REVISION 0

ST. LOUIS DOWNTOWN SITE ANNUAL ENVIRONMENTAL MONITORING DATA AND ANALYSIS REPORT FOR CALENDAR YEAR 2012

ST. LOUIS, MISSOURI

JULY 19, 2013

U.S. Army Corps of Engineers
St. Louis District Office
Formerly Utilized Sites Remedial Action Program

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prepared by:
U.S. Army Corps of Engineers, St. Louis District Office,
Formerly Utilized Sites Remedial Action Program

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ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
µCi/mL	microcurie per milliliter
µg/L	microgram per liter
µS/cm	microSiemen(s) per centimeter
BTOC	below top of casing
AEC	U.S. Atomic Energy Commission
amsl	above mean sea level
ARAR	applicable or relevant and appropriate requirement
ATD	alpha track detector
BTOC	below top of casing
CEDE	committed effective dose equivalent
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	*Code of Federal Regulations*
Ci	curies
COC	contaminant of concern
CY	calendar year
DL	detection limit
DOD	U.S. Department of Defense
DOD-QSM	*DOD Quality Systems Manual for Environmental Laboratories*
DQO	data quality objective
EDE	effective dose equivalent
ELAP	Environmental Laboratory Accreditation Program
EM	Engineer Manual
EMDAR	Environmental Monitoring Data and Analysis Report
EMG	*Environmental Monitoring Guide for the St. Louis Sites*
EMICY	Environmental Monitoring Implementation for Calendar Year
EMICY12	*Environmental Monitoring Implementation Plan for the St. Louis Downtown Site for Calendar Year 2012*
EMP	Environmental Monitoring Program
ER	Engineer Regulation
FFA	Federal Facility Agreement
ft	foot/feet
FUSRAP	Formerly Utilized Sites Remedial Action Program
GRAAA	Ground-Water Remedial Action Alternative Assessment
HU	hydrostratigraphic unit
ICP	inductively coupled plasma
IL	investigative limit
K	potassium
KPA	kinetic phosphorescence analysis
m	meter(s)
Mallinckrodt	Mallinckrodt, LLC
MARSSIM	*Multi-Agency Radiation Survey and Site Investigation Manual*
MDNR	Missouri Department of Natural Resources
MDA	minimum detectable activity
MDC	minimum detectable concentration
MDL	method detection limit
MED	Manhattan Engineer District

ACRONYMS AND ABBREVIATIONS (Continued)

mg/L	milligram(s) per liter
mL	milliliter(s)
mL/min	milliliter(s) per minute
mrem	millirem
mrem/hr	millirem per hr
mrem/qtr	millirem per quarter
mrem/yr	millirem per year
MSD	Metropolitan St. Louis Sewer District
mSv/yr	millisievert per year
mV	millivolt(s)
NAD	normalized absolute difference
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NTU	nephelometric turbidity unit
pCi/L	picocurie per liter
PDI	pre-design investigation
QA	quality assurance
QAPP	Quality Assurance Program Plan
QC	quality control
RA	remedial action
Ra	radium
Rn	radon
ROD	*Record of Decision for the St. Louis Downtown Site*
RPD	relative percent difference
SAG	*Sampling and Analysis Guide for the St. Louis Sites*
SAIC	Science Applications International Incorporation
SLDS	St. Louis Downtown Site
SLS	St. Louis Sites
SOP	standard operating procedure
SOR	sum of ratios
SU	survey unit
TEDE	total effective dose equivalent
Th	thorium
TLD	thermoluminescent dosimeter
U	uranium
UNSCEAR	United Nations Scientific Committee on the Effects of Atomic Radiation
USACE	U.S. Army Corps of Engineers
USCS	Unified Soil Classification System
USEPA	U.S. Environmental Protection Agency
VP	vicinity property
VQ	validation qualifier
WL	working level

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EXECUTIVE SUMMARY

This Annual Environmental Monitoring Data and Analysis Report (EMDAR) for calendar year (CY) 2012 applies to the St. Louis Downtown Site (SLDS) within the Formerly Utilized Sites Remedial Action Program (FUSRAP) (Figure 1-1). This EMDAR provides an evaluation of the data collected as part of the implementation of the Environmental Monitoring Program (EMP) for the SLDS within the FUSRAP. The SLDS consists of the Mallinckrodt, LLC (Mallinckrodt) plant and vicinity properties (VPs) (Figure 1-2). Environmental monitoring of various media at SLDS is required under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), a commitment outlined in the Federal Facility Agreement (FFA), and under the commitments in the *Record of Decision for the St. Louis Downtown Site* (ROD) (USACE 1998a).

