV				**15400**	**0.83**	**3.98**	**127**	**1.31**	**0.4**	**4420**	**10.5**	**4.73**	**11.2**	**0.82**	**19.7**
Soil BV				**29200**	**0.83**	**8.17**	**295**	**1.83**	**0.4**	**6120**	**19.3**	**8.64**	**14.7**	**0.5**	**22.3**
Industrial SSL[a]				**1130000**	**454**	**17.7**	**224000**	**2260**	**1120**	**na**[b]	**2920**	**300**[c]	**45400**	**22700**	**800**
Residential SSL[a]				**78100**	**31.3**	**3.9**	**15600**	**156**	**77.9**	**na**	**219**	**23**[c]	**3130**	**1560**	**400**
RE36-10-7500	36-610622	2–3	SOIL	—	1.18 (U)	—	—	—	0.588 (U)	—	—	—	—	—	—
RE36-10-7501	36-610623	0–0.5	SOIL	—	1.21 (U)	—	—	—	0.607 (U)	—	—	—	—	—	—
RE36-10-8273	36-610821[e]	0–0.5	SED	—	1.3 (U)	—	—	—	0.648 (U)	—	27.8	—	—	—	—
RE36-10-8274	36-610821[e]	2–3	SOIL	—	0.955 (U)	—	—	—	0.478 (U)	—	—	—	—	—	—
RE36-10-8275	36-610822[e]	0–0.5	SED	—	1.49 (U)	—	—	—	0.745 (U)	—	—	—	—	—	—
RE36-10-8276	36-610822[e]	2–3	SED	—	1.14 (U)	—	—	—	0.568 (U)	—	10.7	—	—	—	—
RE36-10-8277	36-610823[e]	0–0.5	SED	—	1.22 (U)	—	—	—	0.609 (U)	—	11.3	—	—	—	—
RE36-10-8278	36-610823[e]	2–3	SED	—	1.05 (U)	—	—	—	0.524 (U)	—	—	—	—	—	—
RE36-10-8279	36-610824[e]	0–0.5	SOIL	—	1 (U)	—	—	—	0.542	—	101	—	18.5	0.838	—
RE36-10-8280	36-610824[e]	2–3	SOIL	—	1.07 (U)	—	—	—	1.09	—	90.2	—	27.8	1.12	—
RE36-10-8281	36-610825[e]	0–1	SOIL	—	1.35 (U)	—	—	—	1.36	11700	28.5	—	2720	1.65	144
RE36-10-8282	36-610825[e]	2–2.5	QBT3	—	1.06 (U)	—	—	—	—	—	30.4	—	309	—	35.7
RE36-10-8283	36-610826[e]	0–0.5	SOIL	—	1.04 (U)	—	—	—	0.469 (J)	—	108	—	—	2.18	—
RE36-10-8284	36-610826[e]	2–3	SOIL	—	1.02 (U)	—	—	—	—	—	70.9	—	—	0.825	—
RE36-10-8285	36-610827[e]	0–0.5	SOIL	—	1.36 (U)	—	—	—	—	—	192	—	15.3	1.57	—
RE36-10-8286	36-610827[e]	2–3	SOIL	—	0.986 (U)	—	—	—	3.35	—	97.9	—	25.2	1.39	—
RE36-10-8287	36-610828[e]	0–0.5	SED	—	1.4 (U)	—	—	—	0.7 (U)	4470 (J+)	21.1	—	—	—	—
RE36-10-8288	36-610828[e]	2–3	SOIL	—	1.19 (U)	—	—	—	0.595 (U)	—	—	—	—	—	—

Table 7.4-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Magnesium	Manganese	Mercury	Nickel	Nitrate	Perchlorate	Selenium	Silver	Sodium	Uranium	Vanadium	Zinc
Qbt 2, 3, 4 BV				**1690**	**482**	**0.1**	**6.58**	**na**	**na**	**0.3**	**1**	**2770**	**2.4**	**17**	**63.5**
Sediment BV				**2370**	**543**	**0.1**	**9.38**	**na**	**na**	**0.3**	**1**	**1470**	**2.22**	**19.7**	**60.2**
Soil BV				**4610**	**671**	**0.1**	**15.4**	**na**	**na**	**1.52**	**1**	**915**	**1.82**	**39.6**	**48.8**
Industrial SSL[a]				**na**	**145000**	**310**[c]	**22700**	**1820000**	**795**	**5680**	**5680**	**na**	**3410**	**5680**	**341000**
Residential SSL[a]				**na**	**10700**	**23**[c]	**1560**	**125000**	**54.8**	**391**	**391**	**na**	**235**	**391**	**23500**
RE36-10-7403	36-610574	0–0.5	SOIL	—	—	0.169	—	15.5	0.0591	—	—	—	—	—	67.9
RE36-10-7404	36-610574	2–2.5	SOIL	—	—	0.118	—	17.7	0.0882	—	—	—	—	—	51.2
RE36-10-7405	36-610575	0–0.5	SOIL	—	—	—	—	1.61	0.0136	—	—	—	—	—	51.4
RE36-10-7406	36-610575	2–2.5	SOIL	—	—	—	—	—	0.0124	—	—	—	—	—	—
RE36-10-7407	36-610576	0–0.5	SOIL	—	—	0.706	—	4.25	0.0541	—	—	—	—	—	72.8
RE36-10-7413	36-610579	0–0.5	FILL	—	—	—	—	—	—	—	—	—	—	—	109
RE36-10-7414	36-610579	2–3	QBT3	—	—	—	—	—	—	1.24 (U)	—	—	—	—	—
RE36-10-7415	36-610580	0–0.5	SOIL	—	—	—	—	12.4	0.00104 (J)	1.69 (U)	—	—	3.55	—	—
RE36-10-7416	36-610580	2–3	SOIL	—	—	—	—	2.97	—	—	—	—	—	—	—
RE36-10-7417	36-610581	0–0.5	SOIL	—	—	—	—	1.34	—	—	—	—	—	—	61.7
RE36-10-7418	36-610581	2–3	SOIL	—	—	—	—	1.47	—	—	—	—	—	—	—
RE36-10-7419	36-610582	0–0.5	SOIL	—	—	0.302	—	5.29	0.0188	—	—	—	—	—	—
RE36-10-7420	36-610582	2–3	SOIL	—	—	—	—	2.73	0.0219	—	—	—	—	—	—
RE36-10-7421	36-610583	0–0.5	SOIL	—	—	—	—	1.39	0.00181 (J)	—	—	—	—	—	—
RE36-10-7422	36-610583	2–3	SOIL	—	—	—	—	1.01	0.0015 (J)	—	—	—	—	—	—
RE36-10-7423	36-610584	0–0.5	SOIL	—	—	—	—	—	0.00128 (J+)	2.03 (U)	—	—	4.63	—	—
RE36-10-7424	36-610584	2–3	QBT3	2590	—	—	9.22	1.33 (J)	—	1.01 (U)	—	—	—	26.2	—
RE36-10-7425	36-610585	0–1	SOIL	—	—	—	—	29.9	0.00506	—	—	—	—	—	—
RE36-10-7426	36-610585	2–3	SOIL	—	—	—	—	—	0.00319	—	—	—	—	—	—
RE36-10-7427	36-610586	0–0.5	SOIL	—	—	—	—	12.7 (J)	0.00215 (J+)	—	—	—	2.97	—	—
RE36-10-7428	36-610586	2–3	SOIL	—	—	—	—	2.08 (J)	0.00113 (J+)	—	—	—	—	—	—
RE36-10-7429	36-610587	0–0.5	SOIL	—	—	—	—	4.09	0.00499	—	—	—	1.85	—	200
RE36-10-7431	36-610588	0–0.5	SOIL	—	—	14.8	—	—	0.00912	—	1.15	—	3.1	—	936
RE36-10-7432	36-610588	2–2.5	SOIL	—	—	10.3	—	—	0.0175	—	—	—	1.88	—	134
RE36-10-7433	36-610589	0–0.5	SOIL	—	—	—	—	2.04	0.0029	—	—	—	3.88	—	—
RE36-10-7434	36-610589	1–2	SOIL	—	—	—	—	1.84	0.00221 (J)	—	—	—	—	—	—
RE36-10-7435	36-610590	0–0.5	SED	—	646	—	—	1.58	—	1.33 (U)	—	—	—	—	—
RE36-10-7436	36-610590	2–3	SOIL	—	—	—	—	1.25	0.00143 (J)	—	—	—	—	—	—
RE36-10-7437	36-610591	0–0.5	SED	—	—	—	—	4.61	0.0018 (J)	1.18 (U)	—	—	—	—	—
RE36-10-7438	36-610591	2–3	QBT3	—	—	—	—	1.03	0.000633 (J)	1.02 (U)	—	—	—	—	—
RE36-10-7439	36-610592	0–0.5	SOIL	—	—	—	—	—	0.000991 (J)	—	—	—	—	—	—

Table 7.4-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Magnesium	Manganese	Mercury	Nickel	Nitrate	Perchlorate	Selenium	Silver	Sodium	Uranium	Vanadium	Zinc
Qbt 2, 3, 4 BV				**1690**	**482**	**0.1**	**6.58**	**na**	**na**	**0.3**	**1**	**2770**	**2.4**	**17**	**63.5**
Sediment BV				**2370**	**543**	**0.1**	**9.38**	**na**	**na**	**0.3**	**1**	**1470**	**2.22**	**19.7**	**60.2**
Soil BV				**4610**	**671**	**0.1**	**15.4**	**na**	**na**	**1.52**	**1**	**915**	**1.82**	**39.6**	**48.8**
Industrial SSL[a]				**na**	**145000**	**310**[c]	**22700**	**1820000**	**795**	**5680**	**5680**	**na**	**3410**	**5680**	**341000**
Residential SSL[a]				**na**	**10700**	**23**[c]	**1560**	**125000**	**54.8**	**391**	**391**	**na**	**235**	**391**	**23500**
RE36-10-7440	36-610592	2–3	SOIL	—	—	—	—	1.17	0.000658 (J)	—	—	—	—	—	—
RE36-10-7441	36-610593	0–0.5	SOIL	—	—	0.109	—	3.29	0.00268	—	—	—	2.68	—	—
RE36-10-7442	36-610593	2–3	SOIL	—	—	—	—	1.24	0.00164 (J)	—	—	—	—	—	—
RE36-10-7443	36-610594	0–0.5	SOIL	—	—	—	—	4.83	—	—	—	—	—	—	—
RE36-10-7444	36-610594	2–3	SOIL	—	—	—	—	1.86	0.000673 (J)	—	—	—	—	—	—
RE36-10-7445	36-610595	0–0.5	SOIL	—	692	0.199	—	2.64	0.0319	—	—	—	—	—	53.7
RE36-10-7447	36-610596	0–0.5	SOIL	—	—	—	—	7.51	0.000994 (J)	—	—	—	—	—	—
RE36-10-7448	36-610596	2–3	SOIL	—	—	—	—	4.29	—	—	—	—	—	—	—
RE36-10-7449	36-610597	0–0.5	SOIL	—	—	—	—	1.95	0.000714 (J)	—	—	—	—	—	—
RE36-10-7450	36-610597	2–3	SOIL	—	—	—	—	1.22	0.000672 (J)	—	—	—	—	—	—
RE36-10-7451	36-610598	0–0.5	SOIL	—	—	—	—	1.69	—	—	—	—	—	—	—
RE36-10-7452	36-610598	2–3	SOIL	—	—	—	—	1.56	—	—	—	—	—	—	—
RE36-10-7453	36-610599	0–0.5	SOIL	—	—	—	—	3.42	—	1.74 (U)	—	—	—	—	55.5
RE36-10-7454	36-610599	0.5–1	QBT2	—	—	—	—	1.47	—	1.04 (U)	—	—	—	—	—
RE36-10-7455	36-610600	0–0.5	SOIL	—	—	—	—	2.39	0.00206 (J)	—	—	—	2.34	—	—
RE36-10-7456	36-610600	1–2	QBT2	—	—	—	—	1.39	0.00178 (J)	1.08 (U)	—	—	—	—	—
RE36-10-7457	36-610601	0–0.5	SOIL	—	—	—	—	2.52	0.00433	—	—	—	—	—	—
RE36-10-7458	36-610601	2–3	SOIL	—	—	—	—	—	0.00384	—	—	—	—	—	—
RE36-10-7459	36-610602	0–0.5	SOIL	—	679	—	—	1.99	0.00414	—	—	—	—	—	—
RE36-10-7460	36-610602	1.5–2.6	QBT2	—	—	—	—	1.68	0.00241	1.09 (U)	—	—	—	—	—
RE36-10-7461	36-610603	0–0.5	FILL	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-7462	36-610603	2–3	SOIL	—	—	—	—	—	—	—	—	—	—	—	188
RE36-10-7463	36-610604	0–0.5	SOIL	—	—	—	—	2.87 (J-)	0.000689 (J)	—	—	—	—	—	—
RE36-10-7464	36-610604	2–3	SOIL	—	—	—	—	1.56 (J-)	0.000602 (J)	—	—	—	—	—	—
RE36-10-7465	36-610605	0–0.5	FILL	—	—	—	—	—	—	—	—	—	2.35	—	80.8
RE36-10-7466	36-610605	2–3	FILL	—	—	0.469	—	—	—	—	—	—	—	—	69.4
RE36-10-7467	36-610606	0–0.5	SED	—	—	1.68	—	2.66 (J-)	0.00072 (J)	1.07 (U)	—	—	—	—	—
RE36-10-7468	36-610606	2–2.9	SED	—	—	1.75	—	—	—	1.33 (U)	—	—	—	—	—
RE36-10-7469	36-610607	0–0.5	SED	—	—	25	12.2 (J)	19.9 (J-)	0.00905	1.13 (U)	1.5	—	—	—	70.6
RE36-10-7470	36-610607	2–3	SOIL	—	—	22	—	2.91 (J-)	0.00222 (J)	—	—	—	—	—	59.6
RE36-10-7471	36-610608	0–0.8	FILL	—	—	0.421	—	—	—	—	—	—	—	—	96.7

Table 7.4-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Magnesium	Manganese	Mercury	Nickel	Nitrate	Perchlorate	Selenium	Silver	Sodium	Uranium	Vanadium	Zinc
Qbt 2, 3, 4 BV				**1690**	**482**	**0.1**	**6.58**	**na**	**na**	**0.3**	**1**	**2770**	**2.4**	**17**	**63.5**
Sediment BV				**2370**	**543**	**0.1**	**9.38**	**na**	**na**	**0.3**	**1**	**1470**	**2.22**	**19.7**	**60.2**
Soil BV				**4610**	**671**	**0.1**	**15.4**	**na**	**na**	**1.52**	**1**	**915**	**1.82**	**39.6**	**48.8**
Industrial SSL[a]				**na**	**145000**	**310**[c]	**22700**	**1820000**	**795**	**5680**	**5680**	**na**	**3410**	**5680**	**341000**
Residential SSL[a]				**na**	**10700**	**23**[c]	**1560**	**125000**	**54.8**	**391**	**391**	**na**	**235**	**391**	**23500**
RE36-10-7472	36-610608	2–3	FILL	—	—	0.111	—	—	—	—	—	—	—	—	50.7
RE36-10-7473	36-610609	0–0.5	SED	—	—	2.32	—	2.25 (J-)	0.0107	1.09 (U)	—	—	—	—	—
RE36-10-7475	36-610610	0–0.5	SED	—	—	0.862	—	—	0.00347	1.36 (U)	—	—	—	—	126
RE36-10-7476	36-610610	2–3	SOIL	—	—	0.146	—	—	0.002 (J)	—	—	—	—	—	51.8
RE36-10-7477	36-610611	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-7478	36-610611	2–3	SOIL	—	—	—	—	2.23	—	—	—	—	—	—	—
RE36-10-7479	36-610612	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-7480	36-610612	2–3	SOIL	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-7481	36-610613	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	2.78	—	—
RE36-10-7482	36-610613	2–3	SOIL	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-7483	36-610614	0–0.5	SOIL	—	—	—	—	1.96	0.000724 (J)	—	—	—	2.43	—	—
RE36-10-7484	36-610614	2–3	SOIL	—	—	—	—	1.7	0.000817 (J)	—	—	—	—	—	—
RE36-10-7485	36-610615	0–0.5	SOIL	—	—	—	—	—	0.00137 (J)	—	—	—	—	—	—
RE36-10-7486	36-610615	2–3	SOIL	—	—	—	—	—	0.00173 (J)	—	—	—	2.21	—	—
RE36-10-7487	36-610616	0–0.5	SOIL	—	—	—	—	6.15	—	—	—	—	—	—	—
RE36-10-7488	36-610616	2–3	SOIL	—	—	—	—	2.67	0.000627 (J)	—	—	—	—	—	—
RE36-10-7489	36-610617	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-7490	36-610617	2–3	SOIL	—	—	—	—	1.45	—	—	—	—	—	—	—
RE36-10-7491	36-610618	0–0.5	SOIL	—	—	—	—	1.93	0.00264 (J)	1.54 (U)	—	—	4.12	—	—
RE36-10-7492	36-610618	2–3	SOIL	—	—	—	—	5.34	0.00118 (J)	—	—	—	—	—	—
RE36-10-7493	36-610619	0–0.5	SOIL	—	893	0.186	—	—	0.00931	—	—	—	—	—	—
RE36-10-7494	36-610619	2–3	SOIL	—	—	—	—	—	0.00604	—	—	—	—	—	51.5
RE36-10-7495	36-610620	0–0.5	SOIL	—	—	0.135	—	1.81	0.00218 (J)	—	—	—	1.88	—	—
RE36-10-7496	36-610620	2–3	SOIL	—	—	—	—	5.04	0.00205 (J)	—	—	—	—	—	—
RE36-10-7497	36-610621	0–0.5	SOIL	—	—	—	—	2.91	—	—	—	—	2.43	—	—
RE36-10-7498	36-610621	2–3	SOIL	—	—	—	—	1.9	—	—	—	—	—	—	—
RE36-10-7499	36-610622	0–0.5	SOIL	—	—	—	—	1.55	—	—	—	—	3.09	—	—
RE36-10-7500	36-610622	2–3	SOIL	—	—	—	—	2.61	—	—	—	—	—	—	—
RE36-10-7501	36-610623	0–0.5	SOIL	—	—	—	—	—	0.00775	—	—	—	—	—	—
RE36-10-8273	36-610821[e]	0–0.5	SED	—	576	0.232	—	4.43	0.000991 (J)	1.39 (U)	4.32	—	3.89	—	—
RE36-10-8274	36-610821[e]	2–3	SOIL	—	—	—	—	2.43	0.000926 (J)	—	2.96	—	—	—	—

Table 7.4-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Magnesium	Manganese	Mercury	Nickel	Nitrate	Perchlorate	Selenium	Silver	Sodium	Uranium	Vanadium	Zinc
Qbt 2, 3, 4 BV				**1690**	**482**	**0.1**	**6.58**	**na**	**na**	**0.3**	**1**	**2770**	**2.4**	**17**	**63.5**
Sediment BV				**2370**	**543**	**0.1**	**9.38**	**na**	**na**	**0.3**	**1**	**1470**	**2.22**	**19.7**	**60.2**
Soil BV				**4610**	**671**	**0.1**	**15.4**	**na**	**na**	**1.52**	**1**	**915**	**1.82**	**39.6**	**48.8**
Industrial SSL[a]				**na**	**145000**	**310**[c]	**22700**	**1820000**	**795**	**5680**	**5680**	**na**	**3410**	**5680**	**341000**
Residential SSL[a]				**na**	**10700**	**23**[c]	**1560**	**125000**	**54.8**	**391**	**391**	**na**	**235**	**391**	**23500**
RE36-10-8275	36-610822[e]	0–0.5	SED	—	—	0.109	—	—	—	1.56 (U)	—	—	2.26	—	—
RE36-10-8276	36-610822[e]	2–3	SED	—	—	—	—	1.73	0.000642 (J)	1.1 (U)	—	—	—	—	—
RE36-10-8277	36-610823[e]	0–0.5	SED	—	—	—	—	2.23	—	1.34 (U)	—	—	—	—	—
RE36-10-8278	36-610823[e]	2–3	SED	—	—	—	—	1.44	—	1.04 (U)	—	—	—	—	—
RE36-10-8279	36-610824[e]	0–0.5	SOIL	—	—	0.582	—	54.1	0.027	—	348	—	5.2	—	89.7 (J+)
RE36-10-8280	36-610824[e]	2–3	SOIL	—	—	0.815	—	20.4	0.0216	—	338	—	5.96	—	74.9 (J+)
RE36-10-8281	36-610825[e]	0–1	SOIL	—	—	0.297	53	19.9	0.0304	—	32.4	—	2.23	—	1320
RE36-10-8282	36-610825[e]	2–2.5	QBT3	—	—	0.131	—	4.07	0.00801	0.635 (J-)	85.9	—	—	—	235
RE36-10-8283	36-610826[e]	0–0.5	SOIL	—	—	0.366	—	540	0.688	—	215	1000	5.15	—	58.3
RE36-10-8284	36-610826[e]	2–3	SOIL	—	—	0.309	—	131	0.212	—	199	—	4.36	—	49.5
RE36-10-8285	36-610827[e]	0–0.5	SOIL	—	—	0.461	—	1.92	0.0126	—	102	—	10.4	—	74.2
RE36-10-8286	36-610827[e]	2–3	SOIL	—	—	0.254	—	—	0.0117	—	302	—	4.73	—	53.2
RE36-10-8287	36-610828[e]	0–0.5	SED	—	860	0.139	—	3.36	0.00715	1.38 (U)	6.49	—	—	—	—
RE36-10-8288	36-610828[e]	2–3	SOIL	—	—	—	—	5.08	0.0111	—	1.03	—	—	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] SSLs from NMED 2009, 108070, unless otherwise noted.

[b] na = Not available.

[c] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[d] — = Not detected or not detected above BV.

[e] Sample location associated with SWMU C-36-003.

