DEPARTMENT OF ENERGY
Environmental Management Los Alamos Field Office (EM-LA)
Los Alamos, New Mexico 87544

EMLA-23-BF226-2-1

June 15, 2023

Mr. Rick Shean
Designated Agency Manager
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6313

Subject: Submittal of the Final Investigation Work Plan for Material Disposal Area T at Technical Area 21

Dear Mr. Shean:

Enclosed please find two hard copies with electronic files of the "Final Investigation Work Plan for Material Disposal Area T at Technical Area 21." This final investigation work plan describes the operational history of the site, the conceptual site model, the previous investigations performed, and the proposed work activities to complete the investigation of Material Disposal Area T (MDA T).

The report is being submitted to fulfill fiscal year 2023 Milestone 7 in Appendix B of the 2016 Compliance Order on Consent (Consent Order). The objective of the final work plan is to further evaluate temporal trends of volatile organic compounds and tritium in pore-gas beneath MDA T, providing necessary information for the refinement of the conceptual site model before proceeding with the corrective measures evaluation.

Per Section XXIII.D of the Consent Order, EM-LA sought to reach agreement with NMED on a review schedule by when NMED will review and approve or disapprove this submission.[1] Consistent with Section XXIII.D. and Appendix D (Document Review/Comment and Revision Schedule) of the Consent Order, EM-LA proposed a 90 day period for NMED to review and approve or disapprove this submission. NMED responded by proposing a 120 day review period. However, in its response, NMED sought to impose conditions that directly contradict Section XXIII.D of the Consent Order. Therefore,

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[1] Section XXIII.D states, in pertinent part:

> "[p]rior to DOE's submission of any work plan or report required by Sections XIII, XVI, XVIII, XIX, or XV (Facility Investigation, Corrective Measures Evaluation, Corrective Measures Implementation, Accelerated Corrective Action, Interim Measures), **the Parties agree to reach agreement on review schedules by when NMED will review and approve or disapprove DOE's submission(s)** … If NMED action on a DOE submission is not completed in accordance with an agreed-upon review schedule, the submittal will be **deemed approved**."

(emphasis added). EM-LA recognizes that NMED "may request a single extension for a specified number of days to an agreed-upon review schedule."

EM-LA could not agree to NMED's proposed review period. A copy of the correspondence between EM-LA and NMED regarding NMED's review schedule is enclosed.

It is crucial that NMED commits to a review schedule of EM-LA's submissions for EM-LA to be able to timely and effectively plan for—and expeditiously execute—legacy waste remediation through the Consent Order corrective action process. Moreover, such commitment from NMED needs to be in accordance with the Consent Order.

If you have any questions, please contact Kevin Reid at (505) 257-7710 (kevin.reid@em-la.doe.gov) or Cheryl Rodriguez at (505) 414-0450 (cheryl.rodriguez@em.doe.gov).

Sincerely,

ARTURO DURAN

Digitally signed by ARTURO DURAN
Date: 2023.06.15 09:56:40 -06'00'

Arturo Q. Duran
Compliance and Permitting Manager
U.S. Department of Energy
Environmental Management
Los Alamos Field Office

Enclosure(s):

1. Two hard copies with electronic files:
   Final Investigation Work Plan for Material Disposal Area T at Technical Area 21 (EM2023-0261)
2. Correspondence regarding review schedule for NMED to review submission

cc (letter with CD/DVD enclosure[s]):
Laurie King, EPA Region 6, Dallas, TX
Raymond Martinez, San Ildefonso Pueblo, NM
Dino Chavarria, Santa Clara Pueblo, NM
Steve Yanicak, NMED-DOE-OB
Steven Lynne, Los Alamos County
Jennifer Payne, LANL
Stephen Hoffman, NA-LA
Cheryl Rodriguez, EM-LA
emla.docs@em.doe.gov
n3brecords@em-la.doe.gov
Public Reading Room (EPRR)
PRS website

cc (letter emailed without enclosure[s]):
Neelam Dhawan, NMED-HWB
Ricardo Maestas, NMED-HWB
Michael Peterson, NMED-HWB
William Alexander, N3B
Teri Bidwell, N3B
Brenda Bowlby, N3B
David Diehl, N3B
Kevin Reid, N3B
Kim Lebak, N3B
Dana Lindsay, N3B
Robert Macfarlane, N3B
Christian Maupin, N3B
Vince Rodriguez, N3B
Bradley Smith, N3B
Troy Thomson, N3B
M. Lee Bishop, EM-LA
John Evans, EM-LA
Thomas McCrory, EM-LA
Michael Mikolanis, EM-LA

June 2023
EM2023-0261

Final Investigation Work Plan for Material Disposal Area T at Technical Area 21

N3B Los Alamos

EM2023-0261

Final Investigation Work Plan for Material Disposal Area T at Technical Area 21

June 2023

Responsible program director:

Brenda Bowlby		Program Director	RCRA Remediation Program	5/31/23
Printed Name	Signature	Title	Organization	Date

Responsible N3B representative:

Troy Thomson		Program Manager	N3B Environmental Remediation Program	5/31/23
Printed Name	Signature	Title	Organization	Date

Responsible DOE EM-LA representative:

Arturo Q. Duran	ARTURO DURAN Digitally signed by ARTURO DURAN Date: 2023.06.06 14:46:06 -06'00'	Compliance and Permitting Manager	Office of Quality and Regulatory Compliance	
Printed Name	Signature	Title	Organization	Date

Executive Summary

This final investigation work plan (IWP) identifies the proposed work activities to complete the investigation of Material Disposal Area (MDA) T. The final IWP presents the proposed activities needed to further evaluate temporal trends of volatile organic compounds (VOCs) and tritium in pore gas beneath MDA T, providing necessary information for the refinement of the conceptual site model before proceeding with the corrective measures evaluation (CME).

MDA T is an inactive waste management area located at the east end of the Delta Prime (DP) West area within Technical Area 21 at Los Alamos National Laboratory. The MDA includes four liquid waste absorption beds [Solid Waste Management Unit (SWMU) 21-016(a)]; a former retrievable waste storage area (RWSA) [SWMU 21-016(b)]; and radioactive waste disposal shafts [SWMU 21-016(c)]. Other sites associated with MDA T include soil contamination caused by airborne emissions from mobile incinerators (SWMU 21-007); a former acid waste storage tank and distribution box [SWMU 21-011(c)]; a former container storage area [Area of Concern (AOC) 21-028(a)]; and two waste spills (AOCs C-21-009 and C-21-012).

MDA T is classified as a Hazard Category 2 nuclear environmental site (NES) because of the radioactive inventory present in the subsurface disposal units. Seven of the above eight sites are located within the NES boundary

A review of historical documents and site data was performed to evaluate and recommend remaining activities to be conducted at MDA T before initiating the CME process in accordance with the 2016 Compliance Order on Consent. The review also evaluated all existing data to identify whether any additional information was needed to achieve regulatory closure of the site. Results from this evaluation concluded that previous investigations of the liquid waste absorption beds, RWSA, and disposal shafts [SWMUs 21-016(a), 21-016(b), and 21-016(c), respectively] were sufficient to evaluate potential risk to human health and environmental receptors based on current land use. However, to assess temporal variability in pore-gas concentrations beneath MDA T, this work plan proposes additional sampling for subsurface VOCs and tritium in pore gas from the five established vapor monitoring wells.

The results of the additional pore-gas monitoring investigation activities will be reported in a supplemental investigation report.

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1.0 Introduction

Los Alamos National Laboratory (LANL or the Laboratory) is a multidisciplinary research facility owned by the U.S. Department of Energy (DOE) and managed by Triad 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 36 mi^2 of the Pajarito Plateau, which consists of a series of fingerlike mesas separated by deep canyons containing perennial and intermittent streams running from west to east. Mesa tops range in elevation from approximately 6200 to 7800 ft above mean sea level. The location of Material Disposal Area (MDA) T with respect to the Laboratory technical areas is shown in Figure 1.0-1.

The Laboratory has been a participant in a national effort by DOE to clean up sites and facilities formerly involved in weapons research and development. The goal of this effort is to ensure past operations do not threaten human or environmental health and safety in and around Los Alamos County, New Mexico. To achieve this goal, the Laboratory has investigated sites potentially contaminated by past Laboratory operations. These sites are designated as either solid waste management units (SWMUs) or areas of concern (AOCs).

Corrective actions at the Laboratory are subject to the 2016 Compliance Order on Consent (Consent Order). The Consent Order was issued pursuant to the New Mexico Hazardous Waste Act, New Mexico Statutes Annotated (NMSA) 1978 Section 74-4-10, and the New Mexico Solid Waste Act, NMSA 1978, Section 74-9-36(D). The New Mexico Environment Department (NMED), pursuant to the New Mexico Hazardous Waste Act, regulates cleanup of hazardous wastes and hazardous constituents. DOE regulates cleanup of radioactive contamination, pursuant to DOE Order 458.1, Administrative Change 4, “Radiation Protection of the Public and the Environment,” and DOE Order 435.1, “Radioactive Waste Management.” Information on radioactive materials and radionuclides, including the results of sampling and analysis of radioactive constituents, is voluntarily provided to NMED in accordance with DOE policy.

This final investigation work plan (IWP) addresses work activities at MDA T and associated SWMUs/AOCs. The location of MDA T (and the associated areas), with respect to the Laboratory technical areas is shown in Figure 1.0-1. These sites are potentially contaminated with hazardous chemicals and radionuclides.

1.1 General Site Information

MDA T is an inactive waste management area located at the east end of the Delta Prime (DP) West area within Technical Area 21 (TA-21) at LANL. This MDA is a fenced 2.1-acre site adjacent to MDA A that was used from 1945 to 1986 for storage and disposal of solid and liquid radioactive wastes. The MDA includes four liquid waste absorption beds [SWMU 21-016(a)]; a former radioactive waste storage area (RWSA) [SWMU 21-016(b)]; and radioactive waste disposal shafts [SWMU 21-016(c)]. Other sites associated with MDA T include soil contamination caused by airborne emissions from mobile incinerators (SWMU 21-007); a former acid waste storage tank and distribution box [SWMU 21-011(c)]; a former container storage area [AOC 21-028(a)]; and two waste spills (AOCs C-21-009 and C-21-012). Figure 1.1-1 shows the location of the areas described above, with respect to the MDA T fenceline and topography.

MDA T is classified as a Hazard Category 2 nuclear environmental site (NES) because of the radioactive inventory present in the subsurface disposal units. Seven of the above eight sites are located within the NES boundary.

Based on an evaluation of the administrative record and previously approved investigations at MDA T, the following conclusions have been made:

- Previous investigations have characterized potential releases from the MDA T absorption beds, disposal shafts, and RWSA to the surface and shallow subsurface. These investigations were sufficient to evaluate potential risk to human health and the environment based on current land use. These investigations defined nature and extent of contaminant releases from MDA T; however, an evaluation of temporal trends of volatile organic compound (VOC) and tritium concentrations in subsurface pore gas is warranted.
- Previous investigations did not specifically characterize releases from individual sites, including SWMUs 21-007 and 21-011(c) and AOCs 21-028(a), C-21-009, and C-21-012; however, these sites are co-located with the absorption beds, disposal shafts, and/or RWSA and were included in the previous investigations at MDA T.
- Investigation requirements contained in the administrative record have been met except for installation of regional well R-65, installation of a vadose-zone moisture-monitoring system, and installation of a deep vapor-monitoring well near building 21-257 to evaluate subsurface pore gas for VOCs and tritium.
    - ❖ Installation of regional groundwater well R-65 will be addressed as a separate deliverable for MDA T and will not be addressed in this IWP.
    - ❖ The vadose-zone moisture-monitoring system is being evaluated and may not be necessary to support the development of the CME.
    - ❖ In lieu of installing a deep vapor-monitoring well near building 21-257, the existing deep vapor monitoring well network at MDA T will be re-sampled to evaluate temporal trends in subsurface pore gas for VOCs and tritium. The existing five well vapor monitoring network provides sufficient extent coverage for the vapor plume beneath MDA T.

1.2 Work Plan Overview

This final IWP presents the proposed activities needed to complete the investigation at MDA T. Specifically, VOC and tritium data will be collected to evaluate changes since subsurface vapor sampling was last conducted in 2011 (NMED 2011, 207573; LANL 2012, 210348).

Section 2 of this IWP presents the background, operational history, conceptual site model, and data overview of MDA T. Section 3 presents site conditions, and section 4 summarizes previous investigations and data collected and presents the scope of proposed activities for MDA T. Section 5 describes investigation methods for proposed field activities. Ongoing monitoring and sampling programs in the vicinity of MDA T are presented in section 6. Section 7 is an overview of the anticipated schedule of the investigation and reporting activities. The references cited are provided in section 8. Appendix A of this work plan includes a list of acronyms and abbreviations, and a data qualifier definitions table.

1.3 Work Plan Objectives

The objective of this final IWP is to propose further sampling for VOCs and tritium in subsurface pore gas at MDA T to provide necessary data to refine the conceptual site model before proceeding with the corrective measures evaluation (CME) process. The data will be evaluated and reported in a supplemental investigation report.

To accomplish this objective, the IWP

- presents historical and background information on MDA T;
- summarizes existing data and information on the nature and extent of contamination and risk;
- describes the rationale for proposed data collection activities; and
- identifies and proposes appropriate methods and protocols for collecting, analyzing, and evaluating data.

2.0 BACKGROUND

2.1 Operational History

A summary of the site description and operational history for each of the MDA T investigation areas: the liquid waste absorption beds [SWMU 21-016(a)]; a former RWSA [SWMU 21-016(b)]; radioactive waste disposal shafts [SWMU 21-016(c)]; soil contamination caused by airborne emissions from mobile incinerators (SWMU 21-007); a former acid waste storage tank and distribution box [SWMU 21-011(c)]; a former container storage area [AOC 21-028(a)]; and two waste spills (AOCs C-21-009 and C-21-012) are described in detail in the following subsections. Figure 1.1-1 shows the locations of each waste feature described in this section.

2.1.1 SWMU 21-016(a), Absorption Beds

SWMU 21-016(a) is composed of four inactive absorption beds and overflow waste lines, two acid waste distribution boxes and outlet lines, and two associated acid waste sumps. The absorption beds were excavated in 1944 and 1945 directly into tuff near the southern edge of DP Canyon and measured approximately 120 ft long × 20 ft wide × 6 ft deep. The bottom 2 ft of each bed was filled with a layer of river rock approximately 3–10 in. diameter, followed by 6 in. of gravel, 6 in. of sand, and 1 ft of soil on the surface; each bed was surrounded by an approximately 10-ft-high earthen berm. Absorption beds 1 and 2 were equipped with 6-in.-diameter overflow waste lines. Wastewater was discharged first to absorption beds 1 and 2 and allowed to flow to absorption beds 3 and 4. The overflow waste line from absorption bed 1 discharged to absorption bed 3, and the overflow waste line from absorption bed 2 discharged to absorption bed 4.

Beginning in 1945, the absorption beds received untreated radioactive liquid waste from uranium- and plutonium-processing laboratories in former buildings 21-2, 21-3, 21-4, and 21-5. After construction of the Radioactive Liquid Waste Treatment Facility (RLWTF) at building 21-35, the beds received only small amounts of treated radioactive liquid waste from 1952 to 1967. When the amounts of wastewater discharged to the beds reached several thousand gallons per day, the beds became congested and were taken out of service. Treated wastewater was then discharged to an outfall to DP Canyon at what is now SWMU 21-011(k). In 1967, operations at building 21-257 started, and no further discharge of wastewater to the beds occurred. In 1987, the inactive absorption beds were covered with fill and topsoil and reseeded.

2.1.2 SWMU 21-016(b), Retrievable Waste Storage Area

SWMU 21-016(b) is the former RWSA and is located between absorption beds 1 and 3 at MDA T. The RWSA pit was excavated in 1974 to retrievably store cement-treated transuranic (TRU) waste in corrugated metal pipes (CMPs). The RWSA pit measured 120 ft long × 24 ft wide × and 19 ft deep and

was located directly west of the waste disposal shafts at MDA T and wrapped around the west end of absorption bed 3. From 1974 to 1983, treated TRU waste containing plutonium-239/240 and americium-241 was mixed with cement in the pug mill in the former RLWTF in building 21-257 and pumped through a buried pipeline and fire hose into 227 CMPs in the RWSA. Each CMP measured 2.5 ft in diameter and 20 ft long and were placed on end in the RWSA. The bottom and top of each CMP were capped with a 1-ft-thick concrete plug. In 1984, 69 of the CMPs were moved to TA-54 for storage prior to future processing for shipment to the Waste Isolation Pilot Plant (WIPP). The remaining 158 CMPs were moved to TA-54 in 1986, also for storage prior to future processing for shipment to WIPP. In 1987, the RWSA area was backfilled and regraded, covered with topsoil, and reseeded.

2.1.3 SWMU 21-016(c), Waste Disposal Shafts

SWMU 21-016(c) consists of 64 waste disposal shafts located primarily between absorption beds 2 and 4 at MDA T. The shafts were augured into tuff at the site between 1968 and 1976. Of the 64 shafts, 49 are 8 ft in diameter and 15 are 6 ft in diameter. All of the shafts were anticipated to be 60 ft deep, but shaft depths vary because of a subsurface boulder zone encountered between 15 and 32 ft below ground surface (bgs) at several shaft locations. The shafts were lined with heated roofing asphalt prior to being filled with cement-treated americium waste from building 21-257. Filling the shafts involved the mixing of treated batch americium raffinate wastes and sludge generated from the RLWTF process in building 21-257 with cement in a pug-mill operation in building 21-257. The resulting cement slurry was pumped into the asphalt-lined shafts of SWMU 21-016(c). In addition, 3-ft-diameter bathyspheres containing plutonium-239/240 and other mixed fission products were placed at various depths in 5 of the cement-filled shafts (shafts 3, 17, 18, 19, and 26). Radionuclides present in the waste disposal shafts are plutonium-238, plutonium-239, plutonium-240, americium-241, uranium-238, and uranium-235, with each shaft varying in composition and volume of waste. Once the shafts were filled with the waste cement mixture, they were capped with concrete. In 1987, the disposal shaft area was covered with fill, regraded, covered with topsoil, and reseeded.

2.1.4 SWMU 21-007, Airborne Emissions Soil Contamination

SWMU 21-007 is an area of potential surface and near-surface soil contamination from the deposition of airborne emissions from mobile incinerators (known as salamanders) that were located on the surface of MDA T. The salamanders were used to incinerate kerosene and waste oils mixed with plutonium-contaminated tricresyl phosphate (TCP) and/or tributyl phosphate (TBP).The salamanders operated in two areas within MDA T; one area was located on top of a concrete pad west of building 21-257 and the other area was located directly east of absorption beds 2 and 4. The areas were active from 1964 to 1972, when the incineration operations were terminated and the salamanders were removed from TA-21. LANL records indicate approximately 1102 gal. of TCP oil and 156 gal. of TBP oil contaminated with low concentrations of plutonium-239/240 were burned in the salamanders. Emissions from the salamanders were believed to not contaminate the ground surface around the former incinerator locations; however, spills of oil from the salamanders are known to have occurred.

2.1.5 SWMU 21-011(c), Acid Waste Storage Tank and Distribution Box

SWMU 21-011(c) consists of a former acid waste holding tank (former structure 21-120) and an inactive acid waste distribution box (structure 21-121) that were located between absorption beds 1 and 2 within MDA T. The tank measured 5 ft 4 in. in diameter × 24 ft long, and was used to store overflow from a 500-gal. citrate waste tank in former building 21-35. The 21-120 tank was not present at the site in 1997 and was assumed to have been disposed of at MDA G at TA-54 along with the other components of

former building 21-35 when the facility was decommissioned in 1967. Structure 21-121 is a distribution box with 6-in. iron outlet waste lines coming off the west and east side of the box, which discharged to absorption beds 1 and 2, respectively, at MDA T. The distribution box was likely abandoned in place in 1967.

2.1.6 AOC 21-028(a), Satellite Accumulation Area

AOC 21-028(a) is a former satellite accumulation area (SAA) that was located outside on a loading dock within the fence at MDA T, between absorption beds 1 and 2 north of former building 21-35. Small quantities of alcohol, acetone, and freon waste were temporarily stored in the SAA while awaiting disposal off-site. Based on the historical engineering drawings, the location of the AOC 21-028(a) SAA was determined to be on the ground surface above structure 21-121 [SWMU 21-011(c)].

2.1.7 AOC C-21-009, Spill/Nonintentional Release Area

AOC C-21-009 is a one-time spill of cemented americium-241 waste that occurred in 1978 (LANL 1978, 001844). The incident occurred when concrete TRU paste plugged the end of a fire hose during routine pug-mill operations while filling a CMP within the east end of the former RWSA between the east ends of absorption beds 1 and 3 at MDA T. When the concrete obstruction was freed, it caused the fire hose to break open, resulting in splattering TRU paste on a plant operator and spraying the surrounding area. The estimated contaminated area measured approximately 100 ft long × 30 ft wide and included the surrounding capped CMPs, the vertical wall of the RWSA pit, and the nearby snow-covered soil and weeds. The paste was visible on untracked snow around the site as quarter-sized drops. Approximately 9000 L of TRU cement waste was released and was estimated to contain 30,000 nCi/g of americium-241. The area was decontaminated that day, and cleanup of the contaminated area resulted in a total of sixty-seven 55-gal. drums of contaminated soil, weeds, and snow removed.

2.1.8 AOC C-21-012, Spill/Nonintentional Release Area

AOC C-21-012 is a one-time spill of cement-treated TRU waste that occurred in 1976 during the CMP-filling operation associated with the former RWSA (LANL 1976, 001919). Approximately 4000 L of TRU cement paste escaped from the bottom of two 20-ft sections of CMP due to the concrete plug at the bottom of each CMP not providing a tight seal. The spill resulted in a contaminated area of approximately 15 ft wide × 30 ft long. The spill area was decontaminated, and cleanup of the contaminated area was completed on December 29, 1976. Twenty-nine 55-gal. drums containing TRU-contaminated waste were generated and were temporarily staged within the RWSA until being moved to a RWSA at MDA G at TA-54.

2.2 Conceptual Site Model

The sampling proposed in this IWP, in part, uses the conceptual site model for MDA T (LANL 2006, 094151; NMED 2007, 095411) to predict areas of potential contamination and to allow adequate characterization of these areas. The conceptual site model is based on the existing knowledge about the site and describes potential contaminant sources, exposure pathways, transport mechanisms, and receptors. The current conceptual site model for MDA T includes both surface and subsurface sources of potential contamination.

2.2.1 Potential Contaminant Sources

Potential contaminant sources associated with MDA T include four liquid waste absorption beds, SWMU 21-016(a); a former retrievable waste storage area, SWMU 21-016(b); and radioactive waste disposal shafts SWMU 21-016(c). Other sites associated with MDA T include soil contamination caused by airborne emissions from mobile incinerators, SWMU 21-007; a former acid waste storage tank and distribution box, SWMU 21-011(c); a former container storage area, AOC 21-028(a); and two waste spills AOCs C-21-009 and C-21-012. Details of these SWMUs/AOCs and known contaminant inventory within MDA T were provided in section 2.1. Investigation results indicate the presence of radionuclides, inorganic chemicals, and/or organic chemicals in surface and subsurface samples.

2.2.2 Potential Contaminant Transport Mechanisms

Current potential transport mechanisms that may lead to exposure include

- dissolution and/or particulate transport of surface contaminants during precipitation and runoff events,
- airborne transport of contaminated surface soil,
- continued dissolution and advective/dispersive transport of chemical contaminants contained in subsurface soil and tuff as a result of past operations,
- transport of contaminants by subsurface diffusion of vapors,
- disturbance of contaminants in shallow soil and subsurface tuff by Laboratory operations, and
- disturbance and uptake of contaminants in shallow soil by plants and animals.

2.2.3 Potential Receptors

Potential receptors at MDA T under the current land use scenario may include

- Laboratory workers,
- construction workers, and
- plants and animals both on-site and in areas immediately surrounding the sites.

Laboratory and construction workers could potentially be exposed to contaminants in soil, tuff, and sediment by direct contact, ingestion, or inhalation. Ecological receptors may also be exposed to contaminants in soil and sediment.

2.2.4 Cleanup Levels

As specified in the Consent Order, soil screening levels (SSLs) for inorganic and organic chemicals may be used as soil cleanup levels unless they are determined to be impracticable or values do not exist for the current and reasonably foreseeable future land uses. Screening action levels (SALs) may be used as soil cleanup levels for radionuclides (LANL 2015, 600929). Screening assessments compare chemical of potential concern (COPC) concentrations for each site with industrial, residential, and construction worker SSLs and SALs.

The human-health cleanup goals specified in Section IX of the Consent Order are a target risk of 1×10^{-5} for carcinogens or a hazard index of 1 for noncarcinogens. For radionuclides, the release requirements in DOE Order 458.1 (25 mrem/yr) will be met.

As specified in the Consent Order, ecological cleanup levels may be developed using a methodology and values approved by NMED. LANL created a methodology for developing ecological preliminary remediation goals (EcoPRGs) (LANL 2018, 602891) that was reviewed and approved by NMED (NMED 2018, 602908). The EcoPRGs may be used as cleanup levels for mitigating unacceptable ecological risk.

2.3 Data Overview

This final IWP summarizes the available decision-level data, and presents the conclusions of the approved investigation report for MDA T (LANL 2006, 094151; NMED 2007, 095411), the approved Phase II investigation report for MDA T (LANL 2007, 100484; NMED 2008, 101111), and the approved Phase III investigation report for MDA T (LANL 2009, 108012; NMED 2010, 108767). This work plan proposes sampling and analyses for those locations where additional data is needed to assess temporal trends in subsurface pore gas. The data collected during this investigation, along with existing decision-level data, will be used to resolve the temporal variability of VOCs and tritium in pore gas, and provide information necessary to proceed with the CME.

Analytical samples described in this work plan have undergone analyses at off-site laboratories. Because analytical practices and documentation of analyses vary in quality and completeness, analytical data presented are of either screening-level or decision-level data. Screening-level data are appropriate for applications that only require determination of gross contamination areas and/or for site characterization. Screening-level data are also used to specify areas where samples should be collected. Decision-level data are used to quantify the nature and extent of releases and to perform risk assessments. The decision-level data presented in this work plan (Tables 4.1-1 through 4.1-22) have been validated for such use and provide supporting information for the investigation activities proposed in the work plan.

3.0 SITE CONDITIONS

Surface and subsurface features and geologic characteristics of MDA T are described in detail in the approved MDA T Investigation Work Plan (LANL 2004, 085641; NMED 2005, 091694). Conditions at the sites addressed in this IWP are predominantly influenced by

- a semiarid climate with low precipitation and a high evapotranspiration rate that limits the extent of subsurface moisture percolation and, therefore, the amount of moisture available to transport radionuclides or hazardous waste constituents in the subsurface, and
- a thick, relatively dry, unsaturated (vadose) zone that greatly restricts or prevents downward migration of contaminants to the regional aquifer.

These and other elements of the environmental setting in MDA T are considered when the investigation data are evaluated with respect to the fate and transport of contaminants.

4.0 SUMMARY OF PREVIOUS RESULTS AND PROPOSED INVESTIGATION ACTIVITIES

4.1 Summary of Previous Investigations

Three extensive investigations were conducted from 2005–2011 and are summarized in the following subsections.

4.1.1 Phase I Investigation

The 2006–2007 Phase I Consent Order investigation (LANL 2006, 094151; NMED 2007, 095411) addressed sites associated with former Consolidated Unit 21-016(a)-99, which consisted of 33 SWMUs and AOCs (including those addressed in this IWP), both within and outside the nuclear environmental site (NES). The following four specific areas were investigated:

- The slope leading from MDA T to DP Canyon
- The area potentially impacted by releases from the absorption beds, shafts, and RWSA
- The building 21-35 area
- The building 21-257 area

The objectives of the Phase I investigation were to 1) determine the horizontal and vertical extent of contamination at the four study areas, 2) characterize fracturing and geotechnical properties of subsurface media, 3) determine the subsurface moisture profile, 4) delineate the boundaries of the absorption beds using geophysics, and 5) refine the location of a paleochannel at the site.

For purposes of this IWP, only the Phase I investigation activities for the absorption beds, shafts, and RWSA will be presented below.

4.1.1.1 Investigation Approach

Characterization of the absorption bed, shaft, and RWSA area included investigation activities performed both inside and outside the NES boundary. Activities within the NES were limited by the technical safety requirements (TSRs) for the NES.

Outside NES Boundary

A surface geophysical survey was performed to confirm that the absorption beds did not extend outside the NES. The geophysical survey was performed using electromagnetic (EM) and ground-penetrating radar (GPR) methods. A low-density walkover gamma radiation survey was also performed. High-energy and low-energy gamma surveys were conducted to identify any areas of elevated gamma radioactivity and guide field-sampling locations.

A total of 7 deep vertical boreholes ([BHs] 01 through 05, 07 and 08) were drilled around the NES to define the vertical and lateral extent of contamination from the disposal units, to characterize fractures in tuff units Qbt 2 and Qbt 3, to characterize subsurface tritium and VOCs in pore gas, and to collect geotechnical data. The boreholes ranged in depth from 279–380 ft bgs. Samples were collected from BH-01 (location 21-25262), BH-02 (location 21-25263), and BH-03 (location 21-25264), located south of absorption beds 1 and 2, north of absorption bed 3, and north of absorption bed 4, respectively. Samples were also collected from BH-04 (location 21-25372), BH-05 (location 21-25373), BH-07 (location 21-25375), and BH-08 (location 21-25376), located north of absorption bed 4, northeast of absorption bed 4, south of absorption bed 1, and northwest of absorption bed 3, respectively. Figure 4.1-1 presents the sample locations.

A total of 59 core samples were collected from these locations and submitted for laboratory analysis of target analyte list (TAL) metals, total uranium, nitrate, perchlorate, semivolatile organic compounds (SVOCs), VOCs, gamma-emitting radionuclides, americium-241, plutonium isotopes, uranium isotopes, tritium, and strontium-90. A total of 19 samples representative of each stratigraphic unit encountered were collected from the three deepest borehole locations (21-25262, 21-25263, and 21-25264) for

hydrogeologic properties including saturated and unsaturated hydraulic conductivity, chloride-ion concentration, porosity, bulk density, matric potential, and moisture content. Downhole geophysical surveys using a neutron probe, gamma probe, downhole camera, and caliper tool were also performed at these locations.

Three shallow boreholes (BH-37 through BH-39) were drilled in the surface drainage northwest of the RWSA to assess transport of contaminants by water infiltrating along the drainage. The boreholes were drilled to approximately 40 ft bgs. Samples were collected from BH-37 (location 21-25361), BH-38 (location 21-25362), and BH-39 (location 21-25363) and submitted for laboratory analysis of TAL metals, total uranium, nitrate, perchlorate, SVOCs, VOCs, gamma-emitting radionuclides, americium-241, plutonium isotopes, uranium isotopes, tritium, and strontium-90. One additional sample from two of the borehole locations was collected and submitted for analysis of dioxins and furans. Figure 4.1-1 presents the sample locations.

Surface samples were collected from 26 locations outside the perimeter of the NES to determine the nature and extent of releases from the NES. The samples were submitted for laboratory analysis of TAL metals, total uranium, perchlorate, SVOCs, gamma-emitting radionuclides, americium-241, plutonium isotopes, uranium isotopes, tritium, and strontium-90. Figure 4.1-2 shows the location of the surface samples.

Seven shallow boreholes were drilled in two rows northwest and southeast of the NES to define the location of the paleochannel previously identified at the site and to characterize the potential transport of contaminants along the paleochannel. Each of the boreholes were drilled to approximately 30 ft bgs. Samples were collected from six of the borehole locations (21-25365, 21-25366, 21-25368, 21-25369, 21-25370, and 21-25371) near the bottom of the borehole and submitted for laboratory analysis of TAL metals, total uranium, nitrate, perchlorate, SVOCs, VOCs, gamma-emitting radionuclides, americium-241, plutonium isotopes, uranium isotopes, tritium, and strontium-90. One of the boreholes (BH-26; 21-25364) was not sampled because there was no evidence of paleochannel deposits. Figure 4.1-1 shows the sampling locations.

Two rounds of pore-gas sampling were performed at the three deepest borehole locations (21-25262, 21-25263, and 21-25264). A total of 16 pore-gas samples were collected during the first round and 13 pore-gas samples were collected during the second round. For the first sampling event at each well, the sample at TD was collected using a single packer inside the augers. The remaining samples were collected after the augers had been withdrawn using a straddle packer to isolate 2-ft intervals. In addition to TD, samples were collected at the depth corresponding to the base of the closest disposal unit and at additional intervals based on stratigraphy. For the second round, TD samples could not be collected since approximately 30 ft of slough was present in each borehole. All samples were submitted for laboratory analysis of VOCs and tritium. Figure 4.1-3 shows the sampling locations for the pore-gas samples.

Inside NES Boundary

A surface geophysical survey was conducted to establish the locations and boundaries of the absorption beds to aid in the selection of a location for a single borehole within the NES. The geophysical survey was performed using electromagnetic and ground-penetrating radar methods. A high-density walkover gamma radiation survey was also performed. High-energy and low-energy gamma surveys were conducted to identify areas of elevated gamma radioactivity. A single deep borehole (location 21-25374) was installed at a depth of 279 ft bgs between absorption beds 1 and 3 at the east end of the RWSA. Six samples were collected and submitted for laboratory analysis of TAL metals, nitrate, perchlorate, SVOCs, VOCs, gamma-

emitting radionuclides, americium-241, plutonium isotopes, uranium isotopes, and strontium-90. Figure 4.1-1 shows the borehole location inside the NES boundary.

4.1.1.2 Results of the Absorption Bed, Shafts, and RWSA Investigation

Soil and Tuff Samples

The maximum detection limit of one inorganic COPC (arsenic) in samples collected in the absorption bed, shaft, and RWSA area during 2005–2006 was greater than the residential SSL. None of the inorganic COPCs were detected above industrial SSLs. The maximum concentrations of four other inorganic COPCs (arsenic, chromium, iron, and lead) were greater than 10% of the residential SSLs. No organic COPCs were detected at concentrations greater than 10% of the residential SSLs. One radionuclide COPC (americium-241) was detected at an activity greater than residential screening action level (SAL), and one other radionuclide COPC (plutonium-239) was detected at activities greater than 10% of the residential SAL. The results of samples from deeper stratigraphic units (Qbt 2, Qbt 1v, Qbt 1g, Qct, Qbo) did not indicate contaminant migration to depth, with the exception of nitrate, perchlorate, and tritium. Elevated concentrations of nitrate (i.e., 10 mg/kg or greater) were only detected in deeper samples. A similar pattern was seen with perchlorate, though concentrations were much lower. The samples that contained elevated nitrate concentrations generally contained elevated tritium activities. Summaries of these analytical results are presented in Tables 4.1-1, 4.1-2, and 4.1-3.

Maximum concentrations/activities of inorganic, organic, and radionuclide COPCs in soil and tuff for samples collected inside the NES (at location 21-25374) during 2005–2006 were all less than 10% of residential SSLs/SALs. Analytical results for samples taken inside the NES boundary are presented in Tables 4.1-1, 4.1-2, and 4.1-3.

Pore Gas

A total of 36 VOCs were detected in pore-gas samples. The maximum VOC concentrations, except methylene chloride, were less than the Tier I screening levels based on protection of groundwater. Methylene chloride was detected at a concentration of 2200 $\mu g/m^3$ in the TD sample (350–354 ft bgs) at location 21-26263 in the first sampling round. Because of borehole sloughing, this depth could not be resampled in the second sampling round. All other methylene chloride results were below the Tier I screening level of 665 $\mu g/m^3$. Analytical results for VOCs detected in pore gas are presented in Table 4.1-4.

Tritium was detected in all 29 pore-gas samples, with a maximum activity of 146,800 pCi/L. The investigation report originally reported a maximum activity of 73,400 pCi/L. A systematic negative bias was later identified in the process used to calculate reported tritium results from laboratory data (Marczak 2009, 106500). These results were later corrected and updated in the Environmental Information Management (EIM) database. Based on the corrected values, a total of 9 results exceeded the Tier I screening level of 20,000 of pCi/L. Only 1 of the 9 results that exceeded the Tier I screening level was from the deepest sample at the sampled location: 44,150 pCi/L at 370–380 ft bgs at location 21-25262. Tritium has a half-life of approximately 12.5 yr, so current activities would be less than half those detected in 2005–2006. Analytical results for tritium detected in pore-gas samples are presented in Table 4.1-5.

Geophysical Survey

No EM or GPR anomalies were identified that could be confidently used to delineate the lateral extent of the absorption beds, indicating that the electrical properties of the materials in the absorption beds are similar to the surrounding materials or that the absorption beds are thin compared with the volume of

materials measured by the geophysical instruments. The GPR data indicates that most of the area was disturbed in the past or that cover materials were placed over the entire area. This leads to an inability to delineate the absorption beds from surrounding material.

Geotechnical Properties

A total of 19 samples were collected for geotechnical analysis. Samples were analyzed for chloride, bulk density, saturated hydraulic conductivity, moisture content, and calculated total porosity.

The average chloride concentration in all geologic units was 9.30 mg/kg. The average bulk density for all geologic units (including fill) was 1.36 g/cm^3. From the samples collected, Qbt 2 is the most dense unit in tuff and Qbt 1v is the least dense unit.

The average saturated hydraulic conductivity value for all geologic units (including fill) was 0.00841 cm/s. The average moisture content for all geologic units (including fill) was 16.4%. Moisture content results varied substantially from each geologic unit and clear trends were not evident, although Qbt 2 had the most consistent values for moisture content of all units sampled. The average total porosity for all geologic units measured (including fill) was 48.8%. Units Qbt 1v and Qbt 1g have the most consistent and highest reported porosity values, ranging from 53% to 59%.

Borehole Geophysics

Geophysical logging performed at three boreholes (locations 21-25262, 21-25263, and 21-25264) show a spike in the volumetric water content for two boreholes (locations 21-25262 and 21-25263) near the bottom of unit Qbt 1v near the contact with Qbt 1g. Water content in borehole 21-25264 remained fairly constant to 180 ft bgs, where a sharp increase in volumetric water content occurs in the middle of unit Qbt 1v at approximately 225 ft bgs. All three boreholes sampled showed a slight increase in gamma counts per second (cps) toward the bottom of the hole, which is attributed to a gradual change in mineralogy of the bedrock to a higher percentage of more naturally occurring gamma emitters (e.g., potassium-40). Borehole stratigraphy could not be seen in the camera data because of the poor resolution caused by formation dust in the boreholes.

Fractures

The results of the fracture investigations indicated that the fractures in core were not continuous from unit Qbt 3 into Qbt 2. In units Qbt 1v and Qbt 1g, the Cerro Toledo Interval, and the Otowi Member, fractures were extremely rare to not present.

Paleochannel

The boreholes installed during the 2005–2006 investigation did not produce evidence of a paleochannel.

Radiation Survey

No areas of elevated gamma radiation were detected inside or outside the NES in the vicinity of the NES.

4.1.1.3 Conclusions and Recommendations

The Phase I investigation report included the following conclusions:

- The nature and extent of all COPCs in soil and tuff in the absorption bed, shaft, and RWSA sampling area were defined.
- Nature and vertical extent of VOCs and tritium in pore gas were defined.
- MDA T poses no unacceptable risk or dose under the industrial scenario and no potential risk to ecological receptors.
- The distribution of site COPCs indicates that there is very little subsurface transport of these chemicals. The majority of subsurface transport likely occurred when the absorption beds were active. Moisture profiles measured during the investigation showed the upper 150 ft to be dry (less than 10% moisture), indicating low potential for infiltration and continued contaminant migration from the beds, shafts, and RWSA.
- Some of the more mobile chemicals (i.e., nitrate, perchlorate, and tritium) were found at very low concentrations or activities at the TD of some of the investigation boreholes. These COPCs appeared to be correlated with the higher moisture intervals at depths greater than 150 ft bgs.
- No saturated zones were observed in boreholes extending to 380 ft bgs.