The purpose of this report is:

1) to document the environmental monitoring activities, and
2) to assess whether the remedial actions (RAs) had a measurable environmental impact by:
    a) summarizing the data collection effort for CY 2012,
    b) reporting the current condition of the SLDS, and
    c) providing an analysis of the environmental monitoring data to date.

The U.S. Army Corps of Engineers (USACE), St. Louis District, collects comprehensive environmental data for decision-making and planning purposes. Environmental monitoring, performed as a Best Management Practice or as a component of RA, serves as a critical component in the evaluation of the current status of residual contaminants and assessment of the potential future migration of residual contaminants.

All environmental monitoring required through implementation of the *Environmental Monitoring Implementation Plan for the St. Louis Downtown Site for Calendar Year 2012* (EMICY12) (USACE 2012) was conducted as planned during CY 2012. The evaluation of environmental monitoring data for SLDS demonstrates compliance with applicable or relevant and appropriate requirements (ARARs).

RADIOLOGICAL AIR MONITORING

Radiological air data were collected and evaluated at the SLDS through airborne radioactive particulate, radon (Rn) (indoor and outdoor), and gamma radiation monitoring, as required in the EMICY12. In addition to environmental monitoring purposes, radiological air data were also used as inputs to calculate total effective dose equivalent (TEDE) to the hypothetical maximally exposed individual at the SLDS.

The TEDE calculated for the hypothetical maximally exposed individual at the SLDS was 0.4 millirem per year (mrem/yr) (0.004 millisievert per year [mSv/yr]). The results of the radiological air monitoring conducted at the SLDS demonstrated compliance with ARARs for the SLDS.

EXCAVATION-WATER DISCHARGE MONITORING AT THE SLDS

CY 2012 was the fourteenth year that excavation-water discharge from the SLDS was monitored and reported. Excavation water from the SLDS was discharged to the St. Louis sanitary sewer system in compliance with the requirements stated in the July 23, 2001, Metropolitan St. Louis

Sewer District (MSD) authorization letter (MSD 2001) and amended in the October 13, 2004, MSD letter (MSD 2004). This authorization was extended through the issuance of letters dated June 19, 2006, May 22, 2008, May 10, 2010, and May 24, 2012 (MSD 2006, 2008, 2010, 2012). This authorization expires July 23, 2014 (MSD 2012). During CY 2012, no exceedances of the MSD limits occurred at the SLDS.

GROUND-WATER MONITORING

Ground water was sampled during CY 2012 at the SLDS following a protocol for individual wells and analytes, and analyzed for various radiological constituents and inorganic parameters. Static ground-water elevations for all SLDS wells were measured quarterly.

The environmental sampling requirements and ground-water criteria for each analyte are consistent with the EMICY12. The ground-water criteria are used for comparison and discussion purposes. The criteria for assessing ground-water sampling data at the SLDS include the investigative limits (ILs) as identified in the ROD (USACE 1998a) and the combined radium (Ra)-226/Ra-228 concentration limit from 40 *Code of Federal Regulations* (*CFR*) 192.02 (Table 1 to Subpart A). The ground-water criteria are presented in Table 2-6 of the EMICY12 and in Section 4.0 of this report. For those stations where an analyte exceeded the ground-water criteria at least once during CY 2012 and sufficient data were available to evaluate trends, Mann-Kendall statistical trend analyses were completed to assess whether analyte concentrations were increasing or decreasing through time.