Table 7.4-3
Organic Chemicals Detected at SWMU 36-008

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Bis(2-ethylhexyl)phthalate	Bromodichloromethane	Butylbenzylphthalate
Industrial SSL[a]				**36700**	**18300**[b]	**851000**	**183000**	**8.26**	**8.26**	**23.4**	**2.34**	**23.4**	**18300**[b]	**234**	**2500000**	**1370**	**29.2**	**9100**[c]
Residential SSL[a]				**3440**	**1720**[b]	**67500**	**17200**	**1.12**	**2.22**	**6.21**	**0.621**	**6.21**	**1720**[b]	**62.1**	**240000**	**347**	**5.25**	**2600**[c]
RE36-10-7403	36-610574	0–0.5	SOIL	—[d]	—	—	0.0484 (J)	0.0151	0.0103	0.242	0.234	0.705	0.153 (J)	—	—	—	—	—
RE36-10-7404	36-610574	2–2.5	SOIL	—	—	—	0.042 (J)	0.015	0.0117	0.19	0.194	0.414	0.123	—	—	—	—	—
RE36-10-7405	36-610575	0–0.5	SOIL	—	—	—	—	0.0079	0.0057	0.0416 (J)	0.0348 (J)	0.0772 (J)	—	—	—	—	—	—
RE36-10-7406	36-610575	2–2.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-7407	36-610576	0–0.5	SOIL	—	—	—	—	0.0185	0.013	0.0272 (J)	0.0201 (J)	—	—	—	0.621 (J)	—	—	—
RE36-10-7413	36-610579	0–0.5	FILL	0.765	0.0202 (J)	—	1.49	0.191	0.116	4.03	3.7	6.62	1.79	—	—	—	—	—
RE36-10-7414	36-610579	2–3	QBT3	0.0149 (J)	—	—	0.0248 (J)	0.0197	0.0159	0.0898	0.0846	0.156	0.0679 (J)	—	—	0.231 (J)	—	—
RE36-10-7415	36-610580	0–0.5	SOIL	—	—	—	—	0.0054 (J)	—	—	—	—	—	—	—	—	—	—
RE36-10-7417	36-610581	0–0.5	SOIL	—	—	—	—	0.0043	—	—	—	—	—	—	—	—	—	—
RE36-10-7418	36-610581	2–3	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-7419	36-610582	0–0.5	SOIL	—	—	—	—	0.0048	—	0.0171 (J)	—	0.0174 (J)	—	—	—	—	—	—
RE36-10-7420	36-610582	2–3	SOIL	—	—	—	—	—	—	—	—	—	—	—	0.245 (J)	—	—	—
RE36-10-7421	36-610583	0–0.5	SOIL	—	—	0.00474 (J+)	—	0.0444	0.034	0.0199 (J)	—	—	—	—	0.702 (J)	—	—	—
RE36-10-7422	36-610583	2–3	SOIL	—	—	0.00228 (J)	—	0.0043	0.0031 (J)	—	—	—	—	—	0.427 (J)	—	—	—
RE36-10-7423	36-610584	0–0.5	SOIL	—	—	0.0236	—	NA[e]	NA	—	—	—	—	—	—	—	—	—
RE36-10-7425	36-610585	0–1	SOIL	0.0353 (J)	—	—	0.709	NA	NA	6.25	6.52	17.8	2.72	—	—	—	—	—
RE36-10-7426	36-610585	2–3	SOIL	—	—	—	0.171	NA	NA	1.61	1.51	2.53	0.623	—	—	—	—	—
RE36-10-7427	36-610586	0–0.5	SOIL	—	—	0.0095 (J+)	—	NA	NA	—	—	0.0236 (J)	—	—	—	—	—	—
RE36-10-7429	36-610587	0–0.5	SOIL	—	—	—	—	NA	NA	0.0488 (J)	0.0371 (J)	0.074 (J)	—	—	—	—	—	—
RE36-10-7431	36-610588	0–0.5	SOIL	3.43	0.0638 (J)	—	5.03	NA	NA	11.4	10.1	19.6	4.88	—	—	0.436 (J)	—	—
RE36-10-7432	36-610588	2–2.5	SOIL	0.563	—	—	0.958	NA	NA	2.55	2.08	4.12	0.802	—	—	0.178 (J)	—	—
RE36-10-7433	36-610589	0–0.5	SOIL	0.0613 (J)	—	—	0.0889 (J)	NA	NA	0.297	0.263	0.517	0.134	—	1.56 (J)	—	—	—
RE36-10-7434	36-610589	1–2	SOIL	—	—	—	—	NA	NA	0.0793 (J)	0.061 (J)	0.119	0.0374 (J)	—	1.65 (J)	—	—	—
RE36-10-7435	36-610590	0–0.5	SED	—	—	0.00429 (J+)	—	NA	NA	—	—	—	—	—	—	—	—	—
RE36-10-7436	36-610590	2–3	SOIL	—	—	0.00332 (J)	—	NA	NA	—	—	—	—	—	—	—	—	—
RE36-10-7437	36-610591	0–0.5	SED	—	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE36-10-7438	36-610591	2–3	QBT3	—	—	0.00261 (J)	—	NA	NA	—	—	—	—	—	—	—	—	—
RE36-10-7439	36-610592	0–0.5	SOIL	—	—	0.00474 (J)	0.0239 (J)	NA	NA	0.0749	0.0845	0.128	0.0596 (J)	0.0528	0.562 (J)	—	—	—
RE36-10-7440	36-610592	2–3	SOIL	—	—	0.00358 (J+)	—	NA	NA	—	—	—	—	—	—	—	—	—
RE36-10-7441	36-610593	0–0.5	SOIL	—	—	0.00442 (J+)	—	NA	NA	—	—	—	—	—	—	—	—	—

Table 7.4-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Bis(2-ethylhexyl)phthalate	Bromodichloromethane	Butylbenzylphthalate
Industrial SSL[a]				**36700**	**18300[b]**	**851000**	**183000**	**8.26**	**8.26**	**23.4**	**2.34**	**23.4**	**18300[b]**	**234**	**2500000**	**1370**	**29.2**	**9100[c]**
Residential SSL[a]				**3440**	**1720[b]**	**67500**	**17200**	**1.12**	**2.22**	**6.21**	**0.621**	**6.21**	**1720[b]**	**62.1**	**240000**	**347**	**5.25**	**2600[c]**
RE36-10-7445	36-610595	0–0.5	SOIL	—	—	0.00328 (J+)	—	NA	NA	0.027 (J)	—	—	—	—	0.602 (J)	—	—	—
RE36-10-7451	36-610598	0–0.5	SOIL	—	—	0.00286 (J+)	—	NA	NA	—	—	—	—	—	—	—	—	—
RE36-10-7452	36-610598	2–3	SOIL	—	—	0.00614 (J+)	—	NA	NA	—	—	—	—	—	—	—	—	—
RE36-10-7453	36-610599	0–0.5	SOIL	—	—	—	—	NA	NA	0.0521 (J)	0.0554 (J)	0.0752	—	0.0324 (J)	—	—	—	—
RE36-10-7455	36-610600	0–0.5	SOIL	—	—	—	—	NA	NA	0.036 (J)	0.0365 (J)	0.0507	—	—	0.627 (J)	—	—	—
RE36-10-7456	36-610600	1–2	QBT2	—	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE36-10-7457	36-610601	0–0.5	SOIL	—	—	—	0.0204 (J)	NA	NA	0.072	0.0741	0.148	0.039 (J)	—	0.615 (J)	—	—	—
RE36-10-7458	36-610601	2–3	SOIL	—	—	—	—	NA	NA	0.0267 (J)	—	0.0301 (J)	—	—	0.568 (J)	—	—	—
RE36-10-7459	36-610602	0–0.5	SOIL	—	—	—	—	NA	NA	0.0278 (J)	0.0247 (J)	0.0439	—	—	0.552 (J)	—	—	—
RE36-10-7460	36-610602	1.5–2.6	QBT2	—	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE36-10-7461	36-610603	0–0.5	FILL	0.0329 (J)	—	—	0.0647	NA	NA	0.242	0.219	0.413	0.178 (J)	—	—	—	—	—
RE36-10-7462	36-610603	2–3	SOIL	—	—	—	0.0187 (J)	NA	NA	0.0667	0.0577	0.108	0.055 (J)	—	—	—	—	—
RE36-10-7463	36-610604	0–0.5	SOIL	0.0129 (J)	—	—	0.029 (J)	NA	NA	0.107	0.113	0.207	0.0818 (J)	—	—	—	—	—
RE36-10-7464	36-610604	2–3	SOIL	—	—	—	—	NA	NA	0.0227 (J)	0.0209 (J)	0.0353 (J)	0.0167 (J)	—	—	—	—	—
RE36-10-7465	36-610605	0–0.5	FILL	1.04 (J-)	0.0243 (J-)	—	2.29 (J-)	NA	NA	5.16 (J-)	4.87 (J-)	8.12 (J-)	2.67 (J-)	—	—	0.112 (J-)	—	—
RE36-10-7466	36-610605	2–3	FILL	0.108	—	—	0.205	NA	NA	0.604	0.559	1.01	0.36	—	—	—	—	—
RE36-10-7467	36-610606	0–0.5	SED	0.0604	—	—	0.0213 (J)	NA	NA	0.078	0.0768	0.144	0.0562	—	—	—	—	—
RE36-10-7468	36-610606	2–2.9	SED	—	—	—	—	NA	NA	0.0269 (J)	0.0249 (J)	0.035 (J)	0.0254 (J)	—	—	—	—	—
RE36-10-7469	36-610607	0–0.5	SED	—	—	—	0.0127 (J)	NA	NA	0.0424	0.0386	0.0719	0.0355 (J)	—	—	—	—	—
RE36-10-7470	36-610607	2–3	SOIL	0.0931	—	—	0.158	NA	NA	0.237	0.208	0.325	0.161 (J)	—	—	—	—	—
RE36-10-7471	36-610608	0–0.8	FILL	0.556	—	—	1.02	NA	NA	1.95	1.74	3.04	1.06 (J)	—	—	—	—	—
RE36-10-7472	36-610608	2–3	FILL	—	—	—	0.0097 (J)	NA	NA	0.0348 (J)	0.0327 (J)	0.0578	0.0268 (J)	—	—	—	—	—
RE36-10-7473	36-610609	0–0.5	SED	—	—	—	—	NA	NA	0.0153 (J)	0.0165 (J)	0.0325 (J)	—	—	—	—	—	—
RE36-10-7475	36-610610	0–0.5	SED	0.692	—	—	1.19	NA	NA	2.08	1.76	2.9	1.27 (J)	—	—	—	—	—
RE36-10-7476	36-610610	2–3	SOIL	—	—	—	—	NA	NA	0.024 (J)	0.0217 (J)	0.0402	0.0194 (J)	—	—	—	—	—
RE36-10-7477	36-610611	0–0.5	SOIL	—	—	—	—	NA	NA	0.0179 (J)	0.0136 (J)	0.0248 (J)	—	—	—	—	—	—
RE36-10-7478	36-610611	2–3	SOIL	—	—	—	—	NA	NA	0.0133 (J)	—	0.0193 (J)	—	—	—	—	—	—
RE36-10-7480	36-610612	2–3	SOIL	—	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE36-10-7481	36-610613	0–0.5	SOIL	0.12	—	—	0.216	NA	NA	0.363	0.328	0.538	0.137 (J)	—	—	—	—	—
RE36-10-7482	36-610613	2–3	SOIL	0.0646	—	—	0.104	NA	NA	0.168	0.117	0.195	0.0545 (J)	—	—	—	—	—
RE36-10-7483	36-610614	0–0.5	SOIL	—	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—

Table 7.4-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic Acid	Bis(2-ethylhexyl)phthalate	Bromodichloromethane	Butylbenzylphthalate
Industrial SSL[a]				**36700**	**18300[b]**	**851000**	**183000**	**8.26**	**8.26**	**23.4**	**2.34**	**23.4**	**18300[b]**	**234**	**2500000**	**1370**	**29.2**	**9100[c]**
Residential SSL[a]				**3440**	**1720[b]**	**67500**	**17200**	**1.12**	**2.22**	**6.21**	**0.621**	**6.21**	**1720[b]**	**62.1**	**240000**	**347**	**5.25**	**2600[c]**
RE36-10-7484	36-610614	2–3	SOIL	—	—	—	—	NA	NA	—	—	—	—	—	—	—	—	0.214 (J)
RE36-10-7485	36-610615	0–0.5	SOIL	—	—	—	—	NA	NA	0.0139 (J)	—	0.0145 (J)	—	—	—	—	—	—
RE36-10-7486	36-610615	2–3	SOIL	—	—	—	—	NA	NA	0.0144 (J)	—	0.0173 (J)	—	—	—	—	—	—
RE36-10-7487	36-610616	0–0.5	SOIL	—	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE36-10-7489	36-610617	0–0.5	SOIL	—	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE36-10-7490	36-610617	2–3	SOIL	—	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE36-10-7491	36-610618	0–0.5	SOIL	—	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE36-10-7492	36-610618	2–3	SOIL	—	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE36-10-7493	36-610619	0–0.5	SOIL	—	—	—	—	NA	NA	—	0.0173 (J)	0.0232 (J)	0.0234 (J)	—	—	—	—	—
RE36-10-7494	36-610619	2–3	SOIL	—	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE36-10-7495	36-610620	0–0.5	SOIL	—	—	—	—	NA	NA	—	0.0221 (J)	0.0327 (J)	—	—	—	—	—	—
RE36-10-7496	36-610620	2–3	SOIL	—	—	—	—	NA	NA	—	—	—	—	—	—	0.604	—	—
RE36-10-7497	36-610621	0–0.5	SOIL	—	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE36-10-7499	36-610622	0–0.5	SOIL	—	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE36-10-7500	36-610622	2–3	SOIL	—	—	—	—	NA	NA	—	—	—	—	—	—	—	—	—
RE36-10-7501	36-610623	0–0.5	SOIL	—	—	0.0394	—	NA	NA	—	—	—	—	—	—	—	—	—
RE36-10-8273	36-610821[h]	0–0.5	SED	—	—	—	—	0.00442 (J)	—	—	—	—	—	—	—	—	—	—
RE36-10-8275	36-610822[h]	0–0.5	SED	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-8277	36-610823[h]	0–0.5	SED	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-8278	36-610823[h]	2–3	SED	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-8279	36-610824[h]	0–0.5	SOIL	0.0965 (J)	—	—	0.294	0.0315	0.0176	2.03	2.24	4.17	1.29	—	—	—	—	—
RE36-10-8280	36-610824[h]	2–3	SOIL	—	—	—	0.133 (J)	0.0655	0.0369	0.971	1.15	2.31	0.682	—	—	—	—	—
RE36-10-8281	36-610825[h]	0–1	SOIL	—	—	—	—	1.03	0.617	—	0.792 (J)	1.7 (J)	—	—	—	—	0.00117 (J+)	—
RE36-10-8282	36-610825[h]	2–2.5	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-8283	36-610826[h]	0–0.5	SOIL	0.0912 (J)	—	—	0.277	0.0678	0.0473	1.55	1.57	3	0.71	—	—	—	—	—
RE36-10-8284	36-610826[h]	2–3	SOIL	0.0725 (J)	—	—	0.191	0.0641	0.043	0.988	1.08	1.96	0.525	—	—	—	—	—
RE36-10-8285	36-610827[h]	0–0.5	SOIL	0.244	—	—	0.787	0.137	0.101	4.68	5.94	13	3.13	—	—	—	—	—
RE36-10-8286	36-610827[h]	2–3	SOIL	0.0145 (J)	—	—	0.0304 (J)	0.0791	0.0556	0.171	0.22	0.49	0.126	—	—	—	—	—
RE36-10-8287	36-610828[g]	0–0.5	SED	—	—	—	—	—	—	—	—	—	—	—	0.355 (J)	—	—	—
RE36-10-8288	36-610828[g]	2–3	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 7.4-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chlorodibromomethane	Chloroform	Chloromethane	Chloronaphthalene[2-]	Chlorotoluene[4-]	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Dichloroethene[1,1-]	Di-n-butylphthalate	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Isopropyltoluene[4-]
Industrial SSL[a]				**61.3**	**31.9**	**198**	**90800**	**na**	**2340**	**2.34**	**1140**[c]	**2220**	**68400**	**24400**	**24400**	**23.4**	**14900**[f]
Residential SSL[a]				**11.9**	**5.72**	**35.6**	**6260**	**na**	**621**	**0.621**	**78.2**[c]	**618**	**6110**	**2290**	**2290**	**6.21**	**3210**[f]
RE36-10-7403	36-610574	0–0.5	SOIL	—	—	—	—	—	0.267	—	—	—	—	0.411	—	0.157	—
RE36-10-7404	36-610574	2–2.5	SOIL	—	—	—	—	—	0.208	—	—	—	—	0.362	—	0.117	—
RE36-10-7405	36-610575	0–0.5	SOIL	—	—	—	—	—	0.0337 (J)	—	—	—	—	0.0497 (J)	—	—	—
RE36-10-7406	36-610575	2–2.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-7407	36-610576	0–0.5	SOIL	—	—	—	—	—	0.0214 (J)	—	—	—	—	0.0448	—	—	—
RE36-10-7413	36-610579	0–0.5	FILL	—	—	—	—	—	4.24	0.669	0.481	—	0.185 (J)	10	0.764	1.85	—
RE36-10-7414	36-610579	2–3	QBT3	—	—	—	—	—	0.0935	0.0253 (J)	—	—	—	0.216	0.0136 (J)	0.0635	—
RE36-10-7415	36-610580	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	0.026 (J-)
RE36-10-7417	36-610581	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00101 (J-)
RE36-10-7418	36-610581	2–3	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00161
RE36-10-7419	36-610582	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	0.0258 (J)	—	—	—
RE36-10-7420	36-610582	2–3	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-7421	36-610583	0–0.5	SOIL	—	—	—	—	—	0.02 (J)	—	—	—	0.168 (J)	0.0357 (J)	—	—	—
RE36-10-7422	36-610583	2–3	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-7423	36-610584	0–0.5	SOIL	—	—	—	—	—	—	—	—	0.000846 (J)	—	—	—	—	0.0696
RE36-10-7425	36-610585	0–1	SOIL	—	—	—	—	—	6.76	—	—	—	—	8.25	0.0605 (J)	2.73	—
RE36-10-7426	36-610585	2–3	SOIL	—	—	—	—	—	1.48	—	—	—	—	2.02	—	0.628	0.00364
RE36-10-7427	36-610586	0–0.5	SOIL	—	—	—	—	—	—	—	—	0.000495 (J+)	—	0.0281 (J)	—	—	—
RE36-10-7429	36-610587	0–0.5	SOIL	—	—	—	—	—	0.0394 (J)	—	—	—	—	0.0749 (J)	—	—	—
RE36-10-7431	36-610588	0–0.5	SOIL	—	—	—	—	—	12.3	—	2.94	—	0.377 (J)	79.8	4	4.65	—
RE36-10-7432	36-610588	2–2.5	SOIL	—	—	—	—	—	2.35	—	0.404 (J)	—	0.193 (J)	5.88	0.627	0.81	—
RE36-10-7433	36-610589	0–0.5	SOIL	—	—	—	—	—	0.29	—	—	—	0.403 (J)	0.617	0.0507 (J)	0.13	—
RE36-10-7434	36-610589	1–2	SOIL	—	—	—	—	—	0.0653 (J)	—	—	—	—	0.149	—	0.0337 (J)	—
RE36-10-7435	36-610590	0–0.5	SED	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00208 (J+)
RE36-10-7436	36-610590	2–3	SOIL	—	—	—	—	0.000496 (J)	—	—	—	—	—	—	—	—	0.00261
RE36-10-7437	36-610591	0–0.5	SED	—	—	—	—	—	0.0297 (J)	—	—	—	—	0.0545	—	—	—
RE36-10-7438	36-610591	2–3	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00187
RE36-10-7439	36-610592	0–0.5	SOIL	—	—	—	—	—	0.115	—	—	—	—	0.241	0.014 (J)	—	—
RE36-10-7440	36-610592	2–3	SOIL	—	—	—	—	—	—	—	—	—	—	0.027 (J)	—	—	0.00233 (J+)
RE36-10-7441	36-610593	0–0.5	SOIL	—	—	—	—	—	0.0324 (J)	—	—	—	—	0.0673	—	—	0.000451 (J+)
RE36-10-7445	36-610595	0–0.5	SOIL	—	—	—	—	—	0.0288 (J)	—	—	—	—	0.0574	—	—	—

Table 7.4-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chlorodibromomethane	Chloroform	Chloromethane	Chloronaphthalene[2-]	Chlorotoluene[4-]	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Dichloroethene[1,1-]	Di-n-butylphthalate	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Isopropyltoluene[4-]
Industrial SSL[a]				**61.3**	**31.9**	**198**	**90800**	**na**	**2340**	**2.34**	**1140**[c]	**2220**	**68400**	**24400**	**24400**	**23.4**	**14900**[f]
Residential SSL[a]				**11.9**	**5.72**	**35.6**	**6260**	**na**	**621**	**0.621**	**78.2**[c]	**618**	**6110**	**2290**	**2290**	**6.21**	**3210**[f]
RE36-10-7451	36-610598	0–0.5	SOIL	—	—	—	—	—	—	—	—	0.00246 (J+)	—	—	—	—	0.00338 (J+)
RE36-10-7452	36-610598	2–3	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	0.0128 (J+)
RE36-10-7453	36-610599	0–0.5	SOIL	—	—	—	—	—	0.0636	—	—	—	—	0.146	—	0.0313 (J)	0.00185
RE36-10-7455	36-610600	0–0.5	SOIL	—	—	—	—	—	0.0477	—	—	—	—	0.0903	—	—	—
RE36-10-7456	36-610600	1–2	QBT2	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00067 (J)
RE36-10-7457	36-610601	0–0.5	SOIL	—	—	—	—	—	0.0899	—	—	—	—	0.181	0.013 (J)	0.042 (J)	—
RE36-10-7458	36-610601	2–3	SOIL	—	—	—	—	—	0.0264 (J)	—	—	—	—	0.0527	—	—	0.00264
RE36-10-7459	36-610602	0–0.5	SOIL	—	—	—	—	—	0.0368 (J)	—	—	—	—	0.0634	—	—	0.00101 (J+)
RE36-10-7460	36-610602	1.5–2.6	QBT2	—	—	—	—	—	—	—	—	—	—	—	—	—	0.000575 (J)
RE36-10-7461	36-610603	0–0.5	FILL	—	—	—	—	—	0.264	0.0651	—	—	—	0.539	0.0297 (J)	0.164	—
RE36-10-7462	36-610603	2–3	SOIL	—	—	—	—	—	0.0764	—	—	—	—	0.166	—	0.0451	—
RE36-10-7463	36-610604	0–0.5	SOIL	—	—	—	—	—	0.128	0.031 (J)	—	—	—	0.249	0.0136 (J)	0.0715	—
RE36-10-7464	36-610604	2–3	SOIL	—	—	—	—	—	0.026 (J)	—	—	—	—	0.0489	—	0.0136 (J)	—
RE36-10-7465	36-610605	0–0.5	FILL	—	—	—	—	—	5.63 (J-)	0.943 (J-)	0.665 (J-)	—	—	13.6 (J-)	1.04 (J-)	2.63 (J-)	0.000399 (J)
RE36-10-7466	36-610605	2–3	FILL	—	—	—	—	—	0.681	0.122	—	—	—	1.44	0.102	0.336	—
RE36-10-7467	36-610606	0–0.5	SED	—	—	—	—	—	0.0868	0.0187 (J)	—	—	0.0913 (J)	0.17	—	0.0506	—
RE36-10-7468	36-610606	2–2.9	SED	—	—	—	—	—	0.0295 (J)	—	—	—	—	0.0488	—	0.0226 (J)	0.00294
RE36-10-7469	36-610607	0–0.5	SED	—	—	—	—	—	0.05	0.0123 (J)	—	—	0.211 (J)	0.105	—	0.0311 (J)	—
RE36-10-7470	36-610607	2–3	SOIL	—	—	—	—	—	0.255	0.0514	—	—	—	0.614	0.112	0.146	—
RE36-10-7471	36-610608	0–0.8	FILL	—	—	—	—	—	2.11	0.354	0.341 (J)	—	—	4.74	0.637	1.01	0.000484 (J)
RE36-10-7472	36-610608	2–3	FILL	—	—	—	—	—	0.0366 (J)	—	—	—	—	0.0849	—	0.023 (J)	—
RE36-10-7473	36-610609	0–0.5	SED	—	—	—	—	—	0.0148 (J)	—	—	—	—	0.0206 (J)	—	—	—
RE36-10-7475	36-610610	0–0.5	SED	—	—	—	—	—	2.26	—	0.529	—	—	5.47	0.843	1.2	—
RE36-10-7476	36-610610	2–3	SOIL	—	—	—	—	—	0.0251 (J)	—	—	—	—	0.0505	—	0.0159 (J)	—
RE36-10-7477	36-610611	0–0.5	SOIL	—	—	—	—	—	0.0167 (J)	—	—	—	—	0.0297 (J)	—	—	0.00093 (J)
RE36-10-7478	36-610611	2–3	SOIL	—	—	—	—	—	0.0158 (J)	—	—	—	—	0.0217 (J)	—	—	—
RE36-10-7480	36-610612	2–3	SOIL	—	—	—	0.0215 (J)	—	—	—	—	—	—	—	—	—	0.00091 (J+)
RE36-10-7481	36-610613	0–0.5	SOIL	—	—	—	—	—	0.407	—	—	—	—	0.962	0.131	0.131	—
RE36-10-7482	36-610613	2–3	SOIL	—	—	—	—	—	0.146	—	—	—	—	0.399	0.0842	0.0492	0.0656 (J-)
RE36-10-7483	36-610614	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	0.0893 (J+)
RE36-10-7484	36-610614	2–3	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00342 (J+)