Based on these conclusions, the investigation report recommended no further characterization of the site. The investigation report stated that control of the known sources and the potential for continued migration of the more mobile contaminants in the deep subsurface will be evaluated in a CME.

The results of the 2005–2006 investigation were documented in an investigation report submitted to NMED in September 2006 (LANL 2006, 094151). The investigation report was approved with direction by NMED on January 16, 2007 (NMED 2007, 095411).

4.1.2 Phase II Investigation

The objectives of the Phase II investigation were to define vertical extent of americium-241 and plutonium-239 contamination on the DP Canyon Slope and to collect additional vapor samples from the locations and depths previously sampled, including borehole TD. The DP Canyon Slope sampling is outside the area of the MDA T waste management units and is not discussed further.

4.1.2.1 Investigation Approach

A Phase II IWP was submitted to NMED on February 15, 2007 (LANL 2007, 095131). The work plan proposed construction of a single pore-gas monitoring well with multiple sampling ports at existing deep borehole location 21-25262. The work plan proposed plugging and abandoning the other two boreholes that had been used for pore-gas sampling. The work plan noted that all open boreholes had surface casing and flush-mount surface completions and installation of packers was not necessary.

NMED issued an approval with modifications for the Phase II IWP on April 9, 2007 (NMED 2007, 095725). NMED's approval required LANL to remove slough at TD from all three boreholes previously sampled for pore gas and to install permanent pore-gas monitoring wells in all three boreholes. LANL was also required to submit a long-term vapor-monitoring and sampling work plan before completion of the wells. NMED noted that lack of pore-gas data prohibited NMED from making remedy decisions for the site.

LANL responded to the approval with modifications on June 22, 2007 (LANL 2007, 098503) and indicated that the three permanent pore-gas monitoring wells would be constructed as required and that a long-term vapor-monitoring and sampling work plan would be prepared. LANL proposed sampling the three pore-gas monitoring wells quarterly for a period of 1 yr. After 1 yr of quarterly monitoring, the need for further pore-gas monitoring would be assessed. A subsurface vapor-monitoring plan for MDA T was submitted to NMED in October 2007 (LANL 2007, 098944). The plan called for installation of multi-port vapor-monitoring wells in the boreholes at locations 21-25262, 21-25263, and 21-25264 (Figure 4.1-2), with sampling ports installed at the depth intervals where pore-gas samples were previously collected. NMED issued an approval with modifications for the vapor-monitoring plan in October 2007 (NMED 2007, 098946). The approval with modifications required vapor samples to be collected at the depth intervals specified in the approved Phase II IWP.

Two of the locations (21-25262 and 21-25263) where multi-port vapor wells were to be installed were within the MDA T NES and well construction activities could not be performed expeditiously because of safety restrictions. To facilitate well construction, the wells were constructed at alternate locations outside the MDA T nuclear facility boundary (location 21-603058 replacing location 21-25263 and location 21-603059 replacing location 21-25262). Figure 4.1-4 shows the location of these pore-gas monitoring wells. After collection of one round of pore-gas sampling, a Phase II investigation report was prepared and submitted to NMED in November 2007 (LANL 2007, 100484).

4.1.2.2 Investigation Results

A total of 35 VOCs were detected in pore-gas samples. All VOCs except bromoform, chlorodibromomethane, ethylbenzene, 2-hexanone, 2-propanol, tetrahydrofuran, and 1,3,5-trimethylbenzene had previously been detected. The maximum concentrations of most VOCs, except for methylene chloride, were equivalent to or less than the maximum concentrations detected in previous sampling. Methylene chloride was the only VOC detected at concentrations greater than the Tier I screening levels based on protection of groundwater. Methylene chloride was detected at a concentration of 1300 µg/m^3 in the TD sample (349.5–354.5 ft bgs) at location 21-26264; 860 µg/m^3 in the TD sample (242.5–247.5 ft bgs) at location 21-603058; and 720 µg/m^3 in the TD sample (372.5–377.5 ft bgs) at location 21-603059. The Tier I screening level is 665 µg/m^3. Table 4.1-6 contains the VOC analytical results.

Tritium was detected in nine samples with a maximum activity of 13,400 pCi/L (The investigation report originally reported a maximum activity of 9385 pCi/L. A systematic negative bias was later identified in the process used to calculate reported tritium results from laboratory data. These results were later corrected and updated in the EIM database). The maximum activity was lower than the previous maximum (146,800 pCi/L) and below the Tier I screening level of 20,000 pCi/L. Tritium activities decreased with depth at all locations. Table 4.1-7 contains the analytical results for tritium.

4.1.2.3 Conclusions and Recommendations

The additional round of vapor sampling confirmed low concentrations of VOCs (less than 2000 µg/m^3) and low activities of tritium (less than 20,000 pCi/L). Three additional quarters of pore-gas monitoring were recommended to more comprehensively evaluate nature and extent of pore gas.

4.1.3 Phase III Investigation

Specific objectives of the Phase III investigation included the following:

- Establish the nature and extent of VOC and tritium vapors beneath MDA T.
- Ascertain the source(s) of vapor-phase contamination.
- Project vapor-phase behavior beneath MDA T over time.
- Confirm the nature and extent of specific inorganic, organic, and radionuclide COPCs in the MDA T subsurface identified by previous investigations.

4.1.3.1 Investigation Approach

A Phase III IWP was prepared and submitted on April 17, 2009 (LANL 2009, 105645). The Phase III work plan called for installation of three deep vapor- monitoring wells, two to approximately 690 ft bgs and one to approximately 950 ft bgs. Core samples were to be collected and analyzed for inorganic, organic, and radionuclide COPCs identified during previous investigations. Installation of one of these wells, near building 21-257, was proposed to be delayed until completion of DP Site Aggregate Area field activities in that area. NMED approved the Phase III work plan with modifications on May 4, 2009 (NMED 2009, 105691). The approval with modifications required adjustments to some of the proposed sample port depths, purging of wells following completion, and preparation of a work plan for installation of the well near building 21-257 in conjunction with the work plan for DP Aggregate Area field activities. LANL concurred with these requirements in a response submitted on May 15, 2009 (LANL 2009, 106412).

During the Phase III investigation, the existing borehole at location 21-25262 was extended to 694 ft bgs to the top of the Puye Formation. Nine core samples were collected and submitted for laboratory analysis of anions, perchlorate, VOCs, gamma-emitting radionuclides, americium-241, plutonium isotopes, tritium, and strontium-90. Tuff samples were also submitted for analysis of geotechnical properties (porosity, density, moisture content, and saturated hydraulic conductivity). Nine vapor-sampling ports were installed, with at least one port in each stratigraphic unit. A new borehole was drilled to 953 ft bgs at location 21-607955. A total of 27 core samples were collected and submitted for laboratory analysis of nitrate, perchlorate, VOCs, gamma-emitting radionuclides, americium-241, plutonium isotopes, tritium, and strontium-90. Samples from units Qbt 2 and Qbt 3 were also submitted for analysis of geotechnical properties (porosity, density, moisture content, and saturated hydraulic conductivity). Eleven vapor-sampling ports were installed, with at least one port in each stratigraphic unit. As specified in the Phase III work plan, the third well was not installed as part of this investigation. Pore-gas samples were collected from the two new wells (21-25262 and 21-607955) and the three existing wells (21-60358, 21-60359, and 21-25264) at MDA T. Figure 4.1-5 shows the existing and new borehole locations that were sampled as part of the Phase III investigation.

4.1.3.2 Investigation Results

Inorganic chemicals detected in core samples from the two new wells included bromide, chloride, fluoride, nitrate, perchlorate, and sulfate. These anions were detected at very low concentrations. Chloride and sulfate are the only anions with background values (BVs), and there were no detections above BV. Fluoride, nitrate, and perchlorate were the only inorganic chemicals with SSLs, and all results were more than three orders of magnitude below residential SSLs. (Data from location 21-607955 were not available when the Phase III report was originally submitted but were included in Revision 1 [LANL 2009, 108012].)

The only organic chemicals detected in core samples were acetone and toluene, which were detected at very low concentrations (below the estimated quantitation limits) in six samples and one sample, respectively. All results were more than five orders of magnitude below residential SSLs. Tables 4.1-8 and 4.1-9 present these analytical results.

The only radionuclides detected in core samples were strontium-90 and tritium, which were detected at low activities in 2 and 11 samples, respectively. The maximum strontium-90 and tritium activities were approximately 19 times and 500 times less than the residential SALs, respectively. These results are presented in Table 4.1-10.

Bulk density values ranged from a minimum of 0.79 g/cm^3 measured at a depth of 675–680 ft bgs in Qbog to a maximum of 1.66 g/cm^3 collected from depths of 114–118 ft bgs and 126–131 ft bgs in Qbt 2. Saturated hydraulic conductivity values ranged from a minimum of 0.000029 cm/s measured at a depth of 570–575 ft bgs in Qbo to a maximum of 0.0057 cm/s at a depth of 70–75 ft bgs in Qbt 3. Moisture contents ranged from a minimum of 5.1% measured at a depth of 89–94 ft bgs in Qbt 3 to a maximum of 25.7% measured at a depth of 675–680 ft bgs in Qbog. Porosity values ranged from a minimum of 37.2% at a depth of 126–131 ft bgs in Qbt 2 to a maximum of 70.4% at a depth of 675–680 ft bgs in Qbog.

The Phase III investigation report (LANL 2009, 108012) also presented the results of all vapor monitoring performed since the Phase II investigation report. This included one round in 2007, three rounds in 2008, and eight rounds in 2009 for the three existing wells; seven rounds in 2009 for the new well at location 21-25262; and one round in 2009 for the new well at location 21-607955. (Data from location 21-607955 were not available when the Phase III report was originally submitted but were included in Revision 1). Tables 4.1-8 through 4.1-22 present all vapor monitoring performed since the Phase II investigation report.

A total of 40 VOCs were detected in pore-gas samples. Three VOCs (acetone, methylene chloride, and 1,1,2-trichloroethane) were detected at concentrations greater than the current Tier I screening levels and one additional VOC (tetrachloroethene) was detected at a concentration equivalent to the current Tier I screening level.

The only detection of acetone above the screening level was in the TD sample (950 ft bgs) collected at well 21-607955 during the initial sampling. The Phase III investigation report concluded that this was an anomalous result and indicated additional sampling was needed to determine whether this result was actually indicative of deep contamination.

Trichloroethane [1,1,2-] was detected above the screening level in only 3 of 260 samples, all at location 21-25262 at 472–478 ft bgs. Concentrations decreased with depth at TD (691 ft bgs). Methylene chloride was detected above the Tier I screening level in approximately 25% of the samples. For the three shallower wells (21-25264, 21-603058, and 21-603059), concentrations increased with depth, and the maximum concentrations were detected in the deepest samples (349.5–354.5 ft bgs, 339.5–344.5 ft bgs, and 372.5–377.5 ft bgs, respectively). For well 21-25262, concentrations increased with depth to approximately 400–500 ft bgs and then decreased with depth. Concentrations in samples from the deepest depth (688–691 ft bgs) were below the Tier I screening level. For well 21-607955, concentrations increased with depth to the maximum concentration at 353.3–359.6 ft bgs and then decreased with depth. Methylene chloride was not detected in samples from the two greatest depths (797.2–803.1 ft and 946.2–952.1 ft bgs). Tetrachloroethene was detected slightly below the Tier I screening level (3630 µg/m^3) in four samples collected from a depth of 67.5–72.5 ft bgs at location 21-25264. All other results were below the Tier I screening level.

Tritium was detected above the Tier I screening level in approximately 20% of the samples, most often at location 21-25264. Most screening level exceedances were between approximately 150 ft and 300 ft bgs, and tritium activity decreased with depth at all locations except 21-603059, where activity increased with depth but was below the Tier I screening level.

4.1.3.3 Conclusions and Recommendations

The Phase III report concluded that nature and extent of contaminants in soil and tuff were defined and no further sampling was recommended.

The report concluded that the vertical extent of tritium in pore gas was defined, and the VOC pore-gas contamination was defined at location 21-25262, but the maximum lateral and vertical extent of VOC contamination in pore gas for the MDA T site as a whole, as well as precise contamination source(s), were not conclusively identified. Sources of subsurface VOC and tritium contamination were not specifically identified, but the presence of highest total VOC concentrations and tritium activity in well 21-25264 (the well nearest building 21-257) suggested the building 21-257 outfall [SWMU 21-011(k)] as a potential source. Further monitoring of VOCs was recommended to better evaluate extent. Further monitoring of tritium was recommended because only one round of samples had been collected at well 21-607955, and tritium had been detected at TD. The report also recommended completion of a groundwater monitoring network evaluation, which was completed in 2010 (LANL 2010, 109947).

As a follow-on to the Phase III pore-gas sampling, additional periodic pore-gas sampling was conducted at MDA T until November 2011. In total 15 rounds of pore-gas monitoring were completed with the final round collected in September 2011 and reported in January 2012 (LANL 2012, 210348). In November 2011, LANL and DOE submitted a request to NMED to discontinue quarterly vapor monitoring at MDA T and to instead monitor on an annual basis (LANL 2011, 207418). The request noted that the existing vapor-monitoring data were adequate to proceed with the CME. NMED responded in November 2011 (NMED 2011, 207573), approving discontinuation of vapor monitoring at MDA T. NMED's approval noted that any further vapor-monitoring activities would be addressed during the implementation phase of the selected remedy.

4.2 Nature and Extent of Contamination and Risk

Based on the data presented in the MDA T Phase I (LANL 2006, 094151; NMED 2007, 095411), MDA T Phase II (LANL 2007, 100484; NMED 2008, 101111), and MDA T Phase III (LANL 2009, 108012; NMED 2010, 108767) investigation reports, the nature and extent of contamination has been defined and no further sampling for extent is warranted at MDA T. Additional activities are proposed, however, to complete the investigation at MDA T.

- Sampling for VOCs and tritium in subsurface pore gas at MDA T is needed to evaluate changes since the last subsurface vapor sampling in 2011. This will provide additional data for evaluation of temporal trends in pore gas.

- The characterization of releases from individual SWMUs/AOCs within MDA T [SWMUs 21-007 and 21-011(c) and AOCs 21-028(a), C-21-009, and C-21-012] has not been performed. However, additional investigations at these sites are not warranted due to the collocation of these areas to the previously investigated SWMUs, as follows:

    - SWMU 21-11(c) and AOC 21-028(a) are collocated with the absorption beds [SWMU 21-016(a)].

- AOCs C-21-009 and C-21-012 are collocated with the RWSA [SWMU 21-016(b].
- SWMU 21-007 (west location) is collocated with the waste disposal shafts [SWMU 21-016(c)].
- SWMU 21-007 (east location) is within the building 21-257 and industrial waste lines area and will be included with the TA-21 D&D and Cleanup Campaign.

Based on the risk-screening assessment results presented in the approved Phase III MDA T investigation report (LANL 2009, 108012; NMED 2010, 108767), MDA T does not pose a potential unacceptable dose or risk under the industrial scenario. The risk assessment also showed no potential unacceptable risk under the residential scenario, but did show a potential unacceptable dose. Results of the ecological risk screening assessment indicate no potential risk to ecological receptors.

4.3 Proposed Investigation Activities at MDA T

One round of pore-gas samples will be collected from the five established vapor wells at MDA T (21-25262, 21-603058, 21-603059, 21-25264, and 21-607955) to evaluate changes since the last subsurface vapor sampling in 2011 and assess the temporal variability of tritium and VOCs in pore gas. All samples will be analyzed for VOCs and tritium. The results will be used to evaluate the extent to which the subsurface vapor pathway must be evaluated in the CME. The proposed sampling locations are shown in Figure 4.1-5. The proposed sampling and analyses at MDA T are presented in Table 4.3-1. A description of the sampling effort is presented in section 5.3.

5.0 INVESTIGATION METHODS

Summaries of the field investigation methods are provided below. Chemical and radiological analyses will be performed in accordance with the Newport News Nuclear BWXT-Los Alamos, LLC (N3B) Exhibit D, “Scope of Work and Technical Specifications for Off-Site Analytical Laboratory Services.” Accredited off-site contract analytical laboratories will use the most recent U.S. Environmental Protection Agency (EPA) and industry-accepted extraction and analytical methods for chemical analyses of analytical suites.

5.1 Establishing Sampling Locations

The sampling intervals for vapor-monitoring well locations are based on the previously sampled intervals, as contained in previous investigations [Phase III IWP (LANL 2009, 105645), MDA T vapor-monitoring plan (LANL 2007, 098944; NMED 2007, 098946) and the Phase III IWP NMED approval (NMED 2009, 106455)]. Table 4.3-1 presents the sampling locations and corresponding sampling intervals.

5.2 Sampling

Pore-gas samples will be collected from existing vapor-monitoring well locations 21-25262, 21-603058, 21-603059, 21-25264, and 21-607955 in accordance with N3B-SOP-ER-2008, “Sampling Subsurface Vapor.”

5.2.1 Pore-Gas Samples

One round of subsurface pore-gas samples will be collected from MDA T existing vapor-monitoring well locations 21-25262, 21-603058, 21-603059, 21-25264, and 21-607955 from all sampling port intervals:

- Nine ports at 21-25262
- Five ports at 21-603058
- Six ports at 21-603059
- Five ports at 21-25264
- Eleven ports at 21-607955

Table 4.3-1 provides details on the proposed sampling and analysis at MDA T.

The static subsurface pressure will be monitored at the time of sample collection. Concentrations of purge indicator gases (carbon dioxide and oxygen) will be monitored continuously using a multigas monitor air analyzer during this pre-sampling cycle. Once indicator-gas concentrations are stable and proper purging has been verified, pore-gas samples will be collected in SUMMA canisters for VOC analysis, and in silica-gel cartridges for tritium analysis (N3B-SOP-ER-2008, Revision 1 “Sampling Subsurface Vapor).

5.3 Field-Screening Methods

Field-screening methods will be used for radiological screening, organic vapor screening, and monitoring of oxygen and carbon dioxide. The sample train may be fitted with or adapted to various field-screening instruments, such as an air-flow gauge, vacuum gage, a photo-ionization detector (PID), a multigas monitor (Lantec gas extraction meter, MultiRAE Multigas Monitor, or equivalent), or gas chromatograph/mass spectrometer (GC/MS).

Field screening will be used primarily for health and safety purposes, to assure representative samples are collected, and for determining transportability of samples from the field sites to the Sample Management Office (SMO) and from the SMO to the analytical laboratories. Field changes to sampling plans will be approved by the field execution team leader and will be documented on field paperwork and in the investigation report.

5.3.1 Radiological Screening

Based on the results of past sampling, field screening for radioactivity will be conducted primarily to ensure worker health and safety and to meet U.S. Department of Transportation shipping requirements, rather than to direct sampling. Radiological control technicians must be on-site (per job-specific radiological work permit) to screen for tritium before opening the vapor monitoring well cover. Field screening will be conducted using appropriate field instruments, which will be calibrated in accordance with N3B Radiation Protection Program requirements. All instrument calibration activities will be documented daily in the field logbooks.

5.3.2 Organic Vapor Field Screening

Vapor screening will be conducted using a PID equipped with an 11.7-electronvolt lamp and capable of measuring quantities as low as 1.0 ppm.

The PID will be calibrated daily to the manufacturer's standard for instrument operation, and the daily calibration results will be documented in the field logbooks. All instrument background checks, background ranges, and calibration procedures will be documented daily in the field logbooks.

5.4 Requesting Samples through the Sample Management Office

Sample collection and analyses shall be coordinated with the N3B SMO. Per N3B-SOP-SDM-1101, "Sample Control and Field Documentation," to notify the SMO, knowledgeable sampling personnel must complete Sample Request Module training, obtain sample plan requestor permission within the N3B EIM database, and submit a sample plan request at least 5 days prior to the sampling event. Once the sample plan request is submitted, a summarized copy will be available for download. The sample plan requestor will be notified by the SMO if the plan is rejected, accepted, or if changes are necessary, and when the sampling paperwork is available. Sampling paperwork will consist of sample collection logs, container labels, and a shipping classification determination checklist.

5.5 Chain of Custody for Samples

The collection, screening, and transport of samples will be documented on standard forms generated by the SMO. These include sample collection logs, chain-of-custody forms, and sample container labels. Sample collection logs will be completed at the time of sample collection and signed by the sampler and a reviewer, who will verify the logs for completeness and accuracy. Corresponding labels will be initialed and applied to each sample container, and custody seals will be placed around container lids or openings. Chain-of-custody forms will be completed and signed to verify that sample custody has been maintained throughout the sample life cycle.

5.6 Quality Assurance/Quality Control Samples

Quality assurance (QA) and quality control (QC) samples will include field duplicates (FD) and field blanks (FB).

Two (2) types of QA/QC samples will be required for VOCs: an FD sample and an FB of pure nitrogen (99.99%). The collection of two types of QA/QC samples for tritium will be required: an FD sample and an FB sample of distilled water. FBs will be collected at a frequency of 10% of samples collected, with at least one FB collected on each day that VOC samples are collected. FDs will be collected at an overall frequency of at least 1 for every 10 regular samples, or as directed by the current version of N3B-SOP-SDM-1100, "Sample Containers, Preservation, and Field Quality Control."

5.7 Laboratory Analytical Methods

The analytical suites for the pore-gas samples to be collected include VOCs and tritium. Vapor samples will be submitted in SUMMA canisters to off-site analytical laboratories for VOC analysis using EPA Method TO-15, and in silica-gel columns for tritium analysis using EPA Method 906. Analytical methods, sample collection, and analysis will be coordinated with the SMO.

5.8 Health and Safety

The field investigations described in this IWP will comply with all applicable requirements pertaining to worker health and safety. An integrated work control document and a site-specific health and safety plan will be in place before fieldwork is conducted.

5.9 Equipment Decontamination

Sampling equipment will be decontaminated before and after sampling activities to minimize the potential for cross-contamination. Pore-gas sample equipment will be decontaminated in accordance with N3B-SOP-ER-2008.

5.10 Waste Management

Waste generated during field-investigation activities may include, but is not limited to, contaminated personal protective equipment, sampling supplies, and plastic; and all other waste that has potentially come into contact with contaminants.

All waste generated during field-investigation activities will be managed in accordance with N3B-AP-TRU-2150, "Waste Characterization Strategy Form," applicable EPA and NMED regulations, and DOE orders.

6.0 MONITORING PROGRAMS

6.1 Groundwater

Groundwater monitoring is not performed to specifically monitor potential releases from MDA T. Monitoring of perched intermediate and regional groundwater to evaluate potential releases from all sites at TA-21 is performed under the Consent Order as described for the TA-21 Monitoring Group in the Interim Facility-Wide Groundwater Monitoring Plan. Monitoring results are reported annually to NMED.

6.2 Stormwater

Stormwater runoff from certain SWMUs and AOCs at the Laboratory is monitored under a National Pollutant Discharge Elimination System Individual Permit (IP). MDA T is not an IP site; therefore, it is not included in the IP monitoring program. However, the surrounding area within TA-21 includes 23 SMAs that are reported annually as part of the IP.

7.0 SCHEDULE

Following approval of this work plan, the work will be implemented in accordance with milestones or targets for the MDAs A and T Remedy Campaign established under the 2016 Consent Order. Assuming review and approval of the document follows schedule, the fieldwork could occur in late 2023 or 2024. Monitoring results will be reported in an investigation report.

8.0 REFERENCES AND MAP DATA SOURCES

8.1 References

The following reference list includes documents cited in this report. Parenthetical information following each reference provides the author(s), publication date, and ERID, ESHID, or EMID. ERIDs were assigned by Los Alamos National Laboratory's (the Laboratory's) Associate Directorate for Environmental Management (IDs through 599999); ESHIDs were assigned by the Laboratory's Associate Directorate for Environment, Safety, and Health (IDs 600000 through 699999); and EMIDs are assigned by N3B (IDs 700000 and above).

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NMED (New Mexico Environment Department), February 21, 2018. "Approval, Development of Ecological Preliminary Remediation Goals for Los Alamos National Laboratory, Revision 1.1," New Mexico Environment Department letter to D. Hintze (DOE-EM-LA) and B. Robinson (LANL) from J.E. Kieling (NMED-HWB), Santa Fe, New Mexico. (NMED 2018, 602908)

8.2 Map Data Sources

Legend Item	Data Source
Waste Disposal feature	As published; TRIAD SDE Spatial Geodatabase: GISPUBPRD1\PUB.regulatory\PUB.wsf_poly; March 2023.
MDA Boundary	As published; TRIAD SDE Spatial Geodatabase: GISPUBPRD1\PUB.regulatory\PUB.mda_boundary; March 2023.
LANL Boundary	As published; TRIAD SDE Spatial Geodatabase: GISPUBPRD1\PUB.Boundaries\PUB.lanlarea; March 2023.
Structures	As published, County of Los Alamos GIS Server: (https://gis.losalamosnm.us/securegis/rest/services/basemaps/basemap/FeatureServer); March 2023.
Drainage	As published, N3B/T2S, GIS projects folder; \\n3b-fs01\n3b-shares) (Q: GIS DATA) Project: 16-0033; project_data.gdb; line feature dataset; drainage_features; March 2023.
Tech Areas	As published; TRIAD SDE Spatial Geodatabase: GISPUBPRD1\PUB.Boundaries\PUB.tecareas; March 2023.
Major Road	As published; Q:\16-Projects\16-0033\project_data.gdb\line\major_road; March 2023
Fences	As published; TRIAD SDE Spatial Geodatabase: GISPUBPRD1\PUB.Infrastructure\PUB.fences_arc; March 2023.
Paved Road	As published; TRIAD SDE Spatial Geodatabase: GISPUBPRD1\PUB.Infrastructure\PUB.paved_rds_arc; March 2023.
Unpaved Road	As published; TRIAD SDE Spatial Geodatabase: GISPUBPRD1\PUB.Infrastructure\PUB.dirt_rds_arc; March 2023.
SWMU or AOC Boundary	As published; TRIAD SDE Spatial Geodatabase: GISEMPRD1\PUB.regulatory\PUB.prs_all_reg_admin; March 2023.
Structures	As published, County of Los Alamos GIS Server: (https://gis.losalamosnm.us/securegis/rest/services/basemaps/basemap /FeatureServer); March 2023.
Index and Terrain Contours (20- and 5-ft Interval)	As published, N3B/T2S, GIS projects folder; \\n3b-fs01\n3b-shares) (Q: GIS DATA) Project: 23-0003; project_data.gdb; line feature dataset; site_contour; All contours generated from the 2014 Bare Earth Elevation Model; N3B/T2S, GIS projects folder; \\n3b-fs01\n3b-shares) Q:\2014\Bare_Earth\BareEarth_DEM_Mosaic.gdb; March 2023.
Sample location	As published, N3B/T2S, GIS projects folder; \\n3b-fs01\n3b-shares) (Q: GIS DATA) Project: 23-0003; project_data.gdb; point feature dataset; mda_a_locations, mda_t_locations, mda_t_locations_1, pore_gas_locations; All data derived from locations originally stored in EIM; March 2023.
Orthophoto	As published; Q:\Aerial\2018\ECW\NMLOSA18_Delivery.ecw, March 2023.

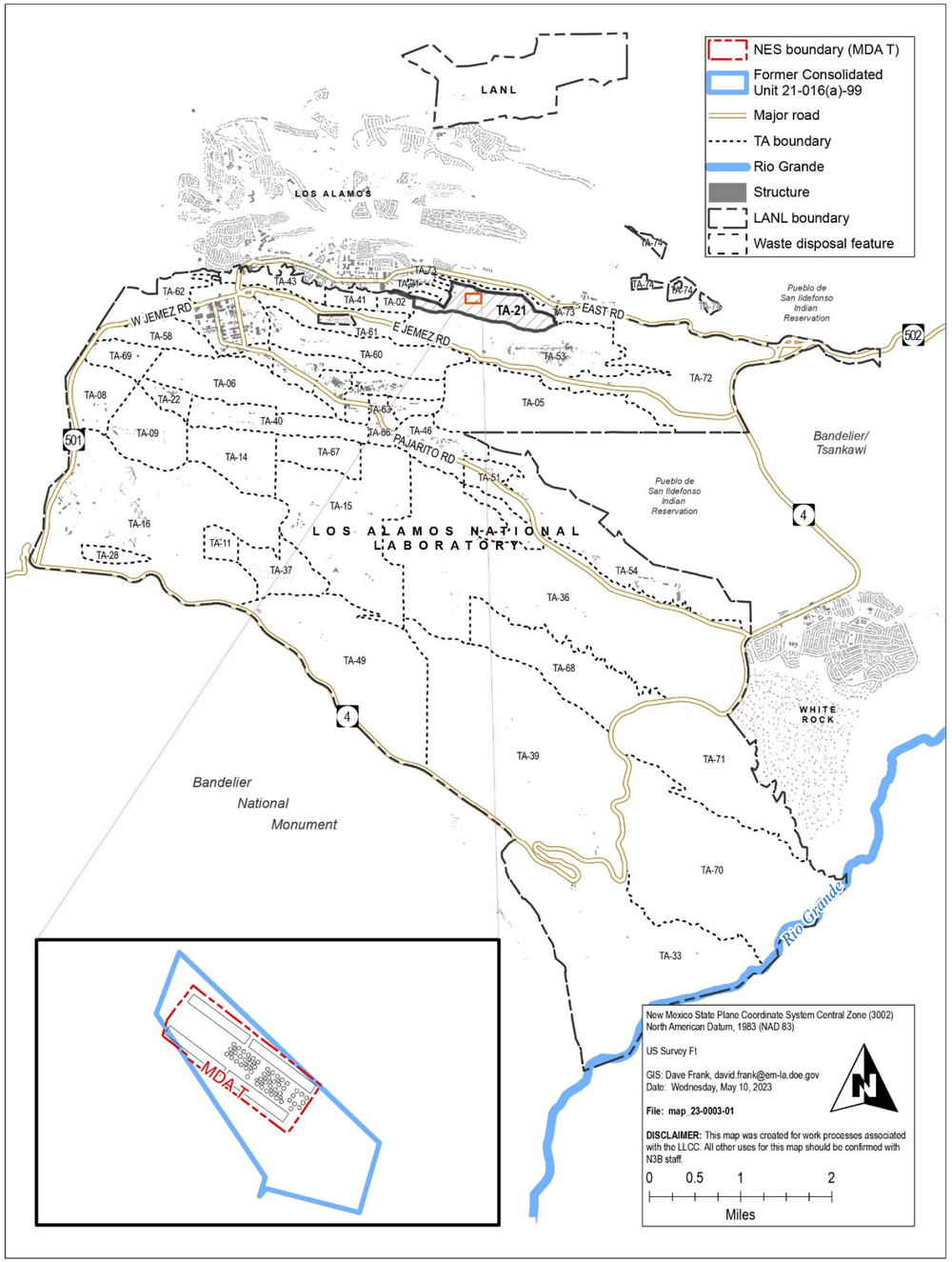

Figure 1.0-1 Location of TA-21 and MDA T with respect to Laboratory technical areas