During CY 2012, two hydrostratigraphic unit (HU)-A monitoring wells (B16W06S and B16W08S) were sampled (Figure 4-3). B16W06S was sampled for arsenic, cadmium Ra-226, Ra-228, thorium (Th)-228, Th-230, Th-232, uranium (U)-234, U-235, and U-238 during the second quarter and arsenic and cadmium during the fourth quarter. B16W08S was sampled for arsenic, cadmium, Ra-226, Ra-228, Th-228, Th-230, Th-232, U-234, U-235, and U-238 during the second quarter. Because the historical results for these contaminants of concern (COCs) were generally below or only slightly above their detection limits, a trend analysis was not conducted for Th-230, U-234, or U-238. Trend analysis was conducted for arsenic in B16W06S. Based on the graph and a quantitative evaluation of the trend using the Mann-Kendall trend test (presented in Section 4.2.3), there is a downward trend in arsenic concentrations in B16W06S. The remaining SLDS COCs (cadmium, Ra-226, Ra-228, Th-228, Th-232,and U-235) were not detected in HU-A ground water during CY 2012.

During CY 2012, eight SLDS wells completed in the Mississippi Alluvial Aquifer (HU-B) were sampled. Mann-Kendall trend testing was conducted for two of the three COCs that exceeded the ILs in HU-B wells during CY 2012: arsenic in DW18 and total U in DW19. A trend analysis was not conducted for cadmium in DW17 because the CY 2012 result did not exceed the IL when measurement error was taken into account. The results of the tests indicate DW18 exhibits a statistically significant upward trend for arsenic. The Mann-Kendall trend test results indicate that there is no statistically significant trend for total U in HU-B well DW19, but levels have remained above the IL since 1999. However, the concentration of total U reported for the December 2012 sample from DW19 is the lowest concentration ever reported for a sample collected from this well.

Potentiometric surface maps were created from ground-water elevations measured in May and December to illustrate ground-water flow conditions in wet and dry seasons, respectively. The ground-water surface in HU-A under the eastern portion of the Mallinckrodt plant is generally sloping northeastward toward the Mississippi River (Figures 4-7 and 4-9). In HU-B, ground-water flow and direction are strongly influenced by river stage which indicates a hydraulic

connection to the Mississippi River. Both the May and December 2012 potentiometric surface maps (Figures 4-8 and 4-10) indicate the presence of relatively low hydraulic gradients in the vicinity of DW19 and the former location of Building 101. The potentiometric surface maps for HU-B indicate a potentiometric high located in the vicinity of DW16. The flow direction at the site is generally northeastward toward the Mississippi River.

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1.0 HISTORICAL SITE BACKGROUND AND CURRENT SITE STATUS

1.1 INTRODUCTION

This Annual Environmental Monitoring Data and Analysis Report (EMDAR) for calendar year (CY) 2012 applies to the St. Louis Downtown Site (SLDS) within the Formerly Utilized Sites Remedial Action Program (FUSRAP) (Figure 1-1). This EMDAR provides an evaluation of the data collected as part of the implementation of the Environmental Monitoring Program (EMP) for the SLDS within the FUSRAP. The SLDS consists of the Mallinckrodt, LLC (Mallinckrodt) plant and vicinity properties (Figure 1-2). Environmental monitoring of various media at SLDS is required under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), a commitment outlined in the Federal Facility Agreement (FFA), and under the commitments in the *Record of Decision for the St. Louis Downtown Site* (ROD) (USACE 1998a).

1.2 PURPOSE

The purpose of this report is to document the environmental monitoring activities and to assess whether the remedial actions (RAs) being performed at the SLDS could be having a measurable environmental impact. In addition, this report serves to enhance the reader's awareness of the current condition of the SLDS, summarizes the data collection efforts for CY 2012, and provides analysis of the CY 2012 environmental monitoring data results. This document presents the following information:

- Sample collection data for various media at SLDS and interpretation of CY 2012 EMP results;
- The status of SLDS regarding compliance with federal and state applicable or relevant and appropriate requirements (ARARs) or other benchmarks;
- Dose assessments for radiological contaminants as appropriate at SLDS;
- A summary of trends based on changes in contaminant concentrations to support RAs, public safety, and maintain surveillance monitoring requirements at SLDS; and
- The identification of data gaps and future EMP needs.

1.3 ST. LOUIS SITE PROGRAM AND SITE BACKGROUND

FUSRAP was executed by the U.S. Atomic Energy Commission (AEC) in 1974 to identify, remediate, or otherwise control sites where residual radioactivity remains from operations conducted for the Manhattan Engineer District (MED) and AEC during the early years of the nation's atomic energy program. FUSRAP was continued by the follow-on agencies to the AEC until 1997, when the U.S. Congress transferred responsibility for FUSRAP to the U.S. Army Corps of Engineers (USACE).