Table 7.4-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Chlorodibromomethane	Chloroform	Chloromethane	Chloronaphthalene[2-]	Chlorotoluene[4-]	Chrysene	Dibenz(a,h)anthracene	Dibenzofuran	Dichloroethene[1,1-]	Di-n-butylphthalate	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Isopropyltoluene[4-]
Industrial SSL[a]				**61.3**	**31.9**	**198**	**90800**	**na**	**2340**	**2.34**	**1140**[c]	**2220**	**68400**	**24400**	**24400**	**23.4**	**14900**[f]
Residential SSL[a]				**11.9**	**5.72**	**35.6**	**6260**	**na**	**621**	**0.621**	**78.2**[c]	**618**	**6110**	**2290**	**2290**	**6.21**	**3210**[f]
RE36-10-7485	36-610615	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	0.017 (J)	—	—	0.00235 (J+)
RE36-10-7486	36-610615	2–3	SOIL	—	—	—	—	—	0.013 (J)	—	—	—	—	0.0212 (J)	—	—	—
RE36-10-7487	36-610616	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00232 (J-)
RE36-10-7489	36-610617	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	0.0561 (J+)
RE36-10-7490	36-610617	2–3	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00666
RE36-10-7491	36-610618	0–0.5	SOIL	—	—	0.000633 (J+)	—	—	—	—	—	—	—	0.018 (J)	—	—	—
RE36-10-7492	36-610618	2–3	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-7493	36-610619	0–0.5	SOIL	—	—	—	—	—	0.0337 (J)	0.0169 (J)	—	—	—	0.0359 (J)	—	0.0197 (J)	—
RE36-10-7494	36-610619	2–3	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-7495	36-610620	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	0.0383 (J)	—	—	0.000591 (J+)
RE36-10-7496	36-610620	2–3	SOIL	—	—	—	—	—	—	—	—	—	—	0.0152 (J)	—	—	—
RE36-10-7497	36-610621	0–0.5	SOIL	—	—	—	—	—	—	—	—	0.000711 (J)	—	—	—	—	0.00117 (J)
RE36-10-7499	36-610622	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-7500	36-610622	2–3	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-7501	36-610623	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	0.0246
RE36-10-8273	36-610821[g]	0–0.5	SED	—	—	—	—	—	—	—	—	—	—	0.0183 (J)	—	—	0.00235 (J+)
RE36-10-8275	36-610822[g]	0–0.5	SED	—	—	—	—	—	—	—	—	—	—	—	—	—	0.0101 (J+)
RE36-10-8277	36-610823[g]	0–0.5	SED	—	—	—	—	—	—	—	—	—	—	—	—	—	0.0124 (J+)
RE36-10-8278	36-610823[g]	2–3	SED	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00105 (J+)
RE36-10-8279	36-610824[g]	0–0.5	SOIL	—	—	—	—	—	2.18	—	—	—	0.441 (J)	3.34	0.0928 (J)	1.21	—
RE36-10-8280	36-610824[g]	2–3	SOIL	—	—	—	—	—	1.21	—	—	—	—	1.63	—	0.641	—
RE36-10-8281	36-610825[g]	0–1	SOIL	0.000635 (J+)	0.00982 (J+)	—	—	—	0.888 (J)	—	—	—	8.07 (J)	1.2 (J)	—	—	0.000453 (J+)
RE36-10-8282	36-610825[g]	2–2.5	QBT3	—	0.00052 (J)	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-8283	36-610826[g]	0–0.5	SOIL	—	—	—	—	—	1.62	—	—	—	0.547 (J)	2.77	0.0957 (J)	0.695	0.00236 (J-)
RE36-10-8284	36-610826[g]	2–3	SOIL	—	—	—	—	—	1.2	—	—	—	0.739 (J)	2.04	0.0719 (J)	0.502	0.0101 (J-)
RE36-10-8285	36-610827[g]	0–0.5	SOIL	—	—	—	—	—	5.7	—	—	—	1.24 (J)	7.63	0.253	3.01	—
RE36-10-8286	36-610827[g]	2–3	SOIL	—	—	—	—	—	0.269	—	—	—	0.258 (J)	0.425	0.0134 (J)	0.111	—
RE36-10-8287	36-610828[g]	0–0.5	SED	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00731 (J)
RE36-10-8288	36-610828[g]	2–3	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 7.4-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Methylene Chloride	Methylnaphthalene[2-]	Naphthalene	Phenanthrene	Pyrene	RDX	Styrene	TATB	Toluene	Trichloroethene	Trimethylbenzene[1,2,4-]	Trimethylbenzene[1,3,5-]	Xylene[1,2-]	Xylene[1,3-]+Xylene[1,4-]
Industrial SSL[a]				**1090**	**4100**[c]	**252**	**20500**	**18300**	**174**	**51200**	**na**	**57900**	**253**	**260**[c]	**10000**[c]	**31500**	**3610**
Residential SSL[a]				**199**	**310**[c]	**45**	**1830**	**1720**	**44.2**	**8970**	**na**	**5570**	**45.7**	**62**[c]	**780**[c]	**9550**	**1090**
RE36-10-7403	36-610574	0–0.5	SOIL	—	—	—	0.265	0.412	—	—	—	—	—	—	—	—	—
RE36-10-7404	36-610574	2–2.5	SOIL	—	—	—	0.252	0.379	—	—	—	—	—	—	—	—	—
RE36-10-7405	36-610575	0–0.5	SOIL	0.00297 (J)	—	—	0.0272 (J)	0.0508 (J)	—	—	—	—	—	—	—	—	—
RE36-10-7406	36-610575	2–2.5	SOIL	—	—	—	—	—	—	—	—	0.000437 (J)	—	—	—	—	—
RE36-10-7407	36-610576	0–0.5	SOIL	—	—	—	0.0273 (J)	0.0357 (J)	—	—	—	—	0.000661 (J+)	0.000454 (J+)	—	—	0.000454 (J+)
RE36-10-7413	36-610579	0–0.5	FILL	—	0.158	0.26	8.64	7.76	—	—	0.331 (J)	0.000455 (J)	—	—	—	—	—
RE36-10-7414	36-610579	2–3	QBT3	—	—	—	0.16	0.202	—	—	—	—	—	—	—	—	—
RE36-10-7415	36-610580	0–0.5	SOIL	—	—	—	—	—	—	—	—	0.00351 (J-)	—	—	—	—	—
RE36-10-7417	36-610581	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-7418	36-610581	2–3	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-7419	36-610582	0–0.5	SOIL	—	—	—	0.0163 (J)	0.0212 (J)	—	—	—	—	—	—	—	—	—
RE36-10-7420	36-610582	2–3	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-7421	36-610583	0–0.5	SOIL	—	—	—	0.0225 (J)	0.036 (J)	—	—	—	—	0.000905 (J+)	—	—	—	—
RE36-10-7422	36-610583	2–3	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	0.000414 (J)
RE36-10-7423	36-610584	0–0.5	SOIL	—	—	—	—	—	—	0.00197 (J)	—	0.00552	—	—	—	—	0.00072 (J)
RE36-10-7425	36-610585	0–1	SOIL	—	0.0235 (J)	0.0661 (J)	1.17	19.1	—	—	—	—	—	—	—	—	—
RE36-10-7426	36-610585	2–3	SOIL	—	—	—	0.278	2.71	—	—	—	—	—	—	0.00569	—	—
RE36-10-7427	36-610586	0–0.5	SOIL	—	—	—	0.0179 (J)	0.0315 (J)	—	—	—	0.000763 (J+)	—	—	—	—	—
RE36-10-7429	36-610587	0–0.5	SOIL	—	—	—	0.0524 (J)	0.0775 (J)	—	—	—	—	—	—	—	—	—
RE36-10-7431	36-610588	0–0.5	SOIL	0.00268 (J)	1.3	2.67	85.7	75.6	—	—	—	—	—	—	—	—	—
RE36-10-7432	36-610588	2–2.5	SOIL	—	0.153	0.277	5.58	5.34	—	—	—	—	—	—	—	—	—
RE36-10-7433	36-610589	0–0.5	SOIL	—	—	—	0.522	0.737	—	—	—	—	—	—	—	—	—
RE36-10-7434	36-610589	1–2	SOIL	—	—	—	0.118	0.145	—	—	—	—	—	—	—	—	—
RE36-10-7435	36-610590	0–0.5	SED	—	—	—	—	—	—	—	—	0.000816 (J+)	0.000701 (J+)	—	—	0.000616 (J+)	—
RE36-10-7436	36-610590	2–3	SOIL	—	—	—	—	—	—	—	—	0.000559 (J)	—	—	—	—	—
RE36-10-7437	36-610591	0–0.5	SED	—	—	—	0.0351 (J)	0.0489	—	—	—	—	—	—	—	—	—
RE36-10-7438	36-610591	2–3	QBT3	—	—	—	—	—	—	—	—	0.00109	—	—	—	—	—
RE36-10-7439	36-610592	0–0.5	SOIL	—	—	—	0.178	0.226	—	—	—	—	—	—	—	—	—
RE36-10-7440	36-610592	2–3	SOIL	—	—	—	0.0154 (J)	0.0223 (J)	—	—	—	0.00371 (J+)	—	—	—	—	0.00037 (J+)
RE36-10-7441	36-610593	0–0.5	SOIL	—	—	—	0.0458	0.0585	—	—	—	—	—	—	—	—	—
RE36-10-7445	36-610595	0–0.5	SOIL	—	—	—	0.0322 (J)	0.0438 (J)	—	—	—	—	0.000632 (J+)	—	—	—	0.00043 (J+)
RE36-10-7451	36-610598	0–0.5	SOIL	—	—	—	—	—	—	—	—	0.0032 (J+)	—	—	—	—	0.000792 (J+)
RE36-10-7452	36-610598	2–3	SOIL	—	—	—	—	—	—	—	—	0.015 (J+)	—	—	—	—	—

Table 7.4-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Methylene Chloride	Methylnaphthalene[2-]	Naphthalene	Phenanthrene	Pyrene	RDX	Styrene	TATB	Toluene	Trichloroethene	Trimethylbenzene[1,2,4-]	Trimethylbenzene[1,3,5-]	Xylene[1,2-]	Xylene[1,3-]+Xylene[1,4-]
Industrial SSL[a]				**1090**	**4100**[c]	**252**	**20500**	**18300**	**174**	**51200**	**na**	**57900**	**253**	**260**[c]	**10000**[c]	**31500**	**3610**
Residential SSL[a]				**199**	**310**[c]	**45**	**1830**	**1720**	**44.2**	**8970**	**na**	**5570**	**45.7**	**62**[c]	**780**[c]	**9550**	**1090**
RE36-10-7453	36-610599	0–0.5	SOIL	—	—	—	0.089	0.107	—	—	—	—	—	—	—	—	—
RE36-10-7455	36-610600	0–0.5	SOIL	—	—	—	0.0537	0.0754	—	—	—	—	—	—	—	—	—
RE36-10-7456	36-610600	1–2	QBT2	—	—	—	—	—	—	—	—	0.0008 (J)	—	0.000454 (J)	—	—	0.00053 (J)
RE36-10-7457	36-610601	0–0.5	SOIL	—	—	—	0.126	0.161	—	—	—	—	—	—	—	—	—
RE36-10-7458	36-610601	2–3	SOIL	—	—	—	0.0344 (J)	0.0427	—	—	—	—	—	—	—	—	—
RE36-10-7459	36-610602	0–0.5	SOIL	—	—	—	0.0369 (J)	0.0517	—	—	—	—	—	—	—	—	—
RE36-10-7460	36-610602	1.5–2.6	QBT2	—	—	—	—	—	—	—	—	0.000442 (J)	—	—	—	—	0.000343 (J)
RE36-10-7461	36-610603	0–0.5	FILL	—	—	—	0.41	0.51	—	—	0.303 (J)	—	—	—	—	—	—
RE36-10-7462	36-610603	2–3	SOIL	—	—	—	0.107	0.129	—	—	—	—	—	—	—	—	—
RE36-10-7463	36-610604	0–0.5	SOIL	—	—	—	0.172	0.222	—	—	—	—	—	—	—	—	—
RE36-10-7464	36-610604	2–3	SOIL	—	—	—	0.0314 (J)	0.0408	—	—	—	—	—	—	—	—	—
RE36-10-7465	36-610605	0–0.5	FILL	—	0.207 (J-)	0.357 (J-)	12.1 (J-)	9.79 (J-)	—	—	—	0.000489 (J)	—	—	—	—	0.000437 (J)
RE36-10-7466	36-610605	2–3	FILL	—	0.0202 (J)	0.0315 (J)	1.35	1.36	—	—	—	—	—	—	—	—	—
RE36-10-7467	36-610606	0–0.5	SED	0.00462 (J)	—	—	0.136	0.157	—	—	—	—	—	—	—	—	—
RE36-10-7468	36-610606	2–2.9	SED	—	—	—	0.028 (J)	0.0372 (J)	—	—	—	—	—	—	—	—	—
RE36-10-7469	36-610607	0–0.5	SED	—	—	—	0.0829	0.0854	—	—	—	—	—	—	—	—	—
RE36-10-7470	36-610607	2–3	SOIL	—	0.0227 (J)	0.037 (J)	0.762	0.453	—	—	—	—	—	—	—	—	—
RE36-10-7471	36-610608	0–0.8	FILL	—	0.115	0.164	4.93	3.98	—	—	—	0.000869 (J)	—	0.00499	0.00279	—	—
RE36-10-7472	36-610608	2–3	FILL	—	—	—	0.0594	0.0686	—	—	—	—	—	—	—	—	—
RE36-10-7473	36-610609	0–0.5	SED	0.00573 (J)	—	—	—	0.0206 (J)	—	—	—	—	—	—	—	—	—
RE36-10-7475	36-610610	0–0.5	SED	—	0.203	0.41	6.15	3.68	—	—	—	—	—	—	—	—	—
RE36-10-7476	36-610610	2–3	SOIL	—	—	—	0.0299 (J)	0.0404	—	—	—	—	—	—	—	—	—
RE36-10-7477	36-610611	0–0.5	SOIL	—	—	—	0.0154 (J)	0.0279 (J)	—	—	—	—	—	0.000406 (J)	—	—	—
RE36-10-7478	36-610611	2–3	SOIL	—	—	—	0.0117 (J)	0.024 (J)	—	—	—	—	—	—	—	0.000366 (J+)	0.000543 (J+)
RE36-10-7480	36-610612	2–3	SOIL	—	—	—	—	—	—	—	—	0.000626 (J+)	0.000501 (J+)	—	—	—	—
RE36-10-7481	36-610613	0–0.5	SOIL	—	0.0324 (J)	0.0815	0.919	0.829	—	—	—	0.00161 (J+)	—	—	—	—	—
RE36-10-7482	36-610613	2–3	SOIL	—	0.0178 (J)	0.0396 (J)	0.48	0.345	—	—	—	0.00155 (J-)	—	—	—	—	—
RE36-10-7483	36-610614	0–0.5	SOIL	0.00357 (J+)	—	—	—	0.0134 (J)	—	—	—	0.00524 (J+)	0.000605 (J+)	—	—	0.000513 (J+)	0.00096 (J+)
RE36-10-7484	36-610614	2–3	SOIL	—	—	—	—	—	—	—	—	0.000412 (J+)	—	—	—	—	—
RE36-10-7485	36-610615	0–0.5	SOIL	—	—	—	—	0.0169 (J)	—	—	—	0.000707 (J+)	—	—	—	—	—
RE36-10-7486	36-610615	2–3	SOIL	0.0026 (J-)	—	—	0.013 (J)	0.02 (J)	—	—	—	—	—	—	—	—	—
RE36-10-7487	36-610616	0–0.5	SOIL	—	—	—	—	—	—	—	—	0.00199 (J-)	—	—	—	—	—
RE36-10-7489	36-610617	0–0.5	SOIL	—	—	—	—	—	—	—	—	0.00106 (J+)	—	—	—	—	—

Table 7.4-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Methylene Chloride	Methylnaphthalene[2-]	Naphthalene	Phenanthrene	Pyrene	RDX	Styrene	TATB	Toluene	Trichloroethene	Trimethylbenzene[1,2,4-]	Trimethylbenzene[1,3,5-]	Xylene[1,2-]	Xylene[1,3-]+Xylene[1,4-]
Industrial SSL[a]				**1090**	**4100**[c]	**252**	**20500**	**18300**	**174**	**51200**	**na**	**57900**	**253**	**260**[c]	**10000**[c]	**31500**	**3610**
Residential SSL[a]				**199**	**310**[c]	**45**	**1830**	**1720**	**44.2**	**8970**	**na**	**5570**	**45.7**	**62**[c]	**780**[c]	**9550**	**1090**
RE36-10-7490	36-610617	2–3	SOIL	—	—	—	—	—	—	—	—	0.00159	—	—	—	—	—
RE36-10-7491	36-610618	0–0.5	SOIL	—	—	—	—	0.016 (J)	—	—	—	0.000494 (J+)	—	—	—	—	—
RE36-10-7492	36-610618	2–3	SOIL	—	—	—	—	—	—	—	—	0.000418 (J)	—	0.000862 (J)	—	0.000393 (J)	0.000774 (J)
RE36-10-7493	36-610619	0–0.5	SOIL	—	—	—	0.112	0.0298 (J)	—	—	—	—	—	—	—	—	—
RE36-10-7494	36-610619	2–3	SOIL	—	—	—	—	—	—	—	—	—	—	0.000388 (J)	—	—	0.000548 (J)
RE36-10-7495	36-610620	0–0.5	SOIL	—	—	—	0.114	0.0403 (J)	—	—	—	0.00106 (J+)	—	—	—	—	0.000523 (J+)
RE36-10-7496	36-610620	2–3	SOIL	—	—	—	—	0.0126 (J)	—	—	—	0.000599 (J)	—	—	—	—	—
RE36-10-7497	36-610621	0–0.5	SOIL	—	—	—	—	—	—	—	—	0.000874 (J)	—	—	—	—	—
RE36-10-7499	36-610622	0–0.5	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-7500	36-610622	2–3	SOIL	—	—	—	—	—	—	—	—	0.000537 (J)	0.000448 (J)	—	—	—	—
RE36-10-7501	36-610623	0–0.5	SOIL	—	—	—	—	—	—	—	—	0.00184	—	—	—	—	—
RE36-10-8273	36-610821[g]	0–0.5	SED	—	—	—	—	0.0156 (J)	—	—	—	0.001 (J+)	—	—	—	—	—
RE36-10-8275	36-610822[g]	0–0.5	SED	—	—	—	—	—	—	—	—	0.00135 (J+)	—	—	—	—	—
RE36-10-8277	36-610823[g]	0–0.5	SED	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-8278	36-610823[g]	2–3	SED	—	—	—	—	—	—	—	—	0.000331 (J+)	—	—	—	—	—
RE36-10-8279	36-610824[g]	0–0.5	SOIL	—	—	—	1.35	3.31	—	—	—	0.000334 (J+)	—	—	—	—	—
RE36-10-8280	36-610824[g]	2–3	SOIL	—	—	—	0.608	1.57	—	—	—	0.000398 (J+)	—	—	—	—	—
RE36-10-8281	36-610825[g]	0–1	SOIL	0.00378 (J+)	—	—	0.879 (J)	1.44 (J)	0.106 (J)	—	—	0.000524 (J+)	—	—	—	—	—
RE36-10-8282	36-610825[g]	2–2.5	QBT3	—	—	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-8283	36-610826[g]	0–0.5	SOIL	0.00315 (J-)	—	—	1.33	2.83	—	—	—	0.00113 (J-)	—	0.001 (J-)	—	—	0.000822 (J-)
RE36-10-8284	36-610826[g]	2–3	SOIL	—	—	—	0.988	1.88	—	—	—	0.000476 (J-)	—	—	—	—	—
RE36-10-8285	36-610827[g]	0–0.5	SOIL	—	—	—	3.59	9.03	—	—	—	—	—	—	—	—	—
RE36-10-8286	36-610827[g]	2–3	SOIL	—	—	—	0.212	0.425	—	—	—	0.000422 (J-)	—	—	—	—	—
RE36-10-8287	36-610828[g]	0–0.5	SED	—	—	—	—	—	—	—	—	0.00113 (J)	—	—	—	—	—
RE36-10-8288	36-610828[g]	2–3	SOIL	—	—	—	—	—	—	—	—	0.000455 (J+)	—	—	—	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] SSLs from NMED 2009, 108070, unless otherwise noted.

[b] Pyrene used as a surrogate based on structural similarity.

[c] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[d] — = Not detected.

[e] NA = Not analyzed.

[f] Isopropylbenzene used as a surrogate based on structural similarity.

[g] Sample location associated with SWMU C-36-003.

Table 7.4-4
Radionuclides Detected or Detected above BVs/FVs at SWMU 36-008

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Plutonium-238	Plutonium-239/240	Tritium	Uranium-234	Uranium-235/236	Uranium-238
Qbt 2, 3, 4 BV[a]				**na**[b]	**na**	**na**	**na**	**na**	**1.98**	**0.09**	**1.93**
Sediment BV[a]				**0.04**	**0.9**	**0.006**	**0.068**	**0.093**	**2.59**	**0.2**	**2.29**
Soil BV[a]				**0.013**[c]	**1.65**[c]	**0.023**[c]	**0.054**[c]	**na**	**2.59**	**0.2**	**2.29**
Industrial SAL[d]				**180**	**23**	**240**	**210**	**440000**	**1500**	**87**	**430**
Residential SAL[d]				**30**	**5.6**	**37**	**33**	**750**	**170**	**17**	**87**
RE36-10-7404	36-610574	2–2.5	SOIL	—[e]	0.362	—	—	—	—	—	—
RE36-10-7415	36-610580	0–0.5	SOIL	0.0246	—	—	—	—	—	—	—
RE36-10-7416	36-610580	2–3	SOIL	—	0.0773	—	—	—	—	—	—
RE36-10-7418	36-610581	2–3	SOIL	—	0.39	—	—	—	—	—	—
RE36-10-7420	36-610582	2–3	SOIL	—	0.207	—	—	—	—	—	—
RE36-10-7423	36-610584	0–0.5	SOIL	0.0318	3.31	—	0.0895	—	—	—	3.27
RE36-10-7426	36-610585	2–3	SOIL	—	0.166	—	—	—	—	—	—
RE36-10-7427	36-610586	0–0.5	SOIL	—	—	—	0.087	—	—	—	—
RE36-10-7431	36-610588	0–0.5	SOIL	—	—	—	—	0.97974	4.3	—	5.17
RE36-10-7432	36-610588	2–2.5	SOIL	—	0.228	—	—	—	—	—	—
RE36-10-7433	36-610589	0–0.5	SOIL	—	—	—	0.0953	—	—	—	—
RE36-10-7434	36-610589	1–2	SOIL	—	0.31	—	—	—	—	—	—
RE36-10-7439	36-610592	0–0.5	SOIL	0.0169	—	—	—	—	—	—	—
RE36-10-7440	36-610592	2–3	SOIL	—	0.0793	—	—	—	—	—	—
RE36-10-7442	36-610593	2–3	SOIL	—	0.193	—	—	—	—	—	—
RE36-10-7443	36-610594	0–0.5	SOIL	0.0171	—	—	—	—	—	—	—

Table 7.4-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Plutonium-238	Plutonium-239/240	Tritium	Uranium-234	Uranium-235/236	Uranium-238
Qbt 2, 3, 4 BV[a]				**na**[b]	**na**	**na**	**na**	**na**	**1.98**	**0.09**	**1.93**
Sediment BV[a]				**0.04**	**0.9**	**0.006**	**0.068**	**0.093**	**2.59**	**0.2**	**2.29**
Soil BV[a]				**0.013**[c]	**1.65**[c]	**0.023**[c]	**0.054**[c]	**na**	**2.59**	**0.2**	**2.29**
Industrial SAL[d]				**180**	**23**	**240**	**210**	**440000**	**1500**	**87**	**430**
Residential SAL[d]				**30**	**5.6**	**37**	**33**	**750**	**170**	**17**	**87**
RE36-10-7444	36-610594	2–3	SOIL	—	0.383	—	—	—	—	—	—
RE36-10-7448	36-610596	2–3	SOIL	—	0.312	—	—	—	—	—	—
RE36-10-7452	36-610598	2–3	SOIL	—	0.733	—	0.0258	—	—	—	—
RE36-10-7458	36-610601	2–3	SOIL	—	0.156	—	—	—	—	—	—
RE36-10-7460	36-610602	1.5–2.6	QBT2	—	0.0986	—	—	—	—	—	—
RE36-10-7462	36-610603	2–3	SOIL	—	0.139	—	—	—	—	—	—
RE36-10-7463	36-610604	0–0.5	SOIL	—	—	—	0.0633	0.0125553	—	—	—
RE36-10-7464	36-610604	2–3	SOIL	—	—	—	—	0.00940506	—	—	—
RE36-10-7466	36-610605	2–3	FILL	—	0.157	—	—	—	—	—	2.49
RE36-10-7469	36-610607	0–0.5	SED	0.0465	1.14	—	—	—	—	—	—
RE36-10-7470	36-610607	2–3	SOIL	—	0.469	—	—	0.0346542	—	—	—
RE36-10-7471	36-610608	0–0.8	FILL	—	—	—	—	0.0517892	—	—	—
RE36-10-7473	36-610609	0–0.5	SED	—	1.17	—	—	—	—	—	—
RE36-10-7478	36-610611	2–3	SOIL	—	0.161	—	—	—	—	—	—
RE36-10-7480	36-610612	2–3	SOIL	—	0.103	—	—	—	—	—	—
RE36-10-7482	36-610613	2–3	SOIL	—	0.296	—	—	—	—	—	—
RE36-10-7483	36-610614	0–0.5	SOIL	0.0189	—	—	—	—	—	—	—
RE36-10-7484	36-610614	2–3	SOIL	—	0.553	—	—	—	—	—	—