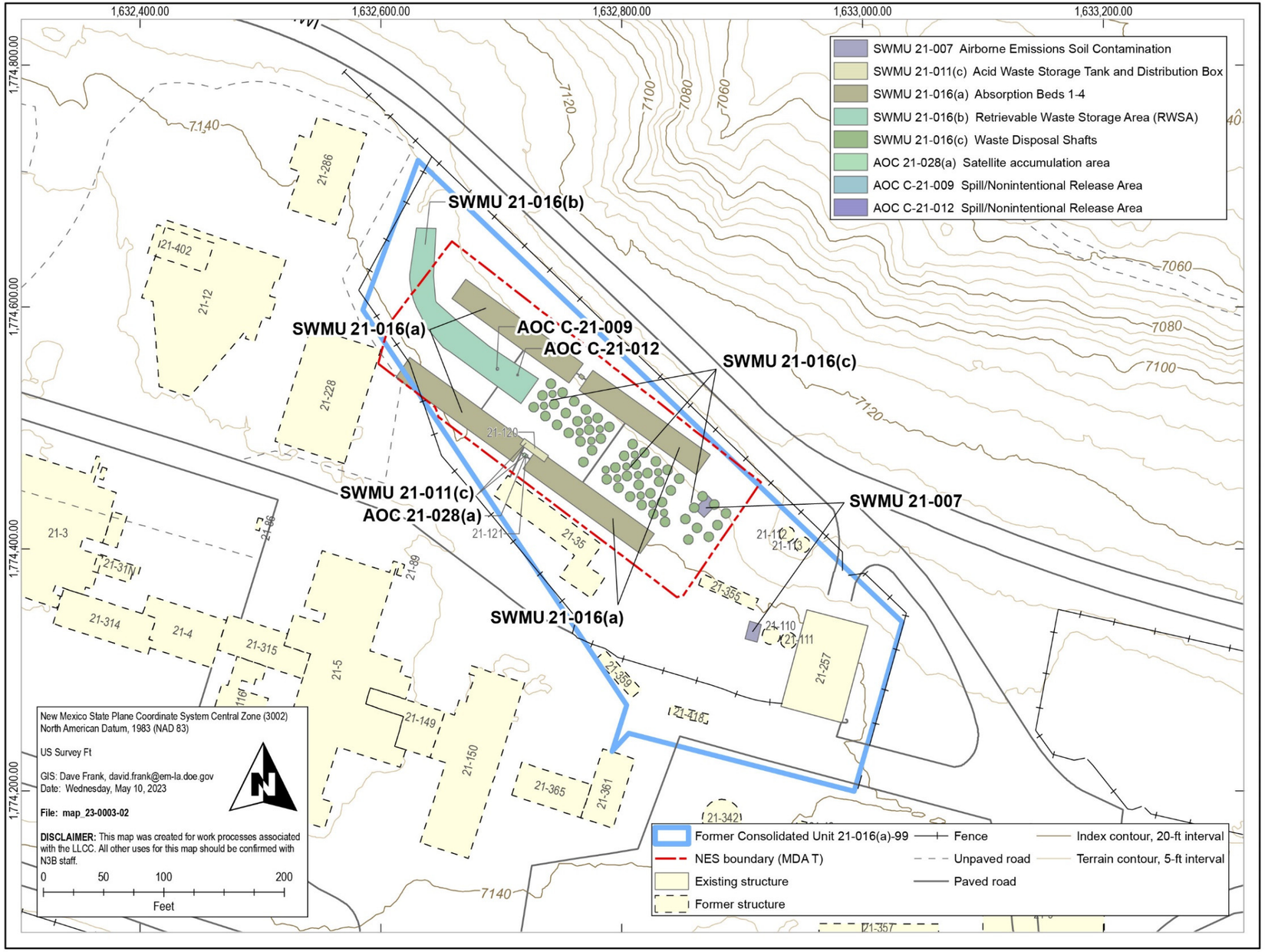

Figure 1.1-1 MDAT site and surrounding area

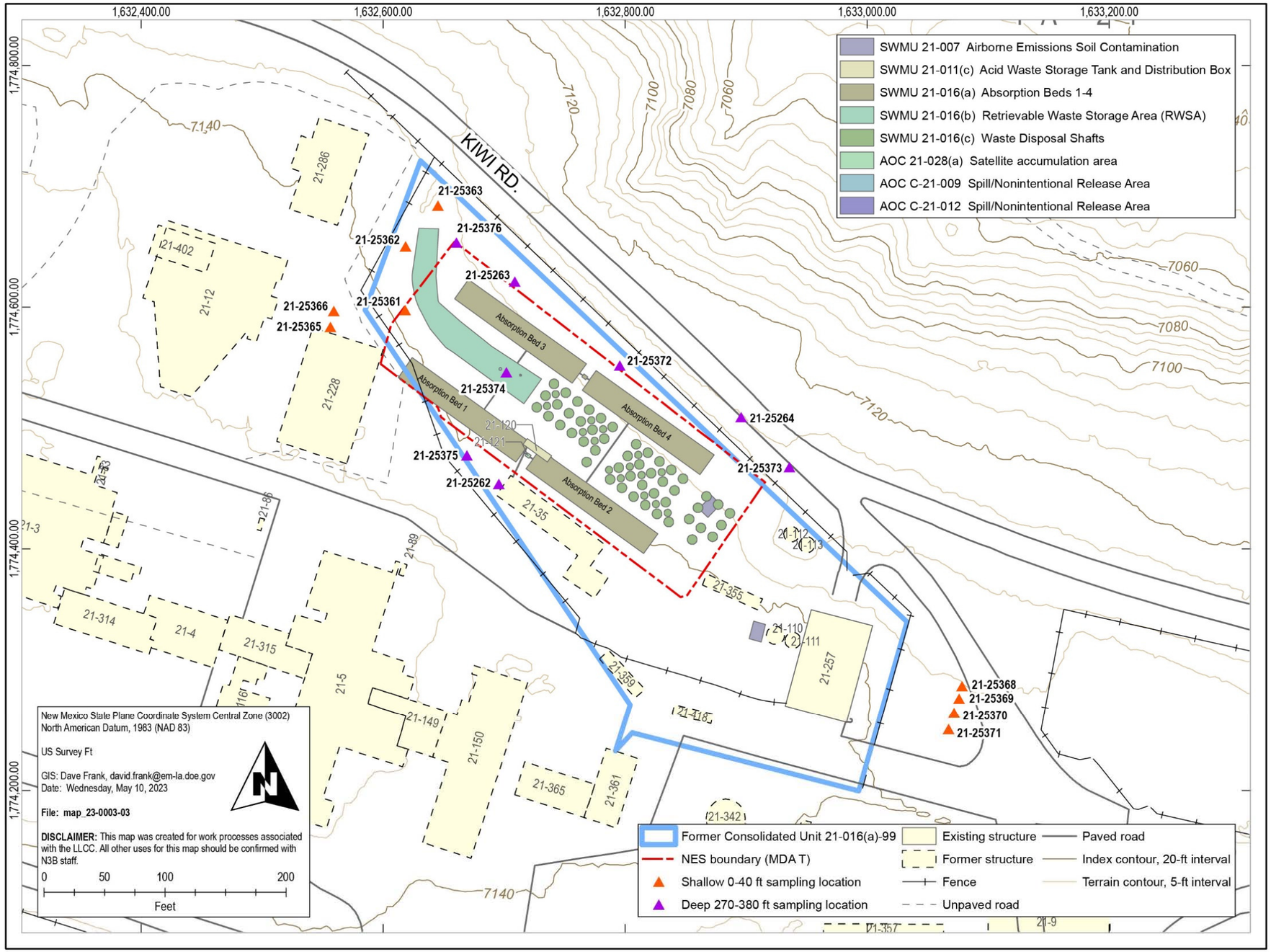

Figure 4.1-1 Phase I subsurface soil sampling locations at MDA T

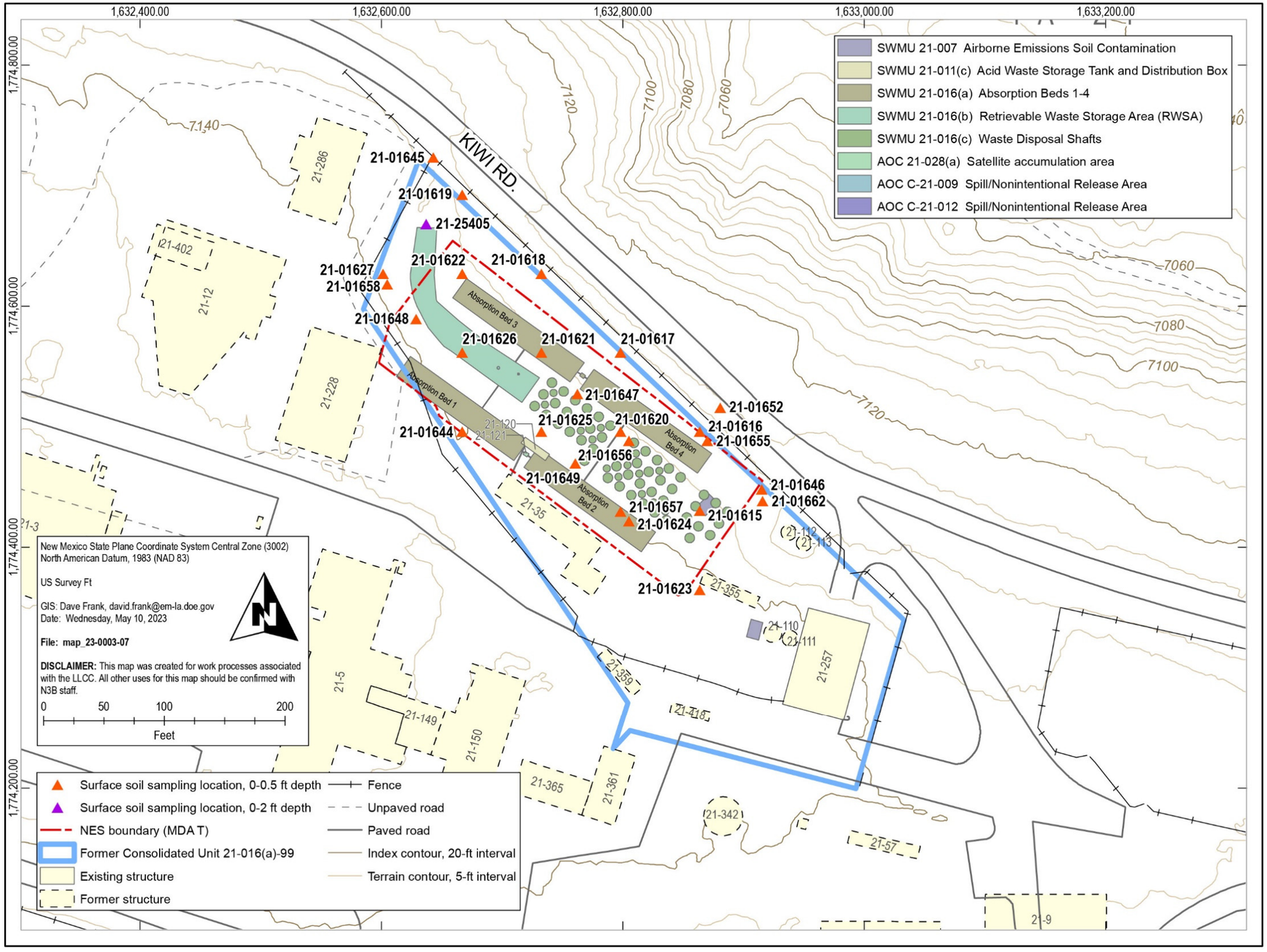

Figure 4.1-2 Phase I surface soil sampling locations at MDA T

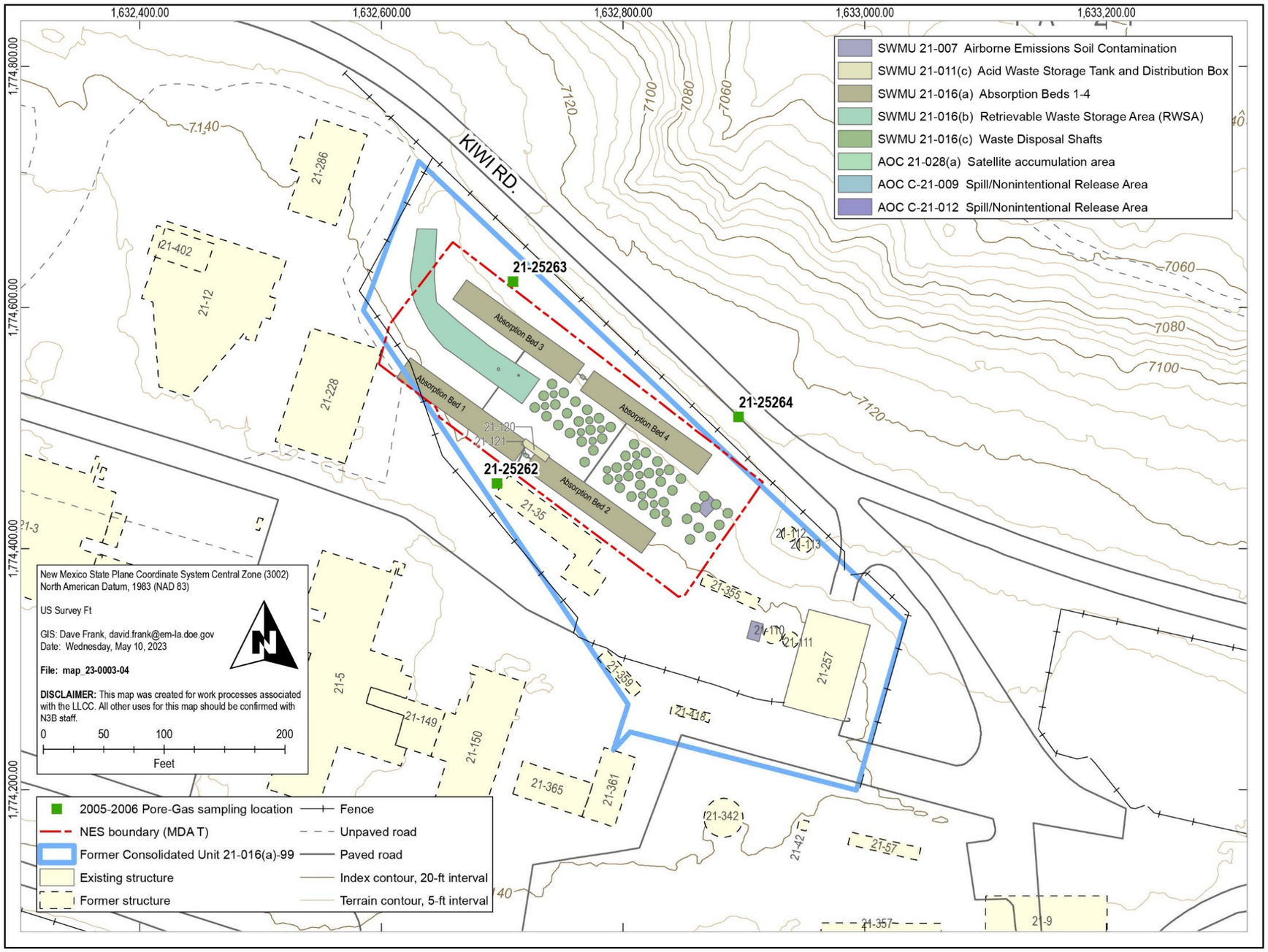

Figure 4.1-3 Phase I pore-gas sampling locations at MDA T

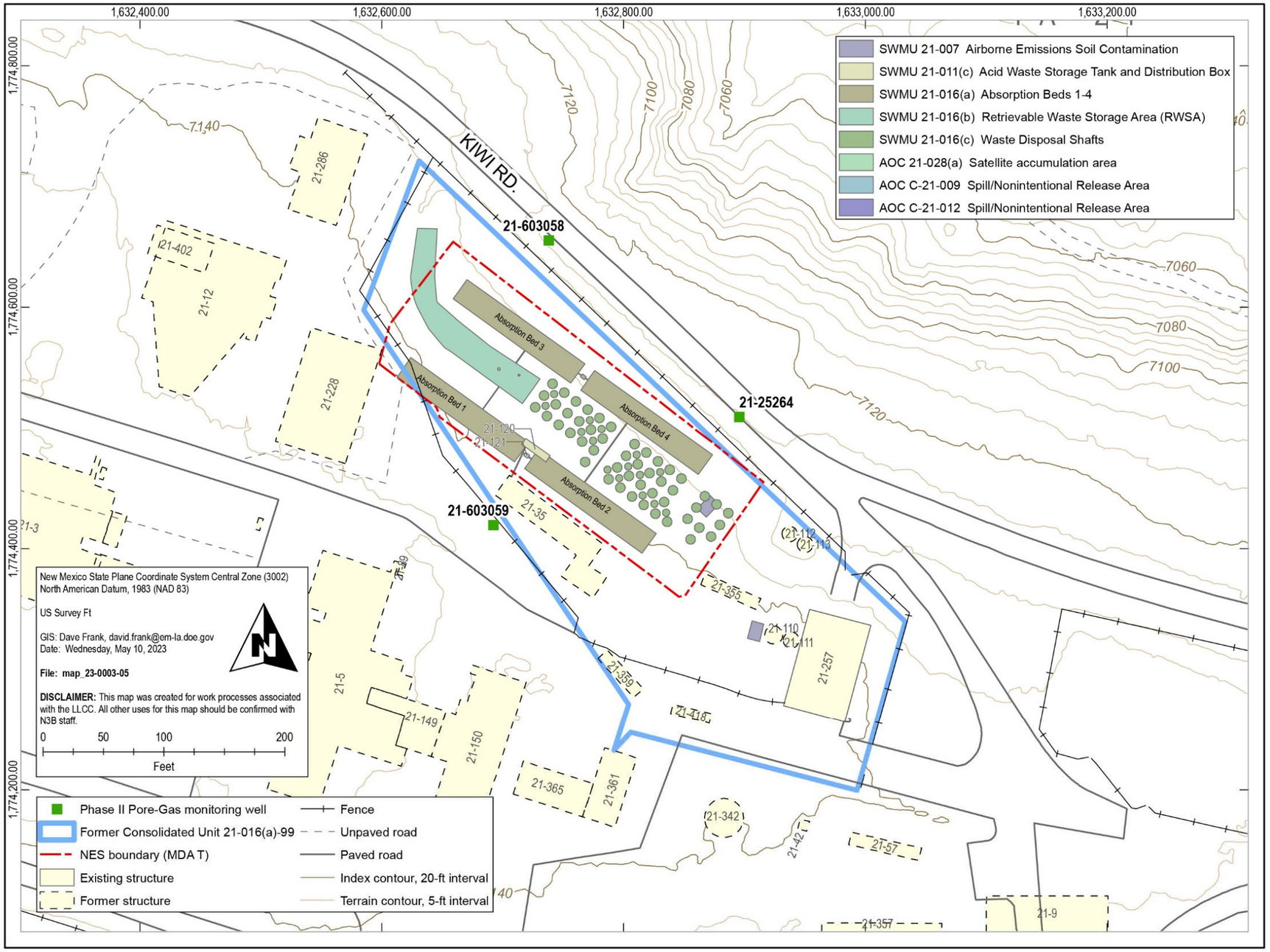

Figure 4.1-4 Phase II pore-gas sampling locations at MDA T

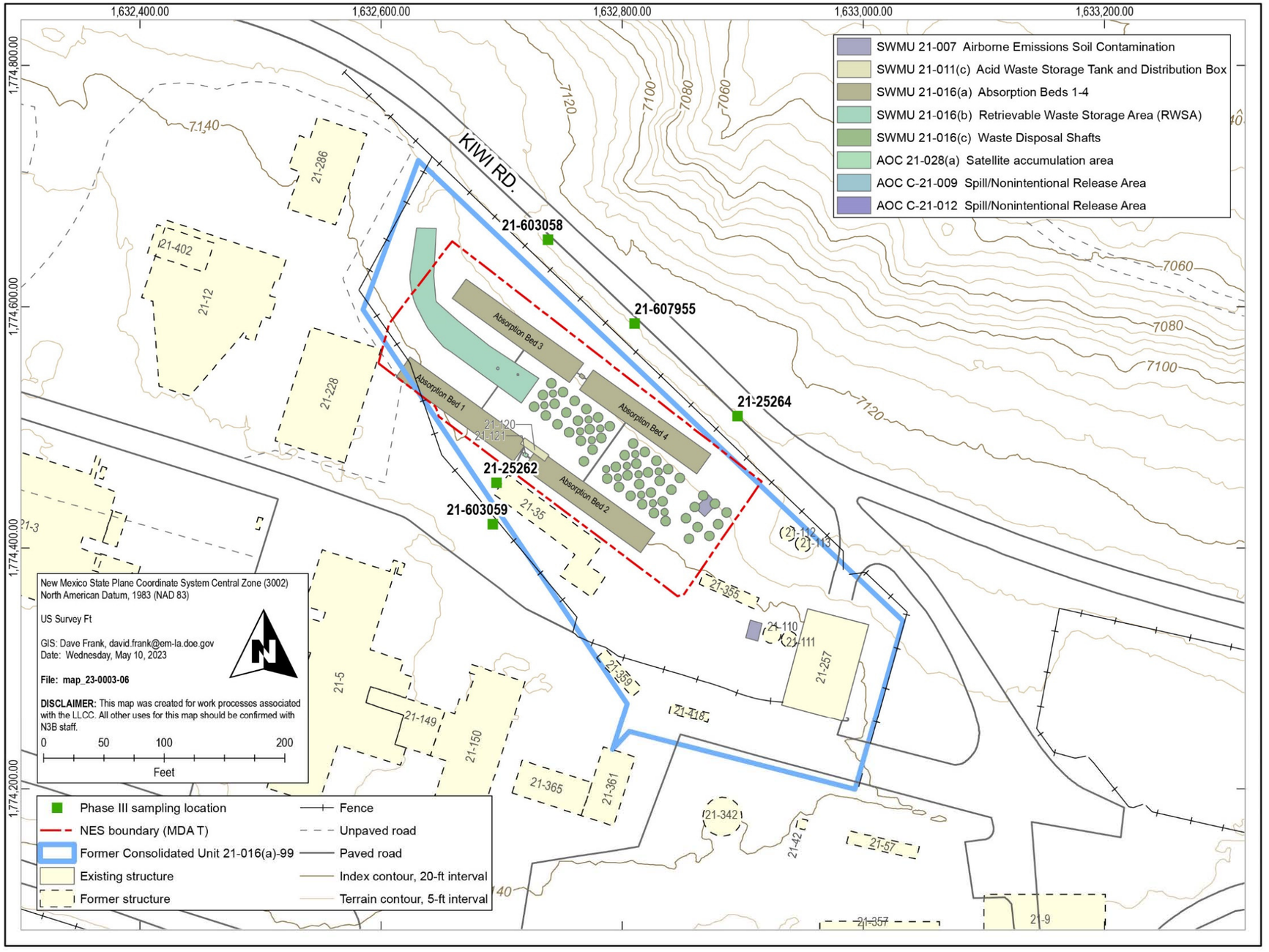

Figure 4.1-5 Phase III pore-gas sampling locations at MDA T

Table 4.1-1
Inorganic COPCs for Shafts, Beds, and RWSA (Phase I Sampling)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Lithium	Manganese	Mercury	Nickel	Nitrate	Perchlorate	Selenium	Silver	Thallium	Vanadium	Zinc
Soil Background Value				**29,200**	**0.83**	**8.17**	**295**	**1.83**	**0.4**	**19.3**	**8.64**	**14.7**	**21,500**	**22.3**	**na[a]**	**671**	**0.1**	**15.4**	**na**	**na**	**1.52**	**1**	**0.73**	**39.6**	**48.8**
Sediment Background Value				**15,400**	**0.83**	**3.98**	**127**	**1.31**	**0.4**	**10.5**	**4.73**	**11.2**	**13,800**	**19.7**	**na**	**543**	**0.1**	**9.38**	**na**	**na**	**0.3**	**1**	**0.73**	**19.7**	**60.2**
Qbt 2,3,4 Background Value				**7340**	**0.5**	**2.79**	**46**	**1.21**	**1.63**	**7.14**	**3.14**	**4.66**	**14,500**	**11.2**	**na**	**482**	**0.1**	**6.58**	**na**	**na**	**0.3**	**1**	**1.1**	**17**	**63.5**
Qbt 1v Background Value				**8170**	**0.5**	**1.81**	**26.5**	**1.7**	**0.4**	**2.24**	**1.78**	**3.26**	**9900**	**18.4**	**na**	**408**	**0.1**	**2**	**na**	**na**	**0.3**	**1**	**1.22**	**4.48**	**40**
Qbt 1g, Qct, Qbo Background Value				**3560**	**0.5**	**0.56**	**25.7**	**1.44**	**0.4**	**2.6**	**8.89**	**3.96**	**3700**	**13.5**	**na**	**189**	**0.1**	**2**	**na**	**na**	**0.3**	**1**	**1.24**	**4.59**	**84.6**
Industrial Soil Screening Levels[b]				**100,000**	**454**	**17.7**	**78,300**	**2250**	**564**	**5000[c]**	**2050**	**45,400**	**100,000**	**800**	**23,000[c]**	**48,400**	**340[c]**	**22,700**	**100,000**	**790[b]**	**5680**	**5680**	**74.9**	**1140**	**100,000**
Residential Soil Screening Levels[b]				**77,800**	**31.3**	**3.9**	**15,600**	**156**	**39**	**2100[c]**	**1520**	**3130**	**23,500**	**400**	**160[c]**	**3590**	**23[c]**	**1560**	**100,000**	**55[b]**	**391**	**391**	**5.16**	**78.2**	**23,500**
AAA3950	21-01615	0.00–0.50	Soil	—[d]	—	—	—	124 (J)	1.6 (U)	—	—	—	—	—	7.8 (J)	—	—	—	—	—	—	1.1 (U)	23.7	—	—
AAA3951	21-01616	0.00–0.50	Soil	—	—	—	—	—	1.1 (U)	—	—	—	—	—	5.4 (J)	—	—	—	—	—	—	1.1 (U)	19.4 (J)	—	—
AAA3952	21-01617	0.00–0.50	Soil	—	—	—	—	—	2 (U)	—	—	—	—	—	8.4 (J)	—	—	—	—	—	—	1.1 (U)	30.8	—	—
AAA3953	21-01618	0.00–0.50	Soil	—	—	—	—	—	1.5 (U)	—	—	—	—	—	14.8	—	—	—	—	—	—	1.1 (U)	30.7	—	—
AAA3954	21-01619	0.00–0.50	Soil	—	—	—	—	—	1.4 (U)	—	—	—	—	—	2.7 (J)	—	—	—	—	—	—	1.2 (U)	10.7 (J)	—	—
AAA3957	21-01620	0.00–0.50	Soil	—	—	—	—	—	1.3 (U)	—	—	—	—	—	7.9 (J)	—	—	—	—	—	—	1.1 (U)	23.6	—	—
AAA3958	21-01621	0.00–0.50	Soil	—	—	—	—	—	0.92 (U)	—	—	—	—	—	8.7 (J)	—	—	—	—	—	—	1.1 (U)	19.1 (J)	—	—
AAA3959	21-01622	0.00–0.50	Soil	—	—	—	—	—	2.2 (U)	—	—	—	—	—	14.3	—	—	—	—	—	—	1.1 (U)	32.6	—	—
AAA3961	21-01623	0.00–0.50	Soil	—	—	—	—	—	1 (U)	—	—	—	—	—	5.4 (J)	—	—	—	—	—	—	1.2 (U)	13.2 (J)	—	—
AAA3962	21-01624	0.00–0.50	Soil	—	—	—	—	—	1.4 (U)	—	—	—	—	—	6.7 (J)	—	—	—	—	—	—	1.1 (U)	22.8 (J)	—	—
AAA3963	21-01625	0.00–0.50	Soil	—	—	—	—	—	1.3 (U)	—	—	—	—	—	7.8 (J)	—	—	—	—	—	—	1.1 (U)	23.4	—	—
AAA3964	21-01626	0.00–0.50	Soil	—	—	—	—	—	1.7 (U)	—	—	—	—	—	9.9 (J)	—	—	—	—	—	—	1.1 (U)	26.5	—	—
AAA3965	21-01627	0.00–0.50	Soil	—	—	—	—	—	1 (U)	—	—	—	—	—	5.3 (J)	—	—	—	—	—	—	1.1 (U)	12.9	—	—
AAA3985	21-01644	0.00–0.50	Soil	—	—	—	—	—	1.1	—	—	—	—	—	4.6 (J)	—	—	—	—	—	—	1.1 (U)	12.2 (J)	—	65.2
AAA3986	21-01645	0.00–0.50	Soil	—	—	—	—	—	0.81 (J)	—	—	—	—	—	3 (J)	—	—	—	—	—	—	1.1 (U)	11.5 (J)	—	132
AAA3987	21-01646	0.00–0.50	Soil	—	—	—	—	—	1.2 (U)	—	—	—	—	—	4.6 (J)	—	—	—	—	—	—	1.1 (U)	14.4 (J)	—	—
AAA3988	21-01647	0.00–0.50	Soil	—	—	—	—	—	0.95 (J)	—	—	—	—	—	6.4 (J)	—	—	—	—	—	—	1.1 (U)	22.3 (J)	—	—
AAA3989	21-01648	0.00–0.50	Soil	—	—	—	—	—	0.94 (J)	—	—	—	—	—	7.7 (J)	—	—	—	—	—	—	1.3 (J)	24.6	—	—
AAA3990	21-01649	0.00–0.50	Soil	—	—	—	—	—	0.7 (J)	—	—	—	—	—	5.2 (J)	—	—	—	—	—	—	1.1 (U)	23.7	—	—
AAA3993	21-01652	0.00–0.50	Soil	—	—	—	—	—	0.63 (U)	—	—	—	—	—	6.4 (J)	—	—	—	—	—	—	1.1 (U)	18.1 (J)	—	—
AAA3996	21-01655	0.00–0.50	Soil	—	—	—	—	—	0.67 (U)	—	—	—	—	—	4.9 (J)	—	—	—	—	—	—	1.1 (U)	21.6 (J)	—	—
AAA3997	21-01656	0.00–0.50	Soil	—	—	—	—	—	1.4 (U)	—	—	—	—	—	9.6 (J)	—	—	—	—	—	—	1.1 (U)	21.6 (J)	—	—
AAA3998	21-01657	0.00–0.50	Soil	—	—	—	—	—	1.3 (U)	—	—	—	—	—	7 (J)	—	—	—	—	—	—	1.2 (U)	22.1 (J)	—	—
AAA4001	21-01658	0.00–0.50	Soil	—	—	—	—	—	1.1 (U)	—	—	—	—	—	5.3 (J)	—	—	—	—	—	—	1.1 (U)	14.3 (J)	—	75.8
AAA4006	21-01662	0.00–0.50	Soil	—	—	—	—	—	0.69 (U)	—	—	—	—	—	4.6 (J)	—	—	—	—	—	—	1.2 (U)	15.9 (J)	—	—

Table 4.1-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Lithium	Manganese	Mercury	Nickel	Nitrate	Perchlorate	Selenium	Silver	Thallium	Vanadium	Zinc
Soil Background Value				**29,200**	**0.83**	**8.17**	**295**	**1.83**	**0.4**	**19.3**	**8.64**	**14.7**	**21,500**	**22.3**	**na[a]**	**671**	**0.1**	**15.4**	**na**	**na**	**1.52**	**1**	**0.73**	**39.6**	**48.8**
Sediment Background Value				**15,400**	**0.83**	**3.98**	**127**	**1.31**	**0.4**	**10.5**	**4.73**	**11.2**	**13,800**	**19.7**	**na**	**543**	**0.1**	**9.38**	**na**	**na**	**0.3**	**1**	**0.73**	**19.7**	**60.2**
Qbt 2,3,4 Background Value				**7340**	**0.5**	**2.79**	**46**	**1.21**	**1.63**	**7.14**	**3.14**	**4.66**	**14,500**	**11.2**	**na**	**482**	**0.1**	**6.58**	**na**	**na**	**0.3**	**1**	**1.1**	**17**	**63.5**
Qbt 1v Background Value				**8170**	**0.5**	**1.81**	**26.5**	**1.7**	**0.4**	**2.24**	**1.78**	**3.26**	**9900**	**18.4**	**na**	**408**	**0.1**	**2**	**na**	**na**	**0.3**	**1**	**1.22**	**4.48**	**40**
Qbt 1g, Qct, Qbo Background Value				**3560**	**0.5**	**0.56**	**25.7**	**1.44**	**0.4**	**2.6**	**8.89**	**3.96**	**3700**	**13.5**	**na**	**189**	**0.1**	**2**	**na**	**na**	**0.3**	**1**	**1.24**	**4.59**	**84.6**
Industrial Soil Screening Levels[b]				**100,000**	**454**	**17.7**	**78,300**	**2250**	**564**	**5000[c]**	**2050**	**45,400**	**100,000**	**800**	**23,000[c]**	**48,400**	**340[c]**	**22,700**	**100,000**	**790[c]**	**5680**	**5680**	**74.9**	**1140**	**100,000**
Residential Soil Screening Levels[b]				**77,800**	**31.3**	**3.9**	**15,600**	**156**	**39**	**2100[c]**	**1520**	**3130**	**23,500**	**400**	**160[c]**	**3590**	**23[c]**	**1560**	**100,000**	**55[c]**	**391**	**391**	**5.16**	**78.2**	**23,500**
MD21-06-63938	21-25263	125.00–127.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.63	0.00266	1.48 (U)	—	—	—	—
MD21-06-63939	21-25263	165.00–167.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.84	0.00126 (J)	1.54 (U)	—	—	—	—
MD21-06-63940	21-25263	215.00–217.00	Qbt 1v	—	—	2.16	—	—	0.581 (U)	—	—	—	—	—	—	—	—	—	1.59	0.00112 (J)	1.53 (U)	—	—	—	—
MD21-06-63941	21-25263	269.00–271.00	Qbt 1g	—	—	1.65 (U)	—	—	0.551 (U)	—	—	—	—	—	—	—	—	—	0.78 (J)	0.0015 (J)	1.55 (U)	—	—	—	—
MD21-06-63942	21-25263	330.00–332.00	Qbt t	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.87 (J)	0.00121 (J)	1.52 (U)	—	—	—	—
MD21-06-63943	21-25263	340.00–342.00	Qct	—	—	0.705 (J)	—	—	0.579 (U)	—	—	—	—	—	—	454	—	—	1.15	0.003	1.74 (U)	—	—	—	—
MD21-06-63944	21-25263	351.00–354.00	Qbo	—	—	1.69 (U)	—	—	0.564 (U)	—	—	—	3920	—	—	—	—	—	12.4	0.007	1.65 (U)	—	—	—	—
MD21-06-63935	21-25263	40.00–42.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.13 (J)	—	—	—	—	—	—
MD21-06-63936	21-25263	70.00–73.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.96	0.000755 (J)	1.74 (U)	—	—	—	—
MD21-06-63937	21-25263	80.00–82.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.861 (J)	—	1.69 (U)	—	—	—	—
MD21-06-63975	21-25264	114.00–117.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	39.9	—	—	—	—	1.17	0.00203 (J)	1.63 (U)	—	—	—	—
MD21-06-63976	21-25264	149.00–150.50	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.64	0.00104 (J)	1.56 (U)	—	—	—	—
MD21-06-63977	21-25264	152.50–154.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.22	0.00236	1.54 (U)	—	—	—	—
MD21-06-63978	21-25264	196.00–199.00	Qbt 1v	—	—	1.89	—	—	0.54 (U)	—	—	—	—	—	—	—	—	—	7.56	0.00634	1.53 (U)	—	—	—	—
MD21-06-63979	21-25264	257.00–259.00	Qbt 1g	—	—	1.63 (U)	26	—	0.544 (U)	—	—	—	—	—	—	—	—	—	8.38	0.00672	1.58 (U)	—	—	—	—
MD21-06-63973	21-25264	30.00–31.50	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	9.3 (J-)	0.006	1.62 (U)	—	—	—	—
MD21-06-63980	21-25264	301.00–304.00	Qbt 1g	—	—	1.66 (U)	—	—	0.552 (U)	—	—	—	—	—	—	—	—	—	5.08	0.004	1.63 (U)	—	—	—	—
MD21-06-63981	21-25264	325.80–327.00	Qct	4420	—	0.895 (J)	—	—	0.576 (U)	—	—	—	—	—	—	—	—	—	1.02 (J)	—	1.66 (U)	—	—	—	—
MD21-06-63982	21-25264	351.00–354.00	Qct	4870	—	0.743 (J)	—	—	0.557 (U)	3.02 (J)	—	—	3750	—	—	239	—	—	—	—	1.73 (U)	—	—	—	—
MD21-06-63974	21-25264	60.00–63.00	Qbt 3	—	—	—	—	—	—	—	—	—	7670	—	—	247	—	2.42	1.14	0.000656 (J)	2.16	—	—	5.99	—
MD21-06-65821	21-25361	11.50–13.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.07 (J)	—	1.62 (U)	—	—	—	—
MD21-06-65822	21-25361	36.00–39.00	Qbt 3	—	—	3.44	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.54 (U)	—	—	—	—
MD21-06-65843	21-25362	22.50–24.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.995 (J)	—	1.55 (U)	—	—	—	—
MD21-06-65844	21-25362	37.00–39.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.992 (J)	—	1.55 (U)	—	—	—	—
MD21-06-65851	21-25363	18.00–20.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.12	—	1.57 (U)	—	—	—	—
MD21-06-65852	21-25363	37.00–40.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.26	—	1.62 (U)	—	—	—	—
MD21-06-65883	21-25365	27.00–30.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.519 (J)	—	1.62 (U)	—	—	—	—
MD21-06-65890	21-25366	25.00–27.90	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.628 (J)	—	1.59 (U)	—	—	—	—
MD21-06-65944	21-25372	101.50–103.50	Qbt 2	—	—	15 (U)	—	—	5 (U)	—	—	—	—	—	—	—	—	—	3.06	0.00421	7.77 (U)	—	—	—	—
MD21-06-65945	21-25372	181.00–183.00	Qbt 1v	—	—	15.7 (U)	—	—	5.24 (U)	—	—	5.09 (U)	—	—	—	—	—	—	10.1	0.0149	7.63 (U)	—	—	—	—

Table 4.1-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Lithium	Manganese	Mercury	Nickel	Nitrate	Perchlorate	Selenium	Silver	Thallium	Vanadium	Zinc
Soil Background Value				**29,200**	**0.83**	**8.17**	**295**	**1.83**	**0.4**	**19.3**	**8.64**	**14.7**	**21,500**	**22.3**	**na[a]**	**671**	**0.1**	**15.4**	**na**	**na**	**1.52**	**1**	**0.73**	**39.6**	**48.8**
Sediment Background Value				**15,400**	**0.83**	**3.98**	**127**	**1.31**	**0.4**	**10.5**	**4.73**	**11.2**	**13,800**	**19.7**	**na**	**543**	**0.1**	**9.38**	**na**	**na**	**0.3**	**1**	**0.73**	**19.7**	**60.2**
Qbt 2,3,4 Background Value				**7340**	**0.5**	**2.79**	**46**	**1.21**	**1.63**	**7.14**	**3.14**	**4.66**	**14,500**	**11.2**	**na**	**482**	**0.1**	**6.58**	**na**	**na**	**0.3**	**1**	**1.1**	**17**	**63.5**
Qbt 1v Background Value				**8170**	**0.5**	**1.81**	**26.5**	**1.7**	**0.4**	**2.24**	**1.78**	**3.26**	**9900**	**18.4**	**na**	**408**	**0.1**	**2**	**na**	**na**	**0.3**	**1**	**1.22**	**4.48**	**40**
Qbt 1g, Qct, Qbo Background Value				**3560**	**0.5**	**0.56**	**25.7**	**1.44**	**0.4**	**2.6**	**8.89**	**3.96**	**3700**	**13.5**	**na**	**189**	**0.1**	**2**	**na**	**na**	**0.3**	**1**	**1.24**	**4.59**	**84.6**
Industrial Soil Screening Levels[b]				**100,000**	**454**	**17.7**	**78,300**	**2250**	**564**	**5000[c]**	**2050**	**45,400**	**100,000**	**800**	**23,000[c]**	**48,400**	**340[c]**	**22,700**	**100,000**	**790[c]**	**5680**	**5680**	**74.9**	**1140**	**100,000**
Residential Soil Screening Levels[b]				**77,800**	**31.3**	**3.9**	**15,600**	**156**	**39**	**2100[c]**	**1520**	**3130**	**23,500**	**400**	**160[c]**	**3590**	**23[c]**	**1560**	**100,000**	**55[c]**	**391**	**391**	**5.16**	**78.2**	**23,500**
MD21-06-65946	21-25372	229.00–231.00	Qbt 1g	4930 (J+)	—	4.75	54.3	2.9	—	—	—	—	—	—	—	—	—	—	5.46	0.0137	15 (U)	—	—	—	—
MD21-06-65947	21-25372	276.00–279.00	Qbt 1g	—	—	0.785 (J)	—	—	0.574 (U)	—	—	10.5 (U)	—	—	—	—	—	—	5.79	0.01	15.7 (U)	—	—	—	—
MD21-06-65942	21-25372	50.00–52.00	Qbt 3	—	—	7.77 (U)	—	—	2.59 (U)	—	—	—	4420	—	—	234	—	—	68.5 (J-)	0.068	1.84 (U)	—	—	—	52.5
MD21-06-65943	21-25372	75.00–77.00	Qbt 3	—	—	7.63 (U)	—	—	2.54 (U)	—	—	—	—	—	—	—	—	—	17.7 (J-)	0.022	1.72 (U)	—	—	—	—
MD21-06-65961	21-25373	139.00–141.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	33	—	—	—	—	0.637 (J)	—	1.52 (U)	—	—	—	—
MD21-06-65962	21-25373	211.00–213.00	Qbt 1v	—	—	2.02	—	—	0.552 (U)	—	—	—	—	42.9	—	—	—	—	0.623 (J)	—	1.54 (U)	—	—	—	—
MD21-06-65963	21-25373	276.00–279.00	Qbt 1g	—	—	1.63 (U)	—	—	0.543 (U)	—	—	—	—	20.6	—	—	—	—	0.586 (J)	—	1.5 (U)	—	—	—	—
MD21-06-65956	21-25373	32.00–34.00	Qbt 3	—	—	4.55	—	—	—	—	—	—	—	13.1	—	—	—	—	0.759 (J)	—	1.52 (U)	—	—	—	—
MD21-06-65957	21-25373	36.00–38.00	Qbt 3	—	—	3.27	—	—	—	—	—	—	—	—	—	—	—	—	0.668 (J)	—	1.55 (U)	—	—	—	—
MD21-06-65958	21-25373	52.50–54.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	13.4	—	—	—	—	1.01	—	6.92	—	—	—	—
MD21-06-65959	21-25373	66.00–69.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	21.6	—	547	—	—	12.4	0.014	6.59	—	—	—	—
MD21-06-65960	21-25373	99.00–101.00	Qbt 2	—	—	—	—	—	—	22	—	—	—	—	—	—	—	—	0.427 (J)	—	2.58	—	—	—	—
MD21-06-65974	21-25374	109.00–111.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00136 (J)	—	—	—	—	—
MD21-06-65975	21-25374	174.00–176.00	Qbt 1v	—	—	—	—	—	0.52 (U)	—	—	—	—	—	—	—	—	—	9.62	0.00266	1.53 (U)	—	—	—	—
MD21-06-65972	21-25374	20.00–22.00	Fill	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.42	0.00277	1.56 (U)	—	—	—	—
MD21-06-65976	21-25374	234.00–236.00	Qbt 1g	6560	—	2.83	116 (J-)	2.68	—	—	—	—	—	—	—	—	—	—	22.9	0.102	1.56 (U)	—	—	—	—
MD21-06-65973	21-25374	27.00–29.00	Qbt 3	—	—	—	—	—	—	—	—	—	7180	—	—	277	—	—	2.02	0.003	1.87 (U)	—	—	—	64.5
MD21-06-65977	21-25374	276.00–279.00	Qbt 1g	—	—	1.72 (U)	—	—	0.573 (U)	—	—	—	—	—	—	—	—	—	2.01	0.003	1.72 (U)	—	—	—	—
MD21-06-65989	21-25375	190.00–192.00	Qbt 1v	—	—	—	—	—	0.54 (U)	—	—	—	—	—	—	—	—	—	—	—	1.62 (U)	—	—	—	—
MD21-06-65990	21-25375	253.00–255.00	Qbt 1g	—	—	1.71 (U)	50.4	—	0.569 (U)	—	—	—	—	—	—	—	—	—	1.05 (J)	—	1.66 (U)	—	—	—	—
MD21-06-65991	21-25375	277.00–280.00	Qbt 1g	—	—	1.78 (U)	—	—	0.593 (U)	—	—	—	—	11.3	—	—	—	—	—	—	1.61 (U)	—	—	—	—
MD21-06-65985	21-25375	29.00–30.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	15.8	—	—	—	—	—	—	1.55 (U)	—	—	—	—
MD21-06-65986	21-25375	32.00–33.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.62 (U)	—	—	—	—
MD21-06-65987	21-25375	57.00–58.00	Qbt 3	—	—	—	—	—	—	—	—	—	6050 (J+)	—	—	249	—	—	—	—	1.71 (U)	—	—	—	—
MD21-06-65988	21-25375	80.00–83.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.21 (J-)	—	1.78 (U)	—	—	—	—
MD21-06-66003	21-25376	108.50–110.90	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7.29	0.000582 (J)	1.54 (U)	—	—	—	—
MD21-06-66004	21-25376	148.00–151.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.18	—	1.54 (U)	—	—	—	—
MD21-06-66005	21-25376	198.00–200.00	Qbt 1v	—	—	2.32	—	—	0.545 (U)	—	—	—	—	—	—	—	—	—	1.32	0.00211 (J)	1.59 (U)	—	—	—	—
MD21-06-66006	21-25376	238.00–240.00	Qbt 1g	—	—	1.03 (J)	—	—	0.56 (U)	—	—	—	—	—	—	—	—	—	—	—	1.52 (U)	—	—	—	—
MD21-06-66000	21-25376	28.00–29.50	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.723 (J)	—	1.54 (U)	—	—	—	—

Table 4.1-1 (continued)

Sample ID	Location ID	Depth (ft)	Media	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Lithium	Manganese	Mercury	Nickel	Nitrate	Perchlorate	Selenium	Silver	Thallium	Vanadium	Zinc
Soil Background Value				**29,200**	**0.83**	**8.17**	**295**	**1.83**	**0.4**	**19.3**	**8.64**	**14.7**	**21,500**	**22.3**	**na[a]**	**671**	**0.1**	**15.4**	**na**	**na**	**1.52**	**1**	**0.73**	**39.6**	**48.8**
Sediment Background Value				**15,400**	**0.83**	**3.98**	**127**	**1.31**	**0.4**	**10.5**	**4.73**	**11.2**	**13,800**	**19.7**	**na**	**543**	**0.1**	**9.38**	**na**	**na**	**0.3**	**1**	**0.73**	**19.7**	**60.2**
Qbt 2,3,4 Background Value				**7340**	**0.5**	**2.79**	**46**	**1.21**	**1.63**	**7.14**	**3.14**	**4.66**	**14,500**	**11.2**	**na**	**482**	**0.1**	**6.58**	**na**	**na**	**0.3**	**1**	**1.1**	**17**	**63.5**
Qbt 1v Background Value				**8170**	**0.5**	**1.81**	**26.5**	**1.7**	**0.4**	**2.24**	**1.78**	**3.26**	**9900**	**18.4**	**na**	**408**	**0.1**	**2**	**na**	**na**	**0.3**	**1**	**1.22**	**4.48**	**40**
Qbt 1g, Qct, Qbo Background Value				**3560**	**0.5**	**0.56**	**25.7**	**1.44**	**0.4**	**2.6**	**8.89**	**3.96**	**3700**	**13.5**	**na**	**189**	**0.1**	**2**	**na**	**na**	**0.3**	**1**	**1.24**	**4.59**	**84.6**
Industrial Soil Screening Levels[b]				**100,000**	**454**	**17.7**	**78,300**	**2250**	**564**	**5000[c]**	**2050**	**45,400**	**100,000**	**800**	**23,000[c]**	**48,400**	**340[c]**	**22,700**	**100,000**	**790[c]**	**5680**	**5680**	**74.9**	**1140**	**100,000**
Residential Soil Screening Levels[b]				**77,800**	**31.3**	**3.9**	**15,600**	**156**	**39**	**2100[c]**	**1520**	**3130**	**23,500**	**400**	**160[c]**	**3590**	**23[c]**	**1560**	**100,000**	**55[c]**	**391**	**391**	**5.16**	**78.2**	**23,500**
MD21-06-66007	21-25376	280.00–283.00	Qbt 1g	—	—	0.84 (J)	—	—	0.558 (U)	—	—	—	—	—	—	—	—	—	0.816 (J)	0.002 (J)	1.64 (U)	—	—	—	—
MD21-06-66001	21-25376	31.50–33.00	Qbt 3	—	—	—	—	—	—	—	—	—	4780	—	—	265 (J+)	—	—	5.45 (J-)	0.004	1.68 (U)	—	—	—	—
MD21-06-66002	21-25376	70.00–72.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.834 (J-)	0.002 (J)	1.68 (U)	—	—	—	—
MD21-06-66243	21-25405	0.00–0.50	Soil	—	—	—	—	—	0.527 (U)	—	—	—	—	—	—	—	—	—	—	—	1.58 (U)	—	—	—	—
MD21-06-66244	21-25405	1.50–2.00	Soil	—	—	—	—	—	0.569 (U)	—	—	—	—	—	—	—	—	—	—	0.000662 (J)	1.71 (U)	—	—	—	—

Notes: See Appendix A for data qualifier definitions. Units are mg/kg. Background values are from LANL 1998, 59730.