The SLDS properties were involved with some of the following operations: refining of uranium (U) ores, production of uranium metal and compounds, uranium recovery from residues and scrap, and the storage and disposal of associated process byproducts. The processing activities were conducted in parts of the SLDS under contract to the MED/AEC between the early 1940s and the 1950s.

Detailed descriptions and histories for SLDS can be found in the *Remedial Investigation Report for the St. Louis Site* (DOE 1994); the *Remedial Investigation Addendum for the St. Louis Site*

(DOE 1995); the ROD (USACE 1998a); and the *Environmental Monitoring Guide for the St. Louis Sites* (EMG) (USACE 1999a).

During CY 2012, the following documents were finalized:

- *CY2011 Fourth Quarter Laboratory QA/QC Report for the FUSRAP St. Louis Radioanalytical Laboratory & Associated Satellite Laboratories, St. Louis, Missouri* (January);
- *Environmental Monitoring Implementation Plan for the St. Louis Downtown Site for Calendar Year 2012, St. Louis, Missouri* (January 12);
- *Geotechnical Soil Boring Work Description, Covidien Plant 6 West Half - Building 101 Area, FUSRAP St. Louis Downtown Site, St. Louis, Missouri,* Revision 0 (February 23);
- *CY2012 First Quarter Laboratory QA/QC Report for the FUSRAP St. Louis Radioanalytical Laboratory & Associated Satellite Laboratories, St. Louis, Missouri* (May);
- *Post-Remedial Action Report and Final Status Survey Evaluation for the Accessible Soils within the St. Louis Downtown Site Vicinity Property Christiana Court, LLC (DT-17), St. Louis, Missouri* (May 18);
- *Geotechnical Soil Boring Work Description, Covidien Plant 6 West Half - Building 101 Area, FUSRAP St. Louis Downtown Site, St. Louis, Missouri*, Revision 1 (June 15);
- *St. Louis Downtown Site (SLDS) Annual Environmental Monitoring Data and Analysis Report for Calendar Year 2011, St. Louis, Missouri* (July 13);
- *CY2012 Second Quarter Laboratory QA/QC Report for the FUSRAP St. Louis Radioanalytical Laboratory & Associated Satellite Laboratories, St. Louis, Missouri* (August);
- *Pre-Design Investigation Summary Report and Final Status Survey Evaluation for the Accessible Soils within the St. Louis Downtown Site Vicinity Property Metropolitan St. Louis Sewer District Lift Station (DT-15), St. Louis, Missouri* (August 27);
- *Post-Remedial Action Report and Final Status Survey Evaluation for the Accessible Soils within the St. Louis Downtown Site Vicinity Property Gunther Salt (DT-4), St. Louis, Missouri* (September 14);
- *Remedial Investigation and Baseline Risk Assessment Report for the Inaccessible Soil Operable Unit at the St. Louis Downtown Site, St. Louis, Missouri* (September 20);
- *Pre-Design Investigation Summary Report and Final Status Survey Evaluation for the Accessible Soils within the St. Louis Downtown Site Vicinity Property DT-34, St. Louis, Missouri* (September 21)*;*
- *Mallinckrodt Plant 6 West Half - Building 101 Area Remedial Action Work Area - Specific Description and Design Package, FUSRAP St. Louis Downtown Site, St. Louis, Missouri* (October 31);
- *Pre-Design Investigation Work Scope for Kiesel Hall Street Property, Appendix B.11 of the SLDS Pre-Design investigation Work Description, FUSRAP St. Louis Downtown Site, St. Louis, Missouri* (November 6); and
- *Environmental Monitoring Implementation Plan for the St. Louis Downtown Site for Calendar Year 2013, St. Louis, Missouri* (December 27).