Table 7.4-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Plutonium-238	Plutonium-239/240	Tritium	Uranium-234	Uranium-235/236	Uranium-238
Qbt 2, 3, 4 BV[a]				**na**[b]	**na**	**na**	**na**	**na**	**1.98**	**0.09**	**1.93**
Sediment BV[a]				**0.04**	**0.9**	**0.006**	**0.068**	**0.093**	**2.59**	**0.2**	**2.29**
Soil BV[a]				**0.013**[c]	**1.65**[c]	**0.023**[c]	**0.054**[c]	**na**	**2.59**	**0.2**	**2.29**
Industrial SAL[d]				**180**	**23**	**240**	**210**	**440000**	**1500**	**87**	**430**
Residential SAL[d]				**30**	**5.6**	**37**	**33**	**750**	**170**	**17**	**87**
RE36-10-7486	36-610615	2–3	SOIL	—	0.663	—	0.0262	—	—	—	—
RE36-10-7490	36-610617	2–3	SOIL	—	0.148	—	—	—	—	—	—
RE36-10-7491	36-610618	0–0.5	SOIL	—	—	—	0.0829	—	—	—	2.68
RE36-10-7492	36-610618	2–3	SOIL	—	0.629	—	—	—	—	—	—
RE36-10-7496	36-610620	2–3	SOIL	—	0.415	—	0.031	—	—	—	—
RE36-10-7500	36-610622	2–3	SOIL	—	0.516	—	0.0263	—	—	—	—
RE36-10-8273	36-610821[f]	0–0.5	SED	—	2.02	—	0.0762	—	—	—	—
RE36-10-8274	36-610821[f]	2–3	SOIL	—	0.379	—	—	—	—	—	—
RE36-10-8276	36-610822[f]	2–3	SED	—	—	0.026	—	—	—	—	—
RE36-10-8279	36-610824[f]	0–0.5	SOIL	—	—	—	—	—	3.43 (J+)	—	3.24 (J+)
RE36-10-8280	36-610824[f]	2–3	SOIL	—	0.614	—	—	—	3.49 (J+)	—	3.01 (J+)
RE36-10-8281	36-610825[f]	0–1	SOIL	—	—	—	—	0.0913562	—	—	—
RE36-10-8282	36-610825[f]	2–2.5	QBT3	—	—	—	—	0.15437	—	0.122	—
RE36-10-8283	36-610826[f]	0–0.5	SOIL	—	—	—	—	0.0241377	4.43	—	3.72
RE36-10-8284	36-610826[f]	2–3	SOIL	—	0.326	—	—	0.0277619	3.72	—	2.88

Table 7.4-4 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Plutonium-238	Plutonium-239/240	Tritium	Uranium-234	Uranium-235/236	Uranium-238
Qbt 2, 3, 4 BV[a]				**na**[b]	**na**	**na**	**na**	**na**	**1.98**	**0.09**	**1.93**
Sediment BV[a]				**0.04**	**0.9**	**0.006**	**0.068**	**0.093**	**2.59**	**0.2**	**2.29**
Soil BV[a]				**0.013**[c]	**1.65**[c]	**0.023**[c]	**0.054**[c]	**na**	**2.59**	**0.2**	**2.29**
Industrial SAL[d]				**180**	**23**	**240**	**210**	**440000**	**1500**	**87**	**430**
Residential SAL[d]				**30**	**5.6**	**37**	**33**	**750**	**170**	**17**	**87**
RE36-10-8285	36-610827[f]	0–0.5	SOIL	—	—	—	—	0.0812778	6.1	0.278	4.51
RE36-10-8286	36-610827[f]	2–3	SOIL	—	0.143	—	—	—	3.21	—	2.62
RE36-10-8288	36-610828[f]	2–3	SOIL	—	0.166	—	—	—	—	—	—

Note: Results are in pCi/g.

[a] BVs/FVs are from LANL 1998, 059730.

[b] na = Not available.

[c] FV applies to soil and tuff samples collected from 0–1 ft only.

[d] SALs from LANL 2009, 107655.

[e] — = Not detected or not detected above BV/FV.

[f] Sample location associated with SWMU C-36-003.

Table 7.5-1
Samples Collected and Analyses Requested at SWMU C-36-003

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cyanide (Total)	Explosive Compounds	Gamma Spectroscopy	Tritium	Isotopic Plutonium	Isotopic Uranium	Nitrate	PCB	Perchlorate	SVOC	TAL Metals	VOC
RE36-10-8273	36-610821	0-0.5	SED	10-2201	10-2200	10-2199	10-2201	10-2201	10-2201	10-2201	10-2200	10-2199	10-2200	10-2199	10-2200	10-2199
RE36-10-8274	36-610821	2-3	SOIL	10-2201	10-2200	10-2199	10-2201	10-2201	10-2201	10-2201	10-2200	10-2199	10-2200	10-2199	10-2200	10-2199
RE36-10-8275	36-610822	0-0.5	SED	10-2201	10-2200	10-2199	10-2201	10-2201	10-2201	10-2201	10-2200	10-2199	10-2200	10-2199	10-2200	10-2199
RE36-10-8276	36-610822	2-3	SED	10-2201	10-2200	10-2199	10-2201	10-2201	10-2201	10-2201	10-2200	10-2199	10-2200	10-2199	10-2200	10-2199
RE36-10-8277	36-610823	0-0.5	SED	10-2201	10-2200	10-2199	10-2201	10-2201	10-2201	10-2201	10-2200	10-2199	10-2200	10-2199	10-2200	10-2199
RE36-10-8278	36-610823	2-3	SED	10-2201	10-2200	10-2199	10-2201	10-2201	10-2201	10-2201	10-2200	10-2199	10-2200	10-2199	10-2200	10-2199
RE36-10-8279	36-610824	0-0.5	SOIL	10-2201	10-2200	10-2199	10-2201	10-2201	10-2201	10-2201	10-2200	10-2199	10-2200	10-2199	10-2200	10-2199
RE36-10-8280	36-610824	2-3	SOIL	10-2201	10-2200	10-2199	10-2201	10-2201	10-2201	10-2201	10-2200	10-2199	10-2200	10-2199	10-2200	10-2199
RE36-10-8281	36-610825	0-1	SOIL	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124
RE36-10-8282	36-610825	2-2.5	QBT3	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124	10-2124
RE36-10-8283	36-610826	0-0.5	SOIL	10-2141	10-2141	10-2140	10-2141	10-2141	10-2141	10-2141	10-2141	10-2140	10-2141	10-2140	10-2141	10-2140
RE36-10-8284	36-610826	2-3	SOIL	10-2141	10-2141	10-2140	10-2141	10-2141	10-2141	10-2141	10-2141	10-2140	10-2141	10-2140	10-2141	10-2140
RE36-10-8285	36-610827	0-0.5	SOIL	10-2141	10-2141	10-2140	10-2141	10-2141	10-2141	10-2141	10-2141	10-2140	10-2141	10-2140	10-2141	10-2140
RE36-10-8286	36-610827	2-3	SOIL	10-2141	10-2141	10-2140	10-2141	10-2141	10-2141	10-2141	10-2141	10-2140	10-2141	10-2140	10-2141	10-2140
RE36-10-8287	36-610828	0-0.5	SED	10-2201	10-2200	10-2199	10-2201	10-2201	10-2201	10-2201	10-2200	10-2199	10-2200	10-2199	10-2200	10-2199
RE36-10-8288	36-610828	2-3	SOIL	10-2201	10-2200	10-2199	10-2201	10-2201	10-2201	10-2201	10-2200	10-2199	10-2200	10-2199	10-2200	10-2199

Note: Numbers in analyte columns are request numbers.

Table 7.5-2
Inorganic Chemicals above BVs at SWMU C-36-003

Sample ID	Location ID	Depth (ft)	Media	Antimony	Cadmium	Calcium	Chromium	Copper	Cyanide (Total)	Lead	Manganese	Mercury	Nickel	Nitrate	Perchlorate	Selenium	Silver	Sodium	Uranium	Zinc
Qbt 2, 3, 4 BV				**0.5**	**1.63**	**2200**	**7.14**	**4.66**	**0.5**	**11.2**	**482**	**0.1**	**6.58**	**na**[a]	**na**	**0.3**	**1**	**2770**	**2.4**	**63.5**
Sediment BV				**0.83**	**0.4**	**4420**	**10.5**	**11.2**	**0.82**	**19.7**	**543**	**0.1**	**9.38**	**na**	**na**	**0.3**	**1**	**1470**	**2.22**	**60.2**
Soil BV				**0.83**	**0.4**	**6120**	**19.3**	**14.7**	**0.5**	**22.3**	**671**	**0.1**	**15.4**	**na**	**na**	**1.52**	**1**	**915**	**1.82**	**48.8**
Industrial SSL[b]				**454**	**1120**	**na**	**2920**	**45400**	**22700**	**800**	**145000**	**310**[c]	**22700**	**1820000**	**795**	**5680**	**5680**	**na**	**3410**	**341000**
Residential SSL[b]				**31.3**	**77.9**	**na**	**219**	**3130**	**1560**	**400**	**10700**	**23**[c]	**1560**	**125000**	**54.8**	**391**	**391**	**na**	**235**	**23500**
RE36-10-8273	36-610821	0–0.5	SED	1.3 (U)	0.648 (U)	—[d]	27.8	—	—	—	576	0.232	—	4.43	0.000991 (J)	1.39 (U)	4.32	—	3.89	—
RE36-10-8274	36-610821	2–3	SOIL	0.955 (U)	0.478 (U)	—	—	—	—	—	—	—	—	2.43	0.000926 (J)	—	2.96	—	—	—
RE36-10-8275	36-610822	0–0.5	SED	1.49 (U)	0.745 (U)	—	—	—	—	—	—	0.109	—	—	—	1.56 (U)	—	—	2.26	—
RE36-10-8276	36-610822	2–3	SED	1.14 (U)	0.568 (U)	—	10.7	—	—	—	—	—	—	1.73	0.000642 (J)	1.1 (U)	—	—	—	—
RE36-10-8277	36-610823	0–0.5	SED	1.22 (U)	0.609 (U)	—	11.3	—	—	—	—	—	—	2.23	—	1.34 (U)	—	—	—	—
RE36-10-8278	36-610823	2–3	SED	1.05 (U)	0.524 (U)	—	—	—	—	—	—	—	—	1.44	—	1.04 (U)	—	—	—	—
RE36-10-8279	36-610824	0–0.5	SOIL	1 (U)	0.542	—	101	18.5	0.838	—	—	0.582	—	54.1	0.027	—	348	—	5.2	89.7 (J+)
RE36-10-8280	36-610824	2–3	SOIL	1.07 (U)	1.09	—	90.2	27.8	1.12	—	—	0.815	—	20.4	0.0216	—	338	—	5.96	74.9 (J+)
RE36-10-8281	36-610825	0–1	SOIL	1.35 (U)	1.36	11700	28.5	2720	1.65	144	—	0.297	53	19.9	0.0304	—	32.4	—	2.23	1320
RE36-10-8282	36-610825	2–2.5	QBT3	1.06 (U)	—	—	30.4	309	—	35.7	—	0.131	—	4.07	0.00801	0.635 (J-)	85.9	—	—	235
RE36-10-8283	36-610826	0–0.5	SOIL	1.04 (U)	0.469 (J)	—	108	—	2.18	—	—	0.366	—	540	0.688	—	215	1000	5.15	58.3
RE36-10-8284	36-610826	2–3	SOIL	1.02 (U)	—	—	70.9	—	0.825	—	—	0.309	—	131	0.212	—	199	—	4.36	49.5
RE36-10-8285	36-610827	0–0.5	SOIL	1.36 (U)	—	—	192	15.3	1.57	—	—	0.461	—	1.92	0.0126	—	102	—	10.4	74.2
RE36-10-8286	36-610827	2–3	SOIL	0.986 (U)	3.35	—	97.9	25.2	1.39	—	—	0.254	—	—	0.0117	—	302	—	4.73	53.2
RE36-10-8287	36-610828	0–0.5	SED	1.4 (U)	0.7 (U)	4470 (J+)	21.1	—	—	—	860	0.139	—	3.36	0.00715	1.38 (U)	6.49	—	—	—
RE36-10-8288	36-610828	2–3	SOIL	1.19 (U)	0.595 (U)	—	—	—	—	—	—	—	—	5.08	0.0111	—	1.03	—	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] na = Not available.

[b] SSLs from NMED 2009, 108070, unless otherwise noted.

[c] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[d] — = Not detected or not detected above BV.

Table 7.5-3
Organic Chemicals Detected at SWMU C-36-003

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Anthracene	Aroclor-1254	Aroclor-1260	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzoic Acid	Bromodichloromethane	Chlorodibromomethane	Chloroform	Chrysene
Industrial SSL[a]				**36700**	**183000**	**8.26**	**8.26**	**23.4**	**2.34**	**23.4**	**18300[b]**	**2500000[c]**	**29.2**	**61.3**	**31.9**	**2340**
Residential SSL[a]				**3440**	**17200**	**1.12**	**2.22**	**6.21**	**0.621**	**6.21**	**1720[b]**	**240000[c]**	**5.25**	**11.9**	**5.72**	**621**
RE36-10-8273	36-610821	0–0.5	SED	—[d]	—	0.00442 (J)	—	—	—	—	—	—	—	—	—	—
RE36-10-8275	36-610822	0–0.5	SED	—	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-8277	36-610823	0–0.5	SED	—	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-8278	36-610823	2–3	SED	—	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-8279	36-610824	0–0.5	SOIL	0.0965 (J)	0.294	0.0315	0.0176	2.03	2.24	4.17	1.29	—	—	—	—	2.18
RE36-10-8280	36-610824	2–3	SOIL	—	0.133 (J)	0.0655	0.0369	0.971	1.15	2.31	0.682	—	—	—	—	1.21
RE36-10-8281	36-610825	0–1	SOIL	—	—	1.03	0.617	—	0.792 (J)	1.7 (J)	—	—	0.00117 (J+)	0.000635 (J+)	0.00982 (J+)	0.888 (J)
RE36-10-8282	36-610825	2–2.5	QBT3	—	—	—	—	—	—	—	—	—	—	—	0.00052 (J)	—
RE36-10-8283	36-610826	0–0.5	SOIL	0.0912 (J)	0.277	0.0678	0.0473	1.55	1.57	3	0.71	—	—	—	—	1.62
RE36-10-8284	36-610826	2–3	SOIL	0.0725 (J)	0.191	0.0641	0.043	0.988	1.08	1.96	0.525	—	—	—	—	1.2
RE36-10-8285	36-610827	0–0.5	SOIL	0.244	0.787	0.137	0.101	4.68	5.94	13	3.13	—	—	—	—	5.7
RE36-10-8286	36-610827	2–3	SOIL	0.0145 (J)	0.0304 (J)	0.0791	0.0556	0.171	0.22	0.49	0.126	—	—	—	—	0.269
RE36-10-8287	36-610828	0–0.5	SED	—	—	—	—	—	—	—	—	0.355 (J)	—	—	—	—
RE36-10-8288	36-610828	2–3	SOIL	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 7.5-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Di-n-butylphthalate	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Isopropyltoluene[4-]	Methylene Chloride	Phenanthrene	Pyrene	RDX	Toluene	Trimethylbenzene[1,2,4-]	Xylene[1,3-]+Xylene[1,4-]
Industrial SSL[a]				**68400**	**24400**	**24400**	**23.4**	**14900**[e]	**1090**	**20500**	**18300**	**174**	**57900**	**260**[c]	**3610**
Residential SSL[a]				**6110**	**2290**	**2290**	**6.21**	**3210d**	**199**	**1830**	**1720**	**44.2**	**5570**	**62**[c]	**1090**
RE36-10-8273	36-610821	0–0.5	SED	—	0.0183 (J)	—	—	0.00235 (J+)	—	—	0.0156 (J)	—	0.001 (J+)	—	—
RE36-10-8275	36-610822	0–0.5	SED	—	—	—	—	0.0101 (J+)	—	—	—	—	0.00135 (J+)	—	—
RE36-10-8277	36-610823	0–0.5	SED	—	—	—	—	0.0124 (J+)	—	—	—	—	—	—	—
RE36-10-8278	36-610823	2–3	SED	—	—	—	—	0.00105 (J+)	—	—	—	—	0.000331 (J+)	—	—
RE36-10-8279	36-610824	0–0.5	SOIL	0.441 (J)	3.34	0.0928 (J)	1.21	—	—	1.35	3.31	—	0.000334 (J+)	—	—
RE36-10-8280	36-610824	2–3	SOIL	—	1.63	—	0.641	—	—	0.608	1.57	—	0.000398 (J+)	—	—
RE36-10-8281	36-610825	0–1	SOIL	8.07 (J)	1.2 (J)	—	—	0.000453 (J+)	0.00378 (J+)	0.879 (J)	1.44 (J)	0.106 (J)	0.000524 (J+)	—	—
RE36-10-8282	36-610825	2–2.5	QBT3	—	—	—	—	—	—	—	—	—	—	—	—
RE36-10-8283	36-610826	0–0.5	SOIL	0.547 (J)	2.77	0.0957 (J)	0.695	0.00236 (J-)	0.00315 (J-)	1.33	2.83	—	0.00113 (J-)	0.001 (J-)	0.000822 (J-)
RE36-10-8284	36-610826	2–3	SOIL	0.739 (J)	2.04	0.0719 (J)	0.502	0.0101 (J-)	—	0.988	1.88	—	0.000476 (J-)	—	—
RE36-10-8285	36-610827	0–0.5	SOIL	1.24 (J)	7.63	0.253	3.01	—	—	3.59	9.03	—	—	—	—
RE36-10-8286	36-610827	2–3	SOIL	0.258 (J)	0.425	0.0134 (J)	0.111	—	—	0.212	0.425	—	0.000422 (J-)	—	—
RE36-10-8287	36-610828	0–0.5	SED	—	—	—	—	0.00731 (J)	—	—	—	—	0.00113 (J)	—	—
RE36-10-8288	36-610828	2–3	SOIL	—	—	—	—	—	—	—	—	—	0.000455 (J+)	—	—

Notes: Results are in mg/kg. Data qualifiers are presented in Appendix A.

[a] SSLs from NMED 2009, 108070, unless otherwise noted.

[b] Pyrene used as a surrogate.

[c] EPA regional screening level (http://www.epa.gov/earth1r6/6pd/rcra_c/pd-n/screen.htm).

[d] — = Not detected.

[e] Isopropylbenzene used as a surrogate.

Table 7.5-4
Radionuclides Detected or Detected above BVs/FVs at AOC C-36-003

Sample ID	Location ID	Depth (ft)	Media	Cesium-137	Plutonium-238	Plutonium-239/240	Tritium	Uranium-234	Uranium-235/236	Uranium-238
Qbt 2, 3, 4 BV[a]				**na**[b]	**na**	**na**	**na**	**1.98**	**0.09**	**1.93**
Sediment BV[a]				**0.9**	**0.006**	**0.068**	**0.093**	**2.59**	**0.2**	**2.29**
Soil BV[a]				**1.65**[c]	**0.023**[c]	**0.054**[c]	**na**	**2.59**	**0.2**	**2.29**
Industrial SAL[d]				**23**	**240**	**210**	**440000**	**1500**	**87**	**430**
Residential SAL[d]				**5.6**	**37**	**33**	**750**	**170**	**17**	**87**
RE36-10-8273	36-610821	0–0.5	SED	2.02	—[e]	0.0762	—	—	—	—
RE36-10-8274	36-610821	2–3	SOIL	0.379	—	—	—	—	—	—
RE36-10-8276	36-610822	2–3	SED	—	0.026	—	—	—	—	—
RE36-10-8279	36-610824	0–0.5	SOIL	—	—	—	—	3.43 (J+)	—	3.24 (J+)
RE36-10-8280	36-610824	2–3	SOIL	0.614	—	—	—	3.49 (J+)	—	3.01 (J+)
RE36-10-8281	36-610825	0–1	SOIL	—	—	—	0.0913562	—	—	—
RE36-10-8282	36-610825	2–2.5	QBT3	—	—	—	0.15437	—	0.122	—
RE36-10-8283	36-610826	0–0.5	SOIL	—	—	—	0.0241377	4.43	—	3.72
RE36-10-8284	36-610826	2–3	SOIL	0.326	—	—	0.0277619	3.72	—	2.88
RE36-10-8285	36-610827	0–0.5	SOIL	—	—	—	0.0812778	6.1	0.278	4.51
RE36-10-8286	36-610827	2–3	SOIL	0.143	—	—	—	3.21	—	2.62
RE36-10-8288	36-610828	2–3	SOIL	0.166	—	—	—	—	—	—

Note: Results are in pCi/g. Data qualifiers are presented in Appendix A.

[a] BVs/FVs are from LANL 1998, 059730.

[b] na = Not available.

[c] FV applies to soil and tuff samples collected from 0–1 ft only.

[d] SALs from LANL 2009, 107655.

[e] — = Not detected or not detected above BV/FV.