[a] na = Not available.

[b] SSLs from NMED 2006, 092513, unless otherwise indicated.

[c] SSLs from EPA Region 6 (EPA 2005, 91002).

[d] — = Not above background value.

Table 4.1-2
Organic COPCs for the Shafts, Beds, and RWSA (Phase I Sampling)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Anthracene	Benzene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic acid	Bis(2-ethylhexyl)phthalate	Butanone[2-]	Butylbenzylphthalate	Chloroform	Chloronaphthalene[2-]
Industrial Soil Screening Levels[a]				**33,500**	**30,900**	**100,000**	**100,000**	**25.8**	**23.4**	**2.34**	**23.4**	**30,900**	**234**	**100,000**	**14,000**[b]	**48,700**	**na**[c]	**9.59**	**104,000**
Residential Soil Screening Levels[a]				**3730**	**2290**	**28,100**	**22,000**	**10.3**	**6.21**	**0.621**	**6.21**	**2290**[d]	**62.1**	**100,000**[b]	**1200**[b]	**31800**	**na**	**4.00**	**6260**
AAA3950	21-01615	0.00–0.50	Soil	—[e]	—	—	—	—	—	—	—	—	—	—	0.049 (J)	—	—	—	—
AAA3951	21-01616	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	0.044 (J)	—	—	—	—
AAA3952	21-01617	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	0.052 (J)	—	—	—	—
AAA3953	21-01618	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	0.072 (J)	—	—	—	—
AAA3954	21-01619	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	0.12 (J)	—	—	—	—
AAA3957	21-01620	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	0.12 (J)	—	—	—	—
AAA3958	21-01621	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	0.046 (J)	—	—	—	—
AAA3959	21-01622	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	0.045 (J)	—	—	—	—
AAA3961	21-01623	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	0.057 (J)	—	—	—	—
AAA3962	21-01624	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	0.087 (J)	—	—	—	—
AAA3963	21-01625	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	0.1 (J)	—	—	—	—
AAA3964	21-01626	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	0.067 (J)	—	—	—	—
AAA3965	21-01627	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	0.11 (J)	—	—	—	—
AAA3985	21-01644	0.00–0.50	Soil	—	—	—	—	—	0.11 (J-)	—	—	—	—	—	0.092 (J-)	—	—	—	—
AAA3987	21-01646	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	0.064 (J)	—	—	—	—
AAA3993	21-01652	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	0.05 (J)	—	—	—	—
AAA3996	21-01655	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	0.092 (J)	—	—	—	—
AAA3997	21-01656	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	0.058 (J)	—	—	—	—
AAA3998	21-01657	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	0.1 (J)	—	—	—	—
AAA4001	21-01658	0.00–0.50	Soil	—	—	—	—	—	0.091 (J)	0.12 (J)	0.1 (J)	—	0.087 (J)	—	0.13 (J)	—	—	—	—
AAA4006	21-01662	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	0.12 (J)	—	—	—	—
MD21-06-63935	21-25263	40.00–42.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	0.0949 (J)	—	—	—	—
MD21-06-63938	21-25263	125.00–127.00	Qbt 2	—	—	0.00609	—	—	—	—	—	—	—	—	—	—	0.0725 (J)	—	—
MD21-06-63939	21-25263	165.00–167.00	Qbt 2	—	—	0.00546	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-63940	21-25263	215.00–217.00	Qbt 1v	—	—	0.00536 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-63941	21-25263	269.00–271.00	Qbt 1g	—	—	0.0137 (J-)	—	—	—	—	—	—	—	—	—	0.00366 (J-)	—	—	—
MD21-06-63942	21-25263	330.00–332.00	Qbt t	—	—	0.0104	—	—	—	—	—	—	—	—	—	—	—	0.000299 (J)	—
MD21-06-63943	21-25263	340.00–342.00	Qct	—	—	0.00785	—	—	—	—	—	—	—	—	—	—	—	0.000293 (J)	—
MD21-06-63944	21-25263	351.00–354.00	Qbo	—	—	0.0112	—	—	—	—	—	—	—	—	—	—	—	0.000234 (J)	—

Table 4.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Anthracene	Benzene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic acid	Bis(2-ethylhexyl)phthalate	Butanone[2-]	Butylbenzylphthalate	Chloroform	Chloronaphthalene[2-]
Industrial Soil Screening Levels[a]			**33,500**	**30,900**	**100,000**	**100,000**	**25.8**	**23.4**	**2.34**	**23.4**	**30,900**	**234**	**100,000**	**14,000**[b]	**48700**	**na**[c]	**9.59**	**104,000**	**33,500**
Residential Soil Screening Levels[a]			**3730**	**2290**	**28,100**	**22,000**	**10.3**	**6.21**	**0.621**	**6.21**	**2290**[d]	**62.1**	**100,000**[b]	**1200**[b]	**31800**	**na**[c]	**4.00**	**6260**	**3730**
MD21-06-63973	21-25264	30.00–31.50	Qbt 3	—	—	0.0142	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-63974	21-25264	60.00–63.00	Qbt 3	—	—	0.0121	—	—	—	—	—	—	—	—	0.124 (J)	—	—	—	—
MD21-06-63981	21-25264	325.80–327.00	Qct	—	—	0.0261 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-63982	21-25264	351.00–354.00	Qct	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65821	21-25361	11.50–13.00	Qbt 3	—	—	0.159	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65823	21-25361	5.00–6.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65843	21-25362	22.50–24.00	Qbt 3	—	—	0.129	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65844	21-25362	37.00–39.00	Qbt 3	—	—	0.00352 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65847	21-25362	8.00–9.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65851	21-25363	18.00–20.00	Qbt 3	—	—	0.11	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65852	21-25363	37.00–40.00	Qbt 3	—	—	0.091	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65855	21-25363	7.00–8.00	Fill	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65883	21-25365	27.00–30.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65890	21-25366	25.00–27.90	Qbt 3	0.0172 (J)	0.0162 (J)	—	0.0149 (J)	—	—	—	—	—	0.0147 (J)	—	—	—	—	—	0.0162 (J)
MD21-06-65942	21-25372	50.00–52.00	Qbt 3	—	—	—	—	0.00221	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65943	21-25372	75.00–77.00	Qbt 3	—	—	—	—	0.00176	—	—	—	—	—	0.553 (J)	—	—	—	—	—
MD21-06-65944	21-25372	101.50–103.50	Qbt 2	—	—	—	—	0.00164	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65945	21-25372	181.00–183.00	Qbt 1v	—	—	—	—	0.00153	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65951	21-25372	6.00–7.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65956	21-25373	32.00–34.00	Qbt 3	—	—	—	0.00929 (J)	—	—	0.0382	—	0.126	0.0106 (J)	—	—	—	—	—	—
MD21-06-65959	21-25373	66.00–69.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65960	21-25373	99.00–101.00	Qbt 2	—	—	0.00288 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65961	21-25373	139.00–141.00	Qbt 2	—	—	0.0145	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65962	21-25373	211.00–213.00	Qbt 1v	—	—	0.0104	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65963	21-25373	276.00–279.00	Qbt 1g	—	—	0.00345 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65973	21-25374	27.00–29.00	Qbt 3	—	—	0.0044 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65974	21-25374	109.00–111.00	Qbt 2	—	—	0.0105	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65975	21-25374	174.00–176.00	Qbt 1v	—	—	0.0028 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 4.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Acenaphthene	Acenaphthylene	Acetone	Anthracene	Benzene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Benzoic acid	Bis(2-ethylhexyl)phthalate	Butanone[2-]	Butylbenzylphthalate	Chloroform	Chloronaphthalene[2-]
Industrial Soil Screening Levels[a]			**33,500**	**30,900**	**100,000**	**100,000**	**25.8**	**23.4**	**2.34**	**23.4**	**30,900**	**234**	**100,000**	**14,000**[b]	**48700**	**na**[c]	**9.59**	**104,000**	**33,500**
Residential Soil Screening Levels[a]			**3730**	**2290**	**28,100**	**22,000**	**10.3**	**6.21**	**0.621**	**6.21**	**2290**[d]	**62.1**	**100,000**[b]	**1200**[b]	**31800**	**na**[c]	**4.00**	**6260**	**3730**
MD21-06-65985	21-25375	29.00–30.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	0.207	—	—	—	—
MD21-06-65986	21-25375	32.00–33.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00023 (J)	—
MD21-06-65988	21-25375	80.00–83.00	Qbt 3	—	—	0.0124	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65989	21-25375	190.00–192.00	Qbt 1v	—	—	0.008 (J-)	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65990	21-25375	253.00–255.00	Qbt 1g	—	—	0.0067	—	—	—	—	—	—	—	—	0.0747 (J)	—	—	—	—
MD21-06-65991	21-25375	277.00–280.00	Qbt 1g	—	—	0.00644	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65994	21-25375	6.00–7.00	Fill	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66000	21-25376	28.00–29.50	Qbt 3	—	—	0.00655	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66001	21-25376	31.50–33.00	Qbt 3	—	—	0.00426 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66002	21-25376	70.00–72.00	Qbt 3	—	—	0.00523 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66003	21-25376	108.50–110.90	Qbt 2	—	—	0.00428 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66004	21-25376	148.00–151.00	Qbt 2	—	—	0.00521 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66005	21-25376	198.00–200.00	Qbt 1v	—	—	0.006	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66006	21-25376	238.00–240.00	Qbt 1g	—	—	0.00615	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66007	21-25376	280.00–283.00	Qbt 1g	—	—	0.0143	—	0.00753	—	—	—	—	—	—	—	—	—	0.000489 (J)	—
MD21-06-66243	21-25405	0.00–0.50	Soil	—	—	—	—	—	—	0.0302 (J)	0.0154 (J)	—	—	—	—	—	—	—	—

Table 4.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Dibromo-3-chloropropane[1,2-]	Dichlorobenzene[1,2-]	Dichlorobenzene[1,3-]	Di-n-butylphthalate	Fluoranthene	Fluorene	Heptachlorodibenzodioxin [1,2,3,4,6,7,8-]	Heptachlorodibenzodioxins (total)	Heptachlorodibenzofuran [1,2,3,4,6,7,8-]	Heptachlorodibenzofurans (total)	Hexachlorodibenzodioxin [1,2,3,7,8,9-]	Hexachlorodibenzodioxins (total)	Hexachlorodibenzofuran [1,2,3,4,7,8-]	Hexachlorodibenzofuran [1,2,3,6,7,8-]	Hexachlorodibenzofuran [2,3,4,6,7,8-]
Industrial Soil Screening Levels[a]				**9.68**	**37.4**	**37.4**	**9.68**	**24,400**	**26,500**	**na**	**na**	**na**	**na**	**na**	**0.00031**	**na**	**na**	**na**
Residential Soil Screening Levels[a]				**1.84**	**37.4**	**32.6**	**1.84**	**2290**	**2660**	**na**	**na**	**na**	**na**	**na**	**0**	**na**	**na**	**na**
AAA3950	21-01615	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3951	21-01616	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3952	21-01617	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3953	21-01618	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3954	21-01619	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3957	21-01620	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3958	21-01621	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3959	21-01622	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3961	21-01623	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3962	21-01624	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3963	21-01625	0.00–0.50	Soil	—	—	—	0.19 (J)	—	—	—	—	—	—	—	—	—	—	—
AAA3964	21-01626	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3965	21-01627	0.00–0.50	Soil	—	—	—	—	0.1 (J)	—	—	—	—	—	—	—	—	—	—
AAA3985	21-01644	0.00–0.50	Soil	—	—	—	—	0.33 (J-)	—	—	—	—	—	—	—	—	—	—
AAA3987	21-01646	0.00–0.50	Soil	—	—	—	—	0.039 (J)	—	—	—	—	—	—	—	—	—	—
AAA3993	21-01652	0.00–0.50	Soil	—	—	—	—	0.04 (J)	—	—	—	—	—	—	—	—	—	—
AAA3996	21-01655	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3997	21-01656	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3998	21-01657	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA4001	21-01658	0.00–0.50	Soil	—	—	—	—	0.22 (J)	—	—	—	—	—	—	—	—	—	—
AAA4006	21-01662	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-63935	21-25263	40.00–42.00	Qbt 3	—	—	—	—	0.0105 (J)	—	—	—	—	—	—	—	—	—	—
MD21-06-63938	21-25263	125.00–127.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-63939	21-25263	165.00–167.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-63940	21-25263	215.00–217.00	Qbt 1v	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-63941	21-25263	269.00–271.00	Qbt 1g	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-63942	21-25263	330.00–332.00	Qbt t	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-63943	21-25263	340.00–342.00	Qct	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-63944	21-25263	351.00–354.00	Qbo	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 4.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Dibromo-3-chloropropane[1,2-]	Dichlorobenzene[1,2-]	Dichlorobenzene[1,3-]	Di-n-butylphthalate	Fluoranthene	Fluorene	Heptachlorodibenzodioxin [1,2,3,4,6,7,8-]	Heptachlorodibenzodioxins (total)	Heptachlorodibenzofuran [1,2,3,4,6,7,8-]	Heptachlorodibenzofurans (total)	Hexachlorodibenzodioxin [1,2,3,7,8,9-]	Hexachlorodibenzodioxins (total)	Hexachlorodibenzofuran [1,2,3,4,7,8-]	Hexachlorodibenzofuran [1,2,3,6,7,8-]	Hexachlorodibenzofuran [2,3,4,6,7,8-]
Industrial Soil Screening Levels[a]				**9.68**	**37.4**	**37.4**	**9.68**	**24,400**	**26,500**	**na**	**na**	**na**	**na**	**na**	**0.00031**	**na**	**na**	**na**
Residential Soil Screening Levels[a]				**1.84**	**37.4**	**32.6**	**1.84**	**2290**	**2660**	**na**	**na**	**na**	**na**	**na**	**0**	**na**	**na**	**na**
MD21-06-63973	21-25264	30.00–31.50	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-63974	21-25264	60.00–63.00	Qbt 3	—	—	—	—	0.0151 (J)	—	—	—	—	—	—	—	—	—	—
MD21-06-63981	21-25264	325.80–327.00	Qct	—	—	0.000235 (J)	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-63982	21-25264	351.00–354.00	Qct	—	0.000271 (J)	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65821	21-25361	11.50–13.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65823	21-25361	5.00–6.00	Qbt 3	—	—	—	—	—	—	1.99E-07 (J)	3.63E-07	—	—	—	—	—	—	—
MD21-06-65843	21-25362	22.50–24.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65844	21-25362	37.00–39.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65847	21-25362	8.00–9.00	Qbt 3	—	—	—	—	—	—	3.63E-07 (J)	3.63E-07	—	—	—	—	3.87E-07 (J)	—	—
MD21-06-65851	21-25363	18.00–20.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65852	21-25363	37.00–40.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65855	21-25363	7.00–8.00	Fill	—	—	—	—	—	—	1.22E-06 (J)	1.64E-06	8.32E-06 (J)	9.09E-06 (J)	2.22E-07 (J)	2.22E-07	3.84E-06	1.04E-06 (J)	3.36E-07 (J)
MD21-06-65883	21-25365	27.00–30.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65890	21-25366	25.00–27.90	Qbt 3	—	—	—	—	0.015 (J)	0.0161 (J)	—	—	—	—	—	—	—	—	—
MD21-06-65942	21-25372	50.00–52.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65943	21-25372	75.00–77.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65944	21-25372	101.50–103.50	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65945	21-25372	181.00–183.00	Qbt 1v	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65951	21-25372	6.00–7.00	Qbt 3	—	—	—	—	—	—	1.76E-07 (J)	1.76E-07	—	—	—	—	—	—	—
MD21-06-65956	21-25373	32.00–34.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65959	21-25373	66.00–69.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65960	21-25373	99.00–101.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65961	21-25373	139.00–141.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65962	21-25373	211.00–213.00	Qbt 1v	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65963	21-25373	276.00–279.00	Qbt 1g	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65973	21-25374	27.00–29.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65974	21-25374	109.00–111.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 4.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Dibromo-3-chloropropane[1,2-]	Dichlorobenzene[1,2-]	Dichlorobenzene[1,3-]	Di-n-butylphthalate	Fluoranthene	Fluorene	Heptachlorodibenzodioxin [1,2,3,4,6,7,8-]	Heptachlorodibenzodioxins (total)	Heptachlorodibenzofuran [1,2,3,4,6,7,8-]	Heptachlorodibenzofurans (total)	Hexachlorodibenzodioxin [1,2,3,7,8,9-]	Hexachlorodibenzodioxins (total)	Hexachlorodibenzofuran [1,2,3,4,7,8-]	Hexachlorodibenzofuran [1,2,3,6,7,8-]	Hexachlorodibenzofuran [2,3,4,6,7,8-]
Industrial Soil Screening Levels[a]				**9.68**	**37.4**	**37.4**	**9.68**	**24,400**	**26,500**	**na**	**na**	**na**	**na**	**na**	**0.00031**	**na**	**na**	**na**
Residential Soil Screening Levels[a]				**1.84**	**37.4**	**32.6**	**1.84**	**2290**	**2660**	**na**	**na**	**na**	**na**	**na**	**0**	**na**	**na**	**na**
MD21-06-65975	21-25374	174.00–176.00	Qbt 1v	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65985	21-25375	29.00–30.00	Qbt 3	—	—	—	0.0405 (J)	0.0175 (J)	—	—	—	—	—	—	—	—	—	—
MD21-06-65986	21-25375	32.00–33.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65988	21-25375	80.00–83.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65989	21-25375	190.00–192.00	Qbt 1v	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65990	21-25375	253.00–255.00	Qbt 1g	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65991	21-25375	277.00–280.00	Qbt 1g	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65994	21-25375	6.00–7.00	Fill	—	—	—	—	—	—	2.33E-07 (J)	2.33E-07	—	—	—	—	—	—	—
MD21-06-66000	21-25376	28.00–29.50	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66001	21-25376	31.50–33.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66002	21-25376	70.00–72.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66003	21-25376	108.50–110.90	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66004	21-25376	148.00–151.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66005	21-25376	198.00–200.00	Qbt 1v	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66006	21-25376	238.00–240.00	Qbt 1g	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66007	21-25376	280.00–283.00	Qbt 1g	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66243	21-25405	0.00–0.50	Soil	—	—	—	—	0.023 (J)	—	—	—	—	—	—	—	—	—	—

Table 4.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Hexachlorodibenzofurans (total)	Hexanone[2-]	Indeno(1,2,3-cd)pyrene	Isopropyltoluene[4-]	Methyl-2-pentanone[4-]	Methylene chloride	Methylnaphthalene[2-]	Naphthalene	Octachlorodibenzodioxin [1,2,3,4,6,7,8,9-]	Octachlorodibenzofuran [1,2,3,4,6,7,8,9-]	Pentachlorodibenzofuran [1,2,3,7,8-]	Pentachlorodibenzofuran [2,3,4,7,8-]	Pentachlorodibenzofurans (totals)
Industrial Soil Screening Levels[a]				**na**	**31,800**	**23.4**	**271**[f]	**17,000**[b]	**490**	**300**[g]	**300**	**na**	**na**	**na**	**na**	**na**
Residential Soil Screening Levels[a]				**na**	**31,800**	**6.21**	**271**[f]	**5800**[b]	**182**	**79.5**[g]	**79.5**	**na**	**na**	**na**	**na**	**na**
AAA3950	21-01615	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3951	21-01616	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3952	21-01617	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3953	21-01618	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3954	21-01619	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3957	21-01620	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3958	21-01621	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3959	21-01622	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3961	21-01623	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3962	21-01624	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3963	21-01625	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3964	21-01626	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3965	21-01627	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3985	21-01644	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3987	21-01646	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3993	21-01652	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3996	21-01655	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3997	21-01656	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA3998	21-01657	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA4001	21-01658	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—
AAA4006	21-01662	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-63935	21-25263	40.00–42.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-63938	21-25263	125.00–127.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-63939	21-25263	165.00–167.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-63940	21-25263	215.00–217.00	Qbt 1v	—	—	—	—	—	0.00255 (J)	—	—	—	—	—	—	—
MD21-06-63941	21-25263	269.00–271.00	Qbt 1g	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-63942	21-25263	330.00–332.00	Qbt t	—	—	—	—	0.00179 (J)	0.0027 (J)	—	—	—	—	—	—	—
MD21-06-63943	21-25263	340.00–342.00	Qct	—	—	—	—	—	0.00246 (J)	—	—	—	—	—	—	—
MD21-06-63944	21-25263	351.00–354.00	Qbo	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 4.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Hexachlorodibenzofurans (total)	Hexanone[2-]	Indeno(1,2,3-cd)pyrene	Isopropyltoluene[4-]	Methyl-2-pentanone[4-]	Methylene chloride	Methylnaphthalene[2-]	Naphthalene	Octachlorodibenzodioxin [1,2,3,4,6,7,8,9-]	Octachlorodibenzofuran [1,2,3,4,6,7,8,9-]	Pentachlorodibenzofuran [1,2,3,7,8-]	Pentachlorodibenzofuran [2,3,4,7,8-]	Pentachlorodibenzofurans (totals)
Industrial Soil Screening Levels[a]				**na**	**31,800**	**23.4**	**271**[f]	**17,000**[b]	**490**	**300**[g]	**300**	**na**	**na**	**na**	**na**	**na**
Residential Soil Screening Levels[a]				**na**	**31,800**	**6.21**	**271**[f]	**5800**[b]	**182**	**79.5**[g]	**79.5**	**na**	**na**	**na**	**na**	**na**
MD21-06-63973	21-25264	30.00–31.50	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-63974	21-25264	60.00–63.00	Qbt 3	—	—	—	—	—	—	0.00901 (J)	0.0399	—	—	—	—	—
MD21-06-63981	21-25264	325.80–327.00	Qct	—	—	—	—	—	0.00276 (J)	—	—	—	—	—	—	—
MD21-06-63982	21-25264	351.00–354.00	Qct	—	—	—	—	—	0.0037 (J)	—	—	—	—	—	—	—
MD21-06-65821	21-25361	11.50–13.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65823	21-25361	5.00–6.00	Qbt 3	—	—	—	—	—	—	—	—	2.23E-06 (J)	—	—	—	—
MD21-06-65843	21-25362	22.50–24.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65844	21-25362	37.00–39.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65847	21-25362	8.00–9.00	Qbt 3	—	—	—	—	—	—	—	—	1.73E-06 (J)	—	—	—	—
MD21-06-65851	21-25363	18.00–20.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65852	21-25363	37.00–40.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65855	21-25363	7.00–8.00	Fill	7.51E-06 (J)	—	—	—	—	—	—	—	5.44E-06	3.25E-06 (J)	1.63E-07 (J)	1.73E-07 (J)	6.96E-07
MD21-06-65883	21-25365	27.00–30.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65890	21-25366	25.00–27.90	Qbt 3	—	—	—	—	—	—	0.0174 (J)	0.0174 (J)	—	—	—	—	—
MD21-06-65942	21-25372	50.00–52.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65943	21-25372	75.00–77.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65944	21-25372	101.50–103.50	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65945	21-25372	181.00–183.00	Qbt 1v	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65951	21-25372	6.00–7.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65956	21-25373	32.00–34.00	Qbt 3	—	—	—	—	—	—	0.012 (J)	0.0123 (J)	—	—	—	—	—
MD21-06-65959	21-25373	66.00–69.00	Qbt 3	—	—	—	—	—	0.00696	—	—	—	—	—	—	—
MD21-06-65960	21-25373	99.00–101.00	Qbt 2	—	—	—	—	—	0.00846	—	—	—	—	—	—	—
MD21-06-65961	21-25373	139.00–141.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65962	21-25373	211.00–213.00	Qbt 1v	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65963	21-25373	276.00–279.00	Qbt 1g	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65973	21-25374	27.00–29.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65974	21-25374	109.00–111.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 4.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Hexachlorodibenzofurans (total)	Hexanone[2-]	Indeno(1,2,3-cd)pyrene	Isopropyltoluene[4-]	Methyl-2-pentanone[4-]	Methylene chloride	Methylnaphthalene[2-]	Naphthalene	Octachlorodibenzodioxin [1,2,3,4,6,7,8,9-]	Octachlorodibenzofuran [1,2,3,4,6,7,8,9-]	Pentachlorodibenzofuran [1,2,3,7,8-]	Pentachlorodibenzofuran [2,3,4,7,8-]	Pentachlorodibenzofurans (totals)
Industrial Soil Screening Levels[a]				**na**	**31,800**	**23.4**	**271**[f]	**17,000**[b]	**490**	**300**[g]	**300**	**na**	**na**	**na**	**na**	**na**
Residential Soil Screening Levels[a]				**na**	**31,800**	**6.21**	**271**[f]	**5800**[b]	**182**	**79.5**[g]	**79.5**	**na**	**na**	**na**	**na**	**na**
MD21-06-65975	21-25374	174.00–176.00	Qbt 1v	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65985	21-25375	29.00–30.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65986	21-25375	32.00–33.00	Qbt 3	—	—	—	—	—	0.00245 (J)	—	—	—	—	—	—	—
MD21-06-65988	21-25375	80.00–83.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65989	21-25375	190.00–192.00	Qbt 1v	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65990	21-25375	253.00–255.00	Qbt 1g	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65991	21-25375	277.00–280.00	Qbt 1g	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-65994	21-25375	6.00–7.00	Fill	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66000	21-25376	28.00–29.50	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66001	21-25376	31.50–33.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66002	21-25376	70.00–72.00	Qbt 3	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66003	21-25376	108.50–110.90	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66004	21-25376	148.00–151.00	Qbt 2	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66005	21-25376	198.00–200.00	Qbt 1v	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66006	21-25376	238.00–240.00	Qbt 1g	—	—	—	—	—	—	—	—	—	—	—	—	—
MD21-06-66007	21-25376	280.00–283.00	Qbt 1g	—	—	—	—	0.00151 (J)	—	—	—	—	—	—	—	—
MD21-06-66243	21-25405	0.00–0.50	Soil	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 4.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Phenanthrene	Pyrene	Tetrachloroethene	Toluene	Trichloroethene	Trichlorofluoromethane
Industrial Soil Screening Levels[a]				**20,500**	**30,900**	**31.6**	**252**	**1.56**	**983**
Residential Soil Screening Levels[a]				**1830**	**2290**	**12.5**	**252**	**0.638**	**588**
AAA3950	21-01615	0.00–0.50	Soil	—	—	—	—	—	—
AAA3951	21-01616	0.00–0.50	Soil	—	—	—	—	—	—
AAA3952	21-01617	0.00–0.50	Soil	—	—	—	—	—	—
AAA3953	21-01618	0.00–0.50	Soil	—	—	—	—	—	—
AAA3954	21-01619	0.00–0.50	Soil	—	—	—	—	—	—
AAA3957	21-01620	0.00–0.50	Soil	—	—	—	—	—	—
AAA3958	21-01621	0.00–0.50	Soil	—	—	—	—	—	—
AAA3959	21-01622	0.00–0.50	Soil	—	—	—	—	—	—
AAA3961	21-01623	0.00–0.50	Soil	—	—	—	—	—	—
AAA3962	21-01624	0.00–0.50	Soil	—	—	—	—	—	—
AAA3963	21-01625	0.00–0.50	Soil	—	—	—	—	—	—
AAA3964	21-01626	0.00–0.50	Soil	—	—	—	—	—	—
AAA3965	21-01627	0.00–0.50	Soil	—	0.078 (J)	—	—	—	—
AAA3985	21-01644	0.00–0.50	Soil	0.12 (J-)	0.26 (J-)	—	—	—	—
AAA3987	21-01646	0.00–0.50	Soil	—	—	—	—	—	—
AAA3993	21-01652	0.00–0.50	Soil	—	0.029 (J)	—	—	—	—
AAA3996	21-01655	0.00–0.50	Soil	—	—	—	—	—	—
AAA3997	21-01656	0.00–0.50	Soil	—	—	—	—	—	—
AAA3998	21-01657	0.00–0.50	Soil	—	—	—	—	—	—
AAA4001	21-01658	0.00–0.50	Soil	0.094 (J)	0.16 (J)	—	—	—	—
AAA4006	21-01662	0.00–0.50	Soil	—	—	—	—	—	—
MD21-06-63935	21-25263	40.00–42.00	Qbt 3	—	0.0245 (J)	—	—	—	—
MD21-06-63938	21-25263	125.00–127.00	Qbt 2	—	—	—	—	—	—
MD21-06-63939	21-25263	165.00–167.00	Qbt 2	—	—	—	—	—	—
MD21-06-63940	21-25263	215.00–217.00	Qbt 1v	—	—	—	—	—	—
MD21-06-63941	21-25263	269.00–271.00	Qbt 1g	—	—	—	—	—	—
MD21-06-63942	21-25263	330.00–332.00	Qbt t	—	—	—	—	—	—
MD21-06-63943	21-25263	340.00–342.00	Qct	—	—	—	—	—	—
MD21-06-63944	21-25263	351.00–354.00	Qbo	—	—	—	—	—	—

Table 4.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Phenanthrene	Pyrene	Tetrachloroethene	Toluene	Trichloroethene	Trichlorofluoromethane
Industrial Soil Screening Levels[a]				**20,500**	**30,900**	**31.6**	**252**	**1.56**	**983**
Residential Soil Screening Levels[a]				**1830**	**2290**	**12.5**	**252**	**0.638**	**588**
MD21-06-63973	21-25264	30.00–31.50	Qbt 3	—	—	—	—	—	—
MD21-06-63974	21-25264	60.00–63.00	Qbt 3	0.0186 (J)	0.0125 (J)	—	—	—	—
MD21-06-63981	21-25264	325.80–327.00	Qct	—	—	—	0.00042 (J)	—	—
MD21-06-63982	21-25264	351.00–354.00	Qct	—	—	—	0.000387 (J)	—	—
MD21-06-65821	21-25361	11.50–13.00	Qbt 3	—	—	—	—	—	—
MD21-06-65823	21-25361	5.00–6.00	Qbt 3	—	—	—	—	—	—
MD21-06-65843	21-25362	22.50–24.00	Qbt 3	—	—	—	—	—	—
MD21-06-65844	21-25362	37.00–39.00	Qbt 3	—	—	—	—	—	—
MD21-06-65847	21-25362	8.00–9.00	Qbt 3	—	—	—	—	—	—
MD21-06-65851	21-25363	18.00–20.00	Qbt 3	—	—	—	—	—	—
MD21-06-65852	21-25363	37.00–40.00	Qbt 3	—	—	—	—	—	—
MD21-06-65855	21-25363	7.00–8.00	Fill	—	—	—	—	—	—
MD21-06-65883	21-25365	27.00–30.00	Qbt 3	—	—	0.00359	—	—	—
MD21-06-65890	21-25366	25.00–27.90	Qbt 3	0.0173 (J)	0.0131 (J)	0.0022	—	—	—
MD21-06-65942	21-25372	50.00–52.00	Qbt 3	—	—	—	0.000597 (J)	—	—
MD21-06-65943	21-25372	75.00–77.00	Qbt 3	—	—	—	0.000462 (J)	—	—
MD21-06-65944	21-25372	101.50–103.50	Qbt 2	—	—	—	0.000442 (J)	—	—
MD21-06-65945	21-25372	181.00–183.00	Qbt 1v	—	—	—	0.00041 (J)	—	—
MD21-06-65951	21-25372	6.00–7.00	Qbt 3	—	—	—	—	—	—
MD21-06-65956	21-25373	32.00–34.00	Qbt 3	0.0109 (J)	—	—	—	—	—
MD21-06-65959	21-25373	66.00–69.00	Qbt 3	—	—	—	—	—	—
MD21-06-65960	21-25373	99.00–101.00	Qbt 2	—	—	—	—	—	—
MD21-06-65961	21-25373	139.00–141.00	Qbt 2	—	—	—	—	—	—
MD21-06-65962	21-25373	211.00–213.00	Qbt 1v	—	—	—	—	—	—
MD21-06-65963	21-25373	276.00–279.00	Qbt 1g	—	—	—	—	—	—
MD21-06-65973	21-25374	27.00–29.00	Qbt 3	—	—	—	—	—	—
MD21-06-65974	21-25374	109.00–111.00	Qbt 2	—	—	—	—	—	—

Table 4.1-2 (continued)

Sample ID	Location ID	Depth (ft)	Media	Phenanthrene	Pyrene	Tetrachloroethene	Toluene	Trichloroethene	Trichlorofluoromethane
Industrial Soil Screening Levels[a]				**20,500**	**30,900**	**31.6**	**252**	**1.56**	**983**
Residential Soil Screening Levels[a]				**1830**	**2290**	**12.5**	**252**	**0.638**	**588**
MD21-06-65975	21-25374	174.00–176.00	Qbt 1v	—	—	—	—	—	—
MD21-06-65985	21-25375	29.00–30.00	Qbt 3	—	0.0559	—	—	—	—
MD21-06-65986	21-25375	32.00–33.00	Qbt 3	—	—	—	—	—	—
MD21-06-65988	21-25375	80.00–83.00	Qbt 3	—	—	—	—	—	—
MD21-06-65989	21-25375	190.00–192.00	Qbt 1v	—	—	—	—	—	—
MD21-06-65990	21-25375	253.00–255.00	Qbt 1g	—	—	—	—	—	—
MD21-06-65991	21-25375	277.00–280.00	Qbt 1g	—	—	—	—	—	—
MD21-06-65994	21-25375	6.00–7.00	Fill	—	—	—	—	—	—
MD21-06-66000	21-25376	28.00–29.50	Qbt 3	—	—	—	—	—	—
MD21-06-66001	21-25376	31.50–33.00	Qbt 3	—	—	—	—	—	—
MD21-06-66002	21-25376	70.00–72.00	Qbt 3	—	—	—	—	—	—
MD21-06-66003	21-25376	108.50–110.90	Qbt 2	—	—	—	—	—	—
MD21-06-66004	21-25376	148.00–151.00	Qbt 2	—	—	—	—	—	—
MD21-06-66005	21-25376	198.00–200.00	Qbt 1v	—	—	—	—	—	—
MD21-06-66006	21-25376	238.00–240.00	Qbt 1g	—	—	—	—	—	—
MD21-06-66007	21-25376	280.00–283.00	Qbt 1g	—	—	—	0.00227	—	—
MD21-06-66243	21-25405	0.00–0.50	Soil	0.0113 (J)	0.0176 (J)	—	—	—	—

Notes: See Appendix A for data qualifier definitions. Units are mg/kg.

[a] SSLs from NMED 2006, 092513, unless otherwise indicated.

[b] SSL from EPA Region 6 (EPA 2005, 91002).

[c] na = Not available; SSLs for individual congeners and totals are not available, just for 2,3,7,8-TCDD.

[d] Pyrene used as a surrogate based on structural similarity.

[e] — = Not detected.

[f] Isopropylbenzene used as a surrogate based on structural similarity.

[g] Naphthalene used as surrogate, based on structural similarity.