1.3.1 St. Louis Downtown Site CY 2012 Remedial Actions

During CY 2012, RAs were performed at the following SLDS properties (Figure 1-2): Plant 7 West 700 Pad, City Property Vicinity Property (VP) (DT-2) Phase 2 East of the Levee, and Plant 6 West Half Building 101. Excavation activities continued at the Plant 7 West 700 Pad throughout the year with restoration activities beginning in the third quarter. Excavation activities continued at DT-2 Phase 2 East of the Levee throughout the year. Excavation at Plant 6 West Half Building 101 began in the fourth quarter. A total of 19,211 cubic yards of contaminated material were excavated from the SLDS. All of the contaminated material was shipped via railcar to US Ecology in Idaho for proper disposal.

During CY 2012, *Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)* (DOD 2000) Class 1 verifications were performed at the following SLDS properties: Plant 7 West 700 Pad (SUs 1-5) and DT-2 Phase 2 East of the Levee (SU-4). MARSSIM Class 2 verifications were performed at DT-8. No MARSSIM 3 verifications were performed. Verifications at SLDS were performed to confirm that the remediation goals of the ROD were achieved. SLDS is shown on Figure 1-2.

Characterizations/Pre-Design Investigations (PDIs) were performed at the Kiesel Hall Street Property during CY 2012.

No monitoring wells were decommissioned in CY 2012.

In accordance with the Metropolitan St. Louis Sewer District (MSD) authorization letter for SLDS, 572,799 gallons of excavation water were discharged in CY 2012. Since the beginning of the project, 14,334,757 gallons have been treated and released to MSD at the SLDS.

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2.0 EVALUATION OF RADIOLOGICAL AIR MONITORING DATA

This section documents environmental monitoring activities related to radiological air data. The radiological air measurements taken at the SLDS are conducted as part of the EMP. Radiological air data is collected to evaluate the compliance status of each site with respect to ARARs, to evaluate trends, and to perform dose assessments for radiological contaminants, as appropriate, at each site. Section 2.1 includes a description of the types of radiological measurements conducted at the SLDS, potential sources of the contaminants to be measured (including natural background), and measurement techniques employed during CY 2012.

All radiological air monitoring required through implementation of the *Environmental Monitoring Implementation Plan for the St. Louis Downtown Site for Calendar Year 2012* (EMICY12) (USACE 2012) was conducted as planned during CY 2012. The evaluations of radiological air monitoring data for all SLDS demonstrate compliance with ARARs.

A total effective dose equivalent (TEDE) for the reasonably maximally exposed member of the public was calculated for the SLDS by summing the dose due to gamma radiation, radiological air particulates, and radon (Rn). The TEDE for the reasonably maximally exposed individual at the SLDS was 0.4 millirem per year (mrem/yr) (0.004 millisievert per year [mSv/yr]). The TEDE for the SLDS was below the 10 *Code of Federal Regulations* (*CFR)* 20.1301 limit for members of the public, which is 100 mrem/yr (1 mSv/yr). Details of the radiological dose assessment (TEDE calculation) are presented in Section 6.0.

2.1 RADIOLOGICAL AIR MEASUREMENTS

The three types of radiological air monitoring that were conducted at the St. Louis Sites (SLS) during CY 2012 are gamma radiation, airborne radioactive particulates, and airborne radon. Section 2.2 provides details of the monitoring conducted at the SLDS.

2.1.1 Gamma Radiation

Gamma radiation is emitted from natural, cosmic, and manmade sources. The earth naturally contains gamma radiation-emitting substances, such as U decay series, thorium (Th) decay series, and potassium (K)-40. Cosmic radiation originates in outer space and filters through the atmosphere to the earth. Together, these two sources make up the majority of natural gamma background radiation. The United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) estimates that the total naturally occurring background radiation dose equivalent due to gamma exposure is 65 mrem/yr (0.65 mSv/yr), 35 mrem/yr (0.35 mSv/yr) of which originates from sources on earth and 30 mrem/yr (0.3 mSv/yr) of which originates from cosmic sources (UNSCEAR 1982). The background monitoring locations for the SLS (Figure 2-1) are reasonably representative of background gamma radiation for the St. Louis Metropolitan Area.

Gamma radiation was measured at the SLDS during CY 2012 using thermoluminescent dosimeters (TLDs). TLDs were located at locations representative of areas accessible to the public in order to provide input for calculation of TEDE.

The TLDs were placed at the monitoring location approximately 3 feet (ft) above the ground surface inside a housing shelter. The TLDs were collected quarterly and sent to a properly certified, off-site laboratory for analysis.