Appendix A

Acronyms and Abbreviations,
Metric Conversion Table, and Data Qualifier Definitions

A-1.0 ACRONYMS AND ABBREVIATIONS

%R	percent recovery
%RSD	percent relative standard deviation
amu	atomic mass unit
AOC	area of concern
bgs	below ground surface
BMP	best management practice
BV	background value
CCB	continuing calibration blank
CCV	continuing calibration verification
COC	chain of custody
Consent Order	Compliance Order on Consent
COPC	chemical of potential concern
CRDL	contract-required detection limit
CST	Chemical Sciences and Technology (a former Laboratory division)
CVAA	cold vapor atomic absorption
CWDR	chemical waste disposal request
D&D	decontamination and decommissioning
DE	Dynamic Experimentation (Laboratory group)
DER	duplicate error ratio
DGPS	differential global positioning system
DL	detection limit
DOE	Department of Energy (U.S.)
dpm	disintegrations per minute
DU	depleted uranium
EC	expedited cleanup
EDL	estimated detection limit
EP	Environmental Programs Directorate
EPA	Environmental Protection Agency (U.S.)
EQL	estimated quantitation limits
ER	Environmental Restoration
ER ID	Environmental Remediation and Surveillance Program identification number
eV	electron-volt
FD	field duplicate
FV	fallout value

GC	gas chromatography
GCMS	GC/mass spectrometry
GFAA	graphite furnace atomic absorption
GPS	global positioning system
HE	high explosives
HMX	1,3,5,7-tetranitro-1,3,5,7-tetrazocine
HSWA	Hazardous and Solid Waste Amendments
HWFP	Hazardous Waste Facility Permit
ICB	initial calibration blank
ICPES	inductively coupled plasma emission spectroscopy
ICS	interference check sample
ICV	initial calibration verification
ID	identification
I.D.	Inside diameter
IDW	investigation-derived waste
IS	internal standard
KPA	kinetic phosphorescence analysis
LAL	lower acceptance limit
LAMC	Los Alamos Medical Center
LANL	Los Alamos National Laboratory
LASL	Los Alamos Scientific Laboratory
LCS	laboratory control sample
LLW	low-level waste
MDC	minimum detectable concentration
MDL	method detection limit
MLLW	mixed low-level waste
MS	matrix spike
MSD	matrix spike duplicate
MSW	municipal solid waste
NFA	no further action
NMED	New Mexico Environment Department
NMSA	New Mexico Statues Annotated
NOD	notice of disapproval
NPDES	National Pollutant Discharge Elimination System
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl

PID	photoionization detector
PPE	personal protective equipment
QA	quality assurance
QC	quality control
QP	quality procedure
RCRA	Resource Conservation and Recovery Act
RCT	radiation control technician
RDX	hexahydro-1,3,5-trinitro-1,3,5-triazine)
RER	Relative error ratio
RFI	Resource Conservation and Recovery Act Facility Investigation
RL	reporting limit
RPD	relative percent difference
RRF	relative response factor
SAL	screening action level
SCL	sample collection log
SMO	Sample Management Office
SOP	standard operating procedure
SOW	statement of work
SSL	soil screening level
SVOC	semivolatile organic compound
SWMU	solid waste management unit
SWSC	Sanitary Wastewater Systems Consolidation
TA	technical area
TAL	target analyte list
TATB	triaminotrinitrobenzene
TCLP	toxicity characteristic leaching procedure
TNT	trinitrotoluene
TPU	total propagated uncertainty
TSDF	treatment, storage, and disposal facility
UAL	upper acceptance level
VCA	voluntary corrective action
VCP	vitrified-clay pipe
VOC	volatile organic compound
WCSF	waste characterization strategy form

A-2.0 METRIC CONVERSION TABLE

Multiply SI (Metric) Unit	by	To Obtain U.S. Customary Unit
kilometers (km)	0.622	miles (mi)
kilometers (km)	3281	feet (ft)
meters (m)	3.281	feet (ft)
meters (m)	39.37	inches (in.)
centimeters (cm)	0.03281	feet (ft)
centimeters (cm)	0.394	inches (in.)
millimeters (mm)	0.0394	inches (in.)
micrometers or microns (µm)	0.0000394	inches (in.)
square kilometers (km^2)	0.3861	square miles (mi^2)
hectares (ha)	2.5	acres
square meters (m^2)	10.764	square feet (ft^2)
cubic meters (m^3)	35.31	cubic feet (ft^3)
kilograms (kg)	2.2046	pounds (lb)
grams (g)	0.0353	ounces (oz)
grams per cubic centimeter (g/cm^3)	62.422	pounds per cubic foot (lb/ft^3)
milligrams per kilogram (mg/kg)	1	parts per million (ppm)
micrograms per gram (µg/g)	1	parts per million (ppm)
liters (L)	0.26	gallons (gal.)
milligrams per liter (mg/L)	1	parts per million (ppm)
degrees Celsius (°C)	9/5 + 32	degrees Fahrenheit (°F)

A-3.0 DATA QUALIFIER DEFINITIONS

Data Qualifier	Definition
U	The analyte was analyzed for but not detected.
J	The analyte was positively identified, and the associated numerical value is estimated to be more uncertain than would normally be expected for that analysis.
J+	The analyte was positively identified, and the result is likely to be biased high.
J-	The analyte was positively identified, and the result is likely to be biased low.
UJ	The analyte was not positively identified in the sample, and the associated value is an estimate of the sample-specific detection or quantitation limit.
R	The data are rejected as a result of major problems with quality assurance/quality control (QA/QC) parameters.

Appendix B

Field Methods

B-1.0 INTRODUCTION

This appendix summarizes the field methods used during the 2009–2010 investigation of the Threemile Canyon Aggregate Area at Los Alamos National Laboratory (LANL or Laboratory). Table B-1.0-1 presents a summary of the field methods used, and the following sections provide more detailed descriptions of these methods. All activities were conducted in accordance subcontractor procedures that are equivalent to Laboratory standard operating procedures (SOPs) listed in Table B-1.0-2 and are available at http://www.lanl.gov/environment/all/qa.shtml.

B-2.0 EXPLORATORY DRILLING CHARACTERIZATION

No exploratory drilling characterization was conducted. All drilling was conducted for the purpose of collecting investigation samples.

B-3.0 FIELD-SCREENING METHODS

This section summarizes the field-screening methods used during the investigation activities. Field screening for radioactivity was performed on each sample. The field-screening results are presented in Table 2.2-2 of the investigation report.

B-3.1 Field Screening for VOCs

Field screening for volatile organic compounds (VOCs) was not required per the approved investigation work plan (LANL 2008, 105673; NMED 2008, 104256).

B-3.2 Field Screening for Radioactivity

During sampling of soil, fill, tuff, and sediment, each sample was screened for radioactivity immediately as it was collected, targeting alpha and beta/gamma emitters. Screening was conducted by a Laboratory radiation control technician (RCT) using an Eberline E-600 radiation meter with an 380AB or SHP360 probe (or equivalent) and as ESP-1 rate meter with a 210 probe (or equivalent). The Eberline E-600 with attachment 380AB or SHP360 consists of a dual phosphor plate covered by two Mylar windows housed in a light-excluding metal body. The phosphor plate is a plastic scintillator for the detection of beta and gamma emissions and is thinly coated with zinc sulfide for the detection of alpha emissions. The operational range varies from trace emissions to 1 million disintegrations per minute (dpm). The screening results are presented in Table 2.2-2 of the investigation report.

B-4.0 FIELD INSTRUMENT CALIBRATION

All instruments were calibrated before use. Calibration of the Eberline E-600 was conducted by the RCT. All calibrations were performed according to the manufacturers' specifications and requirements.

B-4.1 Eberline E-600 Instrument Calibration

The Eberline E-600 was calibrated daily by the RCT before local background levels for radioactivity were measured. The instrument was calibrated using plutonium-239 and chloride-36 sources for alpha and

beta emissions, respectively. The following five checks were performed as part of the calibration procedures:

- calibration date
- physical damage
- battery
- response to a source of radioactivity
- background

All calibrations performed for the Eberline E-600 met the manufacturer's specifications, the requirements of SOP-5006, and the applicable radiation detection instrument manual. Calibrations were recorded in daily activity logs.

B-5.0 SURFACE AND SUBSURFACE SAMPLING

This section summarizes the methods used to collect surface and subsurface samples, including soil, fill, tuff, and sediment samples, according to the revised investigation work plan (LANL 2008, 105673) and the New Mexico Environment Department's (NMED's) approval with modifications letter (NMED 2008, 104256).

B-5.1 Surface Sampling Methods

Surface samples were collected within former Technical Area 12 (TA-12), TA-14, TA-15, TA-36, and TA-18 using either hand-auger or spade-and-scoop methods. Surface samples were collected in accordance with approved subcontractor procedures technically equivalent to SOP-06.10, Hand Auger and Thin-Wall Tube Sampler, or SOP-06.09, Spade and Scoop Method for the Collection of Soil Samples. A hand auger or spade and scoop was used to collect material in approximately 6-in. increments. The sample material was placed in a stainless-steel bowl with a stainless-steel scoop, after which it was transferred to sterile sample collection jars or bags. Samples were preserved using coolers to maintain the required temperature and chemical preservatives, such as nitric acid, in accordance with an approved subcontractor procedure technically equivalent to SOP-5056, Sample Containers and Preservation.

Samples were appropriately labeled, sealed with custody seals, and documented before transporting to the Sample Management Office (SMO). Samples were managed according to approved subcontractor procedures technically equivalent to SOP-5057, Handling, Packaging, and Transporting Field Samples, and SOP-5058, Sample Control and Field Documentation.

Sample collection tools were decontaminated (see section B-5.7) immediately before each sample was collected in accordance with a subcontractor procedure technically equivalent to SOP-5061, Field Decontamination of Drilling and Sampling Equipment.

B-5.2 Borehole Logging

Borehole logs were completed for boreholes drilled with a hollow-stem auger drill rig. Information recorded on field boring logs included footage and percent recovery, lithology and depths of lithologic contacts, depth of samples collected, core descriptions, and other relevant observations. The borehole logs are presented in Appendix C (on CD).

B-5.3 Subsurface Tuff Sampling Methods

Subsurface samples were collected in accordance with approved subcontractor procedures technically equivalent to SOP-06.10, Hand Auger and Thin-Wall Tube Sampler, or SOP-06.26, Core Barrel Sampling for Subsurface Earth Materials. Borehole samples were collected in a stainless-steel split-spoon core-barrel sampler that retrieved core in 2.5-ft intervals. The samples collected, listed by location and depth, are provided in tables for each site in the investigation report.

Core retrieved from the subsurface was field screened for radioactivity and was visually inspected and logged. Following inspection, the 2.5-ft core section to be sampled was removed from the core barrel and placed in a stainless-steel bowl and homogenized. The material was crushed, if necessary, with a decontaminated rock hammer and stainless-steel spoon to allow core material to fit into sample containers.

Samples for VOC analysis were collected immediately to minimize the loss of subsurface VOCs during the sample-collection process. After the VOC samples were collected, a stainless-steel scoop and bowl were used to transfer samples for the remaining analytical suites to sterile sample collection jars or bags for transport to the SMO. The sample collection tools were decontaminated immediately before each sample was collected (see section B-5.7) in accordance with an approved subcontractor procedure technically equivalent to SOP-5061, Field Decontamination of Equipment.

B-5.4 Quality Control Samples

Quality control (QC) samples were collected in accordance with an approved subcontractor procedure technically equivalent to SOP-5059, Field Quality Control Samples. The QC samples included field duplicates, field rinsate blanks, and field trip blanks. Field duplicate samples were collected from the same material as the regular investigation samples and submitted for the same analyses. Field duplicate samples were collected at a frequency of at least 1 duplicate sample for every 10 samples.

Field rinsate blanks were collected to evaluate field decontamination procedures. Rinsate blanks were collected by rinsing sampling equipment (i.e., auger buckets, sampling bowls and spoons) with deionized water after decontamination. The rinsate water was collected in a sample container and submitted to the SMO. Field rinsate blank samples were analyzed for inorganic chemicals (target analyte list [TAL] metals, perchlorate, and total cyanide) and were collected from sampling equipment at a frequency of at least 1 rinsate sample for every 10 solid samples.

Field trip blanks also were collected at a frequency of one per day when samples were being collected for VOC analysis. Trip blanks consisted of containers of certified clean sand opened and kept with the other sample containers during the sampling process.

B-5.5 Sample Documentation and Handling

Field personnel completed a sample collection log (SCL) and a chain of custody (COC) form for each sample. Sample containers were sealed with signed custody seals and placed in coolers at approximately 4°C. Samples were handled in accordance with approved subcontractor procedures technically equivalent to SOP-5057, Handling, Packaging, and Transporting Field Samples, and SOP-5056, Sample Containers and Preservation. Samples were transported to the SMO for processing and shipment to off-site contract analytical laboratories. The SMO personnel reviewed and approved the SCL/COC forms and accepted custody of the samples. The SCL/COC forms are provided in Appendix E (on DVD).

B-5.6 Borehole Abandonment

All boreholes were abandoned in accordance with an approved subcontractor procedure technically equivalent to SOP-5034, Monitor Well and RFI Borehole Abandonment, by filling the boreholes with bentonite chips up to 2–3 ft from the ground surface. The chips were hydrated and clean soil was placed on top. All cuttings were managed as investigation-derived waste (IDW) as described in Appendix F.

B-5.7 Decontamination of Sampling Equipment

The split-spoon core barrels and all other sampling equipment that came (or could have come) in contact with sample material were decontaminated after each core was retrieved and logged. Decontamination included wiping the equipment with Fantastik and paper towels. Decontamination of the drilling equipment was conducted before mobilization of the drill rig to another borehole to avoid cross-contamination between samples and borehole locations. Residual material adhering to equipment was removed using dry decontamination methods such as the use of wire brushes and scrapers. Decontamination activities were performed in accordance with an approved subcontractor procedure technically equivalent to SOP-5061, Field Decontamination of Equipment. Field rinsate blank samples were collected in accordance with an approved procedure technically equivalent to SOP-5059, Field Quality Control Samples.

B-6.0 GEODETIC SURVEYING

Geodetic surveys of all sample locations were performed using a Trimble RTK 5700 differential global-positioning system (DGPS) referenced from published and monumented external Laboratory survey control points in the vicinity. All sampling locations were surveyed in accordance with an approved subcontractor procedure technically equivalent to SOP-5028, Coordinating and Evaluating Geodetic Surveys. Horizontal accuracy of the monumented control points is within 0.1 ft. The DGPS instrument referenced from Laboratory control points is accurate within 0.2 ft. The surveyed coordinates are presented in Table 2.2-1 of the investigation report.

B-7.0 IDW STORAGE AND DISPOSAL

All IDW generated during the field investigation was managed in accordance with an approved subcontractor procedure technically equivalent to SOP-5238, Characterization and Management of Environmental Program Waste. This procedure incorporates the requirements of all applicable U.S. Environmental Protection Agency (EPA) and NMED regulations, U.S. Department of Energy orders, and Laboratory implementation requirements. IDW was also managed in accordance with the approved waste characterization strategy form and the IDW management appendix of the approved investigation work plan (LANL 2008, 105673; NMED 2008, 104256). Details of IDW management for the Threemile Canyon Aggregate Area investigation are presented in Appendix F.

B-8.0 DEVIATIONS FROM WORK PLAN

At each solid waste management unit (SWMU) and area of concern (AOC) investigated, proposed sampling for PCBs was changed from the approved investigation work plan (LANL 2008, 105673; NMED 2008, 104256). Additional samples were collected beyond the planned minimum 20% for PCB analysis to aid in determining the extent of contamination.

Proposed sampling locations identified in the approved investigation work plan (LANL 2008, 105673; NMED 2008, 104256) were moved as a result of site conditions encountered during the fieldwork activities. These locations were moved because they were sited on top of, or next to, underground utilities, sample refusal occurred, or the proposed locations were inaccessible. When locations were moved, the new locations were sited as close as possible to the original locations. Deviations to sampling locations and to the work plan scope are discussed below.

AOC C-12-003: Ground-truthing of the former structure was conducted. Based on the location of the structure sign and the berm, the sampling locations were moved to include the former structure.

Consolidated Unit 12-001(a)-99: Refusal occurred at two locations, and samples could not be collected at the second depth. Four locations were moved to be sited in the drainage.

AOC 12-004(a): Refusal occurred at one location, and a sample could not be collected at the second depth.

AOC 12-004(b): Two additional sampling locations were sampled.

AOC 15-004(d): One location was moved approximately 20 ft south because of the presence of active utilities.

AOC 15-005(c): Two locations were moved because of the presence of active utilities: one was moved a few feet to the north and the other approximately 5 ft to the east.

SWMU 15-007(c): Two sampling locations were inadvertently not sampled.

SWMU 15-008(b): Refusal occurred at one location, and a sample could not be collected at the second depth.

SWMU 15-009(c): Six locations were moved to be sited in the drainage. Refusal occurred at one location, and a sample could not be collected at the second depth.

SWMU 15-009(h): The septic tank was not removed because active utilities were located too close to the septic tank to safely remove it. Consequently, the proposed samples from below the tank were not collected.

SWMU 15-010(b): The high explosives settling tank was not removed. Samples were not collected from below the inlet line, the tank, or the outlet line. Two locations were moved to be sited in the drainage. Refusal occurred at one drainage location, and a sample could not be collected at the second depth.

SWMU 36-003(a): Three locations were moved north because of the presence of active utilities. One location was not sampled because refusal occurred; in addition, the location was within 5 ft of two other sampling locations. A sample could not be collected at the second depth because of refusal at two locations.

SWMU 36-008: Two locations were not sampled because they were located on solid rock and were inaccessible to a drill rig. Refusal occurred at five locations, and a sample could not be collected at the second depth.

B-9.0 REFERENCES

The following list includes all documents cited in this appendix. Parenthetical information following each reference provides the author(s), publication date, and ER ID. This information is also included in text citations. ER IDs are assigned by the Environmental Programs Directorate's Records Processing Facility (RPF) and are used to locate the document at the RPF and, where applicable, in the master reference set.

Copies of the master reference set are maintained at the NMED Hazardous Waste Bureau and the Directorate. The set was developed to ensure that the administrative authority has all material needed to review this document, and it is updated with every document submitted to the administrative authority. Documents previously submitted to the administrative authority are not included.

LANL (Los Alamos National Laboratory), October 2008. "Investigation Work Plan for Threemile Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-08-6727, Los Alamos, New Mexico. (LANL 2008, 105673)

NMED (New Mexico Environment Department), November 20, 2008. "Approval with Modifications for Investigation Work Plan for Threemile Canyon Aggregate Area, Revision 1," New Mexico Environment Department letter to D. Gregory (DOE-LASO) and D. McInroy (LANL) from J.P. Bearzi (NMED-HWB), Santa Fe, New Mexico. (NMED 2008, 104256)

Table B-1.0-1
Summary of Field Investigation Methods

Method	Summary
Spade and Scoop Collection of Soil Samples	This method is typically used to collect shallow (i.e., approximately 0-12 in.) soil or sediment samples. The spade-and-scoop method involves digging a hole to the desired depth, as prescribed in the work plan, and collecting a discrete grab sample. The sample is typically placed in a clean stainless-steel bowl for transfer into various sample containers.
Hand Auger Sampling	This method is typically used for sampling soil or sediment at depths of less than 10–15 ft but in some cases may be used to collect samples of weathered or nonwelded tuff. The method involves hand-turning a stainless-steel bucket auger (typically 3–4 in. inside diameter [I.D.]), creating a vertical hole which can be advanced to the desired sample depth. When the desired depth was reached, the auger was decontaminated before advancing the hole through the sampling depth. The sample material was transferred from the auger bucket to a stainless-steel sampling bowl before the various required sample containers were filled.
Split-Spoon Core-Barrel Sampling	In this method, a stainless-steel core barrel (typically 4-in. I.D., 2.5 ft long) is advanced using a powered drilling rig. The core barrel extracts a continuous length of soil and/or rock that can be examined as a unit. The split-spoon core barrel is a cylindrical barrel split lengthwise so the two halves can be separated to expose the core sample. Once extracted, the section of core was screened for radioactivity and organic vapors and described in a geologic log. A portion of the core was then collected as a discrete sample from the desired depth.
Handling, Packaging, and Shipping of Samples	Field team members sealed and labeled samples before packing to ensure the sample and the transport containers were free of external contamination. Field team members packaged all samples to minimize the possibility of breakage during transport. After all environmental samples were collected, packaged, and preserved, a field team member transported them to the SMO. The SMO arranged to ship the samples to the analytical laboratories.
Sample Control and Field Documentation	The collection, screening, and transport of samples were documented on standard forms generated by the SMO. These included SCLs, COC forms, and sample container labels. SCLs were completed at the time of sample collection, and the logs were signed by the sampler and a reviewer who verified the logs for completeness and accuracy. Corresponding labels were initialed and applied to each sample container, and custody seals were placed around each sample container. COC forms were completed and signed to verify that the samples were not left unattended.
Field Quality Control Samples	Field quality control samples were collected as follows: *Field Duplicates*: at a frequency 10%; collected at the same time as a regular sample and submitted for the same analyses *Equipment Rinsate Blank*: at a frequency of 10%; collected by rinsing sampling equipment with deionized water, which was collected in a sample container and submitted for laboratory analysis *Trip Blanks*: required for all field events that include the collection of samples for VOC analysis. Trip blanks containers of certified clean sand were opened and kept with the other sample containers during the sampling process
Field Decontamination of Drilling and Sampling Equipment	Dry decontamination was used to minimize the generation of liquid waste. Dry decontamination included the use of a wire brush or other tool to remove soil or other material adhering to the sampling equipment, followed by use of a commercial cleaning agent (nonacid, waxless cleaners) and paper wipes.

Table B-1.0-1 (continued)

Method	Summary
Containers and Preservation of Samples	Specific requirements/processes for sample containers, preservation techniques, and holding times are based on EPA guidance for environmental sampling, preservation, and quality assurance. Specific requirements for each sample were printed on the SCL provided by the SMO (size and type of container, e.g., glass, amber glass, and polyethylene). All samples were preserved by placing them in insulated containers with ice to maintain a temperature of 4ºC.
Coordinating and Evaluating Geodetic Surveys	Geodetic surveys focused on obtaining survey data of acceptable quality to use during project investigations. Geodetic surveys were conducted with a Trimble 5700 DGPS. The survey data conformed to Laboratory Information Architecture project standards IA-CB02, GIS Horizontal Spatial Reference System, and IA-D802, Geospatial Positioning Accuracy Standard for A/E/C/ and Facility Management. All coordinates were expressed as State Plain Coordinate System 83, NM Central, U.S. feet. All elevation data were reported relative to the National Geodetic Vertical Datum of 1983.
Management of Environmental Restoration Project Waste, Waste Characterization	IDW is managed, characterized, and stored in accordance with an approved waste characterization strategy form that documents site history, field activities, and characterization approach for each waste stream managed. During the investigation, waste characterization complied with on- or off-site waste acceptance criteria. All stored IDW was marked with appropriate signage and labels. Drummed IDW was stored on pallets to prevent deterioration of containers. A waste storage area was established before waste was generated. Waste storage areas located in controlled areas of the Laboratory and were monitored as needed to prevent inadvertent addition or management of wastes by unauthorized personnel. Each container of waste generated was individually labeled with waste classification, item identification number, and radioactivity (if applicable), immediately following containerization. All waste was segregated by classification and compatibility to prevent cross-contamination. Management of IDW is described in Appendix F.

Table B-1.0-2
Standard Operating Procedures Used for the
Investigation Activities at Upper Mortandad Canyon Aggregate Area

SOP-5018, Integrated Fieldwork Planning and Authorization
SOP-5238, Characterization and Management of Environmental Program Waste
SOP-5028, Coordinating and Evaluating Geodetic Surveys
SOP-5034, Monitor Well and RFI Borehole Abandonment
SOP-5055, General Instructions for Field Investigations
SOP-5056, Sample Containers and Preservation
SOP-5057, Handling, Packaging, and Transporting Field Samples
SOP-5058 Sample Control and Field Documentation
SOP-5059 Field Quality Control Samples
SOP-5061, Field Decontamination of Equipment
SOP-01.12 Field Site Closeout Checklist
SOP-06.09, Spade and Scoop Method for Collection of Soil Samples
SOP-06.10, Hand Auger and Thin-Wall Tube Sampler
SOP-06.26, Core Barrel Sampling for Subsurface Earth Materials
06.33, Headspace Vapor Screening with a Photoionization Detector
SOP-5181, Notebook Documentation for Environmental Restoration Technical Activities
EP-DIR-QAP-0001, Quality Assurance Plan for the Environmental Programs

Note: Procedures used were approved subcontractor procedures technically equivalent to the procedures listed.

Appendix C

Borehole Logs
(on CD included with this document)

Appendix D

Analytical Program

D-1.0 INTRODUCTION

This appendix presents the analytical methods used and the review of the data quality of the analytical results for the Threemile Canyon Aggregate Area investigation at Los Alamos National Laboratory (the Laboratory).

The analytical program for this investigation includes submission of samples to approved contract laboratories, with specific requirements for analytical methods, data quality, and reporting. Quality assurance (QA), quality control (QC), and data validation procedures were implemented in accordance with the requirements of the Quality Assurance Project Plan Requirements for Sampling and Analysis (LANL 1996, 054609), and the analytical services statement of work (SOW) for contract laboratories (LANL 2000, 071233). The results of the QA/QC activities were used to estimate accuracy, bias, and precision of the analytical measurements. The QC samples included preparation blanks, spikes, matrix spikes (MSs), and laboratory control samples (LCSs) to assess accuracy and bias. Internal standards (ISs), external standards, surrogates, and tracers were also used to assess accuracy.

The type and frequency of QC analyses are described in the analytical service SOW (LANL 2000, 071233), along with the applicable analytical methods. Other QC factors such as sample preservation and holding times were also assessed in accordance with the requirements outlined in Standard Operating Procedure (SOP) 5056, Sample Containers and Preservation. Evaluating these QC indicators allows estimates to be made of the accuracy, bias, and precision of the analytical suites. A focused data validation was also performed for all the data packages (also referred to as request numbers).

The following SOPs were used for data validation:

- SOP-5161, Routine Validation of Volatile Organic Compound (VOC) Analytical Data
- SOP-5162, Routine Validation of Semivolatile Organic Compound (SVOC) Analytical Data
- SOP-5163, Routine Validation of Organochlorine Pesticide (PEST) and Polychlorinated Biphenyl (PCB) Analytical Data
- SOP-5165, Routine Validation of Metals Analytical Data
- SOP-5166, Routine Validation of Gamma Spectroscopy, Chemical Separation Alpha Spectrometry, Gas Proportional Counting, and Liquid Scintillation Analytical Data
- SOP-5168, Routine Validation of LC/MS/MS High Explosive Analytical Data
- SOP-5191, Routine Validation of LC/MS/MS Perchlorate Analytical Data (SW-846 EPA Method 6850)

The focused validation included a more detailed review of the data generated by the analytical laboratory. The analytical data and instrument printouts used during focused validation and the validation reports are provided in Appendix E.