Table 4.1-3
Radionuclide COPCS for the Shafts, Beds, and RWSA (Phase I Sampling)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Europium-152	Plutonium-238	Plutonium-239	Strontium-90	Tritium	Uranium-234	Uranium-235	Uranium-238
Soil Background Value[a]				**0.013**	**1.65**	**na**[b]	**0.023**	**0.054**	**1.31**	**na**	**2.59**	**0.2**	**2.29**
Sediment Background Value[a]				**0.04**	**0.9**	**na**	**0.006**	**0.068**	**1.04**	**0.093**	**2.59**	**0.2**	**2.29**
Qbt 2,3,4 Background Value[a]				**na**	**na**	**na**	**na**	**na**	**na**	**na**	**1.98**	**0.09**	**1.93**
Qbt 1v Background Value[a]				**na**	**na**	**na**	**na**	**na**	**na**	**na**	**3.12**	**0.14**	**3.05**
Qbt 1g, Qct, Qbo Background Value[a]				**na**	**na**	**na**	**na**	**na**	**na**	**na**	**4.0**	**0.18**	**3.9**
Industrial Screening Action Level[c]				**180**	**23**	**11**[d]	**240**	**210**	**1900**	**440,000**	**1500**	**87**	**460**
Residential Screening Action Level[c]				**30**	**5.6**	**2.9**[d]	**37**	**33**	**5.7**	**750**	**170**	**17**	**86**
AAA3950	21-01615	0.00–0.50	Soil	0.033 (J-)	—[e]	—	—	0.11 (J-)	—	5.015713E-02 (J-)	—	—	—
AAA3951	21-01616	0.00–0.50	Soil	0.1 (J-)	—	—	—	0.149 (J-)	—	—	—	—	—
AAA3954	21-01619	0.00–0.50	Soil	9.751 (J-)	—	—	0.535 (J-)	8.919 (J-)	—	—	—	—	—
AAA3958	21-01621	0.00–0.50	Soil	—	—	—	—	—	—	0.0533557 (J-)	—	—	—
AAA3959	21-01622	0.00–0.50	Soil	—	—	—	—	—	—	5.678161E-02 (J-)	—	—	—
AAA3961	21-01623	0.00–0.50	Soil	3.406 (J-)	—	—	0.354 (J-)	0.969 (J-)	—	6.667447E-02 (J-)	—	—	—
AAA3962	21-01624	0.00–0.50	Soil	—	—	—	—	—	—	3.782066E-02 (J-)	—	—	—
AAA3963	21-01625	0.00–0.50	Soil	0.08 (J-)	—	—	—	0.182 (J-)	—	3.370412E-02 (J-)	—	—	—
AAA3964	21-01626	0.00–0.50	Soil	—	—	—	0.031 (J-)	—	—	4.902605E-02 (J-)	—	—	—
AAA3965	21-01627	0.00–0.50	Soil	1.31 (J-)	—	—	3.639 (J-)	4.108 (J-)	—	7.801332E-02 (J-)	—	—	—
AAA3985	21-01644	0.00–0.50	Soil	12.333 (J-)	—	—	1.307 (J-)	19.237 (J-)	—	0.3575631 (J-)	—	—	—
AAA3986	21-01645	0.00–0.50	Soil	0.89 (J-)	—	—	0.124 (J-)	6.547 (J-)	—	0.3305381 (J-)	—	—	—
AAA3987	21-01646	0.00–0.50	Soil	26.395 (J-)	—	—	6.851 (J-)	201.254 (J-)	—	9.712644E-02 (J-)	3.363 (J-)	—	—
AAA3988	21-01647	0.00–0.50	Soil	—	—	—	—	—	—	4.237251E-02 (J-)	—	—	—
AAA3989	21-01648	0.00–0.50	Soil	1.56 (J-)	—	—	0.273 (J-)	1.565 (J-)	—	5.045045E-02 (J-)	—	—	—
AAA3993	21-01652	0.00–0.50	Soil	2.042 (J)	—	—	0.223 (J-)	3.735 (J-)	—	6.343915E-02 (J-)	—	0.38 (J-)	—
AAA3996	21-01655	0.00–0.50	Soil	0.504 (J-)	—	—	—	0.136 (J-)	—	4.768559E-02 (J-)	—	—	—
AAA3997	21-01656	0.00–0.50	Soil	—	—	—	—	—	—	5.432373E-02 (J-)	—	—	—
AAA3998	21-01657	0.00–0.50	Soil	0.027 (J-)	—	—	—	0.06 (J-)	—	7.567567E-02 (J-)	—	—	—
AAA4001	21-01658	0.00–0.50	Soil	2.831 (J-)	—	—	6.625 (J-)	8.602 (J-)	—	0.2471635 (J-)	—	—	—
AAA4006	21-01662	0.00–0.50	Soil	3.212 (J-)	—	—	0.511 (J-)	4.791 (J-)	—	—	—	—	—
MD21-06-63902	21-25262	170.00–172.00	Qbt 1v	—	—	—	—	—	—	0.383765	—	0.2	—
MD21-06-63903	21-25262	235.00–238.00	Qbt 1v	—	—	—	—	—	—	0.4727273	—	0.284	—
MD21-06-63935	21-25263	40.00–42.00	Qbt 3	—	—	—	—	—	—	0.8364249	—	—	—

Table 4.1-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Europium-152	Plutonium-238	Plutonium-239	Strontium-90	Tritium	Uranium-234	Uranium-235	Uranium-238
Soil Background Value[a]				**0.013**	**na**	**na**	**0.023**	**0.054**	**1.31**	**na**	**2.59**	**0.2**	**2.29**
Sediment Background Value[a]				**0.04**	**na**	**na**	**0.006**	**0.068**	**1.04**	**0.093**	**2.59**	**0.2**	**2.29**
Qbt 2,3,4 Background Value[a]				**na**	**na**	**na**	**na**	**na**	**na**	**na**	**1.98**	**0.09**	**1.93**
Qbt 1v Background Value[a]				**na**	**na**	**na**	**na**	**na**	**na**	**na**	**3.12**	**0.14**	**3.05**
Qbt 1g, Qct, Qbo Background Value[a]				**na**	**na**	**na**	**na**	**na**	**na**	**na**	**4.0**	**0.18**	**3.9**
Industrial Screening Action Level[c]				**180**	**23**	**11[d]**	**240**	**210**	**1900**	**440,000**	**1500**	**87**	**460**
Residential Screening Action Level[c]				**30**	**5.6**	**2.9[d]**	**37**	**33**	**5.7**	**750**	**170**	**17**	**86**
MD21-06-63936	21-25263	70.00–73.00	Qbt 3	—	—	—	—	—	—	0.7110922	—	—	—
MD21-06-63937	21-25263	80.00–82.00	Qbt 3	—	—	—	—	—	—	0.4974159	—	—	—
MD21-06-63938	21-25263	125.00–127.00	Qbt 2	—	—	—	—	—	—	0.2936922	—	0.139	—
MD21-06-63939	21-25263	165.00–167.00	Qbt 2	—	—	—	—	—	—	0.4899831	—	0.182	—
MD21-06-63940	21-25263	215.00–217.00	Qbt 1v	—	—	—	—	—	—	0.3713124	—	0.273	—
MD21-06-63941	21-25263	269.00–271.00	Qbt 1g	—	—	—	—	0.0584	—	6.661682	—	—	—
MD21-06-63942	21-25263	330.00–332.00	Qbt t	—	—	—	—	0.0385	—	0.4357953	3.2 (J-)	0.184 (J-)	3.3 (J-)
MD21-06-63943	21-25263	340.00–342.00	Qct	—	—	—	—	0.138	—	0.555258	—	0.195 (J-)	—
MD21-06-63944	21-25263	351.00–354.00	Qbo	—	—	—	—	—	—	2.371801E-02	—	—	—
MD21-06-63973	21-25264	30.00–31.50	Qbt 3	—	—	—	—	—	—	0.5436301	—	0.0958	—
MD21-06-63974	21-25264	60.00–63.00	Qbt 3	—	—	—	—	—	—	0.5060955	—	—	—
MD21-06-63975	21-25264	114.00–117.00	Qbt 2	—	—	—	—	—	—	1.819956	—	—	—
MD21-06-63976	21-25264	149.00–150.50	Qbt 2	—	—	—	—	—	—	12.37195	—	—	—
MD21-06-63977	21-25264	152.50–154.00	Qbt 2	—	—	—	—	—	—	15.80106	—	—	—
MD21-06-63978	21-25264	196.00–199.00	Qbt 1v	—	—	—	—	—	—	17.51237	—	0.478	—
MD21-06-63979	21-25264	257.00–259.00	Qbt 1g	—	—	—	—	—	—	8.294977	—	0.192	—
MD21-06-63980	21-25264	301.00–304.00	Qbt 1g	—	—	—	—	—	—	—	—	0.374	—
MD21-06-63982	21-25264	351.00–354.00	Qct	—	—	—	—	—	—	0.2085714	—	—	—
MD21-06-65942	21-25372	50.00–52.00	Qbt 3	—	—	—	—	—	—	5.01568	—	—	—
MD21-06-65943	21-25372	75.00–77.00	Qbt 3	—	—	—	—	—	—	3.205729	—	—	—
MD21-06-65944	21-25372	101.50–103.50	Qbt 2	—	—	—	—	—	—	4.465968	—	—	—
MD21-06-65945	21-25372	181.00–183.00	Qbt 1v	—	—	—	—	—	—	7.433543	—	—	—
MD21-06-65946	21-25372	229.00–231.00	Qbt 1g	—	—	—	—	—	—	21.69505	—	—	—
MD21-06-65947	21-25372	276.00–279.00	Qbt 1g	—	—	—	—	—	—	24.54441	—	—	—
MD21-06-65956	21-25373	32.00–34.00	Qbt 3	—	—	—	—	—	—	0.0454976	—	—	—
MD21-06-65957	21-25373	36.00–38.00	Qbt 3	—	—	—	—	—	—	5.166652E-02	—	—	—
MD21-06-65958	21-25373	52.50–54.00	Qbt 3	—	—	—	—	—	—	5.043579E-02	—	—	—
MD21-06-65959	21-25373	66.00–69.00	Qbt 3	—	—	—	—	—	—	5.897444E-02	—	—	—
MD21-06-65960	21-25373	99.00–101.00	Qbt 2	—	—	—	—	—	—	0.1307482	—	0.0943	—
MD21-06-65961	21-25373	139.00–141.00	Qbt 2	—	—	—	—	—	—	0.468239	—	—	—
MD21-06-65962	21-25373	211.00–213.00	Qbt 1v	—	—	—	—	—	—	3.512641	—	—	—

Table 4.1-3 (continued)

Sample ID	Location ID	Depth (ft)	Media	Americium-241	Cesium-137	Europium-152	Plutonium-238	Plutonium-239	Strontium-90	Tritium	Uranium-234	Uranium-235	Uranium-238
Soil Background Value[a]				**0.013**	**na**	**na**	**0.023**	**0.054**	**1.31**	**na**	**2.59**	**0.2**	**2.29**
Sediment Background Value[a]				**0.04**	**na**	**na**	**0.006**	**0.068**	**1.04**	**0.093**	**2.59**	**0.2**	**2.29**
Qbt 2,3,4 Background Value[a]				**na**	**na**	**na**	**na**	**na**	**na**	**na**	**1.98**	**0.09**	**1.93**
Qbt 1v Background Value[a]				**na**	**na**	**na**	**na**	**na**	**na**	**na**	**3.12**	**0.14**	**3.05**
Qbt 1g, Qct, Qbo Background Value[a]				**na**	**na**	**na**	**na**	**na**	**na**	**na**	**4.0**	**0.18**	**3.9**
Industrial Screening Action Level[c]				**180**	**23**	**11[d]**	**240**	**210**	**1900**	**440,000**	**1500**	**87**	**460**
Residential Screening Action Level[c]				**30**	**5.6**	**2.9[d]**	**37**	**33**	**5.7**	**750**	**170**	**17**	**86**
MD21-06-65963	21-25373	276.00–279.00	Qbt 1g	—	—	—	—	—	—	0.0405793	—	0.186	—
MD21-06-65973	21-25374	27.00–29.00	Qbt 3	0.14	—	—	—	0.162 (J-)	—	6.731767	—	—	—
MD21-06-65974	21-25374	109.00–111.00	Qbt 2	0.11	—	—	—	—	—	3.546952	—	—	—
MD21-06-65975	21-25374	174.00–176.00	Qbt 1v	—	—	—	—	—	—	12.8	—	—	—
MD21-06-65977	21-25374	276.00–279.00	Qbt 1g	—	—	—	—	—	—	1.51373	—	—	—
MD21-06-65985	21-25375	29.00–30.00	Qbt 3	12.1	—	—	0.146	16.4	—	—	—	—	—
MD21-06-65986	21-25375	32.00–33.00	Qbt 3	83.5	—	—	0.531	58.2	—	—	—	—	—
MD21-06-65987	21-25375	57.00–58.00	Qbt 3	—	—	—	—	—	—	—	—	0.216 (J-)	—
MD21-06-65988	21-25375	80.00–83.00	Qbt 3	9.63 (J+)	—	—	0.0869 (J+)	15.6 (J+)	—	—	—	0.202	—
MD21-06-65990	21-25375	253.00–255.00	Qbt 1g	—	—	—	—	—	—	—	—	0.212	—
MD21-06-65991	21-25375	277.00–280.00	Qbt 1g	—	—	—	—	—	—	6.755451E-02	—	0.262	—
MD21-06-66000	21-25376	28.00–29.50	Qbt 3	—	—	—	—	—	—	0.2884367	—	—	—
MD21-06-66001	21-25376	31.50–33.00	Qbt 3	—	—	—	—	—	—	0.1994072	—	—	—
MD21-06-66002	21-25376	70.00–72.00	Qbt 3	—	—	—	—	—	—	0.1383011	—	—	—
MD21-06-66003	21-25376	108.50–110.90	Qbt 2	—	—	—	—	—	—	0.1800255	—	—	—
MD21-06-66004	21-25376	148.00–151.00	Qbt 2	—	—	—	—	—	—	0.2247865	—	—	—
MD21-06-66005	21-25376	198.00–200.00	Qbt 1v	—	—	—	—	—	—	0.325968	—	0.163	—
MD21-06-66006	21-25376	238.00–240.00	Qbt 1g	—	—	—	—	—	—	1.67386	—	—	—
MD21-06-66007	21-25376	280.00–283.00	Qbt 1g	—	—	—	—	—	—	—	—	0.223	—
MD21-06-66243	21-25405	0.00–0.50	Soil	34.8	—	—	—	12.2	—	2.462706E-02	—	—	—
MD21-06-66244	21-25405	1.50–2.00	Soil	7.26 (J+)	—	—	0.117	8.19	—	8.805069E-02	—	—	—

Notes: See Appendix A for data qualifier definitions. Units are pCi/g.

[a] Background values and fallout values are from LANL 1998, 059730.

[b] na = Not available.

[c] SSLs from NMED 2006, 092513, unless otherwise indicated.

[d] LANL 2005, 088493 “Derivation and Use of Radionuclide Screening Action Levels, Revision 1.”

[e] — = Not above background/fallout value or not detected.

Table 4.1-4
Summary of Organic Chemicals Detected in
Pore Gas at Consolidated Unit 21-016(a)-99 (Phase I Sampling)

Sample ID	Location ID	Analyte	Sample Concentration	Depth (ft)	Collection Date
MD21-06-64201	21-25262	Acetone	55	370.00–380.00	1/5/2006
MD21-06-64202	21-25262	Acetone	840	189.00–191.00	1/10/2006
MD21-06-64204	21-25262	Acetone	200	79.00–81.00	1/11/2006
MD21-06-64203	21-25262	Acetone	150	294.00–296.00	1/11/2006
MD21-06-64205	21-25262	Acetone	430 (J)	234.00–236.00	1/20/2006
MD21-06-64206	21-25262	Acetone	61 (J)	114.00–116.00	1/23/2006
MD21-06-67521	21-25262	Acetone	230	290.00–292.00	4/17/2006
MD21-06-67523	21-25262	Acetone	91	189.00–191.00	4/18/2006
MD21-06-67522	21-25262	Acetone	320	234.00–236.00	4/18/2006
MD21-06-67524	21-25262	Acetone	150	114.00–116.00	4/19/2006
MD21-06-67525	21-25262	Acetone	490	79.00–81.00	4/20/2006
MD21-06-64202	21-25262	Benzene	8	189.00–191.00	1/10/2006
MD21-06-64203	21-25262	Benzene	5.4	294.00–296.00	1/11/2006
MD21-06-64205	21-25262	Benzene	8.6	234.00–236.00	1/20/2006
MD21-06-64206	21-25262	Benzene	1.4	114.00–116.00	1/23/2006
MD21-06-67521	21-25262	Benzene	48	290.00–292.00	4/17/2006
MD21-06-64203	21-25262	Bromodichloromethane	3.3	294.00–296.00	1/11/2006
MD21-06-64205	21-25262	Bromodichloromethane	5.5	234.00–236.00	1/20/2006
MD21-06-64206	21-25262	Bromodichloromethane	2.8	114.00–116.00	1/23/2006
MD21-06-67521	21-25262	Butanol[1-]	17 (J)	290.00–292.00	4/17/2006
MD21-06-64205	21-25262	Butanone[2-]	27	234.00–236.00	1/20/2006
MD21-06-67521	21-25262	Butanone[2-]	54	290.00–292.00	4/17/2006
MD21-06-67523	21-25262	Butanone[2-]	9	189.00–191.00	4/18/2006
MD21-06-67522	21-25262	Butanone[2-]	4.6	234.00–236.00	4/18/2006
MD21-06-67524	21-25262	Butanone[2-]	3.3	114.00–116.00	4/19/2006
MD21-06-67525	21-25262	Butanone[2-]	7.2	79.00–81.00	4/20/2006
MD21-06-67521	21-25262	Carbon disulfide	3	290.00–292.00	4/17/2006
MD21-06-67522	21-25262	Carbon disulfide	36	234.00–236.00	4/18/2006
MD21-06-67525	21-25262	Carbon disulfide	8.2	79.00–81.00	4/20/2006
MD21-06-64201	21-25262	Carbon tetrachloride	1.4	370.00–380.00	1/5/2006
MD21-06-64202	21-25262	Carbon tetrachloride	160	189.00–191.00	1/10/2006
MD21-06-64204	21-25262	Carbon tetrachloride	100	79.00–81.00	1/11/2006
MD21-06-64203	21-25262	Carbon tetrachloride	200	294.00–296.00	1/11/2006
MD21-06-64205	21-25262	Carbon tetrachloride	410	234.00–236.00	1/20/2006
MD21-06-64206	21-25262	Carbon tetrachloride	90	114.00–116.00	1/23/2006
MD21-06-67521	21-25262	Carbon tetrachloride	220	290.00–292.00	4/17/2006
MD21-06-67523	21-25262	Carbon tetrachloride	95	189.00–191.00	4/18/2006

Table 4.1-4 (continued)

Sample ID	Location ID	Analyte	Sample Concentration	Depth (ft)	Collection Date
MD21-06-67522	21-25262	Carbon tetrachloride	98	234.00–236.00	4/18/2006
MD21-06-67524	21-25262	Carbon tetrachloride	6.5	114.00–116.00	4/19/2006
MD21-06-67525	21-25262	Carbon tetrachloride	39	79.00–81.00	4/20/2006
MD21-06-64201	21-25262	Chloroform	13	370.00–380.00	1/5/2006
MD21-06-64202	21-25262	Chloroform	580	189.00–191.00	1/10/2006
MD21-06-64204	21-25262	Chloroform	960	79.00–81.00	1/11/2006
MD21-06-64203	21-25262	Chloroform	470	294.00–296.00	1/11/2006
MD21-06-64205	21-25262	Chloroform	690	234.00–236.00	1/20/2006
MD21-06-64206	21-25262	Chloroform	690	114.00–116.00	1/23/2006
MD21-06-67521	21-25262	Chloroform	370	290.00–292.00	4/17/2006
MD21-06-67523	21-25262	Chloroform	380	189.00–191.00	4/18/2006
MD21-06-67522	21-25262	Chloroform	410	234.00–236.00	4/18/2006
MD21-06-67524	21-25262	Chloroform	380	114.00–116.00	4/19/2006
MD21-06-67525	21-25262	Chloroform	760	79.00–81.00	4/20/2006
MD21-06-64201	21-25262	Chloromethane	1.4	370.00–380.00	1/5/2006
MD21-06-64201	21-25262	Dichlorodifluoromethane	2.9	370.00–380.00	1/5/2006
MD21-06-64204	21-25262	Dichlorodifluoromethane	7.7	79.00–81.00	1/11/2006
MD21-06-64203	21-25262	Dichlorodifluoromethane	5.9	294.00–296.00	1/11/2006
MD21-06-64205	21-25262	Dichlorodifluoromethane	9.6 (J)	234.00–236.00	1/20/2006
MD21-06-64206	21-25262	Dichlorodifluoromethane	7.8 (J)	114.00–116.00	1/23/2006
MD21-06-67521	21-25262	Dichloroethane[1,1-]	4.3	290.00–292.00	4/17/2006
MD21-06-67521	21-25262	Dichloroethane[1,2-]	17	290.00–292.00	4/17/2006
MD21-06-67523	21-25262	Dichloroethane[1,2-]	3.3	189.00–191.00	4/18/2006
MD21-06-64203	21-25262	Dichloroethene[1,1-]	5.1	294.00–296.00	1/11/2006
MD21-06-64205	21-25262	Dichloroethene[1,1-]	8	234.00–236.00	1/20/2006
MD21-06-64206	21-25262	Dichloroethene[1,1-]	1.3	114.00–116.00	1/23/2006
MD21-06-67521	21-25262	Dichloroethene[1,1-]	14	290.00–292.00	4/17/2006
MD21-06-67523	21-25262	Dichloroethene[1,1-]	3.5	189.00–191.00	4/18/2006
MD21-06-67522	21-25262	Dichloroethene[1,1-]	6.6	234.00–236.00	4/18/2006
MD21-06-64201	21-25262	Ethyltoluene[4-]	4	370.00–380.00	1/5/2006
MD21-06-67521	21-25262	Hexane	30	290.00–292.00	4/17/2006
MD21-06-67523	21-25262	Hexane	5.7	189.00–191.00	4/18/2006
MD21-06-67521	21-25262	Methyl-2-pentanone[4-]	4.2	290.00–292.00	4/17/2006
MD21-06-64201	21-25262	Methylene chloride	2.9	370.00–380.00	1/5/2006
MD21-06-64202	21-25262	Methylene chloride	34	189.00–191.00	1/10/2006
MD21-06-64204	21-25262	Methylene chloride	11	79.00–81.00	1/11/2006
MD21-06-64203	21-25262	Methylene chloride	100	294.00–296.00	1/11/2006
MD21-06-64205	21-25262	Methylene chloride	73	234.00–236.00	1/20/2006
MD21-06-64206	21-25262	Methylene chloride	12	114.00–116.00	1/23/2006
MD21-06-67521	21-25262	Methylene chloride	93	290.00–292.00	4/17/2006

Table 4.1-4 (continued)

Sample ID	Location ID	Analyte	Sample Concentration	Depth (ft)	Collection Date
MD21-06-67523	21-25262	Methylene chloride	26	189.00–191.00	4/18/2006
MD21-06-67522	21-25262	Methylene chloride	37	234.00–236.00	4/18/2006
MD21-06-67521	21-25262	n-Heptane	64	290.00–292.00	4/17/2006
MD21-06-67523	21-25262	n-Heptane	3.4	189.00–191.00	4/18/2006
MD21-06-64202	21-25262	Styrene	14	189.00–191.00	1/10/2006
MD21-06-64204	21-25262	Styrene	17	79.00–81.00	1/11/2006
MD21-06-64203	21-25262	Styrene	51	294.00–296.00	1/11/2006
MD21-06-64205	21-25262	Styrene	39	234.00–236.00	1/20/2006
MD21-06-64206	21-25262	Styrene	11	114.00–116.00	1/23/2006
MD21-06-67521	21-25262	Styrene	35	290.00–292.00	4/17/2006
MD21-06-67523	21-25262	Styrene	26	189.00–191.00	4/18/2006
MD21-06-67522	21-25262	Styrene	35	234.00–236.00	4/18/2006
MD21-06-67524	21-25262	Styrene	4.8	114.00–116.00	4/19/2006
MD21-06-67525	21-25262	Styrene	18	79.00–81.00	4/20/2006
MD21-06-64201	21-25262	Tetrachloroethene	7	370.00–380.00	1/5/2006
MD21-06-64202	21-25262	Tetrachloroethene	230	189.00–191.00	1/10/2006
MD21-06-64204	21-25262	Tetrachloroethene	1500	79.00–81.00	1/11/2006
MD21-06-64203	21-25262	Tetrachloroethene	190	294.00–296.00	1/11/2006
MD21-06-64205	21-25262	Tetrachloroethene	230	234.00–236.00	1/20/2006
MD21-06-64206	21-25262	Tetrachloroethene	490	114.00–116.00	1/23/2006
MD21-06-67521	21-25262	Tetrachloroethene	160	290.00–292.00	4/17/2006
MD21-06-67523	21-25262	Tetrachloroethene	170	189.00–191.00	4/18/2006
MD21-06-67522	21-25262	Tetrachloroethene	170	234.00–236.00	4/18/2006
MD21-06-67524	21-25262	Tetrachloroethene	200	114.00–116.00	4/19/2006
MD21-06-67525	21-25262	Tetrachloroethene	590	79.00–81.00	4/20/2006
MD21-06-64201	21-25262	Toluene	11	370.00–380.00	1/5/2006
MD21-06-64203	21-25262	Toluene	11	294.00–296.00	1/11/2006
MD21-06-64205	21-25262	Toluene	9	234.00–236.00	1/20/2006
MD21-06-64206	21-25262	Toluene	3.4	114.00–116.00	1/23/2006
MD21-06-67521	21-25262	Toluene	19	290.00–292.00	4/17/2006
MD21-06-67523	21-25262	Toluene	39	189.00–191.00	4/18/2006
MD21-06-67522	21-25262	Toluene	17	234.00–236.00	4/18/2006
MD21-06-67524	21-25262	Toluene	7.5	114.00–116.00	4/19/2006
MD21-06-67525	21-25262	Toluene	12	79.00–81.00	4/20/2006
MD21-06-64203	21-25262	Trichloro-1,2,2-trifluoroethane[1,1,2-]	15	294.00–296.00	1/11/2006
MD21-06-64205	21-25262	Trichloro-1,2,2-trifluoroethane[1,1,2-]	34	234.00–236.00	1/20/2006
MD21-06-64206	21-25262	Trichloro-1,2,2-trifluoroethane[1,1,2-]	9.1	114.00–116.00	1/23/2006
MD21-06-67521	21-25262	Trichloro-1,2,2-trifluoroethane[1,1,2-]	20	290.00–292.00	4/17/2006
MD21-06-67523	21-25262	Trichloro-1,2,2-trifluoroethane[1,1,2-]	8.5	189.00–191.00	4/18/2006
MD21-06-67522	21-25262	Trichloro-1,2,2-trifluoroethane[1,1,2-]	10	234.00–236.00	4/18/2006

Table 4.1-4 (continued)

Sample ID	Location ID	Analyte	Sample Concentration	Depth (ft)	Collection Date
MD21-06-64202	21-25262	Trichloroethane[1,1,1-]	29	189.00–191.00	1/10/2006
MD21-06-64204	21-25262	Trichloroethane[1,1,1-]	30	79.00–81.00	1/11/2006
MD21-06-64203	21-25262	Trichloroethane[1,1,1-]	13	294.00–296.00	1/11/2006
MD21-06-64205	21-25262	Trichloroethane[1,1,1-]	32	234.00–236.00	1/20/2006
MD21-06-64206	21-25262	Trichloroethane[1,1,1-]	28	114.00–116.00	1/23/2006
MD21-06-67521	21-25262	Trichloroethane[1,1,1-]	34	290.00–292.00	4/17/2006
MD21-06-67523	21-25262	Trichloroethane[1,1,1-]	16	189.00–191.00	4/18/2006
MD21-06-67522	21-25262	Trichloroethane[1,1,1-]	14	234.00–236.00	4/18/2006
MD21-06-67525	21-25262	Trichloroethane[1,1,1-]	12	79.00–81.00	4/20/2006
MD21-06-64203	21-25262	Trichloroethane[1,1,2-]	5	294.00–296.00	1/11/2006
MD21-06-64205	21-25262	Trichloroethane[1,1,2-]	5.4	234.00–236.00	1/20/2006
MD21-06-67521	21-25262	Trichloroethane[1,1,2-]	10	290.00–292.00	4/17/2006
MD21-06-64201	21-25262	Trichloroethene	4.4	370.00–380.00	1/5/2006
MD21-06-64202	21-25262	Trichloroethene	390	189.00–191.00	1/10/2006
MD21-06-64204	21-25262	Trichloroethene	780	79.00–81.00	1/11/2006
MD21-06-64203	21-25262	Trichloroethene	420	294.00–296.00	1/11/2006
MD21-06-64205	21-25262	Trichloroethene	690	234.00–236.00	1/20/2006
MD21-06-64206	21-25262	Trichloroethene	400	114.00–116.00	1/23/2006
MD21-06-67521	21-25262	Trichloroethene	490	290.00–292.00	4/17/2006
MD21-06-67523	21-25262	Trichloroethene	270	189.00–191.00	4/18/2006
MD21-06-67522	21-25262	Trichloroethene	300	234.00–236.00	4/18/2006
MD21-06-67524	21-25262	Trichloroethene	92	114.00–116.00	4/19/2006
MD21-06-67525	21-25262	Trichloroethene	320	79.00–81.00	4/20/2006
MD21-06-64201	21-25262	Trimethylbenzene[1,2,4-]	6.4 (J)	370.00–380.00	1/5/2006
MD21-06-64201	21-25262	Xylene (total)	4	370.00–380.00	1/5/2006
MD21-06-64203	21-25262	Xylene (total)	11 (J)	294.00–296.00	1/11/2006
MD21-06-64201	21-25262	Xylene[1,2-]	1.2	370.00–380.00	1/5/2006
MD21-06-67521	21-25262	Xylene[1,3-]+Xylene[1,4-]	5.4	290.00–292.00	4/17/2006
MD21-06-67523	21-25262	Xylene[1,3-]+Xylene[1,4-]	4.5	189.00–191.00	4/18/2006
MD21-06-67522	21-25262	Xylene[1,3-]+Xylene[1,4-]	5.1	234.00–236.00	4/18/2006
MD21-06-64211	21-25263	Acetone	51	350.00–354.00	4/7/2006
MD21-06-64213	21-25263	Acetone	56	228.50–230.50	4/12/2006
MD21-06-64212	21-25263	Acetone	280	311.00–313.00	4/12/2006
MD21-06-64216	21-25263	Acetone	52	79.00–81.00	4/13/2006
MD21-06-64214	21-25263	Acetone	53	172.00–174.00	4/13/2006
MD21-06-64211	21-25263	Butanone[2-]	6.8	350.00–354.00	4/7/2006
MD21-06-64213	21-25263	Butanone[2-]	10	228.50–230.50	4/12/2006
MD21-06-64212	21-25263	Butanone[2-]	38	311.00–313.00	4/12/2006
MD21-06-64216	21-25263	Butanone[2-]	10	79.00–81.00	4/13/2006
MD21-06-64214	21-25263	Butanone[2-]	8	172.00–174.00	4/13/2006

Table 4.1-4 (continued)

Sample ID	Location ID	Analyte	Sample Concentration	Depth (ft)	Collection Date
MD21-06-64211	21-25263	Carbon disulfide	42	350.00–354.00	4/7/2006
MD21-06-64212	21-25263	Carbon disulfide	4.4	311.00–313.00	4/12/2006
MD21-06-64216	21-25263	Carbon disulfide	6.2	79.00–81.00	4/13/2006
MD21-06-64211	21-25263	Carbon tetrachloride	420	350.00–354.00	4/7/2006
MD21-06-64213	21-25263	Carbon tetrachloride	10	228.50–230.50	4/12/2006
MD21-06-64216	21-25263	Carbon tetrachloride	8.6	79.00–81.00	4/13/2006
MD21-06-64214	21-25263	Carbon tetrachloride	15	172.00–174.00	4/13/2006
MD21-06-64211	21-25263	Chloroform	1400	350.00–354.00	4/7/2006
MD21-06-64213	21-25263	Chloroform	96	228.50–230.50	4/12/2006
MD21-06-64212	21-25263	Chloroform	63	311.00–313.00	4/12/2006
MD21-06-64216	21-25263	Chloroform	87	79.00–81.00	4/13/2006
MD21-06-64214	21-25263	Chloroform	150	172.00–174.00	4/13/2006
MD21-06-64211	21-25263	Dichlorobenzene[1,4-]	35	350.00–354.00	4/7/2006
MD21-06-64211	21-25263	Dichloroethane[1,1-]	39	350.00–354.00	4/7/2006
MD21-06-64211	21-25263	Dichloroethane[1,2-]	150	350.00–354.00	4/7/2006
MD21-06-64213	21-25263	Dichloroethane[1,2-]	14	228.50–230.50	4/12/2006
MD21-06-64212	21-25263	Dichloroethane[1,2-]	12	311.00–313.00	4/12/2006
MD21-06-64216	21-25263	Dichloroethane[1,2-]	12	79.00–81.00	4/13/2006
MD21-06-64214	21-25263	Dichloroethane[1,2-]	11	172.00–174.00	4/13/2006
MD21-06-64211	21-25263	Dichloroethene[1,1-]	170	350.00–354.00	4/7/2006
MD21-06-64212	21-25263	Dichloroethene[1,1-]	4.8	311.00–313.00	4/12/2006
MD21-06-64211	21-25263	Dichloroethene[cis-1,2-]	7.6	350.00–354.00	4/7/2006
MD21-06-64211	21-25263	Dichloropropane[1,2-]	11	350.00–354.00	4/7/2006
MD21-06-64211	21-25263	Hexane	8.9	350.00–354.00	4/7/2006
MD21-06-64212	21-25263	Hexane	3.6	311.00–313.00	4/12/2006
MD21-06-64211	21-25263	Methylene chloride	**2200***	350.00–354.00	4/7/2006
MD21-06-64213	21-25263	Methylene chloride	35	228.50–230.50	4/12/2006
MD21-06-64212	21-25263	Methylene chloride	41	311.00–313.00	4/12/2006
MD21-06-64216	21-25263	Methylene chloride	16	79.00–81.00	4/13/2006
MD21-06-64214	21-25263	Methylene chloride	28	172.00–174.00	4/13/2006
MD21-06-64212	21-25263	n-Heptane	11	311.00–313.00	4/12/2006
MD21-06-64213	21-25263	Propylene	8	228.50–230.50	4/12/2006
MD21-06-64212	21-25263	Propylene	7.3	311.00–313.00	4/12/2006
MD21-06-64216	21-25263	Propylene	9.8	79.00–81.00	4/13/2006
MD21-06-64214	21-25263	Propylene	9.2	172.00–174.00	4/13/2006
MD21-06-64213	21-25263	Styrene	8.8	228.50–230.50	4/12/2006
MD21-06-64212	21-25263	Styrene	12	311.00–313.00	4/12/2006
MD21-06-64216	21-25263	Styrene	16	79.00–81.00	4/13/2006
MD21-06-64214	21-25263	Styrene	7.2	172.00–174.00	4/13/2006
MD21-06-64211	21-25263	Tetrachloroethene	320	350.00–354.00	4/7/2006

Table 4.1-4 (continued)

Sample ID	Location ID	Analyte	Sample Concentration	Depth (ft)	Collection Date
MD21-06-64213	21-25263	Tetrachloroethene	91	228.50–230.50	4/12/2006
MD21-06-64212	21-25263	Tetrachloroethene	57	311.00–313.00	4/12/2006
MD21-06-64216	21-25263	Tetrachloroethene	120	79.00–81.00	4/13/2006
MD21-06-64214	21-25263	Tetrachloroethene	140	172.00–174.00	4/13/2006
MD21-06-64211	21-25263	Toluene	13	350.00–354.00	4/7/2006
MD21-06-64213	21-25263	Toluene	81	228.50–230.50	4/12/2006
MD21-06-64212	21-25263	Toluene	190	311.00–313.00	4/12/2006
MD21-06-64216	21-25263	Toluene	68	79.00–81.00	4/13/2006
MD21-06-64214	21-25263	Toluene	31	172.00–174.00	4/13/2006
MD21-06-64211	21-25263	Trichloro-1,2,2-trifluoroethane[1,1,2-]	40	350.00–354.00	4/7/2006
MD21-06-64211	21-25263	Trichloroethane[1,1,1-]	1500	350.00–354.00	4/7/2006
MD21-06-64213	21-25263	Trichloroethane[1,1,1-]	63	228.50–230.50	4/12/2006
MD21-06-64212	21-25263	Trichloroethane[1,1,1-]	37	311.00–313.00	4/12/2006
MD21-06-64216	21-25263	Trichloroethane[1,1,1-]	67	79.00–81.00	4/13/2006
MD21-06-64214	21-25263	Trichloroethane[1,1,1-]	33	172.00–174.00	4/13/2006
MD21-06-64211	21-25263	Trichloroethane[1,1,2-]	61	350.00–354.00	4/7/2006
MD21-06-64211	21-25263	Trichloroethene	2000	350.00–354.00	4/7/2006
MD21-06-64213	21-25263	Trichloroethene	170	228.50–230.50	4/12/2006
MD21-06-64212	21-25263	Trichloroethene	130	311.00–313.00	4/12/2006
MD21-06-64216	21-25263	Trichloroethene	120	79.00–81.00	4/13/2006
MD21-06-64214	21-25263	Trichloroethene	170	172.00–174.00	4/13/2006
MD21-06-64221	21-25264	Acetone	65	350.00–354.00	2/3/2006
MD21-06-64222	21-25264	Acetone	270	325.00–327.00	2/7/2006
MD21-06-64224	21-25264	Acetone	39	69.00–71.00	2/8/2006
MD21-06-64223	21-25264	Acetone	47	224.00–226.00	2/8/2006
MD21-06-64225	21-25264	Acetone	140	152.00–154.00	2/10/2006
MD21-06-67537	21-25264	Acetone	130	325.00–327.00	4/27/2006
MD21-06-67538	21-25264	Acetone	46	224.00–226.00	4/28/2006
MD21-06-67540	21-25264	Acetone	36	69.00–71.00	5/2/2006
MD21-06-67539	21-25264	Acetone	65	152.00–154.00	5/2/2006
MD21-06-64221	21-25264	Benzene	2.8	350.00–354.00	2/3/2006
MD21-06-64222	21-25264	Benzene	6.8	325.00–327.00	2/7/2006
MD21-06-64221	21-25264	Butanone[2-]	11	350.00–354.00	2/3/2006
MD21-06-64222	21-25264	Butanone[2-]	22	325.00–327.00	2/7/2006
MD21-06-64224	21-25264	Butanone[2-]	6.9	69.00–71.00	2/8/2006
MD21-06-64225	21-25264	Butanone[2-]	9	152.00–154.00	2/10/2006
MD21-06-67537	21-25264	Butanone[2-]	14	325.00–327.00	4/27/2006
MD21-06-67539	21-25264	Butanone[2-]	8.8	152.00–154.00	5/2/2006
MD21-06-64221	21-25264	Carbon disulfide	3.7	350.00–354.00	2/3/2006
MD21-06-64224	21-25264	Carbon disulfide	8.4	69.00–71.00	2/8/2006

Table 4.1-4 (continued)

Sample ID	Location ID	Analyte	Sample Concentration	Depth (ft)	Collection Date
MD21-06-64221	21-25264	Carbon tetrachloride	26	350.00–354.00	2/3/2006
MD21-06-64222	21-25264	Carbon tetrachloride	57	325.00–327.00	2/7/2006
MD21-06-64224	21-25264	Carbon tetrachloride	72 (J)	69.00–71.00	2/8/2006
MD21-06-64223	21-25264	Carbon tetrachloride	15 (J)	224.00–226.00	2/8/2006
MD21-06-64225	21-25264	Carbon tetrachloride	170 (J)	152.00–154.00	2/10/2006
MD21-06-67537	21-25264	Carbon tetrachloride	55	325.00–327.00	4/27/2006
MD21-06-67538	21-25264	Carbon tetrachloride	200	224.00–226.00	4/28/2006
MD21-06-67539	21-25264	Carbon tetrachloride	15	152.00–154.00	5/2/2006
MD21-06-64222	21-25264	Chloroethane	10	325.00–327.00	2/7/2006
MD21-06-64221	21-25264	Chloroform	56	350.00–354.00	2/3/2006
MD21-06-64222	21-25264	Chloroform	140	325.00–327.00	2/7/2006
MD21-06-64224	21-25264	Chloroform	160	69.00–71.00	2/8/2006
MD21-06-64223	21-25264	Chloroform	58	224.00–226.00	2/8/2006
MD21-06-64225	21-25264	Chloroform	330	152.00–154.00	2/10/2006
MD21-06-67537	21-25264	Chloroform	140	325.00–327.00	4/27/2006
MD21-06-67538	21-25264	Chloroform	390	224.00–226.00	4/28/2006
MD21-06-67539	21-25264	Chloroform	44	152.00–154.00	5/2/2006
MD21-06-64221	21-25264	Chloromethane	1.2	350.00–354.00	2/3/2006
MD21-06-64222	21-25264	Chloromethane	2.9	325.00–327.00	2/7/2006
MD21-06-64225	21-25264	Cyclohexane	13	152.00–154.00	2/10/2006
MD21-06-64221	21-25264	Dichlorodifluoromethane	2.8	350.00–354.00	2/3/2006
MD21-06-64222	21-25264	Dichlorodifluoromethane	5.2	325.00–327.00	2/7/2006
MD21-06-64224	21-25264	Dichlorodifluoromethane	7.8	69.00–71.00	2/8/2006
MD21-06-64225	21-25264	Dichlorodifluoromethane	9.2	152.00–154.00	2/10/2006
MD21-06-67538	21-25264	Dichlorodifluoromethane	6.1	224.00–226.00	4/28/2006
MD21-06-67537	21-25264	Dichloroethane[1,1-]	4.2	325.00–327.00	4/27/2006
MD21-06-64221	21-25264	Dichloroethane[1,2-]	1.8	350.00–354.00	2/3/2006
MD21-06-67537	21-25264	Dichloroethane[1,2-]	26	325.00–327.00	4/27/2006
MD21-06-67538	21-25264	Dichloroethane[1,2-]	16	224.00–226.00	4/28/2006
MD21-06-67540	21-25264	Dichloroethane[1,2-]	7.6	69.00–71.00	5/2/2006
MD21-06-67539	21-25264	Dichloroethane[1,2-]	20	152.00–154.00	5/2/2006
MD21-06-67537	21-25264	Dichloroethene[1,1-]	17	325.00–327.00	4/27/2006
MD21-06-67538	21-25264	Dichloroethene[1,1-]	8.6	224.00–226.00	4/28/2006
MD21-06-67539	21-25264	Dichloroethene[1,1-]	16	152.00–154.00	5/2/2006
MD21-06-67537	21-25264	Dichloropropane[1,2-]	7.4	325.00–327.00	4/27/2006
MD21-06-67539	21-25264	Dichloropropane[1,2-]	5.1	152.00–154.00	5/2/2006
MD21-06-67537	21-25264	Ethyltoluene[4-]	21	325.00–327.00	4/27/2006
MD21-06-67539	21-25264	Ethyltoluene[4-]	17	152.00–154.00	5/2/2006
MD21-06-64221	21-25264	Methylene chloride	97	350.00–354.00	2/3/2006
MD21-06-64222	21-25264	Methylene chloride	94	325.00–327.00	2/7/2006