2.1.2 Airborne Radioactive Particulates

2.1.2.1 Air Sampling

Airborne radioactive particulates result from radionuclides in soils that become suspended in the air. The radionuclides in soil normally become airborne as a result of wind erosion of the surface soil or as a result of the soil being disturbed (e.g., excavation). This airborne radioactive material includes naturally occurring background concentrations, as well as above background concentrations of radioactive materials present at the SLDS.

Airborne radioactive particulates were measured at the SLDS by drawing air through a filter membrane with an air sampling pump placed approximately 3 ft above the ground, and then analyzing the material contained on the filter. The results of the analysis, when compared to the amount of air drawn through the filter, were reported as radioactive contaminant concentrations (i.e., microcurie per milliliter [µCi/mL]). Particulate air monitors were located in predominant wind directions at excavation and loadout area perimeter locations, as appropriate, to provide input for the National Emissions Standard for Hazardous Air Pollutants (NESHAP) Report and calculation of TEDE to the critical receptor. Air particulate samples were typically collected weekly or more frequently.

2.1.2.2 Estimation of Emissions in Accordance with the National Emissions Standard for Hazardous Air Pollutants

The SLDS CY 2012 NESHAP Report (provided as Appendix A) presents the calculation of the effective dose equivalent (EDE) from radionuclide emissions to critical receptors in accordance with the NESHAP. The report is prepared in accordance with the requirements and procedures contained in 40 *CFR* 61, Subpart I.

Emission rates calculated using air sampling data, activity fractions, and other site-specific information were used for the SLDS as inputs to the U.S. Environmental Protection Agency (USEPA) CAP88-PC Version 3.0 modeling code (USEPA 2007) to demonstrate compliance with the 10 mrem/yr ARAR in 40 *CFR* 61, Subpart I.

The SLDS was in compliance with the 10 mrem/yr ARAR in 40 *CFR* 61, Subpart I. Results from CY 2012 demonstrating compliance are discussed in Section 2.2.1.

2.1.3 Airborne Radon

U-238 is a naturally occurring radionuclide that is commonly found in soil and rock. Rn-222 is a naturally occurring radioactive gas found in the U decay series. A fraction of the radon produced from the radioactive decay of naturally occurring U-238 diffuses from soil and rock into the atmosphere, accounting for natural background airborne radon concentrations. In addition to this natural source, radon is produced from the above background concentrations of radioactive materials present at the SLDS.

Outdoor airborne radon concentration is governed by the emission rate and dilution factors, both of which are strongly affected by meteorological conditions. Surface soil is the largest source of radon. Secondary contributors include oceans, natural gas, geothermal fluids, volcanic gases,

ventilation from caves and mines, and coal combustion. Radon levels in the atmosphere have been observed to vary with height above the ground, season, time of day, and location. The chief meteorological parameter governing airborne radon concentration is atmospheric stability; however, the largest variations in atmospheric radon occur spatially (USEPA 1987).

Radon alpha track detectors (ATDs) were used at the SLDS to measure alpha particles emitted from radon and its associated decay products. Radon ATDs were co-located with environmental TLDs 3 ft above the ground surface in housing shelters at locations representative of areas accessible to the public. Outdoor ATDs were collected approximately every six months and sent to an off-site laboratory for analysis. Recorded radon concentrations are listed in picocurie per liter (pCi/L), and are compared to the value of 0.5 pCi/L average annual concentration above background as listed in 40 *CFR* 192.02(b).

The SLDS was in compliance with the 0.5 pCi/L ARAR in 40 *CFR* 192.02(b). Results from CY 2012 demonstrating compliance are discussed in Section 2.2.3.

At the SLDS, ATDs were also placed in locations within applicable structures to monitor for indoor radon exposure. The ATDs were located in areas that represent the highest likely exposure from indoor radon. ATD locations were selected with consideration given to known radium (Ra)-226 concentrations under applicable buildings and occupancy times at any one location within each building. Annual average indoor radon data in each applicable building were compared to the 40 *CFR* 192.12(b) ARAR value of 0.02 working levels (WL). In accordance with 40 *CFR* 192.12(b), reasonable effort shall be made to achieve, in each habitable or occupied building, an annual average (or equivalent) radon decay product concentration (including background) not to exceed 0.02 WL. In any case, the radon decay product concentration shall not exceed 0.03 WL. Background indoor radon monitors were not necessary, because the regulatory standard of 0.02 WL includes background. Indoor ATDs were also collected approximately every six months and sent to an off-site laboratory for analysis.