Analytical data were reviewed and evaluated based on U.S. Environmental Protection Agency (EPA) National Functional Guidelines for inorganic and organic chemical data review where applicable (EPA 1994, 048639; EPA 1999, 066649). As a result of the data validation and assessment efforts, qualifiers may be assigned to the analytical records as appropriate. The data qualifiers used in the data validation procedures are defined in Appendix A.

D-2.0 ANALYTICAL DATA ORGANIZATION

The data sets evaluated for the Threemile Canyon Aggregate Area include analytical results for samples collected in the 2009–2010 investigation and, for some sites, historical data collected during previous investigations in 1994 and/or 1998. All historical analytical data included in the report were reviewed and revalidated to current data-quality standards. Only analytical data for which complete data packages and sample documentation are available are appropriate for decision-making purposes and included in the data set(s). All other data are screening-level data only and are not included in the data tables in the investigation report or in this appendix.

D-3.0 INORGANIC CHEMICAL ANALYSES

Threemile Canyon Aggregate Area samples collected during historical investigations as well as the 2009–2010 investigation were analyzed for one or more of the following inorganic chemicals: nitrate, target analyte list (TAL) metals, total uranium, perchlorate, and total cyanide. Samples were analyzed for nitrate using EPA Method 300.0. Samples were analyzed for TAL metals using EPA SW-846 Methods 6010, 6010B, 6020, 7470A, 7471A, and 7841. Other analytical methods included EPA SW-846 Method 9012A for total cyanide, EPA SW-846 Method 6850 for perchlorate, and generic kinetic phosphorescence analysis (KPA) for uranium (historical samples only). The analytical methods used for inorganic chemicals are listed in Table D-3.0-1.

A total of 783 samples (plus 80 field duplicates) were submitted for analysis of TAL metals; 227 samples (plus 24 field duplicates) were submitted for analysis of nitrate, 762 samples (plus 80 field duplicates) were submitted for analysis of perchlorate and total cyanide, and 665 samples were submitted for analysis of total uranium.

All decision-level analytical data are included in Appendix E (on DVD).

D-3.1 Inorganic Chemical Analyses

The use of QA/QC samples is designed to produce quantitative measures of the reliability of specific parts of an analytical procedure. The results of the QA/QC analyses performed on a sample provide confidence about whether the analyte is present and whether the concentration reported is accurate. To assess the accuracy and precision of inorganic chemical analyses, LCSs, preparation blanks, MS samples, laboratory duplicate samples, interference check samples (ICSs), and serial dilution samples were analyzed as part of the Threemile Canyon Aggregate Area investigations. Each of these QA/QC sample types is defined in the analytical services SOWs (LANL 1995, 049738; LANL 2000, 071233) and is described briefly in the sections below.

The LCS serves as a monitor of the overall performance of each step during the analysis, including sample digestion. For inorganic chemicals in soil/tuff, LCS percent recoveries (%R) should fall within the lower acceptance limit (LAL) and upper acceptance limit (UAL).

Preparation blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as those used in the environmental sample processing and which is extracted and analyzed in the same manner as the corresponding environmental samples. Preparation blanks are used to measure bias and potential cross-contamination. All inorganic chemical results should be below the method detection limit (MDL).

MS samples assess the accuracy of inorganic chemical analyses. These samples are designed to provide information about the effect of the sample matrix on the sample preparation procedures and analytical technique. The MS acceptance criterion is between the LAL and UAL, inclusive for all spiked analytes.

Laboratory duplicate samples assess the precision of inorganic chemical analyses. All relative percent differences (RPDs) between the sample and laboratory duplicate should be ±35% for soil (LANL 1995, 049738; LANL 2000, 071233).

The ICSs assess the accuracy of the analytical laboratory's interelement and background correction factors used for inductively coupled plasma emission spectroscopy. The ICS %R should be between the LAL and UAL.

Serial dilution samples measure potential physical or chemical interferences and correspond to a sample dilution ratio of 1:5. The chemical concentration in the undiluted sample must be at least 50 times the MDL (100 times for inductively coupled plasma mass spectroscopy) for valid comparison. For sufficiently high concentrations, the relative percent difference (RPD) should be within 10%.

Details regarding the quality of the inorganic chemical analytical data included in the data set are summarized in the following subsections.

D-3.2 Data Quality Results for Inorganic Chemicals

The majority of the analytical results are qualified as not detected (U) because the analytes were not detected by the respective analytical methods or were not qualified. These data do not have any quality issues associated with the values presented.

D-3.2.1 Chain of Custody

Chain-of-custody forms were maintained properly for all samples analyzed for inorganic chemicals (see Appendix E).

D-3.2.2 Sample Documentation

All samples analyzed for inorganic chemicals were properly documented in the field in the sample collection logs (see Appendix E).

D-3.2.3 Sample Dilutions

Some samples were diluted for inorganic chemical analyses. No qualifiers were applied to any inorganic chemical analytical results because of dilutions.

D-3.2.4 Sample Preservation

Preservation criteria were met for all samples analyzed for inorganic chemicals.

D-3.2.5 Holding Times

Holding time criteria were met for all samples analyzed for inorganic chemicals.

D-3.2.6 Initial and Continuing Calibration Verifications

Three nitrate results were qualified as estimated (J), and one nitrate result was qualified as estimated not detected (UJ) because the associated initial calibration verification (ICV) or continuing calibration verification (CCV) was recovered outside the method-specific limits.

Six nitrate results were qualified as undetected (U) because the sample results were less than or equal to 5 times the concentration in the initial calibration blank (ICB) or continuing calibration blank (CCB).

Forty-one TAL metal results were qualified as estimated (J) because the ICV and/or CCV were not analyzed at the appropriate method frequency.

A total of 202 TAL metal results were qualified as undetected (U) because the sample results were less than or equal to 5 times the concentration in the ICB/CCB.

Fourteen TAL metal results were qualified as estimated not detected (UJ) because the ICV and/or CCV were not analyzed at the appropriate method frequency.

Fourteen cyanide (total) results were qualified as undetected (U) because the sample results were less than or equal to 5 times the concentration in the ICB/CCB.

Twelve cyanide (total) results were qualified as estimated not detected (UJ) because the associated matrix spike recovery was less than the LAL but greater than 10%.

D-3.2.7 Interference Check Sample and/or Serial Dilutions

Interference check sample and serial dilution results were within acceptable limits for all samples analyzed for inorganic chemicals.

D-3.2.8 Laboratory Duplicate Samples

A total of 659 TAL metal results were qualified as estimated (J) because the sample and duplicates were greater than or equal to 5 times the reporting limit (RL) and the duplicate RPD was greater than 35%.

D-3.2.9 Preparation Blanks

A total of 377 TAL metal results were qualified as estimated (J) because the results were less than 5 times the amount in the preparation blank.

A total of 101 TAL metal results were qualified as undetected (U) because the sample results were less than or equal to 5 times the concentration in the preparation blank.

D-3.2.10 MS Samples

Twenty-two nitrate results were qualified as estimated and potentially biased low (J-), and 38 nitrate results were qualified as estimated not detected (UJ) because the analyte was recovered below the LAL but above 10% in the associated MS sample.

Nine TAL metal results were qualified as estimated and potentially biased low (J-) because the analyte was recovered below the LAL but above 30% in the associated MS sample.

A total of 441 TAL metal results were qualified as estimated and potentially biased low (J-) because the associated MS recovery was less than the LAL but greater than 10%.

Six TAL metal results were qualified as estimated and potentially biased high (J+) because the associated MS recovery was less than the LAL but greater than 10%.

A total of 1816 TAL metal results were qualified as estimated and potentially biased high (J+) because the analyte was recovered above the UAL in the associated MS sample.

A total of 265 TAL metal results were qualified as estimated not detected (UJ) because the associated MS recovery was below the LAL but above 10%.

Six TAL metal results were qualified as estimated not detected (UJ) because the associated MS recovery was above the UAL.

Four perchlorate results were qualified as estimated and potentially biased high (J+) because the MS or matrix spike duplicate (MSD) %R was greater than 125%.

Six cyanide (total) results were qualified as estimated and potentially biased low (J-) because the associated MS recovery was less than the LAL but greater than 10%.

D-3.2.11 LCS Recoveries

Three TAL metal results were qualified as estimated and potentially biased low (J-) because the LCS %R was less than 10%.

Ninety-seven TAL metal results were qualified as estimated not detected (UJ) because the LCS %R was less than 10%.

Four TAL metal results were qualified as estimated not detected (UJ) because the mass calibration was not within 0.1 atomic mass units or the percent relative standard deviation (%RSD) exceeded 5%.

D-3.2.12 Detection Limits

Detection limits were within acceptable ranges for all samples analyzed for inorganic chemicals.

D-3.2.13 Trip Blanks, Equipment Blanks, and Rinsate Blanks

A total of 256 TAL metal results were qualified as undetected (U) because the sample results were less than or equal to 5 times the concentration in the trip blank or equipment rinsate blank.

Four perchlorate results were qualified as undetected (U) because the sample results were less than or equal to 5 times the concentration in the trip blank or equipment rinsate blank.

D-3.2.14 Rejected Results

Twenty-one barium results [seven from Solid Waste Management Unit [SWMU] 15-007(d), eight from Area of Concern [AOC] 15-008(g), and six from SWMU 15-009(c)] were rejected (R) because the associated MS recoveries were less than 10%.

Fifteen copper results from SWMU 15-008(b) were rejected (R) because the associated MS recoveries were less than 10%.

Eight selenium results from AOC 15-004(d) were rejected (R) because the associated MS recoveries were less than 10%. All of the rejected selenium results were initially qualified as nondetects by the analytical laboratories.

The rejected data were not used to characterize the extent of contamination. However, sufficient data of good quality are available to characterize the site(s), with the exceptions of barium at AOC 15-008(g), where no sample results remained after the eight results were rejected, and selenium at AOC 15-004(d), where only two sample results remain. The results of other qualified data were used as reported and do not affect the usability of the sample results.

D-4.0 ORGANIC CHEMICAL ANALYSES

Soil, tuff, and sediment samples collected during the investigation were analyzed for one or more of the following organic chemicals: explosive compounds, polychlorinated biphenyls (PCBs), semivolatile organic compounds (SVOCs), volatile organic compounds (VOCs), and pesticides. Samples were analyzed for explosive compounds using SW-846 Methods 8321A and 8330; for PCBs using SW-846 Method 8082; for pesticides using SW-846 Method 8081; for SVOCs using SW-846 Method 8270C; and for VOCs using SW-846 Method 8260B. All QC procedures were followed as required by the analytical laboratory SOWs (LANL 1995, 049738; LANL 2000, 071233). The analytical methods used for organic chemicals are listed in Table D-4.0-1.

A total of 773 samples (plus 80 field duplicates) were submitted for analysis of high explosives (HE); 265 samples (plus 72 field duplicates) were submitted for analysis of PCBs; 9 samples were submitted for analysis of pesticides; 350 samples (plus 37 field duplicates) were submitted for analysis of SVOCs, and 308 samples (plus 31 field duplicates) were submitted for analysis of VOCs.

All organic chemical analytical results are included in Appendix E (on DVD).

D-4.1 Organic Chemical QA/QC Samples

The use of QA/QC samples is designed to produce quantitative measures of the reliability of specific parts of an analytical procedure. The results of the QA/QC analyses performed on a sample provide confidence about whether the analyte is present and whether the concentration reported is accurate. Calibration verifications, LCSs, method blanks, MS samples, surrogates, and ISs were analyzed to assess the accuracy and precision of organic chemical analyses. Each of these QA/QC sample types is defined in the analytical services SOW (LANL 1995, 049738; LANL 2000, 071233) and described briefly below.

Calibration verification is the establishment of a quantitative relationship between the response of the analytical procedure and the concentration of the target analyte. There are two aspects of calibration verification: initial and continuing. The initial calibration verifies the accuracy of the calibration curve as well as the individual calibration standards used to perform the calibration. The continuing calibration ensures the initial calibration is still holding and is correct as the instrument is used to process samples. The continuing calibration also serves to determine that analyte identification criteria such as retention times and spectral matching are being met.

The LCS is a sample of a known matrix that has been spiked with compounds that are representative of the target analytes, and it serves as a monitor of overall performance on a “controlled” sample. The LCS is the primary demonstration, on a daily basis, of the ability to analyze samples with good qualitative and quantitative accuracy. The LCS recoveries should fall between the LAL and UAL.

A method blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as those used in the environmental sample processing and which is extracted and analyzed in the same manner as the corresponding environmental samples. Method blanks are used to assess the potential for sample contamination during extraction and analysis. All target analytes should be below the contract-required detection limit in the method blank (LANL 1995, 049738; LANL 2000, 071233).

Matrix spike samples are used to measure the ability to recover prescribed analytes from a native sample matrix and consist of aliquots of the submitted samples spiked with a known concentration of the target analyte(s). Spiking typically occurs before sample preparation and analysis. The spike sample recoveries should be between the LAL and UAL.

A surrogate compound (surrogate) is an organic compound used in the analyses of target analytes that is similar in composition and behavior to the target analytes but normally is not found in environmental samples. Surrogates are added to every blank, sample, and spike to evaluate the efficiency with which analytes are recovered during extraction and analysis. The recovery percentage of the surrogates must be within specified ranges or the sample may be rejected or assigned a qualifier.

Internal standards (ISs) are chemical compounds added to every blank, sample, and standard extract at a known concentration. They are used to compensate for (1) analyte concentration changes that might occur during storage of the extract and (2) quantitation variations that can occur during analysis. Internal standards are used as the basis for quantitation of target analytes. The %R for ISs should be within the range of 50% to 200%.

Details regarding the quality of the organic chemical analytical data included in the datasets are summarized in the following subsections.

D-4.2 Data Quality Results for Organic Chemicals

The majority of the analytical results are qualified as not detected (U) because the analytes were not detected by the respective analytical methods or were not qualified. These data do not have any quality issues associated with the values presented.

D-4.2.1 Maintenance of Chain of Custody

Chain-of-custody forms were maintained properly for all samples analyzed for organic chemicals (see Appendix E).

D-4.2.2 Sample Documentation

All samples analyzed for organic chemicals were properly documented in the sample collection logs in the field (see Appendix E).

D-4.2.3 Sample Dilutions

Some samples were diluted for organic chemical analyses. No qualifiers were applied to any organic chemical sample results because of dilutions.

D-4.2.4 Sample Preservation

Preservation criteria were met for all samples analyzed for organic chemicals.

D-4.2.5 Holding Times

Three explosive compound results were qualified as estimated and potentially biased low (J-) because the extraction/analytical holding time was exceeded by less than 2 times the published method holding times.

A total of 1218 explosive compound results were qualified as estimated not detected (UJ) because the extraction/analytical holding time was exceeded by less than 2 times the published method holding times.

Eighteen SVOC results were qualified as estimated and potentially biased low (J-) because the extraction holding time was exceeded by less than 2 times the published method holding times.

Fifty-one SVOC results were qualified as estimated not detected (UJ) because the extraction holding time was exceeded by less than 2 times the published method holding times.

Twenty-nine VOC results were qualified as estimated and potentially biased low (J-) because the extraction/analytical holding time was exceeded by less than 2 times the published method holding times.

A total of 827 VOC results were qualified as estimated not detected (UJ) because the extraction/analytical holding time was exceeded by less than 2 times the published method holding times.

D-4.2.6 ICVs and CCVs

Twenty-four explosive compound results were qualified as estimated (J) because the ICV and/or CCV were recovered outside the method-specific limits.

A total of 306 explosive compound results were qualified as estimated not detected (UJ) because the affected analytes were analyzed with a relative response factor (RRF) of less than 0.05 in the ICV and or CCV.

A total of 356 explosive compound results were qualified as estimated not detected (UJ) because the ICV and/or CCV were recovered outside the method-specific limits.

One PCB result was qualified as estimated not detected (UJ) because the ICV and/or CCV were recovered outside the method-specific limits.

Twenty-nine SVOC results were qualified as estimated (J) because the ICV and/or CCV were recovered outside the method-specific limits.

A total of 1733 SVOC results were qualified as estimated not detected (UJ) because the ICV and/or CCV were recovered outside the method-specific limits.

Twenty-one VOC results were qualified as estimated (J) because the ICV and/or CCV were recovered outside the method-specific limits.

A total of 863 VOC results were qualified as estimated not detected (UJ) because the ICV and/or CCV were recovered outside the method-specific limits.

D-4.2.7 Surrogate Recoveries

Fourteen PCB results were qualified as estimated not detected (UJ) because the associated surrogate recovery was less than the LAL but greater than or equal to 10%.

Thirty-seven SVOC results were qualified as estimated not detected (UJ) because the associated surrogate was recovery was less than the LAL but greater than or equal to 10%.

Two VOC results were qualified as estimated (J) because at least one surrogate was recovered above the UAL and one surrogate was recovered below the LAL.

Ninety-eight VOC results were qualified as estimated and potentially biased high (J+) because the surrogate %R was greater than the UAL.

Fifty-seven VOC results were qualified as estimated not detected (UJ) because at least one surrogate was recovered above the UAL and one surrogate was recovered below the LAL.

D-4.2.8 Internal Standard Responses

The IS responses were within acceptable limits for all samples analyzed for organic chemicals.

D-4.2.9 Method Blanks

Method blanks used for organic chemical analyses indicated acceptable results for all samples analyzed for organic chemicals.

D-4.2.10 Laboratory Duplicate Samples

Laboratory duplicates collected for organic chemical analyses indicated acceptable precision for all samples analyzed for organic chemicals.

D-4.2.11 Laboratory Control Sample Recoveries

A total of 270 explosive compound results were qualified as estimated not detected (UJ) because the LCS %R was less than the LAL but greater than 10%.

Thirty SVOC results were qualified as estimated not detected (UJ) because the LCS %R was less than the LAL but greater than 10%.

D-4.2.12 Quantitation and MDLs

Quantitation and MDLs were within acceptable ranges for all samples analyzed for organic chemicals.

D-4.2.13 MS Samples

One explosive compound result was qualified as estimated (J) because the MS/MSD RPD was greater than 30%.

Two explosive compound results were qualified as estimated and potentially biased high (J+) because the MS/MSD percent recovery was greater than 130%.

A total of 185 explosive compound results were qualified as estimated not detected (UJ) because the MS/MSD %R was greater than 10% but less than 70%.

A total of 189 explosive compound results were qualified as estimated not detected (UJ) because the MS/MSD RPD was greater than 30%.

D-4.2.14 Trip Blanks, Equipment Blanks, and Rinsate Blanks

Twenty-six VOC results were qualified as undetected (U) because the sampling results were less than or equal to the concentration of the related analyte in the trip blank or equipment rinsate blank.

D-4.2.15 Rejected Data

All eight 4-nitrotoluene results from AOC 15-008(g) were rejected (R) because the samples were analyzed with an RRF of less than 0.05 in the ICV and/or CCV. All of the rejected results were initially qualified as nondetects by the analytical laboratories.

Thirty-four tetryl results [2 from AOC 12-004(b); 1 from SWMU 36-003(a); 21 from AOC 36-008; and 10 from AOC C-36-003] were rejected (R) because the LCS %R was less than 10%. All of the rejected results were initially qualified as nondetects by the analytical laboratories.

Forty-three tetryl results [18 from SWMU 15-008(b), 5 from SWMU 15-009(h), and 20 from AOC 36-008] were rejected (R) because the MS/MSD %R was less than 10%. All of the rejected results were initially qualified as nondetects by the analytical laboratories.

Fifty-nine VOC results (1 result for each of 59 VOC analytes) at SWMU 15-009(c) were rejected (R) because the quantitating IS area was less than 10% of the expected value. All of the rejected results were initially qualified as nondetects by the analytical laboratories.

One acetone result at SWMU 15-010(b) was rejected (R) because the result was not analyzed with a valid 5-point calibration curve and/or a standard at the reporting limit.

Eighty-six 1,1,2-trichloro-1,2,2-trifluoroethane results [13 from SWMU 15-010(b); 9 from SWMU 36-003(a); 40 from AOC 36-008; 10 from AOC C-14-006; and 14 from AOC C-36-003] were rejected (R) because the affected analytes were analyzed with an RRF of less than 0.05 in the ICV and/or CCV. All of the rejected results were initially qualified as nondetects by the analytical laboratories.

The rejected data were not used to characterize the extent of contamination. However, sufficient data of good quality are available to characterize the site(s) and conduct the risk assessments, except the 4-nitrotoluene results at AOC 15-008(g). The results of other qualified data were used as reported and do not affect the usability of the sampling results.

D-5.0 RADIONUCLIDE ANALYSES

Samples were analyzed for radionuclides by gamma spectroscopy using EPA Method 901.1 or generic gamma spectroscopy (historical samples only); for americium-241, isotopic plutonium, and isotopic uranium by alpha spectroscopy (HASL-300 Methods); and for tritium by liquid scintillation using EPA Method 906.0. All QC procedures were followed as required by the analytical laboratories SOW (LANL 1995, 049738; LANL 2000, 071233). The methods used for analyzing radionuclides are listed in Table D-5.0-1.

A total of 666 samples (plus 68 field duplicates) were submitted for analyses by gamma spectroscopy; 655 samples (plus 68 field duplicates) were submitted for analysis of americium-241; 655 samples (plus 68 field duplicates) were submitted for analysis of isotopic plutonium, 664 samples (plus 68 field duplicates) were submitted for analysis of isotopic uranium; and 514 samples (plus 52 field duplicates) were submitted for analysis of tritium.

All radionuclide results are included in Appendix E (provided on DVD).

D-5.1 Radionuclide QA/QC Samples

All procedures were followed as required by the analytical services SOWs (LANL 1995, 049738; LANL 2000, 071233). Some sample results were qualified as not detected (U) because the associated sample concentration was less than or equal to the minimum detectable concentration (MDC). Some sample results were qualified as not detected (U) because the associated sample concentration was less than or equal to 3 times the total propagated uncertainty. This data qualification is related to detection status only not to data quality issues.

To assess the accuracy and precision of radionuclide analyses, LCSs, method blanks, MS samples, laboratory duplicate samples, and tracers were analyzed. Each of these QA/QC sample types is defined in the analytical services SOWs (LANL 1995, 049738; LANL 2000, 071233) and is described briefly below.

The LCS serves as a monitor of the overall performance of each step during the analysis, including sample digestion. For radionuclides in soil/tuff, LCS %Rs should fall between the LAL and UAL.

Method blanks are an analyte-free matrix to which all reagents are added in the same volumes or proportions as those used in the environmental sample processing and which is analyzed in the same manner as the corresponding environmental samples. Method blanks are used to assess the potential for sample contamination during analysis. All radionuclide results should be below the MDC.

MS samples assess the accuracy of inorganic chemical analyses. These samples are designed to provide information about the effect of the sample matrix on the sample preparation procedures and analytical technique. The MS acceptance criterion is between the LAL and UAL.

Tracers are radioisotopes added to a sample for the purposes of monitoring losses of the target analyte. The tracer is assumed to behave in the same manner as the target analytes. The tracer recoveries should fall between the LAL and UAL.

Laboratory duplicate samples assess the precision of inorganic chemical analyses. All RPDs between the sample and laboratory duplicate should be ±35% for soil (LANL 1995, 049738; LANL 2000, 071233).

Details regarding the quality of the radionuclide analytical data included in the data set are summarized in the following subsections.

D-5.1 Data Quality Results for Radionuclides

The majority of the analytical results are qualified as undetected (U) because the analytes were not detected by the respective analytical methods. These data do not have any quality issues associated with the values presented.

D-5.1.1 Chain of Custody

Chain-of-custody forms were maintained properly for all samples (see Appendix E).

D-5.1.2 Sample Documentation

All samples were properly documented on the sample collection logs in the field (see Appendix E).

D-5.1.3 Sample Dilutions

Some samples were diluted for radionuclide analyses. No qualifiers were applied to any radionuclide sample results because of dilutions.

D-5.1.4 Sample Preservation

Preservation criteria were met for all samples analyzed for radionuclides.