Table 4.1-4 (continued)

Sample ID	Location ID	Analyte	Sample Concentration	Depth (ft)	Collection Date
MD21-06-64224	21-25264	Methylene chloride	66	69.00–71.00	2/8/2006
MD21-06-64223	21-25264	Methylene chloride	46	224.00–226.00	2/8/2006
MD21-06-64225	21-25264	Methylene chloride	390	152.00–154.00	2/10/2006
MD21-06-67537	21-25264	Methylene chloride	140	325.00–327.00	4/27/2006
MD21-06-67538	21-25264	Methylene chloride	510	224.00–226.00	4/28/2006
MD21-06-67539	21-25264	Methylene chloride	36	152.00–154.00	5/2/2006
MD21-06-64225	21-25264	n-Heptane	47	152.00–154.00	2/10/2006
MD21-06-64221	21-25264	Styrene	5.1	350.00–354.00	2/3/2006
MD21-06-64222	21-25264	Styrene	140	325.00–327.00	2/7/2006
MD21-06-64224	21-25264	Styrene	9.1	69.00–71.00	2/8/2006
MD21-06-64225	21-25264	Styrene	19	152.00–154.00	2/10/2006
MD21-06-67537	21-25264	Styrene	22	325.00–327.00	4/27/2006
MD21-06-67539	21-25264	Styrene	27	152.00–154.00	5/2/2006
MD21-06-64221	21-25264	Tetrachloroethene	31	350.00–354.00	2/3/2006
MD21-06-64222	21-25264	Tetrachloroethene	520	325.00–327.00	2/7/2006
MD21-06-64224	21-25264	Tetrachloroethene	730	69.00–71.00	2/8/2006
MD21-06-64223	21-25264	Tetrachloroethene	150	224.00–226.00	2/8/2006
MD21-06-64225	21-25264	Tetrachloroethene	320	152.00–154.00	2/10/2006
MD21-06-67537	21-25264	Tetrachloroethene	260	325.00–327.00	4/27/2006
MD21-06-67538	21-25264	Tetrachloroethene	440	224.00–226.00	4/28/2006
MD21-06-67540	21-25264	Tetrachloroethene	24	69.00–71.00	5/2/2006
MD21-06-67539	21-25264	Tetrachloroethene	91	152.00–154.00	5/2/2006
MD21-06-64221	21-25264	Toluene	4.8	350.00–354.00	2/3/2006
MD21-06-64222	21-25264	Toluene	17	325.00–327.00	2/7/2006
MD21-06-64224	21-25264	Toluene	3.6	69.00–71.00	2/8/2006
MD21-06-64223	21-25264	Toluene	4.6	224.00–226.00	2/8/2006
MD21-06-64225	21-25264	Toluene	1900	152.00–154.00	2/10/2006
MD21-06-67537	21-25264	Toluene	17	325.00–327.00	4/27/2006
MD21-06-67538	21-25264	Toluene	3.5	224.00–226.00	4/28/2006
MD21-06-67540	21-25264	Toluene	6.7	69.00–71.00	5/2/2006
MD21-06-67539	21-25264	Toluene	16	152.00–154.00	5/2/2006
MD21-06-67538	21-25264	Trichloro-1,2,2-trifluoroethane[1,1,2-]	8.1	224.00–226.00	4/28/2006
MD21-06-64222	21-25264	Trichloroethane[1,1,1-]	8.2	325.00–327.00	2/7/2006
MD21-06-64224	21-25264	Trichloroethane[1,1,1-]	10	69.00–71.00	2/8/2006
MD21-06-64225	21-25264	Trichloroethane[1,1,1-]	17	152.00–154.00	2/10/2006
MD21-06-67537	21-25264	Trichloroethane[1,1,1-]	110	325.00–327.00	4/27/2006
MD21-06-67538	21-25264	Trichloroethane[1,1,1-]	26	224.00–226.00	4/28/2006
MD21-06-67540	21-25264	Trichloroethane[1,1,1-]	33	69.00–71.00	5/2/2006
MD21-06-67539	21-25264	Trichloroethane[1,1,1-]	67	152.00–154.00	5/2/2006
MD21-06-64221	21-25264	Trichloroethene	59	350.00–354.00	2/3/2006

Table 4.1-4 (continued)

Sample ID	Location ID	Analyte	Sample Concentration	Depth (ft)	Collection Date
MD21-06-64222	21-25264	Trichloroethene	240	325.00–327.00	2/7/2006
MD21-06-64224	21-25264	Trichloroethene	320	69.00–71.00	2/8/2006
MD21-06-64223	21-25264	Trichloroethene	77	224.00–226.00	2/8/2006
MD21-06-64225	21-25264	Trichloroethene	400	152.00–154.00	2/10/2006
MD21-06-67537	21-25264	Trichloroethene	320	325.00–327.00	4/27/2006
MD21-06-67538	21-25264	Trichloroethene	530	224.00–226.00	4/28/2006
MD21-06-67540	21-25264	Trichloroethene	6	69.00–71.00	5/2/2006
MD21-06-67539	21-25264	Trichloroethene	200	152.00–154.00	5/2/2006
MD21-06-67537	21-25264	Trimethylbenzene[1,2,4-]	15 (J-)	325.00–327.00	4/27/2006
MD21-06-67539	21-25264	Trimethylbenzene[1,2,4-]	14 (J-)	152.00–154.00	5/2/2006
MD21-06-64221	21-25264	Vinyl chloride	0.63	350.00–354.00	2/3/2006
MD21-06-64222	21-25264	Vinyl chloride	1.4	325.00–327.00	2/7/2006
MD21-06-64221	21-25264	Xylene (total)	2.6	350.00–354.00	2/3/2006
MD21-06-64221	21-25264	Xylene[1,2-]	2.6	350.00–354.00	2/3/2006
MD21-06-67537	21-25264	Xylene[1,2-]	17	325.00–327.00	4/27/2006
MD21-06-67539	21-25264	Xylene[1,2-]	13	152.00–154.00	5/2/2006
MD21-06-67537	21-25264	Xylene[1,3-]+Xylene[1,4-]	9.5	325.00–327.00	4/27/2006
MD21-06-67539	21-25264	Xylene[1,3-]+Xylene[1,4-]	8.7	152.00–154.00	5/2/2006

Notes: See Appendix A for data qualifier definitions. Units are $\mu g/kg^3$.

* Bold indicates above Tier I screening level.

Table 4.1-5
Summary of Tritium Detected in Pore Gas at
Consolidated Unit 21-016(a)-99 (Phase I Sampling)

Sample ID	Location ID	Depth (ft)	Sample Concentration* ($\mu g/m^3$)	Collection Date
MD21-06-64201	21-25262	370.00–380.00	19,118	1/5/2006
MD21-06-64202	21-25262	189.00–191.00	9670	1/10/2006
MD21-06-64203	21-25262	294.00–296.00	13,700	1/11/2006
MD21-06-64204	21-25262	79.00–81.00	6680	1/11/2006
MD21-06-64205	21-25262	234.00–236.00	5150	1/20/2006
MD21-06-64206	21-25262	114.00–116.00	2290	1/23/2006
MD21-06-67521	21-25262	290.00–292.00	6330	4/17/2006
MD21-06-67522	21-25262	234.00–236.00	2870	4/18/2006
MD21-06-67523	21-25262	189.00–191.00	2190	4/18/2006
MD21-06-67524	21-25262	114.00–116.00	1970	4/19/2006
MD21-06-67525	21-25262	79.00–81.00	2090	4/20/2006
MD21-06-64211	21-25263	350.00–354.00	1810	4/7/2006

Table 4.1-5 (continued)

Sample ID	Location ID	Depth (ft)	Sample Concentration (μg/m³)	Collection Date
MD21-06-64212	21-25263	311.00–313.00	6100	4/12/2006
MD21-06-64213	21-25263	228.50–230.50	4300	4/12/2006
MD21-06-64214	21-25263	172.00–174.00	5300	4/13/2006
MD21-06-64216	21-25263	79.00–81.00	4300	4/13/2006
MD21-06-67529	21-25263	311.00–313.00	9470	5/19/2006
MD21-06-67530	21-25263	228.50–230.50	2300	5/22/2006
MD21-06-67531	21-25263	172.00–174.00	4830	5/22/2006
MD21-06-67532	21-25263	79.00–81.00	13,760	5/23/2006
MD21-06-64221	21-25264	350.00–354.00	2310	2/3/2006
MD21-06-64222	21-25264	325.00–327.00	5200	2/7/2006
MD21-06-64223	21-25264	224.00–226.00	23,900	2/8/2006
MD21-06-64224	21-25264	69.00–71.00	20,300	2/8/2006
MD21-06-64225	21-25264	152.00–154.00	61200	2/10/2006
MD21-06-67537	21-25264	325.00–327.00	5070	4/27/2006
MD21-06-67538	21-25264	224.00–226.00	63,100	4/28/2006
MD21-06-67539	21-25264	152.00–154.00	73,400	5/2/2006
MD21-06-67540	21-25264	69.00–71.00	14,070	5/2/2006

* Values are those reported in the investigation report and are biased low by a factor of approximately 2 due to a systematic conversion error discovered after the IR was published (Marczak 2009, 106500).

Table 4.1-6
Summary of VOCs Detected in Pore Gas at Consolidated Unit 21-016(a)-99 (Phase II Sampling)

Sample ID	Location ID	Depth (ft)	Acetone	Benzene	Bromodichloromethane	Bromoform	Butanol[1-]	Butanone[2-]	Carbon Disulfide	Carbon Tetrachloride	Chlorodibromomethane	Chloroform	Cyclohexane	Dichlorobenzene[1,4-]	Dichlorodifluoromethane	Dichloroethane[1,2-]	Dichloroethene[1,1-]	Dichloroethene[cis-1,2-]	Ethylbenzene	Ethyltoluene[4-]	Hexane	Hexanone[2-]	Methyl-2-pentanone[4-]	Methylene Chloride	n-Heptane	Propanol[2-]	Propylene	Tetrachloroethene	Tetrahydrofuran	Toluene	Trichloro-1,2,2-trifluoroethane[1,1,2-]	Trichloroethane[1,1,1-]	Trichloroethane[1,1,2-]	Trichloroethene	Trimethylbenzene[1,3,5-]	Xylene[1,2-]	Xylene[1,3-]+Xylene[1,4-]
MD21-07-6804	21-603059	77.5–82.5	49	4.8	—[a]	10	—	4.3	12	62	—	840	—	—	6	—	—	—	—	—	8.5	—	—	6.4	6.2	—	140	1300	—	6.6	7.2	20	—	710	—	—	5.6
MD21-07-6803	21-603059	187.5–192.5	290	5.5	6.4	—	—	55	5.1	150	—	630	3.4	—	7.4	—	7.4	—	—	—	6.8	—	3.6 (J)	43	4.7	11	160	340	—	6.6	19	29	—	480	—	—	—
MD21-07-6802	21-603059	292.5–297.5	150	3.2	9.2	—	—	8.4	5.1	620	—	680	—	—	9.2	5.2	27	5	—	—	—	—	—	380	—	—	—	200	2.7	6	55	26	27	1100	—	—	—
MD21-07-6801	21-603059	229.5–234.5	560	8.2	7.8	—	21	170	15	290	—	630	3.4	—	7.4	—	12	3.6	11	24	7.7	86	21	68	12	9	210	250	3.7	25	30	31	—	580	11	16	35
MD21-07-6800	21-603059	372.5–377.5	130	3.3	7.3	—	—	3.7	2.8	350	—	540	—	—	—	11	33	—	—	—	—	—	—	**720**[b]	—	—	40	78	—	5.1	16	8.2	81	800	—	—	—
MD21-07-6807	21-603058	67.5–72.5	120	3.9	—	10	—	40	3.8	63	—	450	—	—	5.1	—	—	—	—	—	4.3	29	8.7	7.2	3.9	—	85	650	—	5.7	—	23	—	270	—	—	4.9
MD21-07-6808	21-603058	160.5–165.5	35	8.4	—	—	42	17	12	100	9.7	330	—	—	6.9	—	—	—	7.5	—	36	—	5.5	52	24	—	690	210	4.9	14	8.5	17	—	280	—	9.9	21
MD21-07-6809	21-603058	217.0–222.0	200	4.9	6.4	—	—	69	5.7	400	—	680	—	6	6.8	5	9.7	—	—	—	8.3	37	8.9	420	6.4	—	150	270	—	5.8	26	36	13	790	—	—	4.8
MD21-07-6810	21-603058	242.5–247.5	170	6.4	—	16	—	20	6.2	400	7.3	720	—	10	5.5	9.8	11	4.1	—	—	9.4	—	4.5	**860**	6.3	—	160	120	—	9.6	19	22	19	810	—	—	5
MD21-07-6811	21-603058	339.5–344.5	160	—	—	—	—	21	—	6.4	—	110	—	—	—	3.9	—	—	—	—	—	—	—	280	—	—	12	—	—	—	—	—	6.3	47	—	—	—
MD21-07-6813	21-25264	67.5–72.5	17	—	—	12	—	—	3	160	—	350	3.2	—	10	3.8	—	—	—	—	—	—	—	250	—	—	—	1500	—	5.1	—	18	—	660	—	—	—
MD21-07-6814	21-25264	150.5–155.5	68	2.9	—	—	—	12	—	160	—	310	4.5	—	8.6	4	—	—	—	—	—	—	—	300	—	—	—	360	—	6.8	—	19	—	420	—	—	—
MD21-07-6815	21-25264	222.5–227.5	18	—	—	—	—	3.4	3.8	180	—	300	3.6	—	6.6	6.3	—	—	—	—	—	—	—	420	—	—	—	160	—	—	6.7 (J)	16	—	380	—	—	—
MD21-07-6816	21-25264	323.0–328.0	19	—	—	—	—	—	—	190	—	270	—	—	4.9	5.9	4	—	—	—	—	—	—	590	—	—	—	79	—	5.8	—	5.4	—	320	—	—	5.7
MD21-07-6817	21-25264	349.5–354.5	44	—	—	—	—	5.6	—	230	—	550	—	—	—	15	6.8	—	—	—	—	—	—	**1300**	—	—	—	26	—	9.4	—	—	—	460	—	—	8.4

Notes: See Appendix A for data qualifier definitions. Results are in µg/m^3.

[a] — = Not detected.

[b] Bold indicates above Tier I screening level.

Table 4.1-7
Summary of Tritium Detected in Pore Gas at
Consolidated Unit 21-016(a)-99 (Phase II Sampling)

Sample ID	Location ID	Depth (ft)	Tritium*
MD21-07-6808	21-603058	160.5–165.5	816.721
MD21-07-6813	21-25264	67.5–72.5	318.847
MD21-07-6814	21-25264	150.5–155.5	9385.24
MD21-07-6815	21-25264	222.5–227.5	206.76
MD21-07-6817	21-25264	349.5–354.5	243.472
MD21-07-6803	21-603059	187.5–192.5	379.253
MD21-07-6801	21-603059	229.5–234.5	1585.58
MD21-07-6802	21-603059	292.5–297.5	273.951
MD21-07-6800	21-603059	372.5–377.5	197.9

Note: Results are in pCi/L

* Values are those reported in the investigation report and are biased low by a factor of approximately 2 due to a systematic conversion error discovered after the IR was published (Marczak 2009, 106500).

Table 4.1-8
Summary of Inorganic Chemicals Detected in 2009 Core Samples (Phase III Sampling)

Sample ID	Location ID	Depth (ft bgs)	Collection Date	Media	Bromide	Chloride	Fluoride	Nitrate	Perchlorate	Sulfate
Qbt2/Qbt3 Background Value[a]					**na**[b]	**94.6**	**na**	**na**	**na**	**157**
Qbt1v Background Value[a]					**na**	**446**	**na**	**na**	**na**	**142**
Qbt1g/Qct/Qbo/Qbog Background Value[a]					**na**	**474**	**na**	**na**	**na**	**1120**
Tp Background Value[a]					**na**	**na**	**na**	**na**	**na**	**na**
Residential SSL[c]					**na**	**na**	**4690**	**125,000**	**54.8**	**na**
Industrial SSL[c]					**na**	**na**	**68,100**	**1,820,000**	**795**	**na**
Construction Worker SSL[c]					**na**	**na**	**18,600**	**496,000**	**217**	**na**
MD21-09-4633	21-25262	420–425	4/13/2009	Qbo	NA[d]	4.08	NA	3.97	0.0114	NA
MD21-09-4634	21-25262	470–473	4/16/2009	Qbo	NA	3.46	NA	1.8	—[e]	NA
MD21-09-4635	21-25262	520–525	4/20/2009	Qbo	NA	3.69(J-)	NA	1.67	—	NA
MD21-09-4637	21-25262	570–575	4/20/2009	Qbo	NA	3.48(J-)	NA	—	—	NA
MD21-09-4638	21-25262	620–625	4/22/2009	Qbo	NA	3.75	NA	1.06(J)	0.000702(J+)	NA
MD21-09-4639	21-25262	670–675	4/22/2009	Qbog	NA	5.66	NA	1.7	0.00101(J+)	NA
MD21-09-4640	21-25262	675–680	4/22/2009	Qbog	—	7.3	—	1.95	—	NA
MD21-09-8973	21-25262	693.7–695.1	5/4/2009	Tp	NA	—	3.48(J)	—	0.0114	5.36
MD21-09-11593	21-607955	22–23	9/15/2009	Qbt3	—	32	—	—	0.00027(J)	—
MD21-09-11594	21-607955	70–75	9/21/2009	Qbt3	—	4.7	1.4(J-)	—	0.00041(J)	—
MD21-09-11595	21-607955	89–94	9/21/2009	Qbt3	—	6.1	1.3(J-)	—	0.0007	—
MD21-09-11596	21-607955	114–118	9/22/2009	Qbt2	—	10	1.8(J-)	—	0.00099	—
MD21-09-11597	21-607955	126–131	9/22/2009	Qbt2	—	7.1	1.7(J-)	—	0.0014	—
MD21-09-11598	21-607955	143–148	9/22/2009	Qbt2	—	4.4	3.1(J-)	—	0.00028(J)	—

Table 4.1-8 (continued)

Sample ID	Location ID	Depth (ft bgs)	Collection Date	Media	Bromide	Chloride	Fluoride	Nitrate	Perchlorate	Sulfate
Qbt2/Qbt3 Background Value[a]					**na**[b]	**94.6**	**na**	**na**	**na**	**157**
Qbt1v Background Value[a]					**na**	**446**	**na**	**na**	**na**	**142**
Qbt1g/Qct/Qbo/Qbog Background Value[a]					**na**	**474**	**na**	**na**	**na**	**1120**
Tp Background Value[a]					**na**	**na**	**na**	**na**	**na**	**na**
Residential SSL[c]					**na**	**na**	**4690**	**125,000**	**54.8**	**na**
Industrial SSL[c]					**na**	**na**	**68,100**	**1,820,000**	**795**	**na**
Construction Worker SSL[c]					**na**	**na**	**18,600**	**496,000**	**217**	**na**
MD21-09-11599	21-607955	155–160	9/24/2009	Qbt2	—	18	6.3(J-)	5.1(J)	0.0052	—
MD21-09-11600	21-607955	174–179	9/24/2009	Qbt1v	—	9.6	5.5(J-)	—	0.00083	—
MD21-09-11601	21-607955	180–185	9/24/2009	Qbt1v	—	12	9.3(J-)	—	0.00071	—
MD21-09-11602	21-607955	194–197	9/27/2009	Qbt1v	1.6(J)	—	10(J-)	—	0.00056(J-)	—
MD21-09-11603	21-607955	227–230	9/27/2009	Qbt1v	2.4	16(J)	12(J-)	—	0.0039(J-)	—
MD21-09-11604	21-607955	287–290.5	9/28/2009	Qbt1g	—	—	6.2(J-)	0.51(J)	0.00039(J)	—
MD21-09-11605	21-607955	327–329.8	9/29/2009	Qct	—	3.06(J-)	3.31(J-)	—	—	—
MD21-09-11606	21-607955	362–364.8	9/30/2009	Qbo	—	2.82(J-)	2.65(J-)	—	—	—
MD21-09-11607	21-607955	418.58–421.68	10/1/2009	Qbo	—	3.01(J-)	1.92(J-)	1.02 J-)	—	—
MD21-09-11608	21-607955	461–464.6	10/2/2009	Qbo	—	2.62(J-)	1.56(J-)	—	—	—
MD21-09-11609	21-607955	500–505	10/3/2009	Qbo	—	2.4(J-)	1.28(J-)	1.09(J-)	—	—
MD21-09-11610	21-607955	562–565	10/6/2009	Qbo	—	—	0.938(J-)	—	—	—
MD21-09-11611	21-607955	618.31–621.66	10/7/2009	Qbo	—	—	1.46(J-)	—	—	—
MD21-09-11612	21-607955	666–668.4	10/8/2009	Qbo	—	—	2.12(J-)	—	—	—
MD21-09-11613	21-607955	722.74–726.04	10/9/2009	Tp	—	—	1.39(J-)	—	—	—

Table 4.1-8 (continued)

Sample ID	Location ID	Depth (ft bgs)	Collection Date	Media	Bromide	Chloride	Fluoride	Nitrate	Perchlorate	Sulfate
Qbt2/Qbt3 Background Value[a]					**na**[b]	**94.6**	**na**	**na**	**na**	**157**
Qbt1v Background Value[a]					**na**	**446**	**na**	**na**	**na**	**142**
Qbt1g/Qct/Qbo/Qbog Background Value[a]					**na**	**474**	**na**	**na**	**na**	**1120**
Tp Background Value[a]					**na**	**na**	**na**	**na**	**na**	**na**
Residential SSL[c]					**na**	**na**	**4690**	**125,000**	**54.8**	**na**
Industrial SSL[c]					**na**	**na**	**68,100**	**1,820,000**	**795**	**na**
Construction Worker SSL[c]					**na**	**na**	**18,600**	**496,000**	**217**	**na**
MD21-09-11614	21-607955	762.04–766.24	10/10/2009	Tp	—	—	5.5(J-)	—	—	3.8(J-)
MD21-09-11615	21-607955	799.56–801.86	10/12/2009	Tp	—	—	—	—	—	8.8(J-)
MD21-09-11616	21-607955	874–877	10/13/2009	Tp	—	2.06(J)	1.35	—	—	2.84(J)
MD21-09-11617	21-607955	950–953	10/15/2009	Tp	—	1.99(J)	0.74(J)	—	—	2.67(J)

Notes: See Appendix A for data qualifier definitions. Units are in mg/kg.

[a] Background values from LANL (1998, 059730).

[b] na = Not available.

[c] SSLs from NMED 2006, 092513, unless otherwise indicated.

[d] NA = Not analyzed.

[e] — = Not detected.

Table 4.1-9
Summary of Organic Chemicals Detected in 2009 Core Samples (Phase III Sampling)

Sample ID	Location ID	Depth (ft bgs)	Collection Date	Media	Acetone	Toluene
Residential SSL[a]					**67,500**	**5,570**
Industrial SSL[a]					**851,000**	**57,900**
Construction Worker SSL[a]					**263,000**	**21,100**
MD21-09-4640	21-25262	675–680	4/22/2009	Qbog	0.00227(J)	—[b]
MD21-09-11604	21-607955	287–290.5	9/28/2009	Qbt1g	0.01(J)	—
MD21-09-11607	21-607955	418.58–421.68	10/1/2009	Qbo	0.00333(J)	0.000349(J)
MD21-09-11610	21-607955	562–565	10/6/2009	Qbo	0.00215(J)	—
MD21-09-11615	21-607955	799.56–801.86	10/12/2009	Tp	0.053(J)	—
MD21-09-11616	21-607955	874–877	10/13/2009	Tp	0.0182	—

Notes: See Appendix A for data qualifier definitions. Units are in mg/kg.

[a] SSLs from NMED 2006, 092513, unless otherwise indicated.

[b] — = Not detected.

Table 4.1-10
Summary of Radionuclides Detected in 2009 Core Samples (Phase III Sampling)

Sample ID	Location ID	Depth (ft bgs)	Collection Date	Media	Strontium-90	Tritium
Qbo Background Value					**na**[a]	**na**
Qbt1v Background Value					**na**	**na**
Qbt2 Background Value					**na**	**na**
Qbt3 Background Value					**na**	**na**
Tp Background Value					**na**	**na**
Residential SAL[b]					**46,900**	**750**
Industrial SAL[b]					**681,000**	**440,000**
Construction Worker SAL[b]					**186,000**	**320,000**
MD21-09-4633	21-25262	420–425	4/13/2009	Qbo	—[c]	0.594186
MD21-09-4637	21-25262	570–575	4/20/2009	Qbo	—	0.0736364
MD21-09-11594	21-607955	70–75	9/21/2009	Qbt3	—	0.160633(J-)
MD21-09-11595	21-607955	89–94	9/21/2009	Qbt3	—	0.181122(J-)
MD21-09-11596	21-607955	114–118	9/22/2009	Qbt2	—	0.959186(J-)
MD21-09-11597	21-607955	126–131	9/22/2009	Qbt2	—	0.861817(J-)
MD21-09-11598	21-607955	143–148	9/22/2009	Qbt2	—	1.01038(J-)
MD21-09-11599	21-607955	155–160	9/24/2009	Qbt2	—	3.37489(J-)
MD21-09-11600	21-607955	174–179	9/24/2009	Qbt1v	0.78	0.0729089(J-)
MD21-09-11601	21-607955	180–185	9/24/2009	Qbt1v	—	0.0648116(J-)
MD21-09-11603	21-607955	227–230	9/27/2009	Qbt1v	—	1.58349(J-)
MD21-09-11615	21-607955	799.56–801.86	10/12/2009	Tp	0.348	—

Notes: See Appendix A for data qualifier definitions. Units are in pCi/g.

[a] na = Not available.

[b] SALs from LANL (2005, 088493).

[c] — = Not detected.

Table 4.1-11
Summary of VOCs Detected in Pore-Gas Samples at MDA T Vapor-Monitoring Well 21-25262, April–November 2009

Sample ID	Depth (ft)	Collection Date	Acetone	Benzene	Bromodichloromethane	Bromomethane	Butadiene[1,3-]	Butanol[1-]	Butanone[2-]	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Cyclohexane	Dichlorobenzene[1,4-]	Dichlorodifluoromethane	Dichloroethane[1,2-]	Dichloroethene[1,1-]	Dichloroethene[cis-1,2-]	Hexane	Methanol	Methylene Chloride	Propylene	Tetrachloroethene	Tetrahydrofuran	Toluene	Trichloro-1,2,2-trifluoroethane[1,1,2-]	Trichloroethane[1,1,1-]	Trichloroethane[1,1,2-]	Trichloroethene
April 2009																													
MD21-09-4674	679.25–680.75	4/23/2009	51	—[a]	—	—	—	**82(J)**[b]	6	—	11	270	—	—	—	—	9.9	—	—	—	340	8.9	—	—	5.6	—	—	35	85
June 2009																													
MD21-09-10355	80–85	6/12/2009	—	—	—	—	—	—	—	3.2	57	930	—	—	4.7	—	—	—	—	—	3.8	—	1500	—	—	—	17	—	580
MD21-09-10356	115–120	6/12/2009	—	—	—	—	—	—	—	—	41	330	—	—	4.5	—	—	—	—	—	5.1	—	360	—	—	—	11	—	240
MD21-09-10357	232–237	6/12/2009	37	—	—	—	—	—	4.4	—	56	160	—	—	—	—	—	—	—	—	8.1	—	57	—	—	—	5.8	—	100
MD21-09-10358	295–300	6/12/2009	26	—	—	—	—	—	2.8	—	170	160	—	—	—	—	5.7	—	—	—	67	—	39	—	—	10	6.3	—	280
MD21-09-10359	329.5–334.5	6/12/2009	12	—	7.8	—	—	—	—	6.2	490	450	—	—	6	6	20	3.6	—	—	320	—	97	—	—	27	16	24	820
MD21-09-10360	375–380	6/12/2009	24	—	7.9	—	—	—	4.1	—	410	570	—	—	—	9.4	36	—	—	—	680[c]	—	63	—	3.9	14	8.3	55	880
MD21-09-10361	472–478	6/1220/09	14	—	—	—	—	—	—	4.9	340	830	—	—	—	16	61	—	—	—	1300	—	41	—	4.5	9.3	—	110	880
MD21-09-10362	572–577	6/12/2009	—	—	—	—	—	—	—	5.2	160	910	—	—	—	15	63	—	—	—	1500	—	17	—	—	—	—	66	670
MD21-09-10363	686–691	6/15/2009	22	—	—	—	—	—	6	3.5	—	74	—	—	—	—	—	—	—	—	77	9.2	—	—	—	—	—	14	19
July 2009																													
MD21-09-11294	80–85	7/14/2009	—	—	—	—	—	—	—	3.6	45	730	—	—	4.9	—	—	—	—	—	—	—	1300	—	—	—	12	—	450
MD21-09-11295	115–120	7/14/2009	—	—	—	—	—	—	—	—	44	380	—	—	4.9	—	—	—	—	—	5.8	—	430	—	—	—	12	—	270
MD21-09-11296	232–237	7/14/2009	—	—	6.3	—	—	—	—	3.2	220	520	—	—	7.4	—	6	—	—	—	30	—	240	—	—	21	21	—	390
MD21-09-11297	295–300	7/14/2009	—	—	11	—	—	—	—	8.2	830	740	—	—	11	5.1	29	4.5	—	—	310	—	210	—	—	56	31	16	1300
MD21-09-11298	329.5–334.5	7/14/2009	—	—	14	—	—	—	—	4.6	780	720	—	—	8.4	9.4	35	4.8	—	—	520	—	180	—	—	50	25	44	1400
MD21-09-11299	375–380	7/14/2009	—	3.9	15	—	—	—	—	5.1	700	930	—	7.4	5.1	17	62	5.5	—	—	1200	—	120	3.7	—	26	14	100	1500
MD21-09-11300	472–478	7/14/2009	—	—	—	—	—	36	—	19	600	1400	—	—	—	27	100	—	—	—	2100	—	74	—	—	18	—	200	1500
MD21-09-11301	572–577	7/14/2009	—	—	—	—	—	—	—	—	190	1000	—	—	—	17	71	—	—	—	1700	13	23	—	—	—	—	85	780
MD21-09-11302	686–691	7/14/2009	—	13	—	—	7.4	—	—	4.8	—	120	—	—	—	—	7.1	—	5.6	—	140	120	—	—	—	—	—	21	34

Table 4.1-11 (continued)

Sample ID	Depth (ft)	Collection Date	Acetone	Benzene	Bromodichloromethane	Bromomethane	Butadiene[1,3-]	Butanol[1-]	Butanone[2-]	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Cyclohexane	Dichlorobenzene[1,4-]	Dichlorodifluoromethane	Dichloroethane[1,2-]	Dichloroethene[1,1-]	Dichloroethene[cis-1,2-]	Hexane	Methanol	Methylene Chloride	Propylene	Tetrachloroethene	Tetrahydrofuran	Toluene	Trichloro-1,2,2-trifluoroethane[1,1,2-]	Trichloroethane[1,1,1-]	Trichloroethane[1,1,2-]	Trichloroethene
August 2009																													
MD21-09-11488	80–85	8/11/2009	20	—	—	—	—	12(J)	—	3.9	53	880	—	—	4.5	—	—	—	—	—	3.1	—	1600	—	8.9	—	14	—	560
MD21-09-11489	115–120	8/11/2009	20	—	—	—	—	—	3.6	—	38	350	—	—	—	—	—	—	—	—	4.4	—	400	—	5.9	—	10	—	240
MD21-09-11490	232–237	8/11/2009	16	—	—	—	—	—	—	—	17	110	—	—	—	—	—	—	—	—	7.2	—	29	—	12	—	—	—	52
MD21-09-11491	295–300	8/13/2009	13	—	8.5	—	—	—	3	11	680	600	—	—	9	—	22	—	—	—	210	—	180	—	8.8	54	24	14	1200
MD21-09-11492	329.5–334.5	8/13/2009	8.9	—	9.6	—	—	—	—	12	640	590	—	—	6.5	7.1	28	4.2	—	—	400	—	160	—	4.9	50	20	40	1200
MD21-09-11493	375–380	8/11/2009	37	—	—	—	—	—	3.4	4.6	190	310	—	—	—	5.6	18	—	—	—	400	—	33	—	**18**	8.6	—	35	470
MD21-09-11494	472–478	8/13/2009	—	4.8	9.1	—	—	62(J)	4.9	14	460	1100	—	9.3	—	—	78	—	—	—	1500	—	70	—	8	16	—	170	1300
MD21-09-11495	572–577	8/14/2009	—	—	—	—	—	—	—	—	260	**1400**	—	—	—	20	94	—	—	—	2100	—	30	—	7.6	—	—	120	1100
MD21-09-11496	686–691	8/14/2009	18	—	—	—	—	—	3.9	3.6	8.6	220	—	—	—	—	17	—	—	—	260	—	—	—	—	—	—	37	70
September 2009																													
MD21-09-12612	80–85	9/17/2009	—	—	—	—	—	—	—	3.3	64	1000	**3.4**	—	4.9	—	—	—	—	—	3	—	2200	—	—	—	18	—	680
MD21-09-12613	115–120	9/17/2009	22	—	—	—	—	—	—	—	46	400	—	—	4.3	—	—	—	—	—	6.3	—	510	—	**18**	—	13	—	290
MD21-09-12614	232–237	9/17/2009	43	—	—	—	—	—	4.2	—	170	430	—	—	6.2	—	4.4	—	—	—	22	—	210	—	—	18	17	—	310
MD21-09-12615	295–300	9/17/2009	27	—	6	—	—	—	6	—	390	410	—	—	6.3	—	14	—	—	—	140	—	110	—	—	28	14	10	730
MD21-09-12616	329.5–334.5	9/17/2009	—	—	7	—	—	—	—	13	380	400	—	—	5	5.2	17	—	—	—	280	—	100	—	3.4	26	12	30	760
MD21-09-12617	375–380	9/1720/09	28	—	8.9	—	—	—	3.6	—	410	590	—	—	—	10	38	4	—	**120(J)**	710	—	80	—	5	18	8.3	73	1000
MD21-09-12618	472–478	9/17/2009	—	3.4	6.1	—	—	—	—	5.3	300	740	—	5.7	—	14	55	—	—	—	1100	—	46	—	4.2	9.6	—	120	840
MD21-09-12619	572–577	9/17/2009	36	—	—	—	—	—	**7.5**	—	160	950	—	—	—	15	63	—	—	—	1600	—	20	—	—	—	—	88	720
MD21-09-12620	686–691	9/17/2009	24	—	—	—	—	—	3	—	—	120	—	—	—	—	11	—	—	—	140	—	—	—	—	—	—	21	44
October 2009																													
MD21-10-32	80–85	10/19/2009	13	—	—	—	—	—	—	5.4	64	1300	—	—	6.8	—	—	—	—	NA	5.2	—	**2800**	—	—	11	17	—	890
MD21-10-33	115–120	10/19/2009	31	—	—	—	—	—	4.6	—	54	620	—	—	6.1	—	—	—	—	NA	9.6	—	780	—	—	9.9	15	—	460
MD21-10-34	232–237	10/19/2009	37	—	7	—	—	—	3.5	4.2	280	710	—	—	9.8	—	13	—	—	NA	55	—	350	—	—	44	25	—	620
MD21-10-35	295–300	10/19/2009	46	—	12	—	—	—	5.9	7.3	770	790	—	—	**14**	4.5	39	4.6(J+)	—	NA	350	—	230	—	—	**88**	28	18	1600
MD21-10-36	329.5–334.5	10/19/2009	**76**	3.1	14	—	—	—	7.2	3.5	760	770	—	—	10	9	44	**5.5(J+)**	—	NA	660	—	190	—	5.2	76	22	54	1600
MD21-10-37	375–380	10/19/2009	45	—	**15**	—	—	—	—	—	600	890	—	—	—	16	75	—	—	NA	1300	—	120	—	6.9	42	12	120	**1700**
MD21-10-38	472–478	10/19/2009	23	6.7	13	—	—	—	—	6.9	510	**1400**	—	11	—	**27**	**130**	—	—	NA	**2400**	—	84	—	7.4	27	—	**240**	**1700**
MD21-10-39	572–577	10/19/2009	—	—	—	—	—	—	—	—	230	1200	—	**13**	—	21	65(J)	—	—	NA	1800(J-)	—	32	—	—	—	—	130	1000
MD21-10-40	686–691	10/19/2009	31	—	—	**6.7**	—	—	6.4	—	16	290	—	—	—	—	20(J)	—	—	NA	190(J-)	—	—	—	—	—	—	43	98

Table 4.1-11 (continued)

Sample ID	Depth (ft)	Collection Date	Acetone	Benzene	Bromodichloromethane	Bromomethane	Butadiene[1,3-]	Butanol[1-]	Butanone[2-]	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Cyclohexane	Dichlorobenzene[1,4-]	Dichlorodifluoromethane	Dichloroethane[1,2-]	Dichloroethene[1,1-]	Dichloroethene[cis-1,2-]	Hexane	Methanol	Methylene Chloride	Propylene	Tetrachloroethene	Tetrahydrofuran	Toluene	Trichloro-1,2,2-trifluoroethane[1,1,2-]	Trichloroethane[1,1,1-]	Trichloroethane[1,1,2-]	Trichloroethene
November 2009																													
MD21-10-5007	80–85	11/17/2009	—	—	—	—	—	—	—	—	61	1100	3.2(J)	—	5.5	—	—	—	5.5	NA	—	—	2200	—	4.6	—	17	—	600
MD21-10-5008	115–120	11/17/2009	—	—	—	—	—	—	—	—	48	470	—	—	5	—	—	—	—	NA	7.2	—	510	—	—	—	14	—	290
MD21-10-5009	232–237	11/17/2009	—	—	—	—	—	—	—	—	140	380	—	—	5.7	—	4.5	—	—	NA	24	—	170	—	—	14(J-)	14	—	270
MD21-10-5010	295–300	11/17/2009	—	—	—	—	—	—	—	—	320	360	—	—	5.8	—	12	—	—	NA	110	—	92	—	—	21(J-)	12	—	590
MD21-10-5011	329.5–334.5	11/17/2009	9.7	—	8.2	—	—	—	—	—	410	430	—	—	6.3	5.6	19	—	—	NA	320	—	100	—	3.3	26(J-)	12	31	760
MD21-10-5012	375–380	11/17/2009	9.2	—	7.4	—	—	—	—	—	310	490	—	—	—	7.9	32	—	—	NA	630	—	55	—	3.7	13(J-)	6.2	55	740
MD21-10-5013	472–478	11/17/2009	—	—	—	—	—	—	—	9.7	360	960	—	—	—	16	73	—	—	NA	1600	—	51	—	—	—	—	140	1000
MD21-10-5014	572–577	11/17/2009	—	—	—	—	—	—	—	—	100	740	—	—	—	12	48	—	—	NA	1400	—	13	—	—	—	—	66	500
MD21-10-5015	686–691	11/17/2009	25	—	—	—	—	—	3.8	—	6.4	120	—	—	—	—	10	—	—	NA	160	—	—	—	—	—	—	20	43

Notes: See Appendix A for data qualifier definitions. Organic chemical detections per sample; standard unit of measure = μg/m^3.

[a] — = Not detected.

[b] Bold values represent the maximum concentrations.

[c] Shaded values indicate above Tier I screening level.

Table 4.1-12
Summary of VOCs Detected in Pore-Gas Samples at MDA T Vapor-Monitoring Well 21-25264, October 2007–November 2009

Sample ID	Depth (ft)	Collection Date	Acetone	Benzene	Bromodichloromethane	Bromoform	Butanone[2-]	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Cyclohexane	Dichlorobenzene[1,4-]	Dichlorodifluoromethane	Dichloroethane[1,2-]	Dichloroethene[1,1-]	Ethanol	Methylene Chloride	Propylene	Tetrachloroethene	Tetrahydrofuran	Toluene	Trichloro-1,2,2-trifluoroethane[1,1,2-]	Trichloroethane[1,1,1-]	Trichloroethane[1,1,2-]	Trichloroethene	Xylene[1,3-]+Xylene[1,4-]
October 2007																										
MD21-07-6813	67.5–72.5	10/19/2007	17	—[a]	—	**12**[b]	—	3	160	350	3.2	—	10	3.8	—	—	250	—	1500	—	5.1	—	18	—	660	—
MD21-07-6814	150.5–155.5	10/19/2007	68	2.9	—	—	12	—	160	310	4.5	—	8.6	4	—	—	300	—	360	—	6.8	—	19	—	420	—
MD21-07-6815	222.5–227.5	10/19/2007	18	—	—	—	3.4	3.8	180	300	3.6	—	6.6	6.3	—	—	420	—	160	—	—	6.7(J)	16	—	380	—
MD21-07-6816	323–328	10/19/2007	19	—	—	—	—	—	190	270	—	—	4.9	5.9	4	—	590	—	79	—	5.8	—	5.4	—	320	5.7
MD21-07-6817	349.5–354.5	10/19/2007	44	—	—	—	5.6	—	230	550	—	—	—	15	6.8	—	1300[c]	—	26	—	9.4	—	—	—	460	**8.4**
February 2008																										
MD21-08-10511	67.5–72.5	2/14/2008	—	—	—	—	—	—	160	410	—	—	13	—	—	—	36	—	2500	—	—	—	29	—	980	—
MD21-08-10512	150.5–155.5	2/14/2008	12	—	—	—	—	5.7	170	360	5.4	—	10	—	—	—	220	—	440	—	—	7	24	—	520	—
MD21-08-10513	222.5–227.5	2/14/2008	—	—	6	—	—	6	310	450	5.6	—	9.9	9.3	5	—	640	—	190	—	—	9	21	4.6(J)	620	—
MD21-08-10514	323–328	2/14/2008	—	—	—	—	—	—	370	540	—	—	7	12	8.3	—	1200	—	81	—	—	10	9.3	—	620	—
MD21-08-10515	349.5–354.5	2/14/2008	—	—	—	—	—	—	460	1000	—	—	—	30	**15**	—	2400	—	34	—	—	—	—	—	890	—
May 2008																										
MD21-08-12247	67.5–72.5	5/7/2008	—	—	—	—	—	—	140	410	—	—	13	—	—	—	24	—	2300	**5.2**	—	—	26	—	880	—
MD21-08-12248	150.5–155.5	5/7/2008	73	—	—	—	**15**	—	150	360	5.4	—	9.7	—	—	10	190	—	400	—	—	—	23	—	480	—
MD21-08-12249	222.5–227.5	5/7/2008	—	—	—	—	—	3.2	290	470	6.2	—	8.6	9.3	6.6	—	590	—	190	—	3.4	11	21	—	580	—
MD21-08-12250	323–328	5/7/2008	**110**	—	—	—	11	—	340	570	—	6	—	13	7.6	—	1200	—	77	—	—	11	8.6	—	600	—
MD21-08-12251	349.5–354.5	5/7/2008	—	—	—	—	—	—	360	940	—	—	—	24	12	—	1900	—	32	—	**16**	—	—	—	720	—
September 2008																										
MD21-08-14828	67.5–72.5	9/23/2008	—	—	—	—	—	—	150	400	—	—	13	—	—	—	19	—	2700	—	—	—	27	—	1000	—
MD21-08-14829	150.5–155.5	9/23/2008	—	—	—	—	—	—	170	380	—	—	9.8	3.8	—	—	200	6.9	420	—	—	7.7	26	—	530	—
MD21-08-14830	222.5–227.5	9/23/2008	—	—	—	—	—	—	320	480	—	—	9.8	11	5.2	—	660	13	200	—	—	10	24	—	640	—
MD21-08-14831	323–328	9/23/2008	—	—	—	—	—	—	430	680	—	—	8.1	20	8	—	1500	19	70	—	—	11	11	—	770	—
MD21-08-14832	349.5–354.5	9/23/2008	—	—	—	—	—	—	**500**	**1100**	—	—	—	**36**	13	—	**2500**	21	31	—	—	—	—	—	920	—

Table 4.1-12 (continued)

Sample ID	Depth (ft)	Collection Date	Acetone	Benzene	Bromodichloromethane	Bromoform	Butanone[2-]	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Cyclohexane	Dichlorobenzene[1,4-]	Dichlorodifluoromethane	Dichloroethane[1,2-]	Dichloroethene[1,1-]	Ethanol	Methylene Chloride	Propylene	Tetrachloroethene	Tetrahydrofuran	Toluene	Trichloro-1,2,2-trifluoroethane[1,1,2-]	Trichloroethane[1,1,1-]	Trichloroethane[1,1,2-]	Trichloroethene	Xylene[1,3-]+Xylene[1,4-]
February 2009																										
MD21-09-3564	67.5–72.5	2/4/2009	—	—	—	—	—	—	170	500	—	—	15	—	—	—	20	—	2900	—	—	—	31	—	1200	—
MD21-09-3563	150.5–155.5	2/4/2009	14	2.8	—	—	4.3	—	200	450	5.8	—	13	3.8	—	—	240	9.4	520	—	—	8	29	—	620	—
MD21-09-3560	222.5–227.5	2/3/2009	23	—	**7.7**	—	3.5	—	370	580	**7.6**	—	11	12	6.7	—	810	16	240	—	—	12	28	5	760	—
MD21-09-3561	323–328	2/3/2009	—	—	—	—	—	—	**500**	840	—	—	9.2	22	11	—	1800	**22**	90	—	—	**16**	12	—	850	—
MD21-09-3562	349.5–354.5	2/3/2009	—	—	—	—	—	—	390	950	—	—	—	25	13	—	2000	19	30	—	—	—	—	—	740	—
April 2009																										
MD21-09-7164	67.5–72.5	4/16/2009	—	—	—	—	—	—	150	490	—	—	**19**	—	—	—	21	—	3500	—	—	—	24	—	1200	—
MD21-09-7166	150.5–155.5	4/17/2009	—	—	—	—	—	—	170	430	6.1	—	11	—	8.5	—	190	—	480	—	—	7.8	19	—	580	—
MD21-09-7168	222.5–227.5	4/17/2009	—	—	6.8	—	—	—	320	570	7.3	—	9	10	11	—	690	—	230	—	—	13	18	—	710	—
MD21-09-7167	323–328	4/17/2009	—	—	—	—	—	—	410	760	—	—	—	18	12	—	1500	—	78	—	—	14	—	—	810	—
MD21-09-7165	349.5–354.5	4/16/2009	22	—	—	—	6.4	—	410	1000	—	**11**	—	28	14	—	2200	—	39	—	—	—	—	—	880	—
June 2009																										
MD21-09-10344	67.5–72.5	6/17/2009	11	—	—	—	—	—	77	230	—	—	8.4	—	—	—	9.5	—	1500	—	—	—	15	—	590	—
MD21-09-10345	150.5–155.5	6/17/2009	10	—	—	—	—	—	95	230	—	—	7.1	—	—	—	110	—	270	—	7.3	—	15	—	320	—
MD21-09-10346	222.5–227.5	6/17/2009	10	—	—	—	—	—	140	250	—	—	5.9	5.4	—	—	350	—	94	—	8	—	11	—	310	—
MD21-09-10347	323–328	6/17/2009	12	—	—	—	—	—	140	260	—	—	4.4	6.6	—	—	540	—	23	—	6.8	—	—	—	260	—
MD21-09-10348	349.5–354.5	6/17/2009	34	—	—	—	5	—	130	330	—	—	—	9.6	4.4	—	740	—	10	—	5.9	—	—	—	270	—
July 2009																										
MD21-09-11283	67.5–72.5	7/17/2009	—	—	—	—	—	—	180	500	—	—	17	—	—	—	18	—	**3600**	—	—	—	**32**	—	**1300**	—
MD21-09-11284	150.5–155.5	7/17/2009	—	—	—	—	—	—	210	470	—	—	14	3.9	—	—	210	—	570	—	—	8.3	30	—	650	—
MD21-09-11285	222.5–227.5	7/17/2009	—	—	—	—	—	—	230	420	—	—	8.6	9.1	3.8	—	570	—	160	—	—	—	17	—	510	—
MD21-09-11286	323–328	7/17/2009	—	—	—	—	9.6	—	310	570	—	5.2(J)	7.1	16	7.8	—	1100	—	50	—	—	8.3	7.1	—	570	—
MD21-09-11287	349.5–354.5	7/17/2009	—	—	—	—	—	—	180	460	—	—	—	17	6.1	—	1000	—	18	—	—	—	—	—	370	—

Table 4.1-12 (continued)

Sample ID	Depth (ft)	Collection Date	Acetone	Benzene	Bromodichloromethane	Bromoform	Butanone[2-]	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Cyclohexane	Dichlorobenzene[1,4-]	Dichlorodifluoromethane	Dichloroethane[1,2-]	Dichloroethene[1,1-]	Ethanol	Methylene Chloride	Propylene	Tetrachloroethene	Tetrahydrofuran	Toluene	Trichloro-1,2,2-trifluoroethane[1,1,2-]	Trichloroethane[1,1,1-]	Trichloroethane[1,1,2-]	Trichloroethene	Xylene[1,3-]+Xylene[1,4-]
August 2009																										
MD21-09-11477	67.5–72.5	8/19/2009	—	**11**	—	—	—	8.2	140	380	—	—	12	—	—	—	14	—	3400	—	**16**	—	24	—	1000	—
MD21-09-11478	150.5–155.5	8/19/2009	45	—	—	—	5.4	—	160	370	4.8	—	9.9	—	—	—	150	—	500	—	—	8.2	23	—	540	—
MD21-09-11479	222.5–227.5	8/1920/09	—	—	5.9	—	—	4.3	340	510	6.3	—	9.2	10	5.7	—	630	—	230	—	—	12	23	—	690	—
MD21-09-11480	323–328	8/19/2009	—	—	—	—	—	—	460	730	—	—	—	18	8.7	—	1300	—	76	—	—	15	10	—	800	—
MD21-09-11481	349.5–354.5	8/19/2009	—	—	—	—	—	—	430	950	—	—	—	26	13	—	1900	—	36	—	—	—	—	—	840	—
September 2009																										
MD21-09-12605	67.5–72.5	9/16/2009	—	—	—	—	4.3	**41**	100	310	—	—	11	—	—	—	11	—	2600	—	—	—	19	—	840	—
MD21-09-12606	150.5–155.5	9/16/2009	12	—	—	—	2.9	—	140	330	4.3	—	8.6	—	—	—	140	—	460	—	—	7.4	22	—	500	—
MD21-09-12607	222.5–227.5	9/16/2009	17	—	—	—	2.9	—	210	360	3.9	—	6.8	7.7	3.9	—	480	—	160	—	—	8.2	16	—	480	—
MD21-09-12608	323–328	9/16/2009	10	—	—	—	—	—	230	420	—	—	5.1	11	5.6	—	800	—	42	—	—	7.9	5.7	—	440	—
MD21-09-12609	349.5–354.5	9/16/2009	—	—	—	—	—	—	200	520	—	—	—	16	7.2	—	1100	—	19	—	—	—	—	—	440	—
October 2009																										
MD21-10-25	67.5–72.5	10/16/2009	9	—	—	—	—	—	87	320	—	—	9.3	—	—	—	16	—	2400	—	—	8.1	16	—	910	—
MD21-10-26	150.5–155.5	10/16/2009	57	—	—	—	5	—	140	390	4.4	—	11	—	5.1	—	210	—	500	—	—	10	21	—	600	—
MD21-10-27	222.5–227.5	10/16/2009	48	—	—	—	5.3	—	130	320	—	—	5.8	7.2	4.3	21	560	—	110	—	—	—	9.9	—	380	—
MD21-10-28	323–328	10/16/2009	12	—	—	—	—	—	110	280	—	—	—	8.2	4.6	**25**	720	—	22	—	—	—	—	—	290	—
MD21-10-29	349.5–354.5	10/16/2009	11	—	—	—	—	—	73	280	—	—	—	11	4.2	23	860	—	9.1	—	—	—	—	—	240	—
November 2009																										
MD21-10-5002	67.5–72.5	11/19/2009	—	—	—	—	—	—	120	350	—	—	12	—	—	—	13	—	3000	—	—	—	21	—	900	—
MD21-10-5003	150.5–155.5	11/19/2009	12	—	—	—	—	—	150	370	4.2	—	11	—	—	—	160	—	460	—	—	—	21	—	480	—
MD21-10-5004	222.5–227.5	11/19/2009	15	—	—	—	3.5	—	310	520	5.1	—	11	9.5	5.6	—	700	—	200	—	—	12	22	**5.6**	650	—
MD21-10-5005	323–328	11/19/2009	17	—	—	—	—	—	400	750	—	—	8.3	17	10	—	1500	—	65	—	—	13	9.4	—	750	—
MD21-10-5006	349.5–354.5	11/19/2009	—	—	—	—	—	—	370	950	—	—	—	24	13	—	2200	—	32	—	—	—	—	—	770	—

Notes: See Appendix A for data qualifier definitions.

Organic chemical detections per sample, standard unit of measure = $\mu g/m^3$.

[a] — = Not detected.

[b] Bold values represent the maximum concentrations.

[c] Shaded values indicate above Tier I screening level.

Table 4.1-13
Summary of VOCs Detected in Pore Gas Samples at MDA T Vapor-Monitoring Well 21-603058, November 2007–November 2009

Sample ID	Depth (ft)	Collection Date	Acetone	Benzene	Bromodichloromethane	Bromoform	Butanol[1-]	Butanone[2-]	Carbon Disulfide	Carbon Tetrachloride	Chlorodibromomethane	Chloroform	Dichlorobenzene[1,2-]	Dichlorobenzene[1,4-]	Dichlorodifluoromethane	Dichloroethane[1,2-]	Dichloroethene[1,1-]	Dichloroethene[cis-1,2-]	Ethanol	Ethylbenzene	Hexane	Hexanone[2-]	Methyl-2-pentanone[4-]	Methylene Chloride	n-Heptane	Propylene	Tetrachloroethene	Tetrahydrofuran	Toluene	Trichloro-1,2,2-trifluoroethane[1,1,2-]	Trichloroethane[1,1,1-]	Trichloroethane[1,1,2-]	Trichloroethene	Xylene[1,2-]	Xylene[1,3-]+Xylene[1,4-]
November 2007																																		
MD21-07-6807	67.5–72.5	10/30/2007	120	3.9	—[a]	10	—	40	3.8	63	—	450	—	—	5.1	—	—	—	—	—	4.3	29	8.7	7.2	3.9	85	650	—	5.7	—	23	—	270	—	4.9
MD21-07-6808	160.5–165.5	10/30/2007	35	**8.4**[b]	—	—	42	17	12	100	**9.7**	330	—	—	6.9	—	—	—	—	**7.5**	**36**	—	5.5	52	**24**	**690**	210	**4.9**	**14**	8.5	17	—	280	**9.9**	**21**
MD21-07-6809	217–222	10/30/2007	**200**	4.9	**6.4**	—	—	**69**	5.7	400	—	680	—	6	6.8	5	9.7	—	—	—	8.3	**37**	**8.9**	420	6.4	150	270	—	5.8	26	36	13	790	—	4.8
MD21-07-6810	242.5–247.5	10/30/2007	170	6.4	—	**16**	—	20	6.2	400	7.3	720	—	10	5.5	9.8	11	4.1	—	—	9.4	—	4.5	860[c]	6.3	160	120	—	9.6	19	22	19	810	—	5
MD21-07-6811	339.5–344.5	10/30/2007	160	—	—	—	—	21	—	6.4	—	110	—	—	—	3.9	—	—	—	—	—	—	—	280	—	12	—	—	—	—	—	6.3	47	—	—
February 2008																																		
MD21-08-10504	67.5–72.5	2/13/2008	—	—	—	—	—	—	2.7	78	—	540	—	—	5.5	—	—	—	—	—	—	—	—	5.1	—	—	750	—	—	7.2	26	—	340	—	—
MD21-08-10505	160.5–165.5	2/13/2008	21	—	—	—	—	13	9.7	240	—	680	—	—	7.8	—	4.1	—	—	—	—	—	—	120	—	49	410	—	—	16	38	—	640	—	—
MD21-08-10506	217–222	2/13/2008	—	—	—	—	—	—	4.1	380	—	690	—	—	7.2	6	9.5	—	—	—	—	—	—	430	—	—	220	—	**14**	24	33	—	830	—	—
MD21-08-10507	242.5–247.5	2/13/2008	—	—	—	—	—	—	7.1	**760**	—	1200	—	12	9.4	—	19	—	—	—	—	—	—	1500	—	—	180	—	—	**43**	40	**45**	**1500**	—	—
MD21-08-10508	339.5–344.5	2/13/2008	—	—	—	—	—	—	—	530	—	1000	—	14	—	24	15	—	—	—	—	—	—	1900	—	—	76	—	—	26	12	26	930	—	—
May 2008																																		
MD21-08-12242	67.5–72.5	5/9/2008	—	—	—	—	52	—	6.3	61	—	490	—	—	—	—	—	—	12	—	—	—	—	6.8	—	—	640	2.7	—	—	21	—	300	—	—
MD21-08-12244	217–222	5/8/2008	—	—	—	—	—	—	—	370	—	740	—	5.5	6.5	5.4	9.9	—	15	—	—	—	—	380	—	—	240	—	—	27	35	13	780	—	—
MD21-08-12245	242.5–247.5	5/8/2008	—	4.1	—	—	—	—	5.6	610	—	1100	—	14	8	17	17	**6**	55	—	—	—	—	1200	—	—	170	3.8	—	37	32	42	1200	—	—
MD21-08-12246	339.5–344.5	5/8/2008	—	—	—	—	—	—	—	510	—	1100	—	18	—	24	15	—	42	—	—	—	—	1800	—	—	61	—	—	28	11	31	1000	—	—
September 2008																																		
MD21-08-14813	67.5–72.5	9/24/2008	—	—	—	—	—	5	—	68	—	510	—	—	5	—	—	—	—	—	—	—	—	5.3	—	—	680	—	—	—	22	—	320	—	—
MD21-08-14814	217–222	9/24/2008	—	—	—	—	—	—	—	380	—	720	—	—	7.3	6.3	9.1	—	—	—	—	—	—	440	—	11	230	—	—	23	35	14	820	—	—
MD21-08-14815	242.5–247.5	9/24/2008	—	—	—	—	**70**	7	9.2	440	—	770	—	9.1(J)	6.2	15	11	5.7	7.3	—	—	—	—	1000	—	10	120	—	—	24	23	33	990	—	—
MD21-08-14816	339.5–344.5	9/24/2008	—	—	—	—	—	—	—	520	—	1000	—	13(J)	—	24	17	—	—	—	—	—	—	2000	—	16	52	—	—	23	11	25	990	—	—
February 2009																																		
MD21-09-3553	67.5–72.5	2/5/2009	—	—	—	—	—	—	—	80	—	590	—	—	6	—	—	—	—	—	—	—	—	6.6	—	—	790	—	—	7.9	24	—	370	—	—
MD21-09-3554	217–222	2/5/2009	—	—	6.2	—	—	—	—	480	—	890	—	6.1	8.5	7.7	13	—	14	—	—	—	—	540	—	—	300	—	—	29	**42**	17	1000	—	—
MD21-09-3555	242.5–247.5	2/5/2009	—	—	—	—	—	—	—	740	—	1300	—	14	—	22	19	—	46	—	—	—	—	1500	—	—	200	—	—	37	41	**45**	1400	—	—
MD21-09-3556	339.5–344.5	2/5/2009	—	—	—	—	—	—	—	750	—	**1500**	—	**25**	—	**33**	**22**	—	43	—	—	—	—	**2400**	—	—	96	—	—	33	17	42	1400	—	—

Table 4.1-13 (continued)

Sample ID	Depth (ft)	Collection Date	Acetone	Benzene	Bromodichloromethane	Bromoform	Butanol[1-]	Butanone[2-]	Carbon Disulfide	Carbon Tetrachloride	Chlorodibromomethane	Chloroform	Dichlorobenzene[1,2-]	Dichlorobenzene[1,4-]	Dichlorodifluoromethane	Dichloroethane[1,2-]	Dichloroethene[1,1-]	Dichloroethene[cis-1,2-]	Ethanol	Ethylbenzene	Hexane	Hexanone[2-]	Methyl-2-pentanone[4-]	Methylene Chloride	n-Heptane	Propylene	Tetrachloroethene	Tetrahydrofuran	Toluene	Trichloro-1,2,2-trifluoroethane[1,1,2-]	Trichloroethane[1,1,1-]	Trichloroethane[1,1,2-]	Trichloroethene	Xylene[1,2-]	Xylene[1,3-]+Xylene[1,4-]
April 2009																																		
MD21-09-7159	67.5–72.5	4/14/2009	—	—	—	—	—	—	—	74	—	630	—	—	7	—	5.6	—	—	—	—	—	—	5.6	—	—	810	—	—	7.5	17	—	350	—	—
MD21-09-7160	217–222	4/14/2009	—	—	—	—	—	—	—	500	—	1100	—	5.8	**11**	6.9	21	—	—	—	—	—	—	470	—	—	310	—	—	32	32	17	1000	—	—
MD21-09-7162	242.5–247.5	4/15/2009	—	—	—	—	—	—	—	520	—	950	—	12	—	15	18	—	—	—	—	—	—	1100	—	—	140	—	—	31	25	35	1000	—	—
MD21-09-7161	339.5–344.5	4/15/2009	—	—	—	—	—	—	—	660	—	1400	—	20	—	23	21	—	—	—	—	—	—	2100	—	—	74	—	—	36	13	23	1300	—	—
June 2009																																		
MD21-09-10339	67.5–72.5	6/18/2009	—	—	—	—	—	—	—	58	—	430	—	—	5	—	—	—	—	—	—	—	—	4.2	—	—	570	—	—	—	17	—	270	—	—
MD21-09-10341	217–222	6/18/2009	—	—	—	—	—	—	—	210	—	400	—	—	5.3	—	5.2	—	—	—	—	—	—	230	—	—	120	—	—	12	19	6.8	440	—	—
MD21-09-10342	242.5–247.5	6/18/2009	—	—	—	—	—	—	—	470	—	810	—	8.6	6.7	14	12	3.6	—	—	—	—	—	960	—	—	130	—	—	22	26	29	950	—	—
MD21-09-10343	339.5–344.5	6/18/2009	—	—	—	—	—	5.8	—	390	—	830	—	14	—	18	14	—	—	—	—	—	—	1600	—	—	57	—	—	23	—	23	810	—	—
July 2009																																		
MD21-09-11278	67.5–72.5	7/16/2009	29	—	—	—	—	4.8	—	68	—	520	—	—	5.8	—	—	—	—	—	—	—	—	5.6	—	—	740	—	**14**	—	20	—	330	—	—
MD21-09-11280	217–222	7/16/2009	—	3.1	—	—	—	—	—	310	—	670	—	—	6.7	7.8	8	—	—	—	—	—	—	420	—	—	210	—	3.7	17	27	14	720	—	—
MD21-09-11281	242.5–247.5	7/16/2009	15	—	—	—	—	5.4	**29**	200	—	460	**83**	16	5.2	8.9	6.2	—	—	—	—	—	—	620	—	—	68	—	4.8	9.5	12	17	1200	—	—
MD21-09-11282	339.5–344.5	7/16/2009	22	—	—	—	—	—	—	350	—	730	—	8.9	5	17	11	—	—	—	—	—	—	1300	—	—	44	—	—	16	7.7	18	700	—	—
August 2009																																		
MD21-09-11472	67.5–72.5	8/18/2009	—	—	—	—	—	—	—	58	—	440	—	—	4.9	—	—	—	—	—	—	—	—	3.6	—	—	710	—	6.7	—	17	—	290	—	—
MD21-09-11473	217–222	8/18/2009	16	—	—	—	—	—	—	340	—	670	—	—	6.6	5.3	8.5	—	—	—	—	—	—	380	—	—	250	—	—	24	30	13	770	—	—
MD21-09-11474	242.5–247.5	8/18/2009	—	3.2	—	—	—	—	3.4	560	—	950	—	13	7.8	16	15	**6**	—	—	—	—	—	1100	—	—	180	—	—	34	29	40	1200	—	—
MD21-09-11475	339.5–344.5	8/18/2009	—	—	—	—	—	—	—	560	—	1100	—	19	—	25	17	—	—	—	—	—	—	1800	—	—	85	—	—	29	12	33	1200	—	—
September 2009																																		
MD21-09-12598	67.5–72.5	9/15/2009	—	—	—	—	—	—	—	48	—	390	—	—	4.4	—	—	—	—	—	—	—	—	4	—	—	570	—	—	—	15	—	240	—	—
MD21-09-12600	217–222	9/15/2009	—	—	—	—	—	—	—	400	—	800	—	—	7.4	6.1	9.4	—	—	—	—	—	—	460	—	—	280	—	—	26	33	16	880	—	—
MD21-09-12601	242.5–247.5	9/15/2009	15	2.8	—	—	—	3.9	—	530	—	960	—	9.7	7.1	16	14	5.4	—	—	—	—	—	1100	—	—	160	—	—	31	29	39	1100	—	—
MD21-09-12602	339.5–344.5	9/15/2009	—	—	—	—	—	—	7.9	670	—	1300	—	20	—	29	19	—	—	—	—	—	—	2200	—	—	94	—	—	35	16	38	1300	—	—

Table 4.1-13 (continued)

Sample ID	Depth (ft)	Collection Date	Acetone	Benzene	Bromodichloromethane	Bromoform	Butanol[1-]	Butanone[2-]	Carbon Disulfide	Carbon Tetrachloride	Chlorodibromomethane	Chloroform	Dichlorobenzene[1,2-]	Dichlorobenzene[1,4-]	Dichlorodifluoromethane	Dichloroethane[1,2-]	Dichloroethene[1,1-]	Dichloroethene[cis-1,2-]	Ethanol	Ethylbenzene	Hexane	Hexanone[2-]	Methyl-2-pentanone[4-]	Methylene Chloride	n-Heptane	Propylene	Tetrachloroethene	Tetrahydrofuran	Toluene	Trichloro-1,2,2-trifluoroethane[1,1,2-]	Trichloroethane[1,1,1-]	Trichloroethane[1,1,2-]	Trichloroethene	Xylene[1,2-]	Xylene[1,3-]+Xylene[1,4-]
October 2009																																			
MD21-10-18	67.5–72.5	10/14/2009	93	—	—	—	—	14	—	68	—	600	—	—	6.1	—	—	—	—	—	—	—	—	6.5	—	—	**980**	—	—	11	20	—	400	—	—
MD21-10-20	217–222	10/14/2009	20	—	—	—	—	—	—	400	—	900	—	—	8.1	7.3	17	—	—	—	—	—	—	610	—	13	330	—	—	39	34	20	1100	—	—
MD21-10-21	242.5–247.5	10/14/2009	43	—	—	—	—	6	—	480	—	1000	—	11	7.6	17	21	**6(J+)**	—	—	—	—	—	1400	—	23	180	—	—	**43**	26	**45**	1300	—	—
MD21-10-22	339.5–344.5	10/14/2009	32	—	—	—	—	—	—	460	—	1000	—	—	—	25	20	—	—	—	—	—	—	2200	—	—	79	—	—	37	—	32	1100	—	—
November 2009																																			
MD21-10-4997	67.5–72.5	11/20/2009	—	—	—	—	—	—	—	56	—	440	—	—	5.1	—	—	—	—	—	—	—	—	5.4	—	—	640	—	—	—	16	—	260	—	—
MD21-10-4998	217–222	11/20/2009	13	—	—	—	—	—	—	200	—	500	—	—	4.8	4.1	5.4	—	—	—	—	—	—	310	—	—	160	—	—	12	18	10	520	—	—
MD21-10-4999	242.5–247.5	11/20/2009	—	—	—	—	—	—	4.3	160	—	400	—	—	—	6.5	5.4	—	—	—	—	—	—	550	—	—	56	—	—	8.5	8.8	17	400	—	—
MD21-10-5000	339.5–344.5	11/20/2009	—	—	—	—	—	—	—	340	—	750	—	—	—	14	11	—	**58(J)**	—	—	—	—	1400	—	—	44	—	—	17	—	18	690	—	—

Notes: See Appendix A for data qualifier definitions. Organic chemical detections per sample, standard unit of measure = μg/m^3.

[a] — = Not detected.

[b] Bold values represent the maximum concentrations.

[c] Shaded values indicate above Tier I screening level.

Table 4.1-14
Summary of VOCs Detected in Pore Gas Samples at MDA T Vapor-Monitoring Well 21-603059, November 2007–November 2009

Sample ID	Depth (ft)	Collection Date	Acetone	Benzene	Bromodichloromethane	Bromoform	Butanol[1-]	Butanone[2-]	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Cyclohexane	Dichlorobenzene[1,4-]	Dichlorodifluoromethane	Dichloroethane[1,2-]	Dichloroethene[1,1-]	Dichloroethene[cis-1,2-]	Ethanol	Ethylbenzene	Ethyltoluene[4-]	Hexane	Hexanone[2-]	Methanol	Methyl-2-pentanone[4-]	Methylene Chloride	n-Heptane	Propanol[2-]	Propylene	Tetrachloroethene	Tetrahydrofuran	Toluene	Trichloro-1,2,2-trifluoroethane[1,1,2-]	Trichloroethane[1,1,1-]	Trichloroethane[1,1,2-]	Trichloroethene	Trimethylbenzene[1,3,5-]	Xylene[1,2-]
November 2007																																					
MD21-07-6804	77.5–82.5	11/4/2007	49	4.8	—[a]	**10**[b]	—	4.3	12	62	840	—	—	6	—	—	—	—	—	—	**8.5**	—	—	—	6.4	6.2	—	140	1300	—	6.6	7.2	20	—	710	—	—
MD21-07-6803	187.5–192.5	11/3/2007	290	5.5	6.4	—	—	55	5.1	150	630	3.4	—	7.4	—	7.4	—	—	—	—	6.8	—	—	3.6(J)	43	4.7	**11**	160	340	—	6.6	19	29	—	480	—	—
MD21-07-6801	229.5–234.5	11/3/2007	**560**	**8.2**	7.8	—	**21**	**170**	15	290	630	3.4	—	7.4	—	12	3.6	—	**11**	**24**	7.7	**86**	—	**21**	68	**12**	9	**210**	250	**3.7**	25	30	31	—	580	**11**	**16**
MD21-07-6802	292.5–297.5	11/3/2007	150	3.2	9.2	—	—	8.4	5.1	620	680	—	—	9.2	5.2	27	5	—	—	—	—	—	—	—	380	—	—	—	200	2.7	6	55	26	27	1100	—	—
MD21-07-6800	372.5–377.5	11/3/2007	130	3.3	7.3	—	—	3.7	2.8	350	540	—	—	—	11	33	—	—	—	—	—	—	—	—	720[c]	—	—	40	78	—	5.1	16	8.2	81	800	—	—
February 2008																																					
MD21-08-10518	77.5–82.5	2/6/2008	—	—	—	—	—	—	2.8	58	800	—	—	5.1	—	—	—	—	—	—	—	—	—	—	4.2	—	—	—	1400	—	—	6.9	19	—	700	—	—
MD21-08-10519	187.5–192.5	2/8/2008	—	—	7	—	—	—	3.5	140	570	—	—	7.1	—	6.2	—	—	—	—	—	—	—	—	24	—	—	—	320	—	—	15	28	—	460	—	—
MD21-08-10520	229.5–234.5	2/6/2008	11	2.9	—	—	—	—	2.7	140	330	—	—	4.8	—	5.7	—	—	—	—	—	—	—	—	23	—	—	—	120	—	13	12	14	—	300	—	—
MD21-08-10521	292.5–297.5	2/6/2008	—	—	9.6	—	—	—	3.7	670	660	—	—	9.8	5.4	26	3.9	—	—	—	—	—	—	—	330	—	—	—	180	—	4.6	51	27	24	1200	—	—
MD21-08-10522	372.5–377.5	2/8/2008	9.4	3.4	12	—	—	—	3.4	580	750	—	7	—	16	52	5.9	—	—	—	—	—	—	—	920	—	—	—	110	—	7.9	24	14	**120**	1300	—	—
May 2008																																					
MD21-08-12236	77.5–82.5	5/9/2008	11	—	—	—	—	2.8	2.9	57	900	—	—	—	—	—	—	—	—	—	—	—	—	—	3.1	—	—	—	1400	—	—	6.6	19	—	670	—	—
MD21-08-12237	187.5–192.5	5/9/2008	—	—	6.7	—	—	—	—	140	610	—	—	—	—	7.1	—	—	—	—	—	—	—	—	22	—	—	—	320	—	—	18	24	—	440	—	—
MD21-08-12238	229.5–234.5	5/9/2008	31	—	6.8	—	—	4	4	330	670	—	—	8.4	—	14	—	—	—	—	—	—	—	—	50	—	—	—	240	—	—	35	29	—	620	—	—
MD21-08-12239	292.5–297.5	5/9/2008	—	2.8	8.4	—	—	—	—	620	650	—	—	9	5.3	24	**13**	21	—	—	—	—	—	—	290	—	—	—	170	—	3.8	54	25	22	1000	—	—
MD21-08-12240	372.5–377.5	5/9/2008	58	3.2	10	—	—	6.6	—	540	780	—	7.6	—	14	51	4.4	**65**	—	—	—	—	—	—	880	—	—	—	100	—	6.2	28	12	110	1200	—	—
September 2008																																					
MD21-08-14818	77.5–82.5	9/25/2008	—	—	—	—	—	—	—	67	1000	—	—	6.2	—	—	—	—	—	—	—	—	—	—	4.3	—	—	—	1700	—	—	—	21	—	770	—	—
MD21-08-14819	187.5–192.5	9/25/2008	—	—	7	—	—	8	—	130	550	—	—	6.5	—	5.5	—	—	—	—	—	—	—	—	24	—	—	8.4	300	—	—	15	26	—	440	—	—
MD21-08-14820	229.5–234.5	9/25/2008	—	—	—	—	—	—	—	280	580	—	—	7.1	—	11	—	—	—	—	—	—	—	—	49	—	—	13	230	—	—	29	28	—	600	—	—
MD21-08-14821	292.5–297.5	9/25/2008	—	—	9.7	—	—	—	—	620	620	—	—	8.6	5.3	23	3.8	—	—	—	—	—	—	—	300	—	—	20	160	—	3.9	49	25	20	1100	—	—
MD21-08-14822	372.5–377.5	9/25/2008	—	—	8.4	—	—	—	18	380	520	—	—	—	12	32	—	—	—	—	—	—	—	—	680	—	—	11	63	—	5.4	17	9	81	860	—	—

Table 4.1-14 (Continued)

Sample ID	Depth (ft)	Collection Date	Acetone	Benzene	Bromodichloromethane	Bromoform	Butanol[1-]	Butanone[2-]	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Cyclohexane	Dichlorobenzene[1,4-]	Dichlorodifluoromethane	Dichloroethane[1,2-]	Dichloroethene[1,1-]	Dichloroethene[cis-1,2-]	Ethanol	Ethylbenzene	Ethyltoluene[4-]	Hexane	Hexanone[2-]	Methanol	Methyl-2-pentanone[4-]	Methylene Chloride	n-Heptane	Propanol[2-]	Propylene	Tetrachloroethene	Tetrahydrofuran	Toluene	Trichloro-1,2,2-trifluoroethane[1,1,2-]	Trichloroethane[1,1,1-]	Trichloroethane[1,1,2-]	Trichloroethene	Trimethylbenzene[1,3,5-]	Xylene[1,2-]
February 2009																																					
MD21-09-3546	77.5–82.5	2/8/2009	—	—	6.4	—	—	—	—	73	**1100**	—	—	6.4	—	—	—	—	—	—	—	—	—	—	4	—	—	—	1600	—	—	—	22	—	820	—	—
MD21-09-3545	187.5–192.5	2/6/2009	—	—	8.7	—	—	4.1	6.8	170	700	—	—	7.8	—	7.2	—	—	—	—	—	—	—	—	29	—	—	—	390	—	—	18	30	—	550	—	—
MD21-09-3547	229.5–234.5	2/8/2009	9	—	8.6	—	—	—	—	440	770	3.1(J)	—	10	—	19	—	—	—	—	—	—	—	—	80	—	—	—	290	—	—	39	**33**	—	810	—	—
MD21-09-3549	292.5–297.5	2/6/2009	—	—	11	—	—	—	—	**750**	740	—	—	**11**	6.1	30	—	13	—	—	—	—	—	—	360	—	—	—	210	—	4.8	57	31	25	1300	—	—
MD21-09-3550	372.5–377.5	2/6/2009	—	4.1	**14**	—	—	—	—	670	900	—	7.8	5.3	**19**	65	4.1	54	—	—	—	—	—	—	**1100**	—	—	—	120	—	7.5	28	15	**120**	**1400**	—	—
April 2009																																					
MD21-09-7155	77.5–82.5	4/13/2009	—	—	—	—	—	—	—	—	560	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	920	—	—	—	—	—	380	—	—
MD21-09-7154	187.5–192.5	4/10/2009	—	—	—	—	—	—	—	120	620	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	310	—	—	—	—	—	460	—	—
MD21-09-7157	229.5–234.5	4/13/2009	—	—	—	—	—	—	—	130	400	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	130	—	—	—	—	—	320	—	—
MD21-09-7163	229.5–234.5	4/20/2009	37	—	7.6	—	—	10	—	320	710	—	—	8.3	—	19	—	—	—	—	—	—	—	—	58	—	—	—	270	—	—	34	22	—	670	—	—
MD21-09-7153	292.5–297.5	4/10/2009	—	—	—	—	—	—	—	480	610	—	—	—	—	—	—	—	—	—	—	—	—	—	280	—	—	—	170	—	—	—	—	—	980	—	—
MD21-09-7156	372.5–377.5	4/13/2009	—	—	—	—	—	—	—	—	94	—	—	—	—	—	—	—	—	—	—	—	—	—	160	—	—	—	—	—	—	—	—	—	91	—	—
June 2009																																					
MD21-09-10333	77.5–82.5	6/16/2009	—	—	—	—	—	—	—	50	850	—	—	5.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1200	—	—	—	16	—	560	—	—
MD21-09-10334	187.5–192.5	6/16/2009	—	—	—	—	—	—	3.3	110	480	—	—	6.1	—	4.3	—	—	—	—	—	—	—	—	19	—	—	—	260	—	—	9.7	20	—	360	—	—
MD21-09-10335	229.5–234.5	6/16/2009	—	—	—	—	—	2.7	—	220	440	—	—	6.2	—	8.8	—	—	—	—	—	—	—	—	29	—	—	—	170	—	—	20	19	—	410	—	—
MD21-09-10336	292.5–297.5	6/16/2009	—	—	—	—	—	—	—	440	450	—	—	7.1	—	17	—	—	—	—	—	—	—	—	200	—	—	—	120	—	—	32	18	13	740	—	—
MD21-09-10337	372.5–377.5	6/16/2009	—	—	7.6	—	—	2.6	—	400	520	—	—	—	11	35	—	—	—	—	—	—	—	—	610	—	—	—	67	—	4.6	15	8.8	67	820	—	—
MD21-09-10333	77.5–82.5	6/16/2009	—	—	—	—	—	—	—	50	850	—	—	5.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1200	—	—	—	16	—	560	—	—
July 2009																																					
MD21-09-11272	77.5–82.5	7/15/2009	44	—	6.2	—	12	5.4	—	64	**1100**	—	—	5.9	—	—	—	—	—	—	—	—	—	—	4	—	—	—	1600	—	**200**	—	18	—	720	—	—
MD21-09-11273	187.5–192.5	7/15/2009	43	—	6.2	—	—	5.4	—	120	530	—	—	7	—	5.5	—	—	—	—	5.5	—	—	—	24	—	—	—	310	—	21	14	22	—	400	—	—
MD21-09-11274	229.5–234.5	7/15/2009	13	—	—	—	—	—	—	210	480	—	—	6.8	—	8.4	—	—	—	—	—	—	—	—	37	—	—	—	190	—	—	18	18	—	440	—	—
MD21-09-11275	292.5–297.5	7/15/2009	15	—	11	—	—	—	4.2	690	690	—	—	**11**	5.3	26	7	—	—	—	—	—	—	—	320	—	—	—	200	—	6.1	51	28	23	1200	—	—
MD21-09-11276	372.5–377.5	7/15/2009	12	—	10	—	—	—	4.6	380	600	—	6	—	13	35	—	—	—	—	—	—	—	—	760	—	—	—	72	—	9.5	14	8.2	85	850	—	—