D-5.1.5 Holding Times

Holding-time criteria were met for all samples analyzed for radionuclides.

D-5.1.6 Method Blanks

Fourteen isotopic uranium results were qualified as estimated (J) because the analyte was identified in the method blank, but the sample results were greater than 5 times the concentration in the method blank.

D-5.1.7 MS Samples

Six isotopic plutonium results were qualified as estimated not detected (UJ) because the matrix spike %R value was less than the LAL and the sample results were greater than the MDC.

Twenty-two isotopic uranium results were qualified as estimated and potentially biased low (J-) because the MS %R value was less than the LAL and the sample results were greater than the MDC.

Two isotopic uranium results were qualified as estimated not detected (UJ) because the MS %R value was less than the LAL and the sample result was greater than the MDC.

D-5.1.8 Tracer Recoveries

One isotopic plutonium result was qualified as estimated and potentially biased high (J+) because the tracer %R was greater than the UAL.

Fifty-nine isotopic uranium results were qualified as estimated and potentially biased high (J+) because the tracer %R value was greater than the UAL.

D-5.1.9 LCS Recoveries

The LCS recoveries were within acceptable limits for all samples analyzed for radionuclides.

D-5.1.10 Laboratory Duplicate Samples Recoveries

Thirty isotopic uranium results were qualified as estimated (J) because the associated duplicate sample had a duplicate error ration (DER) or relative error ratio (RER) greater than the analytical laboratory's acceptance limits.

D-5.1.11 Rejected Data

A total of 354 cesium-134 results were rejected (R) for the following sites because the MDC and/or total propagated uncertainty (TPU) documentation was missing: 6 from AOC C-12-001; 5 from AOC C-12-002; 4 from AOC C-12-003; 4 from AOC C-12-004; 3 from AOC C-12-005; 25 from SWMU 12-001(a) and Consolidated Unit 12-001(a)-99; 19 from SWMU 12-001(b); 2 from SWMU 12-002; 16 from AOC 12-004(a); 2 from AOC 12-004(b); 5 from AOC C-14-006; 4 from AOC 15-004(d); 13 from AOC 15-005(c); 90 from SWMU 15-008(b); 2 from AOC 15-008(g); 11 from SWMU 15-009(b); 17 from SWMU 15-009(c); 3 from SWMU 15-009(h); 12 from SWMU 15-010(b); 24 from AOC 15-014(h); 3 from SWMU 36-002; 16 from SWMU 36-003(a); 59 from SWMU 36-008; and 9 from SWMU C-36-003.

Seventeen cesium-137 results were rejected (R) for the following site because the MDC and/or TPU documentation was missing: 1 from SWMU 12-001(b); 7 from SWMU 15-008(b); 2 from SWMU 15-009(c); 1 from SWMU 15-009(h); 1 from AOC 15-014(h); 3 from AOC 36-008; 1 from AOC C-12-004; and 1 from AOC C-14-006. All of the rejected results were initially qualified as nondetects by the analytical laboratories.

One cobalt-60 result from SWMU 15-009(c) was rejected (R) because the MDC and/or TPU documentation was missing.

The rejected data were not used to characterize the nature and extent or the potential human and ecological risks. However, sufficient data of good quality are available to characterize the site(s) and conduct the risk assessments. The results of other qualified data were used as reported and do not affect the usability of the sample results.

D-6.0 REFERENCES

The following list includes all documents cited in this appendix. Parenthetical information following each reference provides the author(s), publication date, and ER ID. This information is also included in text citations. ER IDs are assigned by the Environmental Programs Directorate's Records Processing Facility (RPF) and are used to locate the document at the RPF and, where applicable, in the master reference set.

Copies of the master reference set are maintained at the New Mexico Environment Department Hazardous Waste Bureau and the Directorate. The set was developed to ensure that the administrative authority has all material needed to review this document, and it is updated with every document submitted to the administrative authority. Documents previously submitted to the administrative authority are not included.

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LANL (Los Alamos National Laboratory), July 1995. "Statement of Work (Formerly Called "Requirements Document") - Analytical Support, (RFP number 9-XS1-Q4257), (Revision 2 - July, 1995)," Los Alamos National Laboratory, Los Alamos, New Mexico. (LANL 1995, 049738)

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Table D-3.0-1
Inorganic Chemical Analytical Methods for
Samples Collected from the Threemile Canyon Aggregate Area

Analytical Method	Analytical Description	Analytical Suite
EPA Method 300.0	Ion chromatography	Nitrate
SW-846:6850	High-performance liquid chromatography/mass spectrometry	Perchlorate
SW-846: 6010/6010B	Inductively coupled plasma emission spectroscopy (ICPES)—atomic emission spectroscopy	Aluminum, antimony, arsenic, barium, beryllium, calcium, cadmium, cobalt, chromium, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, silver, thallium, vanadium, and zinc (TAL metals)
SW-846:6020	ICPES	Aluminum, antimony, arsenic, barium, beryllium, calcium, cadmium, cobalt, chromium, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, sodium, silver, thallium, vanadium, and zinc (TAL metals)
SW-846:9012a	Colorimetric method	Cyanide (total)
SW-846:7470A	Cold vapor atomic absorption (CVAA)	Mercury
SW-846:7471A	Graphite furnace atomic absorption (GFAA)	Mercury (TAL metal)
SW-846:7841	GFAA	Thallium
Generic: KPA	Kinetic phosphorescence analysis	Uranium (total)

Table D-4.0-1
Organic Chemical Analytical Methods for
Samples Collected from the Threemile Canyon Aggregate Area

Analytical Method	Analytical Description	Target Compound List
EPA SW-846:8321A_MOD	Explosive compounds	HEXP
EPA SW-846:8330	Explosive compounds	HEXP
EPA SW-846:8270C	SVOCs	Analytical services SOW (LANL 1995, 049738; LANL 2000, 071233)
EPA SW-846:8260B	VOCs	Analytical services SOW (LANL 1995, 049738; LANL 2000, 071233)
EPA SW-846:8082–Analysis	PCBs	Analytical services SOW (LANL 1995, 049738; LANL 2000, 071233)
EPA SW-846:8081	Pesticides	Analytical services SOW (LANL 1995, 049738; LANL 2000, 071233)

Table D-5.0-1
Radionuclide Analytical Methods for
Samples Collected from the Threemile Canyon Aggregate Area

Analytical Method	Analytical Description	Target Compound List
HASL-300: Am-241	Alpha spectroscopy	Americium-241
EPA Method: 901.1 Generic: Gamma Spec	Gamma spectroscopy	Americium-241, cesium-137, cesium-134, cobalt-60, europium-152, ruthenium-106, sodium-22, uranium-235
EPA Method: 906.0	Liquid scintillation	Tritium
HASL-300: ISOPU	Alpha spectroscopy	Isotopic plutonium
HASL-300: ISOU	Alpha spectroscopy	Isotopic uranium

Appendix E

Analytical Suites and Results and Analytical Reports
(on DVD included with this document)

Appendix F

Investigation-Derived Waste Management

F-1.0 INTRODUCTION

This appendix contains the waste management records for the investigation-derived waste (IDW) generated during the implementation of the investigation work plan for the Threemile Canyon Aggregate Area at former Technical Area 12 (TA-12), TA-14, TA-15, TA-18, and TA-36 of Los Alamos National Laboratory (LANL or the Laboratory).

All IDW generated during the field investigation was managed in accordance with Standard Operating Procedure SOP 5238, Characterization and Management of Environmental Program Waste. This procedure incorporates the requirements of applicable U.S. Environmental Protection Agency (EPA) and New Mexico Environment Department (NMED) regulations, U.S. Department of Energy (DOE) orders, and Laboratory implementation requirements.

Consistent with Laboratory procedures, a waste characterization strategy form (WCSF) was prepared to address characterization approaches, on-site management, and final disposition options for wastes. Information from previous investigation wastes and analytical data and/or acceptable knowledge (AK) were used to complete the WCSF. The WCSF and Amendment 1 are included as Attachment F-1 and to this appendix.

The selection of waste containers was based on appropriate U.S. Department of Transportation requirements, waste types, and estimated volumes of IDW to be generated. Immediately following containerization, each waste container was individually labeled with a unique identification number and with information regarding waste classification, contents, radioactivity, and date generated.

Wastes were staged in clearly marked and appropriately constructed waste accumulation areas. Waste accumulation area postings, regulated storage duration, and inspection requirements were based on the type of IDW and its classification. Container and storage requirements were detailed in the WCSF and approved before waste was generated.

Investigation activities were conducted in a manner that minimizes the generation of waste. Waste minimization was accomplished by implementing the most recent version of the “Los Alamos National Laboratory Hazardous Waste Minimization Report” (LANL 2008, 104174).

F-2.0 WASTE STREAMS

The IDW streams that were generated and managed during the investigation of Threemile Canyon Aggregate Area are described below and summarized in Table F-2.0-1. Waste, except for municipal waste, has not yet been fully characterized or dispositioned, so Table F-2.0-1 identifies potential waste classifications and destinations.

- *WCSF Waste #1: Municipal solid waste (MSW).* MSW consists of noncontact trash and debris. It was stored in plastic-lined trash cans and disposed of at the Los Alamos County landfill.
- *WCSF Waste #2: Drill cuttings.* This waste stream includes drill cuttings from boreholes. Approximately 16 yd^3 of cuttings were stored in a lined rolloff container and approximately 1 yd^3 of cuttings was stored in lined 55-gal. drums. The waste was initially stored as hazardous waste pending data analysis. The rolloff and all drums were directly sampled and were determined to be nonhazardous. Drill cuttings that meet Notice of Intent Decision Tree for Land Application of Investigation Derived Waste solids from Construction of Wells/Boreholes will be land applied.

Cuttings that cannot be land applied are expected to be low-level waste (LLW) or industrial waste that will be disposed of at an authorized off-site facility appropriate for the type of waste.

- *WCSF Waste #3: Contact Waste.* This waste stream includes spent personal protective equipment (PPE), material used in dry decontamination of sampling equipment (e.g., paper towels) and plastic bags. These wastes were containerized at the point of generation and were characterized based on AK of the waste materials, the methods of generation, and analytical data for the media with which they came into contact. These wastes were initially managed as hazardous waste pending data analysis. Approximately 0.75 yd^3 of contact waste was generated. Contact waste is expected to be Green-Is-Clean, LLW, or industrial waste that will be disposed at an authorized off-site facility appropriate for the type of waste.
- *WCSF Waste #6: Returned American Radiation Services (rad van) samples.* This waste stream consists of returned soil and tuff samples (including ziplock bag and sample labels) from Rad-Van. Approximately 0.25 yd^3 was generated and initially managed in a lined 55-gal. drum within a less-than-90-day-accumulation area pending data analysis. The drum was directly sampled and was managed as hazardous until the analytical data were received. The waste has been determined to be mixed low-level waste (MLLW). The waste will be treated/disposed of in an authorized off-site MLLW facility.
- *WCSF Waste #7: Debris.* This waste stream consists of concrete with rebar, asphalt, and metal piping. Approximately 32 yd^3 of debris was generated and stored in locked rolloffs and in an 85-gal. drum and 55-gal. The debris was initially managed within a less-than-90-day-accumulation area pending data analysis. The asphalt and concrete were characterized by direct sampling. The metal piping associated with the tanks was characterized based on data from the associated debris and placed in the same bins as the associated tank. The tank debris in rolloff bin 5623 was determined to be nonhazardous and will be disposed of in an authorized off-site industrial landfill. The tank debris in rolloff bin 5735 and asphalt debris in 55-gal. drums were determined to be LLW. They will be disposed of in an authorized off-site LLW facility. The excavated pipe from TA-12, not associated with the tanks from TA-15, was decontaminated and determined to be nonhazardous and nonradioactive per swipes taken. It will be recycled through the Laboratory's recycling program. Otherwise it will be disposed of in an authorized industrial landfill.
- *WCSF Waste #8: Excavated soil.* This waste stream includes overburden soil and rock excavated next to and above septic tanks. The excavated soil was sampled and determined to be nonhazardous and nonradioactive and met residential soil screening levels. It will be returned to the bottom portion of the excavations.
- *WCSF Waste #9: Water.* This waste stream includes the liquids that were in the high explosives (HE) settling tank, Solid Waste Management Unit (SWMU) 15-010(b). Approximately 300 gal. of material was generated and containerized in two 300-gal. tanks at the point of generation. It was initially managed within a less-than-90-day-accumulation area pending data analysis. The waste was characterized by direct sampling and was determined to be nonhazardous and nonradioactive. It will be treated at one of the on-site permitted wastewater treatment facilities if it meets their waste acceptance criteria (WAC). If it does not meet the WAC for an on-site facility, it will be treated and/or disposed in an authorized off-site facility appropriate for the waste.
- *WCSF Waste #10: Lead shot.* This waste stream consists of 0.25-in.-diameter lead shot from SWMU 15-007(c). Less than 10 gal. of material was generated and is stored in two 5-gal. containers within a less than-90-day-accumulation area pending data analysis. If the lead shot cannot be recycled, it will be treated and/or disposed of in an authorized off-site hazardous or mixed waste facility.

- *WCSF Waste #11: HE spot test waste.* This waste stream consists of filter paper, soil, sodium methoxide/dimethyl sulfoxide, hydrochloric acid/sulfanilamide, and 1-n-(naphthyl-ethylene)diamine hydrochloride/water. Less than 1 gal. of waste was generated and stored in a 5-gal. drum. The waste was characterized based on the analytical data for the media with which they came into contact. It is expected that the waste will be classified as "Green is Clean", LLW, or industrial waste that will be disposed at an authorized off-site facility appropriate for the waste type.

WCSF wastes #4 (decontamination fluids) and #5 (petroleum contaminated soils) were not generated during the Threemile Canyon Aggregate Area investigation.

F-3.0 REFERENCES

The following list includes all documents cited in this appendix. Parenthetical information following each reference provides the author(s), publication date, and ER ID. This information is also included in text citations. ER IDs are assigned by the Environmental Programs Directorate's Records Processing Facility (RPF) and are used to locate the document at the RPF and, where applicable, in the master reference set.

Copies of the master reference set are maintained at the NMED Hazardous Waste Bureau and the Directorate. The set was developed to ensure that the administrative authority has all material needed to review this document, and it is updated with every document submitted to the administrative authority. Documents previously submitted to the administrative authority are not included.

LANL (Los Alamos National Laboratory), November 2008. "Los Alamos National Laboratory Hazardous Waste Minimization Report," Los Alamos National Laboratory document LA-UR-08-7274, Los Alamos, New Mexico. (LANL 2008, 104174)

Table F-2.0-1
Summary of IWD Generation and Management

Waste Stream	Waste Type	Volume	Characterization Method	On-Site Management	Disposition
Municipal solid	MSW	2 yd^3	AK	Plastic bags	Off-site municipal landfill
Drill cutting	Reusable material Industrial LLW	17 yd^3	Direct sampling	Rolloff container, 55-gal. drums	Land apply or dispose of at an authorized off-site facility
Contact waste	Green Is Clean Industrial LLW	0.75 yd^3	AK and analytical results of site characterization	55-gal. drums	Off-site authorized disposal facility
Returned rad van samples	Industrial LLW MLLW	0.25 yd^3	Direct sampling	55-gal. drums	Off-site authorized disposal facility
Debris	Recyclable material Industrial LLW	32 yd^3	Direct sampling	Rolloff container, 85-gal. drum, and 55-gal. drums	Recycle or dispose of at an authorized off-site facility
Excavated soil	Reusable	64 yd^3	Direct sampling	Stored next to excavation	Return to excavation
Water	Nonhazardous	1.5 yd^3	Direct sampling	300-gal. tanks	Treatment at an on-site facility or treatment/disposal at an off-site authorized facility
Lead shot	Hazardous MLLW Recycle	1 gal.	AK, sampled to determine if MLLW	5-gal. containers	Recycle or dispose of at an off-site authorized facility
HE spot test waste	Green-Is-Clean LLW Industrial	1 gal.	AK and analytical results of site characterization	5-gal. drum	Off-site authorized facility

Attachment F-1

Waste Characterization Strategy Form for Threemile Canyon Aggregate Area and Amendment #1 to the Form

Waste Characterization Strategy Form

Project Title	Implementation of the Investigation Work Plan for Threemile Canyon Aggregate Area, Revision 1
Solid Waste Management Unit or Area of Concern #	AOCs: C-12-005, 12-004(a), 12-004(b), C-12-001, C-12-002, C-12-003, C-12-004, C-14-006, 15-004(d), 15-005(c), 15-008(g), 15-014(h), 36-008, C-36-003 SWMUs: 12-001(a), 12-001(b), 12-002, 15-004(a), 15-006(b), 15-006(c), 15-008(b), 15-006(d), 15-007(c), 15-007(d), 15-009(b), 15-009(c), 15-009(h), 15-010(b), 36-002, 36-003(a),
Activity Type	Characterization sampling and remediation
Field Team Leader	Tracy McFarland
Field Waste Management Technician	Jon Roberson
Completed by	Jon Roberson
Date	11/19/2009

Description of Activity

The objective of the project is to characterize the nature and extent of contamination, if any, associated with 30 sites in the Threemile Canyon Aggregate Area. The project is to be executed in compliance with the Consent Order and as described in the Investigation Work Plan for Threemile Canyon Aggregate Area, Revision 1, and subsequent NOD modifications. The following activities are planned:

- Site preparation – This activity includes establishment of site access control immediately prior to performing survey, sampling, or drilling activities.
- Non-intrusive field surveys – This activity includes the use of various instruments to perform non-intrusive geodetic site surveys. Geodetic surveys will involve the use of GPS or Total Station instruments to determine coordinates of sampling locations and structures as necessary.
- Surface and subsurface sampling – This activity includes collection of samples using hand auger, spade and scoop and/or core-barrel (hollow-stem auger drill rig) methods. The method(s) used will depend on site conditions and depth of required samples; all samples will be collected using hand methods if possible, and a drill rig will be used only at sites where samples cannot be collected by hand.
- Removal of septic tanks and tank contents – This activity includes the characterization and disposal of septic tank contents and septic tanks.
- Removal of HE settling tank and tank contents – This activity includes the characterization and disposal of HE settling tank contents and settling tank.
- Removal of Lead Shot – This activity includes removal and containerization of lead shot around the shaft in SWMU 15-007(c).
- Waste management – This task involves the management of the investigation-derived waste following all applicable procedures, including but not limited to SOP-5238 Characterization and Management of Environmental Program Waste, P930-1 LANL Waste Acceptance Criteria, P930-2 Waste Certification Program, and P409 Waste Management,.

- Site restoration – This step involves the restoration of sites to pre-investigation conditions to the degree practicable. This may involve patching concrete or asphalt pavement, filling excavations with backfill material, land application of cuttings, and seeding or planting vegetation.

Relevant Site History and Description

The Threemile Canyon Aggregate Area consists of sites within Technical Area 14 (TA-14), TA-15, TA-18, TA-36 and TA-67 at Los Alamos National Laboratory. This aggregate area also includes sites associated with former TA-12 that lie within the boundaries of TA-15 and TA-67. Former TA-12, known as L-Site, was constructed in 1944 on Pajarito Mesa and was used as a firing site and dynamic testing area through the mid-1960s. The testing site was abandoned in 1946. In 1950, the Biomedical Group used TA-12 and constructed a bermed radiation test bunker for conducting an experiment using a 1000-Ci radioactive lanthanum-140 source. In 1951, the Dynamic Experimentation Group began using the area, reportedly firing 600 shots per month. By 1953, the entire site was vacated. In 1960, the structures were decontaminated, decommissioned, and intentionally burned. Structures at the former site included a generator building, a junction shelter, and a steel-lined pit. Materials used included explosives, lead, aluminum, copper, and uranium-238. As a result of the Laboratory redefining TA boundaries in 1989, former TA-12 was incorporated into TA-15 and TA-67.

TA-14, known as Q-Site, is one of five major firing sites at the Laboratory and is used for high explosives (HE) testing. TA-14 contains 10 structures and 5 firing mounds. TA-14 was used for close observation work on small explosive charges and included both open and closed firing chambers. TA-14 has always been a dedicated site for developing and testing of explosives, including tests involving radioactive materials. TA-14 remains an active site with scheduled tests at both the firing area and bullet test facility.

TA-15, known as R-Site, was constructed on Threemile Mesa in 1945. TA-15 contains a complex of firing sites and related support structures used for HE research, development, and testing, mainly through hydrodynamic testing and dynamic experimentation. TA-15 personnel also investigate weapons functioning and systems behavior in non-nuclear testing. Test explosions ranging from a few kilograms of HE to as much as 1800 kg have been detonated. In most cases, the tests are carried out aboveground, resulting in the test materials being scattered over areas as large as hundreds of square meters. Sites located within the Threemile Canyon Aggregate Area include Firing Sites C, R-44, and R-45, and Ector and related support structures. Part of former TA-12 now lies within the boundary of TA-15.

TA-36, known as Kappa Site, contains four active firing sites that support explosives testing. The sites and associated buildings are used for a wide variety of nonnuclear ordnance tests for the Department of Defense. TA-36 is primarily located within the Potrillo Canyon watershed; however, the northwest portion of TA-36 (west of TA-18) is located in the Threemile Canyon Aggregate Area. Operations at TA-36 started in 1950. Structures at TA-36 consist of the group office and sanitary facilities, four active firing sites, and a storage magazine. In 1983, the boundary was changed to incorporate the I-J firing site (formerly part of TA-15). Activities at TA-36 include the storage and assembly of prefabricated metal and explosives components, detonators, cables, and instrumentation for shots; and the detonation of these shots. Sites located within the Threemile Canyon Aggregate Area are associated with building 36-1, which houses laboratory activities and photoprocessing operations. None of the TA-36 sites within Threemile Canyon Aggregate Area are associated with firing-site activities. TA-67 contains significant archeological sites and serves as a buffer area for Laboratory activities. Part of former TA-12 now lies within the boundary of TA-67.

Characterization Strategy

This WCSF identifies the types of wastes expected, based on previous investigations. However, other types of waste may be an encountered. An amendment to this WCSF shall be prepared and submitted for review and approval if any of the waste streams change in description or characterization approach or a new waste stream is generated. All wastes will be managed in accordance with SOP-5238, *Characterization and Management of Environmental Program Waste.*

In accordance with the work plan, all investigation-derived wastes (IDW) except municipal wastes will initially be managed as hazardous waste. Characterization of IDW will be completed through acceptable knowledge (AK), including associated environmental sampling data, process knowledge, and existing documents; and/or the waste

may be directly sampled. Samples must be collected by trained sampling personnel in accordance with this WCSF and Environmental Protection Agency (EPA) guidance. Sampling personnel must record waste sampling information in accordance with EP-ERSS-SOP-5058, *Sample Control and Field Documentation* and EP-ERSS-SOP-5181, *Documentation for Waste and Environmental Services Technical Field Activities*. The field notebook must be used to document sample collection activities (e.g., equipment and sampling methods used, number and location of samples, etc.). Sampling personnel must also record field conditions, problems encountered, local sources of contamination (e.g., operating generators or vehicles), the personnel involved, equipment and supplies used, wastes generated, and field observations.

If the waste determination identifies the waste as non-hazardous, the wastes will be managed in secure designated non-hazardous waste areas appropriate to the type of waste and its regulatory classification. The selection of waste containers will be based on U.S. Department of Transportation requirements, waste types, and estimated volumes of IDW to be generated. Immediately following containerization, each waste container will be individually labeled with a unique identification number and with information regarding waste classification, contents, and date generated. A waste determination must be made within 45 days of the generation of the waste. A WAC exception form (WEF) can be used if the generator does not meet the 45 day deadline.

If analyses indicate the presence of listed constituents, a due diligence document review may be performed to identify whether the contaminants are from a listed process. If no or inconclusive documentation of a listed source exists, the waste will not carry the listed hazardous waste numbers(s). If documentation exist that the contaminant(s) originated from a listed source but the levels are below residential screening levels and the land disposal restriction treatment standards, a "contained-in" request may be submitted to the New Mexico Environment Department (NMED), who may approve dropping the listings from the waste stream. A copy of either the ENV-RCRA approved due diligence or the NMED contained-in approval letter must accompany all waste profiles prepared for the subject waste(s).