Table 4.1-14 (Continued)

Sample ID	Depth (ft)	Collection Date	Acetone	Benzene	Bromodichloromethane	Bromoform	Butanol[1-]	Butanone[2-]	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Cyclohexane	Dichlorobenzene[1,4-]	Dichlorodifluoromethane	Dichloroethane[1,2-]	Dichloroethene[1,1-]	Dichloroethene[cis-1,2-]	Ethanol	Ethylbenzene	Ethyltoluene[4-]	Hexane	Hexanone[2-]	Methanol	Methyl-2-pentanone[4-]	Methylene Chloride	n-Heptane	Propanol[2-]	Propylene	Tetrachloroethene	Tetrahydrofuran	Toluene	Trichloro-1,2,2-trifluoroethane[1,1,2-]	Trichloroethane[1,1,1-]	Trichloroethane[1,1,2-]	Trichloroethene	Trimethylbenzene[1,3,5-]	Xylene[1,2-]
August 2009																																					
MD21-09-11469	77.5–82.5	8/14/2009	22	—	—	—	—	4.6	18	61	1000	—	—	5.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	**1800**	—	—	—	17	—	700	—	—
MD21-09-11470	187.5–192.5	8/14/2009	8.7	—	6.8	—	—	3.1	**38**	140	580	—	—	7	—	5.6	—	—	—	—	—	—	—	—	24	—	—	—	380	—	—	17	24	—	470	—	—
MD21-09-11471	229.5–234.5	8/14/2009	28	—	—	—	—	5	—	170	320	**4.1**	**30**	5.2	—	6.4	—	—	—	—	—	—	—	—	42	—	8.3(J)	—	140	—	40	18	13	—	320	—	—
MD21-09-11468	292.5–297.5	8/14/2009	51	—	9.1	—	—	9	—	640	630	—	—	9.3	4.6	22	—	—	—	—	—	—	—	—	280	—	—	—	190	—	3.7	52	25	21	1100	—	—
MD21-09-11467	372.5–377.5	8/14/2009	40	3.1	11	—	—	7.2	—	530	700	—	7	—	13	48	4.4	—	—	—	—	—	—	—	800	—	—	—	100	—	6.5	27	11	100	1200	—	—
September 2009																																					
MD21-09-12623	77.5–82.5	9/18/2009	12	—	—	—	—	—	—	59	1000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	**1800**	—	—	—	18	—	700	—	—
MD21-09-12624	187.5–192.5	9/18/2009	11	—	6	—	—	—	26	140	580	—	—	6.4	—	5.6	—	—	—	—	—	—	—	—	24	—	—	—	360	—	—	16	24	—	460	—	—
MD21-09-12625	229.5–234.5	9/18/2009	—	—	6.9	—	—	—	—	340	660	—	—	8.3	—	13	—	—	—	—	—	—	—	—	47	—	—	—	280	—	—	35	28	—	660	—	—
MD21-09-12626	292.5–297.5	9/18/2009	10	—	9.2	—	—	—	—	670	670	—	—	**11**	5.2	31	—	—	—	—	—	—	—	—	300	—	—	—	190	—	3.6	**67**	26	20	1200	—	—
MD21-09-12627	372.5–377.5	9/18/2009	19	2.8	11	—	—	—	—	520	700	—	5.8	—	14	54	4.5	—	—	—	—	—	**140(J)**	—	720	—	—	—	94	—	5.9	27	11	95	1100	—	—
October 2009																																					
MD21-10-10	77.5–82.5	10/20/2009	—	—	—	—	—	3.5	—	58	1000	—	—	5.2	—	—	—	—	—	—	—	—	NA	—	—	—	—	—	1500	—	—	—	17	—	630	—	—
MD21-10-11	187.5–192.5	10/20/2009	—	—	6.4	—	—	4.5	—	130	580	—	—	6.2	—	4.6(J)	—	—	—	—	—	—	NA	—	—	—	—	8.4	340	—	—	12(J)	24	—	430	—	—
MD21-10-12	229.5–234.5	10/20/2009	—	—	7.1	—	—	—	—	390	700	—	—	8.8	—	12(J)	—	—	—	—	—	—	NA	—	54(J-)	—	—	14	260	—	—	28(J)	28	—	660	—	—
MD21-10-13	292.5–297.5	10/20/2009	—	—	8.8	—	—	—	—	580	630	—	—	9	4.2	17(J)	3.8	—	—	—	—	—	NA	—	140(J-)	—	—	18	180	—	—	35(J)	24	22	960	—	—
MD21-10-14	372.5–377.5	10/20/2009	—	2.8(J)	11	—	—	2.6	—	480	670	—	8.2	—	12	33(J)	3.9	—	—	—	—	—	NA	—	730(J-)	—	—	12	99	—	5.6	17(J)	10	100	1000	—	—
November 2009																																					
MD21-10-4991	77.5–82.5	11/18/2009	20	—	—	—	—	3.3	—	52	1000	—	—	5.4	—	—	—	—	—	—	—	—	NA	—	3.3(J-)	—	—	—	1700	—	—	—	15	—	600	—	—
MD21-10-4993	187.5–192.5	11/18/2009	—	—	6.1	—	—	—	—	120	560	—	—	6.4	—	5.4(J-)	—	—	—	—	—	—	NA	—	24(J-)	—	—	7.4	320	—	—	14	21	—	410	—	—
MD21-10-4994	229.5–234.5	11/18/2009	13	—	6.9	—	—	3.3	—	290	640	—	—	8.4	—	13(J-)	—	—	—	—	—	—	NA	—	40(J-)	—	—	13	240	—	—	30	24	—	570	—	—
MD21-10-4995	292.5–297.5	11/18/2009	—	—	7.8	—	—	—	—	560	610	—	—	9.4	4	23(J-)	—	—	—	—	—	—	NA	—	270(J-)	—	—	18	170	—	4.1	47	22	20	980	—	—
MD21-10-4996	372.5–377.5	11/18/2009	—	2.7	10	—	—	—	—	500	700	—	7	4.4	12	**51(J-)**	4.2	—	—	—	—	—	NA	—	880(J-)	—	—	13	91	—	5.3	24	10	96	1100	—	—

Notes: See Appendix A for data qualifier definitions. Organic chemical detections per sample, standard unit of measure = $\mu g/m^3$.

[a] — = Not detected.

[b] Bold values represent the maximum concentrations.

[c] Shaded values indicate above Tier I screening level.

Table 4.1-15
Summary of VOCs Detected in Pore Gas Samples at MDA T Vapor-Monitoring Well 21-607955, December 2009

Sample ID	Depth (ft)	Collection Date	Acetone	Benzene	Bromodichloromethane	Butanone[2-]	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Cyclohexane	Dichlorodifluoromethane	Dichloroethane[1,2-]	Dichloroethene[1,1-]	Hexane	Methylene Chloride	Propylene	Tetrachloroethene	Toluene	Trichloro-1,2,2-trifluoroethane[1,1,2-]	Trichloroethane[1,1,1-]	Trichloroethane[1,1,2-]	Trichloroethene
MD21-10-7567	71.1–76.4	12/2/2009	—[a]	—	—	—	9.4	89	680	—	—	—	—	—	66	—	**2000**[b]	29	—	16	—	430
MD21-10-7568	153.8–159.7	12/3/2009	—	—	—	—	4.6	190	560	—	**8**	4.4	—	—	290	—	390	22	9.8	**18**	6.3	490
MD21-10-7569	173.4–179	12/2/2009	31	—	—	—	—	—	19	—	—	—	—	—	25	—	—	—	—	—	—	20
MD21-10-7570	225.9–232.1	12/2/2009	100	3	**5.5**	**2.6**	**20**	340	680	**3.6**	7.4	11	8	2.9	880	—	220	90	**16**	17	**16**	710
MD21-10-7571	326.6–333.4	12/3/2009	—	—	—	—	4.5	130	350	—	4.6	7.5	4	—	660	—	110	9.4	—	9.4	6.6	290
MD21-10-7572	353.3–359.6	12/2/2009	16	—	—	—	5.6	**360**	**1000**	—	—	**21**	15	—	**2100**[c]	—	29	83	13	—	15	**760**
MD21-10-7573	459.4–464.8	12/2/2009	—	—	—	—	—	26	91	—	—	—	—	—	180	—	—	12	—	—	—	57
MD21-10-7574	559–565	12/2/2009	8.9	**3.4**	—	—	4.5	100	540	—	—	—	**24**	**5.2**	710	—	—	100	—	—	—	320
MD21-10-7575	651.3–657.3	12/2/2009	—	—	—	—	6.1	—	29	—	—	—	3.8	3.9	17	—	—	100	—	—	—	18
MD21-10-7576	797.2–803.1	12/3/2009	—	—	—	—	3.3	—	—	—	—	—	—	—	—	8.6	—	11	—	—	—	—
MD21-10-7577	946.2–952.1	12/3/2009	**30000**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	**690**	—	—	—	—

Note: Organic chemical detections per sample, standard unit of measure = μg/m^3.

[a] — = Not detected.

[b] Bold values represent the maximum concentrations.

[c] Shaded values indicate above Tier I screening level.

Table 4.1-16
Summary of Tritium Results in Pore-Gas Samples at
MDA T Vapor Monitoring Well 21-25262, June July 2009

Sample ID	Depth (ft bgs)	Collection Date	Tritium
June 2009			
MD21-09-10357	232–237	6/12/2009	19,570.9
MD21-09-10358	295–300	6/12/2009	901.051
MD21-09-10359	329.5–334.5	6/12/2009	3062.27
MD21-09-10360	375–380	6/12/2009	13,958.3
June 2009			
MD21-09-11294	80–85	7/14/2009	1041.73
MD21-09-11295	115–120	7/14/2009	441.102
MD21-09-11296	232–237	7/14/2009	556.992
MD21-09-11297	295–300	7/14/2009	3199.46
MD21-09-11298	329.5–334.5	7/14/2009	6803.85
MD21-09-11299	375–380	7/14/2009	**37413.2***
MD21-09-11301	572–577	7/14/2009	321.425
MD21-09-11302	686–691	7/14/2009	420.838

Note: Units are in pCi/g.

* Bold values represents the maximum concentration.

Table 4.1-17
Summary of Tritium Results in Pore-Gas Samples at
MDA T Vapor-Monitoring Well 21-25264, October 2007–July 2009

Sample ID	Depth (ft bgs)	Collection Date	Tritium
October 2007			
MD21-07-6814	150.5–155.5	10/19/2007	13373.2
February 2008			
MD21-08-10511	67.5–72.5	2/14/2008	2251.85
MD21-08-10512	150.5–155.5	2/14/2008	84172.8
MD21-08-10513	222.5–227.5	2/14/2008	49611.9
MD21-08-10514	323–328	2/14/2008	1975.59
MD21-08-10515	349.5–354.5	2/14/2008	1132.8
May 2008			
MD21-08-12247	67.5–72.5	5/7/2008	6251.64
MD21-08-12248	150.5–155.5	5/7/2008	170123
MD21-08-12249	222.5–227.5	5/7/2008	66092.6
MD21-08-12250	323–328	5/7/2008	3493.47
MD21-08-12251	349.5–354.5	5/7/2008	1872.38

Table 4.1-17 (continued)

Sample ID	Depth (ft bgs)	Collection Date	Tritium
September 2008			
MD21-08-14828	67.5–72.5	9/23/2008	8939.89
MD21-08-14829	150.5–155.5	9/23/2008	150,117
MD21-08-14830	222.5–227.5	9/23/2008	113,362
MD21-08-14831	323–328	9/23/2008	2605.36
MD21-08-14832	349.5–354.5	9/23/2008	1586
February 2009			
MD21-09-3564	67.5–72.5	2/4/2009	6608.33
MD21-09-3563	150.5–155.5	2/4/2009	88,523.8
MD21-09-3560	222.5–227.5	2/3/2009	91,886.9
MD21-09-3561	323–328	2/3/2009	3613.93
MD21-09-3562	349.5–354.5	2/3/2009	2228.43
April 2009			
MD21-09-7164	67.5–72.5	4/16/2009	5647
MD21-09-7166	150.5–155.5	4/17/2009	120,741
MD21-09-7168	222.5–227.5	4/17/2009	80587.5
MD21-09-7167	323–328	4/17/2009	1421.08
MD21-09-7165	349.5–354.5	4/16/2009	1557.89
June 2009			
MD21-09-10344	67.5–72.5	6/17/2009	142,818
MD21-09-10345	150.5–155.5	6/17/2009	133,254
MD21-09-10346	222.5–227.5	6/17/2009	2093.28
MD21-09-10347	323–328	6/17/2009	3952.86
July 2009			
MD21-09-11283	67.5–72.5	7/17/2009	10560.3
MD21-09-11284	150.5–155.5	7/17/2009	**173,113***
MD21-09-11285	222.5–227.5	7/17/2009	123530
MD21-09-11286	323–328	7/17/2009	2323.85
MD21-09-11287	349.5–354.5	7/17/2009	7802.76

Note: Units are in pCi/g.

* Bold value represents the maximum concentration.

Table 4.1-18
Summary of Tritium Results in Pore-Gas Samples at
MDA T Vapor-Monitoring Well 21-603058, October 2007–July 2009

Sample ID	Depth (ft bgs)	Collection Date	Tritium
October 2007			
MD21-07-6808	160.5–165.5	10/30/2007	1549.88
February 2008			
MD21-08-10504	67.5–72.5	2/13/2008	796.201
MD21-08-10505	160.5–165.5	2/13/2008	1231.56
MD21-08-10506	217–222	2/13/2008	**25,118.3***
MD21-08-10508	339.5–344.5	2/13/2008	15,351.3
May 2008			
MD21-08-12244	217–222	5/8/2008	583.107
MD21-08-12245	242.5–247.5	5/8/2008	461.252
September 2008			
MD21-08-14814	217–222	9/24/2008	799.333
MD21-08-14815	242.5–247.5	9/24/2008	963.595
February 2009			
MD21-09-3553	67.5–72.5	2/5/2009	3346.86
MD21-09-3554	217–222	2/5/2009	6339.59
MD21-09-3555	242.5–247.5	2/5/2009	2155.65
MD21-09-3556	339.5–344.5	2/5/2009	581.996
April 2009			
MD21-09-7159	67.5–72.5	4/14/2009	812.322
MD21-09-7160	217–222	4/14/2009	390.326

Note: Units are in pCi/g.

*Bold value represents the maximum concentration.

Table 4.1-19
Summary of Tritium Results in Pore-Gas Samples at
MDA T Vapor-Monitoring Well 21-603059, October 2007–July 2009

Sample ID	Depth (ft bgs)	Collection Date	Tritium
November 2007			
MD21-07-6801	229.5–234.5	11/3/2007	2453.32
February 2008			
MD21-08-10518	77.5–82.5	2/6/2008	1160.83
MD21-08-10520	229.5–234.5	2/6/2008	1553.92
MD21-08-10521	292.5–297.5	2/6/2008	743.398
MD21-08-10522	372.5–377.5	2/8/2008	2505.89

Table 4.1-19 (continued)

Sample ID	Depth (ft bgs)	Collection Date	Tritium
May 2008			
MD21-08-12237	187.5–192.5	5/9/2008	457.765
MD21-08-12238	229.5–234.5	5/9/2008	1143.8
MD21-08-12239	292.5–297.5	5/9/2008	438.762
MD21-08-12240	372.5–377.5	5/9/2008	5380.01
September 2008			
MD21-08-14818	77.5–82.5	9/25/2008	452.696
MD21-08-14819	187.5–192.5	9/25/2008	505.469
MD21-08-14820	229.5–234.5	9/25/2008	1646.42
MD21-08-14821	292.5–297.5	9/25/2008	2835.43
MD21-08-14822	372.5–377.5	9/25/2008	417.64
February 2009			
MD21-09-3546	77.5–82.5	2/8/2009	6357.79
MD21-09-3545	187.5–192.5	2/6/2009	556.668
MD21-09-3547	229.5–234.5	2/8/2009	1368.89
MD21-09-3549	292.5–297.5	2/6/2009	4105.41
MD21-09-3550	372.5–377.5	2/6/2009	5277.58
April 2009			
MD21-09-7155	77.5–82.5	4/13/2009	353.451
MD21-09-7157	229.5–234.5	4/13/2009	756.393
MD21-09-7153	292.5–297.5	4/10/2009	1284.11
MD21-09-7156	372.5–377.5	4/13/2009	1420.85
MD21-09-7163	229.5–234.5	4/20/2009	1332.55
June 2009			
MD21-09-10333	77.5–82.5	6/16/2009	334.831
MD21-09-10334	187.5–192.5	6/16/2009	628.593
MD21-09-10335	229.5–234.5	6/16/2009	1660.84
MD21-09-10336	292.5–297.5	6/16/2009	4605.51
MD21-09-10337	372.5–377.5	6/16/2009	6449.81
July 2009			
MD21-09-11273	187.5–192.5	7/15/2009	601.61
MD21-09-11274	229.5–234.5	7/15/2009	1428.52
MD21-09-11275	292.5–297.5	7/15/2009	4776.39
MD21-09-11276	372.5–377.5	7/15/2009	**6527.3***

Note: Units are in pCi/g.

* Bold value represents the maximum concentration.

Table 4.1-20
Summary of Tritium Results in Pore-Gas Samples at
MDA T Vapor-Monitoring Well 21-607955, December 2009

Sample ID	Depth (ft)	Collection Date	Tritium
MD21-10-7567	71.1–76.4	12/2/2009	1005.55
MD21-10-7568	153.8–159.7	12/3/2009	3022.43
MD21-10-7569	173.4–179	12/2/2009	1350.52
MD21-10-7570	225.9–232.1	12/2/2009	**4580.07***
MD21-10-7571	326.6–333.4	12/3/2009	1201.62
MD21-10-7572	353.3–359.6	12/2/2009	694.773
MD21-10-7573	459.4–464.8	12/2/2009	424.773
MD21-10-7574	559–565	12/2/2009	1143.6
MD21-10-7577	946.2–952.1	12/3/2009	844.549

Note: Units are in pCi/L.

* Bold value represents the maximum concentration.

Table 4.1-21
Screening of VOCs Detected in Pore Gas at
MDA T, October 2007–November/December 2009

VOC	Maximum Pore Gas Concentration (µg/m³)	Groundwater Screening Level (µg/L)	Calculated Concentrations in Pore Gas Corresponding to Groundwater Standard (µg/m³)	Screening Value (unitless)
Acetone	30,000	21,800[a]	34,880	8.60E-01
Benzene	13	5[b]	1140	1.14E-02
Bromodichloromethane	15	1.17[a]	102	1.47E-01
Bromoform	16	85[c]	1870	8.56E-03
Bromomethane	6.7	8.66[a]	2217	3.02E-03
1,3-Butadiene	7.4	0.0176[a]	53	1.40E-01
1-Butanol	82	3700[d]	1332	6.16E-02
2-Butanone	170	7060[a]	16,238	1.05E-02
Carbon Disulfide	41	1040[a]	613,600	6.68E-05
Carbon Tetrachloride	830	5[b]	5500	1.51E-01
Chlorodibromomethane	9.7	1.5[d]	48	2.02E-01
Chloroform	1500	100[e]	15,000	1.00E-01
Cyclohexane	7.6	13,000[d]	79,300,000	9.58E-08
1,2-Dichlorobenzene	83	600[b]	46,740	1.78E-03
1,4-Dichlorobenzene	30	75b	7470	4.02E-03
Dichlorodifluoromethane	19	395[a]	5,530,000	3.44E-06
1,2-Dichloroethane	36	5[b]	240	1.50E-01

Table 4.1-21 (continued)

VOC	Maximum Pore Gas Concentration (µg/m³)	Groundwater Screening Level (µg/L)	Calculated Concentrations in Pore Gas Corresponding to Groundwater Standard (µg/m³)	Screening Value (unitless)
1,1-Dichloroethene	130	5[e]	5500	2.36E-02
cis-1,2-Dichloroethane	13	70[b]	11,900	1.09E-03
Ethylbenzene	11	750e	242,250	4.54E-05
Hexane	24	876[a]	64,824,000	3.10E-07
n-Heptane	36	876[c]	77,440,000	5.55E-07
4-Methyl-2-pentanone	21	2000[d]	11,200	1.88E-03
Methylene chloride	2500	5[b]	650	3.85
Tetrachloroethene	3600	5[b]	3600	1
Toluene	690	750[e]	204,000	3.38E-03
1,1,2-Trichloro-1,2,2-trifluoroethane	88	59,200[a]	1,302,400,000	6.76E-08
1,1,1-Trichloroethane	42	60[e]	42,300	9.93E-04
1,1,2-Trichloroethane	240	5[b]	170	1.41
Trichloroethene	1700	5[b]	2000	8.50E-01
1,3,5-Trimethylbenzene	11	12[d]	3840	2.86E-03
1,2-Xylene	16	620[e]	132,060	1.21E-04
1,3-Xylene+1,4-Xylene	35	620[e]	167,400	2.09E-04

Note: Calculated concentrations in pore gas corresponding to groundwater standard derived from denominator of Equation 3.0-3.

[a] NMED Tap Water SL (2009, 106420, Appendix A)

[b] EPA MCL (40 Code of Federal Regulations 141.61).

[c] Hexane used as a surrogate, based on structural similarity.

[d] EPA regional tap water screening levels (http://www.epa.gov/region06/6pd/rcra_c/pd-n/screen.htm)).

[e] New Mexico Water Quality Control Commission (NMWQCC) groundwater standard (20.6.2.3103 New Mexico Administrative Code).

Table 4.1-22
Screening of Methylene Chloride, Tetrachloroethene, and 1,1,2-Trichloroethane at Port 9, Vapor-Monitoring Well 21-25262

VOC	Maximum Pore Gas Concentration (µg/m³)	Groundwater Screening Level (µg/L)	Calculated Concentrations in Pore Gas Corresponding to Groundwater Standard (µg/m³)	Screening Value (unitless)
Methylene chloride	140	5*	650	0.22
Tetrachloroethene	7.2	5*	3,600	0.002
1,1,2-Trichloroethane	21	5*	170	0.12

Note: Calculated concentrations in pore gas corresponding to groundwater standard derived from denominator of Equation 3.0-3.

* EPA MCL (40 Code of Federal Regulations 141.61).

Table 4.3-1
Proposed Sampling and Analysis at MDA T

Sampling Objective	Location Numbers	Location Description	Depth (ft)	VOCs (EPA TO-15)	Tritium (EPA 906.0)
Assess temporal variability of subsurface pore-gas at MDA T	21-25262	Inside fence, south of Absorption Beds 1 and 2	Port 1: 80-85	X*	X
			Port 2: 115-120		
			Port 3: 232-237		
			Port 4: 295-300		
			Port 5: 329.5-334.5		
			Port 6: 375-380		
			Port 7: 472.25-478		
			Port 8: 572-577		
			Port 9: 686-691		
Assess temporal variability of subsurface pore-gas at MDA T	21-603058	North perimeter road north of Absorption Bed 3	Port 1: 67.5-72.5	X	X
			Port 2: 160.5-165.5		
			Port 3: 217-222		
			Port 4: 242.5-247.5		
			Port 5: 339.5-344.5		
Assess temporal variability of subsurface pore-gas at MDA T	21-603059	Outside fence, south of Absorption Beds 1 and 2	Port 1: 77.5-82.5	X	X
			Port 2: 112.5-117.5		
			Port 3: 187.5-192.5		
			Port 4: 229.5-234.5		
			Port 5: 292.5-297.5		
			Port 6: 372.5-377.5		
Assess temporal variability of subsurface pore-gas at MDA T	21-25264	North perimeter road north of Absorption Bed 4	Port 1: 67.5-72.5	X	X
			Port 2: 150.5-155.5		
			Port 3: 222.5-227.5		
			Port 4: 323-328		
			Port 5: 349.5-354.5		

Table 4.3-1 (continued)

Sampling Objective	Location Numbers	Location Description	Depth (ft)	VOCs (EPA TO-15)	Tritium (EPA 906.0)
Assess temporal variability of subsurface pore-gas at MDA T	21-607955	North perimeter road, north of Absorption Beds 3 and 4.	Port 1: 71.1–76.4	X	X
			Port 2: 153.8–159.7		
			Port 3: 173.4–179		
			Port 4: 225.9–232.1		
			Port 5: 326.6–333.4		
			Port 6: 353.3–359.6		
			Port 7: 459.4–464.8		
			Port 8: 559–565		
			Port 9: 651.3–657.3		
			Port 10: 797.2–803.1		
			Port 11: 946.2-952.1		

* X = Analysis will be performed.

Appendix A

Acronyms and Abbreviations, and Data Qualifier Definitions

A-1.0 ACRONYMS AND ABBREVIATIONS

AOC	area of concern
bgs	below ground surface
BV	background value
CME	corrective measures evaluation
CMP	corrugated metal pipe
Consent Order	Compliance Order on Consent
COPC	chemical of potential concern
D&D	decontamination and decommissioning
DOE	Department of Energy (U.S.)
DP	Delta Prime
EcoPRG	ecological preliminary remediation goal
EIM	environmental information management
EM	electromagnetic
EPA	Environmental Protection Agency (U.S.)
FB	field blank
FD	field duplicate
GC/MS	gas chromatograph/mass spectrometer
GPR	ground-penetrating radar
GPS	global positioning system
IP	individual permit
IWP	investigation work plan
LANL	Los Alamos National Laboratory
MDA	material disposal area
N3B	Newport News Nuclear BWXT-Los Alamos, LLC
NES	nuclear environmental site
NMED	New Mexico Environment Department
NMSA	New Mexico Statutes Annotated
PID	photoionization detector
QA	quality assurance
QC	quality control
RCRA	Resource Conservation and Recovery Act
RCT	radiological control technician

RFI	RCRA facility investigation
RLWTF	Radioactive Liquid Waste Treatment Facility
RWSA	retrievable waste storage area
SAA	satellite accumulation area
SAL	screening action level
SMO	Sample Management Office
SOP	standard operating procedure
SSL	soil screening level
SVOC	semivolatile organic compound
SWMU	solid waste management unit
TA	technical area
TAL	target analyte list
TBP	tributyl phosphate
TCP	tricresyl phosphate
TD	total depth
TRU	transuranic
TSR	technical safety requirement
VOC	volatile organic compound
WIPP	Waste Isolation Pilot Plant

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.

Enclosure 2

Correspondence Regarding Review
Schedule for NMED to Review Submission

From:	Shean, Rick, ENV
To:	Duran, Arturo Q.
Cc:	Evans, John H.; Kate Ellers; Bishop, M. Lee; Mikolanis, Michael A; Chai, Lisa, ENV; Dhawan, Neelam, ENV; Martinez, Caitlin, ENV
Subject:	RE: [EXTERNAL] NMED"s Review Schedule - Final IWP for MDA T at TA-21
Date:	Wednesday, June 14, 2023 2:23:15 PM
Attachments:	image001.png

Hi Arturo:

For the purposes of conducting an initial review of the MDA T Investigation Work Plan that is due tomorrow, NMED proposes a 120-day initial review period. This 120-day period is based on your description of the Work Plan as consisting of approximately 98 pages, including 67 pages of previously provided figures and tables. This 120-day initial review period does not include a DOE revision period; a comment resolution period for NMED and DOE; a subsequent NMED review period; or a NMED approval/disapproval period. If NMED does not complete the initial review within 120 days, there will be no imputed approval or disapproval, and NMED will notify DOE of any additional time needed for the initial review. The approval or disapproval of the MDA T Investigation Work Plan shall be in writing only.

This agreement to the 120-day initial review period in this case is not intended to be binding on future discussions regarding an initial review period, or any review period, by NMED. For any future document submittal, the estimated review time will be evaluated on a case-by-case basis. The target dates in Appendix D of the 2016 Consent Order are just targets that do not account for the sometimes large variations in the quality and size of submittals over time. Having knowledge of the number of pages helps, but is insufficient for an accurate prediction of how detailed the responsive comments and actual review time will be.

Thank you for your cooperation as we continue moving forward with the revisions to the 2016 Consent Order to achieve greater clarity for both parties in the future.

Rick

Rick Shean, Resource Protection Division Director
New Mexico Environment Department
121 Tijeras Ave. NE
Albuquerque, NM 87102
Main Office Phone 505-476-6000
Cell 505-629-6494
www.env.nm.gov
twitter.com/NMEnvDep
(he, him) Why: https://www.mypronouns.org/what-and-why

From: Duran, Arturo Q. <arturo.duran@em.doe.gov>
Sent: Tuesday, June 13, 2023 3:44 PM

To: Shean, Rick, ENV <Rick.Shean@env.nm.gov>; Dhawan, Neelam, ENV <neelam.dhawan@env.nm.gov>
Cc: Evans, John H. <John.H.Evans@em.doe.gov>; Kate Ellers <kate.ellers@em-la.doe.gov>; Bishop, M. Lee <lee.bishop@em.doe.gov>; Mikolanis, Michael A <michael.mikolanis@em.doe.gov>; Chai, Lisa, ENV <Lisa.Chai1@env.nm.gov>
Subject: RE: [EXTERNAL] NMED's Review Schedule - Final IWP for MDA T at TA-21

Thanks Rick,

Let me know if you have any questions.

Arturo

From: Shean, Rick, ENV <Rick.Shean@env.nm.gov>
Sent: Tuesday, June 13, 2023 3:27 PM
To: Duran, Arturo Q. <arturo.duran@em.doe.gov>; Dhawan, Neelam, ENV <neelam.dhawan@env.nm.gov>
Cc: Evans, John H. <John.H.Evans@em.doe.gov>; Kate Ellers <kate.ellers@em-la.doe.gov>; Bishop, M. Lee <lee.bishop@em.doe.gov>; Mikolanis, Michael A <michael.mikolanis@em.doe.gov>; Chai, Lisa, ENV <Lisa.Chai1@env.nm.gov>
Subject: RE: [EXTERNAL] NMED's Review Schedule - Final IWP for MDA T at TA-21

Hi Arturo:

We are currently discussing this internally and I will get back to you as soon as we come to some consensus.

Sincerely,

Rick Shean, Resource Protection Division Director
New Mexico Environment Department
121 Tijeras Ave. NE
Albuquerque, NM 87102
Main Office Phone 505-476-6000
Cell 505-629-6494
www.env.nm.gov
twitter.com/NMEnvDep
(he, him) Why: https://www.mypronouns.org/what-and-why

From: Duran, Arturo Q. <arturo.duran@em.doe.gov>
Sent: Monday, June 12, 2023 7:06 PM
To: Dhawan, Neelam, ENV <neelam.dhawan@env.nm.gov>; Shean, Rick, ENV <Rick.Shean@env.nm.gov>
Cc: Evans, John H. <John.H.Evans@em.doe.gov>; Kate Ellers <kate.ellers@em-la.doe.gov>; Bishop,

M. Lee <lee.bishop@em.doe.gov>; Mikolanis, Michael A <michael.mikolanis@em.doe.gov>
Subject: RE: [EXTERNAL] NMED's Review Schedule - Final IWP for MDA T at TA-21

Good afternoon Rick and Neelam,

Section XXIII.D of the Consent Order specifies that before DOE submits a work plan or report to NMED, DOE and NMED are to establish a mutually agreeable review period for NMED to review DOE's submissions.

As you know, a pre-submittal meeting was held on February 22, 2023. During this pre-submittal meeting—and consistent with Section XXIII.C of the Consent Order—DOE shared the content, technical approach, and proposed activities to be included as part of the Investigation Work Plan in an effort to reach a common understanding. No significant issues or concerns with the content, technical approach, or proposed activities were raised by NMED at this meeting. The Consent Order does not state that a draft document is to be shared with NMED prior to the pre-submittal meeting, during the pre-submittal meeting, or before DOE submits the work plan or report.

This MDA T Investigation Work Plan is approximately 98 pages (with 31 pages constituting the body of the document and 67 pages providing figures and tables that have been shared previously with NMED in other reports). This document has gone through our internal quality review process.

Therefore, we respectfully request that you propose a review period for NMED to review this submission. In our email to you of June 6, 2023, DOE proposed a 90 day NMED review period based on the size and quality of the document, as well as the fact that Appendix D of the Consent Order provides a target review period of 90 days for NMED to review RFI Work Plans.

We look forward to your response with a proposed review period for NMED to review this submission.

Thanks in advance for your consideration.

Arturo

From: Dhawan, Neelam, ENV <neelam.dhawan@env.nm.gov>
Sent: Friday, June 9, 2023 9:14 AM
To: Kate Ellers <kate.ellers@em-la.doe.gov>
Cc: Shean, Rick, ENV <Rick.Shean@env.nm.gov>; Martinez, Caitlin, ENV <caitlin.martinez@env.nm.gov>; Duran, Arturo Q. <arturo.duran@em.doe.gov>; Evans, John H. <John.H.Evans@em.doe.gov>; Maupin, Christian T <christian.maupin@em-la.doe.gov>; Bowlby, Brenda <brenda.bowlby@em-la.doe.gov>; Diehl, David Layne <david.diehl@em-la.doe.gov>; Kevin D. Reid <Kevin.Reid@EM-LA.DOE.GOV>; Alexander, William Z <william.alexander@em-la.doe.gov>; Burgin, Jillian Elizabeth <jillian.burgin@em-la.doe.gov>; Schatz, Mitchell, ENV <Mitchell.Schatz@env.nm.gov>; Petersen, Michael, ENV <Michael.Petersen@env.nm.gov>; Briley, Siona, ENV <Siona.Briley@env.nm.gov>; Robinson, Kylian, ENV <Kylian.Robinson@env.nm.gov>;

Chai, Lisa, ENV <Lisa.Chai1@env.nm.gov>
Subject: RE: [EXTERNAL] NMED's Review Schedule - Final IWP for MDA T at TA-21

Kate,

For the following reasons, NMED cannot accept your proposal for a 90-day period for NMED to review and approve or disapprove of EM-LA's submission of the Final Investigation Work Plan for Material Disposal Area T, at Technical Area 21. As you stated in your email, Section XXIII.D of the CO states that, prior to DOE's submission of a document, the parties agree to reach agreement on review schedules. However, the CO also states that "agreed-upon review schedules will be based on the size (e.g., multiple volumes) and quality of the submission(s)". Once NMED receives from EM-LA draft documents upon which to determine the size and quality of the submission, then we may begin the discussion of review schedules.

If I remember correctly from the CO discussions in 2016, draft documents are to be shared with NMED prior to the pre-submittal meetings so NMED could provide input on technical approach and to identify issues with the document. Please let me know whether/when we may expect to receive draft documents.

Also, Appendix D only lists target review times. Actual review times will be based on the size and quality of the submission and staff's capacity to process the submission. Moreover, my reading of Appendix D is that in this case the target of a 90-day period addresses NMED's review time and DOE also has a target revision period, which is listed as a 60-day period. My understanding of how NMED and DOE have been handling document submissions is that NMED performs an initial review and provides DOE with comments on the submission, ideally within 90 days; DOE responds to NMED's comments and revises and resubmits the document, ideally within 60 days; NMED has additional time to review and resolve comments; then NMED issues an approval or disapproval. This is how we have been conducting reviews of the documents -- we go through several rounds of comment resolution before the submission is ready for approval or disapproval.

Please let me know if you have any questions about this.

Thanks

Neelam Dhawan
LANL Program Manager
Hazardous Waste Bureau
New Mexico Environment Department
neelam.dhawan@env.nm.gov
(505) 690-5469

From: Kate Ellers <kate.ellers@em-la.doe.gov>
Sent: Tuesday, June 6, 2023 2:09 PM
To: Dhawan, Neelam, ENV <neelam.dhawan@env.nm.gov>
Cc: Shean, Rick, ENV <Rick.Shean@env.nm.gov>; Martinez, Caitlin, ENV <caitlin.martinez@env.nm.gov>; Arturo Duran <arturo.duran@em.doe.gov>; Evans, John H. <John.H.Evans@em.doe.gov>; Christian T. Maupin <Christian.Maupin@em-la.doe.gov>; Brenda Bowlby <Brenda.Bowlby@em-la.doe.gov>; David Diehl <David.Diehl@EM-LA.DOE.GOV>; Kevin D.

Reid <Kevin.Reid@EM-LA.DOE.GOV>; William Alexander <William.Alexander@em-la.doe.gov>; Jillian E. Burgin <Jillian.Burgin@EM-LA.DOE.GOV>
Subject: [EXTERNAL] NMED's Review Schedule - Final IWP for MDA T at TA-21

Hi Neelam,

Per Section XXIII.D of the 2016 Compliance Order on Consent (Consent Order), DOE EM-LA proposes a 90 day period for NMED to review and approve or disapprove EM-LA's submission of the *Final Investigation Work Plan for Material Disposal Area T, at Technical Area 21*.

The 90 day review period will start from the date this document is submitted to NMED. The project's schedule is contingent on NMED's timely review of this submission.

EM-LA requests NMED's agreement with the review period as proposed above. This review period is consistent with the 90 day period for NMED to review RFI Work Plans set forth in Appendix D of the Consent Order.

Section XXIII.D of the Consent Order provides that "[p]rior to DOE's submission of any work plan or report required by Sections XIII, XVI, XVIII, XIX, or XV (Facility Investigation, Corrective Measures Evaluation, Corrective Measures Implementation, Accelerated Corrective Action, Interim Measures), the Parties agree to reach agreement on review schedules by when NMED will review and approve or disapprove DOE's submission(s)."

Please reach out with any questions.

Regards,
Kate

Kate Ellers
Sr. Regulatory Compliance Manager
Environment, Safety, Health & Quality
c: 505-699-7705
e: kate.ellers@em-la.doe.gov
4/10 Schedule (Monday-Thursday)
N3B Los Alamos
1200 Trinity Drive, Suite 150, Los Alamos NM 87544