Waste #1: Municipal Solid Waste (MSW) - This waste stream primarily consists of non-contact trash including but not limited to paper, cardboard, wood, plastic, food and beverage containers, empty solution containers, and other non-contact trash. This waste stream may also include vegetation from sites with no radioactive contamination. It is estimated that approximately 3 cubic yards of MSW will be generated (Note: Volume may change if vegetation removal is required).

Anticipated Regulatory Status: MSW

Characterization Approach: MSW will be characterized based on acceptable knowledge (AK) of the waste materials (including Material Safety Data Sheets) and methods of generation.

Management and Disposal Method: MSW will be segregated from all other waste streams. It is anticipated that the waste will be stored in plastic trash bags or other appropriate containers and disposed of at the County of Los Alamos solid waste transfer station or other authorized off-site solid waste facility.

Waste # 2: Drill Cuttings (IDW) - Drill cuttings consist of soil and rock removed during the mechanized drilling of boreholes. This may include small chips or unused core samples collected with a hollow-stem auger core barrel. Cuttings will not contain residue of drilling additives (drilling mud or foam) as only dry drilling will be used. It is estimated that approximately 22 cubic yards of borehole cuttings will be generated during this investigation.

Anticipated Regulatory Status: Industrial, Hazardous, Low-level waste (LLW), Mixed low-level waste (MLLW), Beryllium, Polychlorinated Biphenyls (PCB), Land Applied

Characterization Approach: Waste characterization will be based upon the analytical results obtained from direct sampling of containerized waste. Cuttings will be sampled within 10 days of generation and submitted for analysis with a 21 day turnaround time. A hand auger or thin-wall tube sampler will be used in accordance with SOP-06.10, Hand Auger and Thin-Wall Tube Sampler, to collect waste material from each container, augering from the surface to the bottom of the waste in a sufficient number of locations to obtain a representative sample. Samples will be analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), PCBs, high

explosives, perchlorate, nitrate, radionuclides, total metals, toxicity characteristic metals, total cyanide, total petroleum hydrocarbons (TPH), and TCLP organics. Other constituents may be analyzed as necessary to meet the WAC for a receiving facility.

Storage and Disposal Method: The cuttings will be collected and containerized at the point of generation and initially stored in registered hazardous waste accumulation or storage areas pending analytical data availability. If the waste is characterized as non-hazardous, it will be stored in a designated non-hazardous waste area appropriate for the waste classification. The containers will be appropriate for the quantity of wastes generated (e.g., roll-off bins for large quantities of wastes and drums for small quantities of waste). Cuttings meeting the criteria of the NMED-approved NOI decision tree for land application may be land applied. Land application of drill cuttings will be conducted in accordance with ENV-RCRA-QP-011, *Land Application of Drill Cuttings.* Cuttings that cannot be land applied will be treated and/or disposed of at authorized off-site facilities appropriate for the waste classification.

Waste #3: Contact IDW - This waste stream is comprised of PPE, sampling equipment and other materials that contacted or potentially contacted contaminated environmental media and that cannot be decontaminated. This includes but is not limited to plastic sheeting (e.g., tarps and liners), gloves, coveralls, booties, paper towels, plastic and glass sample bottles, and disposable sampling supplies. It is estimated that approximately 1 cubic yard of contact IDW will be generated during this investigation.

Anticipated Regulatory Status: Industrial, Hazardous, LLW, MLLW, PCB, Beryllium, Green is Clean

Characterization Approach: Contact IDW generated during drilling operations will be characterized using AK based on the direct sampling and analyses of the drill cuttings. Contact waste that is generated using a hand auger will be inspected before being placed in containers to determine if environmental media or staining is present, indicating contamination. If staining is present, an estimate of the portion or percentage of the item stained will be recorded. Results from the analytical data will be weighted by the extent of contamination for determining whether wastes are characteristics. If the material with which the contact waste came into contact is listed, the contact waste will be assumed to be listed unless a "contained-in" approval is obtained. *Storage and Disposal Method:* The contact waste may be separately containerized in drums or it may be placed into the same containers as the media with which it is contaminated. Contact waste will initially be stored in a registered hazardous waste accumulation or storage areas pending analytical data availability. If the waste is characterized as non-hazardous, it will be stored in a designated non-hazardous waste area appropriate for the waste classification. For disposal, the separately containerized contact waste may be also be combined with the material from which they originated (the WPF will document the decision to combine the waste streams). Wastes will be treated and/or disposed of in authorized on- or off-site facilities appropriate for the waste classification.

Waste #4: Decontamination fluids (potential) - This waste stream consists of liquid wastes generated from the decontamination of excavation, sampling and drilling equipment. This waste stream will be generated only if dry decontamination methods are not effective. It is estimated that less than 55 gallons of decontamination fluids will be generated from this activity.

Anticipated Regulatory Status: Industrial, Hazardous, LLW, MLLW, PCB

Characterization Approach: The decontamination water will be characterized by direct sampling of the containerized fluids or analysis of the media associated with the decontamination fluids. Representative waste characterization samples will be sampled within 10 days of generation and submitted for analysis with a 21 day turnaround time. Samples will be collected from the storage container in accordance with LANL SOP-06.15, *COLIWASA Sampler for Liquids and Slurries.* If the container does not permit COLIWASA or bailer sampling, the type of sampling equipment used will be appropriate for the waste container and properly operated in accordance with Chapter 7 and Appendix E of the RCRA Waste Sampling Draft Technical Guidance (EPA 530-D-02-002, August 2002, http://www.epa.gov/osw/hazard/testmethods/sw846/pdfs/rwsdtg.pdf). Samples will be analyzed for VOCs, SVOCs, PCBs, total cyanide, high explosives, perchlorate, radionuclides, total metals. Other analyses may be required to meet the WAC of the receiving facility. Note that decontamination fluids destined for LANL's sanitary plant (SWS) must be sampled by ENV-RCRA for microtox analysis, total suspended solids (TSS),

total dissolved solids (TDS), oil and grease, and pH. Submit a request for analysis at https://esp-esh-as01-f5.lanl.gov/~esh19/databases/rfa_form.shtml.

Storage and Disposal Method: These wastes will be containerized in drums at the point of generation and will initially be stored in registered hazardous waste accumulation or storage areas. It is expected that most of the decontamination fluids will be treated on-site at the SWS or Radioactive Liquid Waste Treatment Facility (RLWTF). Wastes that do not meet the WAC for the on-site facilities will be treated and/or disposed of in authorized off-site facilities appropriate for the waste classification.

Waste #5: Petroleum Contaminated Soils (PCS) (potential) - PCS may be generated from releases of products such as hydraulic fluid, motor oil, unleaded gasoline, or diesel fuel (e.g. from the rupture of hydraulic or fuel hoses, or spills during maintenance or filling equipment) onto soil. Absorbent padding, paper towels, spill pillows or other absorbent material used to contain the released material may be added to the PCS waste for storage and disposal. It is estimated that less than one cubic yard of PCS will be generated.

Anticipated Regulatory Status: New Mexico Special Waste (NMSW), Industrial, Hazardous, LLW, MLLW. PCB, Beryllium

Characterization Approach: The contaminated soil may either be sampled in-place (by gridding the spill location and collecting and combining incremental samples into one sample) or after containerization in accordance with SOP-06.10, Hand Auger and Thin-Wall Tube Sampler. If the spill is shallow (in-place sampling) or containers are small, Spade and Scoop Method for Collection of Soil Samples (SOP-06.11) may also be appropriate. Samples will be analyzed for VOCs; SVOC, PCBs, radionuclides, high explosives, perchlorate, total metals, TPH (DRO/GRO), TCLP metals, and TCLP organics. Other constituents must be analyzed as needed to meet the receiving disposal facility's WAC.

Storage and Disposal Method: PCS will be stored in clearly marked and appropriately constructed waste accumulation areas. Waste accumulation area postings, regulated storage duration, and inspection requirements will be based on the most restrictive waste classification appropriate to the area where the spill occurred. If the PCS is suspect or known hazardous or mixed low-level waste (MLLW), it will initially be managed in a registered hazardous waste accumulation area pending analysis. All PCS will be treated/disposed at an authorized off-site facility appropriate for the waste classification.

Waste # 6: Returned Rad-Van Samples - This waste stream consists of returned soil and tuff samples (zip lock bag and sample labels) from American Radiation Services (Rad-Van). It is estimated that approximately 0.5 cubic yards of soil will be generated from this activity.

Anticipated Regulatory Status: Industrial, Hazardous, LLW, MLLW, Beryllium, PCB

Characterization Approach: Waste characterization will be based upon the analytical results obtained from the direct sampling of containerized waste or the environmental media from which the samples were collected. Direct samples will be collected within 10 days of generation and submitted for analysis with a 21 day turnaround time. Samples will be collected using a hand auger or thin-wall tube sampler in accordance with SOP-06.10, Hand Auger and Thin-Wall Tube Sampler. Samples will be collected by augering from the surface to the bottom of the waste in a sufficient number of locations to obtain a representative sample. Samples will be analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), PCBs, high explosives, perchlorate, nitrate, radionuclides, total metals, toxicity characteristic metals, total cyanide, total petroleum hydrocarbons (TPH), and TCLP organics.

Storage and Disposal Method: Upon their return, these wastes will be containerized in drums or placed into the same containers as the materials (i.e., drill cuttings, excavated soil, or debris) from which they were taken. The waste containers will initially be stored in registered hazardous waste accumulation areas. If the waste is characterized as non-hazardous, it will be stored in a designated non-hazardous waste area appropriate for the waste classification. For disposal, the separately containerized samples may be also be combined with the material from

which they originated (the WPF will document the decision to combine the waste streams). Wastes will be treated and/or disposed of in authorized on-site or off-site facilities appropriate for the waste classification.

Waste # 7: Debris - This waste stream consists of concrete with rebar, asphalt, vitrified clay pipe or metal piping. It is estimated that approximately 16 cubic yards of debris will be generated from this activity. Debris will contain less than 1% excavated soil. Sealants or caulking in septic tank concrete joint or around pipe penetrations may contain PCB material. If present, caulking must be characterized for PCBs. PCBs in sealants at or above 50 part per million must be managed as PCB Bulk Waste.

Anticipated Regulatory Status: Industrial, Hazardous, LLW, MLLW, PCB, Beryllium, Recycled

Characterization Approach: When possible, the debris will be characterized by direct sampling in accordance with SOP-5194, R0, Chip Sampling of Porous Surfaces. Qualified sampling personnel will make the decision in the field of how many samples are necessary to represent the debris and will document these decisions in the field notebook. If the materials are difficult to sample (e.g., metal piping), the characterization will be made by using AK of processes, data from associated debris, tank contents, and/or site characterization sampling. Debris will be sampled within 10 days of generation and submitted for analysis with a 21 day turnaround time. Samples will be analyzed for total metals, VOCs, SVOCs, radionuclides, PCBs, and TCLP metals. The presence of high explosives will be determined by direct sampling or though the use of HE spot test kits. Additional analyses may be required to meet the WAC of the receiving facility or if process knowledge or visual observations indicate that other contaminants may be present (e.g., asbestos).

Storage and Disposal Method: These wastes will be collected and containerized (e.g., rolloff bins) at the point of generation and initially stored in registered hazardous waste accumulation or storage areas. If the waste is characterized as non-hazardous, it will be stored in a designated non-hazardous waste area appropriate for the waste classification.

Clean debris (non-hazardous, non-radioactive, non-PCB, non-beryllium) may be recycled in a manner consistent with LANL procedures and the approved work plan. . If debris cannot be recycled, it will be treated and/or disposed of in authorized on-site or off-site facilities appropriate for the waste classification.

Waste # 8: Excavated Soil - Overburden soil and rock excavated adjacent to and above septic tanks, settling tanks and piping are expected to be non-contaminated. It is estimated that approximately 30 cubic yards of excavated soil will be generated during these activities.

Anticipated Regulatory Status: Industrial, Hazardous, LLW, MLLW, PCB, Beryllium , Fill

Characterization Approach: Waste characterization will be based upon the analytical results obtained from direct sampling of the waste. Representative composite samples will be collected for each excavation location. A minimum of one sample must be collected for every 50 cubic yards of soil excavated. Excavated soil will be sampled within 10 days of generation and submitted for analysis with a 21 day turnaround time. If the soil is sampled after it is excavated, a hand auger or thin-wall tube sampler will be used in accordance with SOP-06.10, Hand Auger and Thin-Wall Tube Sampler to collect waste material from each container or spoils pile, augering from the surface to the bottom of the waste in a sufficient number of locations to obtain a representative composite sample. If the soil is stored in a pile, the pile must be constructed so that the entire depth of the pile can be sampled. If the soil is incrementally sampled as it is generated, the incremental samples will be collected in accordance with SOP-06.11, *Spade and Scoop Method for Collection of Soil Samples*. Samples will be analyzed for total metals, nitrate, cyanide, perchlorate, VOCs, SVOCs, high explosives, PCBs, TPH, and radionuclides. Additional analyses may be required to meet the WAC of the receiving facility or if process knowledge or visual observations indicate that other contaminants may be present (e.g., asbestos).

Storage and Disposal Method: Excavated material will be field-screened during the excavation process and will remain within the solid waste management unit boundary from which it was excavated. If the field screening does not indicate that contamination is present, the excavated material will be stored on the ground surface with appropriate best management practices. If field screening indicates contamination is present, the excavated material

will be placed in rolloff containers, which will initially be stored in a hazardous waste accumulation area. The analytical results will be compared to residential soil screening levels (SSLs). If the concentrations are less than the residential SSLs the material will be used as backfill for the excavation. If the concentrations exceed the residential SSLs, the material will be disposed of at an authorized off-site disposal facility appropriate for the waste classification.

Waste # 9: Tank Contents – This waste steam consists of liquids and/or sludge that could potentially be in the tanks to be excavated. It is estimated that up to 10 cubic yards of tank contents will be generated during these activities.

Anticipated Regulatory Status: LLW, Industrial, Hazardous, or MLLW

Characterization Approach: Waste characterization will be based upon the analytical results obtained from direct sampling of the waste. The containerized liquids will be sampled within 10 days of generation and submitted for analysis with a 21 day turnaround time. Samples will be collected from the storage container in accordance with LANL SOP-06.15, *COLIWASA Sampler for Liquids and Slurries.* If the container does not permit COLIWASA or bailer sampling, the type of sampling equipment used will be appropriate for the waste container and properly operated in accordance with Chapter 7 and Appendix E of the RCRA Waste Sampling Draft Technical Guidance (EPA 530-D-02-002, August 2002, http://www.epa.gov/osw/hazard/testmethods/sw846/pdfs/rwsdtg.pdf). Samples will be analyzed for VOCs, SVOCs, high explosives, perchlorate, radionuclides, PCBs, and total metals. Other analyses may be required to meet the WAC of the receiving facility. Note that fluids destined for LANL's sanitary plant (SWS) must be sampled by ENV-RCRA for microtox analysis, total suspended solids (TSS), total dissolved solids (TDS), oil and grease, and pH. Submit a request for analysis at https://esp-esh-as01-f5.lanl.gov/~esh19/databases/rfa_form.shtml.

Storage and Disposal Method: These wastes will be containerized at the point of generation and will initially be stored in registered hazardous waste accumulation or storage areas. It is expected that most of the tank contents will be treated on-site at the SWS or RLWTF. Wastes that do not meet the WAC for the on-site facilities will be treated and/or disposed of in authorized off-site facilities appropriate for the waste classification.

Waste # 10: Lead Shot – This waste stream consists of 0.25-inch diameter lead shot scattered on the concrete pad adjacent to the shaft at SWMU 15-007(c). It is estimated that less that 1 gallon of lead will be generated in the cleanup activity.

Anticipated Regulatory Status: Hazardous, MLLW, or Recycled

Characterization Approach: Waste characterization will be based upon AK. The use of smears will be used to detect the presence of radiological contamination.

Storage and Disposal Method: These wastes will be containerized at the point of generation and will be stored in registered hazardous waste accumulation areas within the aggregate area boundary as directed in the work plan.

Lead may be recycled in a manner consistent with LANL procedures and the approved work plan if it is determined that the waste meets release criteria. If the waste cannot be recycled, it will be treated and/or disposed of in an authorized off-site hazardous waste facility.

References

LANL (Los Alamos National Laboratory), July 2008. "Historical Investigation Report for Threemile Canyon Aggregate Area," Los Alamos National Laboratory document LA-UR-08-4713, Los Alamos, New Mexico. (LANL 2008, 102244)

LANL (Los Alamos National Laboratory), October 2008. "Investigation Work Plan for Threemile Canyon Aggregate Area, Revision 1," Los Alamos National Laboratory document LA-UR-08-6727, Los Alamos, New Mexico. (LANL 2008, EP2008-0549)

Characterization Table

Waste Description	Waste # 1 MSW	Waste #2 Drill Cuttings	Waste #3 Contact IDW	Waste #4 Decon Fluids	Waste #5 PCS	Waste #6 Returned Rad-Van Samples	Waste #7 Debris	Waste #8 Excavated Soil	Waste #9 Tank Contents	Waste #10 Lead Shot
Volume	3 cy	22 cy	1 cy	< 55 gal	<1 cy	0.5 cy	16 cy	30 cy	10 cy	1 gallon
Packaging	Approved Container	Approved Container	Approved Container	Approved Container	Approved Container	Approved Container	Approved Container	Approved Container	Approved Container	Approved Container
Regulatory Classification										
Radioactive		X	X	X	X	X	X	X	X	
MSW	X									
Hazardous		X	X	X	X	X	X	X	X	X
MLLW (hazardous and radioactive)		X	X	X	X	X	X	X	X	X
Beryllium		X	X		X	X	X	X	X	
PCB		X	X	X	X	X	X	X	X	
New Mexico Special Waste					X					
Industrial		X	X	X	X	X	X	X	X	
Characterization Method										
Acceptable knowledge (AK): Existing Data/Documentation	X		X	X	X	X	X			X
AK: Site Characterization			X			X	X			
Direct Sampling/ or smears for lead shot		X		X	X	X	X	X	X	X
Analytical Testing										
Volatile Organic Compounds (EPA 8260-B)		X		X	X	X	X	X	X	
Semivolatile Organic Compounds (EPA 8270-C)		X		X	X	X	X	X	X	
Organic Pesticides (EPA 8081-A)		X						X	X	
Organic Herbicides (EPA 8151-A)		X						X	X	

Waste Description	Waste # 1 MSW	Waste #2 Drill Cuttings	Waste #3 Contact IDW	Waste #4 Decon Fluids	Waste #5 PCS	Waste #6 Returned Rad-Van Samples	Waste #7 Debris	Waste #8 Excavated Soil	Waste #9 Tank Contents	Waste #10 Lead Shot
PCBs (EPA 8082)		X		X	X	X	X	X	X	
Total Metals (EPA 6010-B/7471-A)		X		X	X	X	X	X	X	
Total Cyanide (EPA 9012-A)		X		X		X		X		
High Explosives Constituents (EPA 8330/8321-A)		X		X	X	X	X[a]	X	X	
Asbestos							X[a]	X[a]		
Total petroleum hydrocarbon (TPH)-GRO (EPA 8015-M)		X			X	X		X		
TPH-DRO (EPA 8015-M)		X			X	X		X		
TCLP Metals (EPA 1311/6010-B)		X			X	X	X			
TCLP Organics (EPA 1311/8260-B & 1311/8270-C)		X			X	X				
TCLP Pest. & Herb. (EPA 1311/8081-A/1311/8151-A)										
Gross Alpha (alpha counting) (EPA 900)										
Gross Beta (beta counting) (EPA 900)										
Tritium (liquid scintillation) (EPA 906.0)		X		X	X[d]	X	X	X	X	
Gamma spectroscopy (EPA 901.1)								X		
Isotopic plutonium (chem. separation/alpha spec.) (HASL-300)		X		X	X[d]	X	X	X	X	

Waste Description	Waste # 1 MSW	Waste #2 Drill Cuttings	Waste #3 Contact IDW	Waste #4 Decon Fluids	Waste #5 PCS	Waste #6 Returned Rad-Van Samples	Waste #7 Debris	Waste #8 Excavated Soil	Waste #9 Tank Contents	Waste #10 Lead Shot
Isotopic uranium (chem. separation/alpha spec.) (HASL-300)		X		X	X[d]	X	X	X	X	
Total uranium (6020 inductively coupled plasma mass spectroscopy [ICPMS])										
Strontium-90 (EPA 905)		X		X	X[d]	X	X	X	X	
Americium-241 (chem. separation/alpha spec.) (HASL-300)		X		X	X[d]	X	X	X	X	
TDS				X[e]					X[e]	
TSS				X[e]					X[e]	
COD				X[e]					X[e]	
TTO (Method 624, 625A, 625B)				X[e]					X[e]	
Perchlorate		X		X		X		X	X	
Nitrates		X		X[e]		X		X	X[e]	
Gross Gamma				X[e]					X[e]	
Waste Profile Form #	NA	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

[a] If needed
[b] If waste is destined for Energy Solutions facility in Clive, Utah.
[c] If waste is destined for an authorized New Mexico Special Waste Facility, it will require TPH data.
[d] If waste may have contacted radioactively-contaminated soil.
[e] If the waste is destined for the RLWTF.

Note: Section 1.2 of the TCLP method 1311 states "If a total analysis of the waste demonstrates that individual analytes are not present in the waste, or that they are present but at such low concentrations that the appropriate regulatory levels could not possibly be exceeded, the TCLP need not be run." The methodology for using total waste analyses determination for the 40 TC constituents is as follows;

Liquids – Wastes containing less than 0.5% filterable solids do not require extraction and therefore by filtering the waste and measuring the total constituent levels of the filtrate and comparing those levels to regulatory levels is appropriate.

Solids – Constituent concentrations from the extraction fluid of wastes that are 100% physical solids are divided by 20 (reflecting the 20 to 1 ratio of TCLP extraction) and then compared to the regulatory levels. If the theoretical levels do not equal or exceed the regulatory levels, the TCLP need not be run. If the levels do equal or exceed the regulatory levels, the generator will run TCLP analyses.

Signatures	**Date**
WES-CAP Project Leader (Sign below) John McCann	12-1-09
WES Waste Management Coordinator (Sign below) Gordon Jio	12/1/2009
ENV-RCRA Representative (Sign below) Ann Sherrard	12/1/09
Waste Certification Program Representative (Sign below) Michelle Coriz	12/1/09
WES-WA Representative (Sign below) Andy Elicio	12/02/2009

Amendment #1
to the Waste Characterization Strategy Form (WCSF) (EP2009-0637) for
Implementation of the Investigation Work Plan for Threemile Canyon Agg Area

Date: 12/15/2009

REASON FOR CHANGE

Amendment #1 to WCSF EP2009-0637 for the Implementation of the IWP for Threemile Canyon Aggregate Area will add waste stream #11, HE spot test waste. The field investigation of Threemile canyon requires that a HE spot test be conducted at each location prior to collecting a characterization sample The HE Spot Test was inadvertently left out of the original WCSF.

WASTE DESCRIPTION

Waste #11: HE spot test waste

This waste stream will be composed of filter paper, soil or rock, sodium methoxide/dimethyl sulfoxide, hydrochloric acid/sulfanilamide, 1-N-(naphthyl-ethylene) diamine hydrochloride/water. There will not be free liquids associated with the waste.

CHARACTERIZATION, MANAGEMENT, AND DISPOSAL

Waste #11: HE spot test waste
This waste stream will be characterized by the HE Spot Test material safety data sheets and AK from the characterization of the investigation surface samples from each location. Contact waste will initially be stored in a registered hazardous waste accumulation area pending analytical data availability. If the waste is characterized as non-hazardous, it will be stored in a designated non-hazardous waste area appropriate for the waste classification. For disposal, the separately containerized HE spot test waste may be combined with the contact waste (waste stream #3). The WPF will document the decision to combine the waste streams. Wastes will be treated and/or disposed of in authorized on- or off-site facilities appropriate for the waste classification.

SIGNATURES (Print name and then sign.)	**DATE**
WES-CAP Project Leader (Sign below.) John McCann	1-4-10
WES Waste Management Coordinator (Sign below.) Gordon Jio	1/4/2010
ENV-RCRA Representative (Sign below) Ann Sherrard	1/4/2010
Waste Certification Program Representative (Sign below.) Michelle Coriz	1/4/2010
WES-WA Representative (Sign below.) Andy Elicio	1/4/2010