The SLDS was in compliance with the 0.02 WL ARAR in 40 *CFR* 192.12(b). Results from CY 2012 demonstrating compliance are discussed in Section 2.2.4.

2.2 EVALUATION OF RADIOLOGICAL AIR MONITORING DATA

2.2.1 Evaluation of Gamma Radiation Data

Gamma radiation monitoring was performed at the SLDS during CY 2012 at four locations that were representative of areas accessible to the public (see Figure 2-2) and at the background location (see Figure 2-1) to compare on-site/off-site exposure and to provide input for calculation of TEDE to the critical receptor. The EMP uses two TLDs at Monitoring Station DA-1 (for each monitoring period) to provide additional quality control (QC) of monitoring data (Figure 2-2). A summary of TLD monitoring results for CY 2012 at the SLDS is shown in Table 2-1. TLD data is located in Appendix B of this report.

Table 2-1. Summary of SLDS Gamma Radiation Data for CY 2012

Monitoring Location	Monitoring Station	First Quarter TLD Data (mrem/qtr) Rpt./Cor.		Second Quarter TLD Data (mrem/qtr) Rpt./Cor.		Third Quarter TLD Data (mrem/qtr) Rpt./Cor.		Fourth Quarter TLD Data (mrem/qtr) Rpt./Cor.		CY 2012 Net TLD Data (mrem/yr)
		Rpt.	Cor.[a,b]	Rpt.	Cor.[a,b]	Rpt.	Cor.[a,b]	Rpt.	Cor.[a,b]	
SLDS Perimeter	DA-1	15.1	0.0	25.7	0.0	22.3	0.0	17	0.0	0.0
	DA-1[c]	16.1	0.0	24.7	0.0	24.3	0.0	17	0.0	---
	DA-2	18.9	0.0	27.1	0.0	26.2	0.0	18.9	0.0	0.0
	DA-3	16.2	0.0	25.5	0.0	24.1	0.0	17.6	0.0	0.0
	DA-6	16.7	0.0	26.8	0.0	28	0.0	19.1	0.0	0.0
Background	BA-1	19.3	---	27.4	---	28.3	---	19.4	---	---

[a] All quarterly data reported from the vendor have been normalized to exactly one quarter's exposure above background.
[b] CY 2012 net TLD data are corrected for background, shelter absorption (s/a = 1.075), and fade.
[c] A QC duplicate is collected at the same time and location and is analyzed by the same method for evaluating precision in sampling and analysis. Duplicate sample results were not included in calculations.
mrem/qtr = millirem per quarter
Rpt. = reported; Cor. = corrected
--- Result calculation not required.

2.2.2 Evaluation of Airborne Radioactive Particulate Data

Air sampling for radiological particulates was not conducted at the SLDS perimeter locations during CY 2012 due to the insignificant potential for material to become airborne at the site. The ground surface at the SLDS is generally covered with asphalt or concrete, which limits the potential for material to become airborne. Air sampling for radiological particulates during CY 2012 was conducted by the RA contractor at the perimeter of each active excavation and loadout area within the SLDS. Air particulate data were used as inputs to the NESHAP Report (Appendix A) and calculation of TEDE to the critical receptor (Section 6.0). A summary of air particulate monitoring data from excavation perimeters is shown in Table 2-2. Airborne radioactive particulate data are located in Appendix B of this report.

Table 2-2. Summary of SLDS Airborne Radioactive Particulate Data for CY 2012

Monitoring Location	Average Concentration (µCi/mL)	
	Gross Alpha	Gross Beta
DT-2	3.21E-15	2.43E-14
Plant 7 West	2.68E-15	2.42E-14
Plant 6	3.11E-15	3.46E-14
Plant 6 Loadout	3.46E-15	2.99E-14
Background Concentration[a]	4.24E-15	2.05E-14

[a] These concentrations are only provided for informational purposes.

2.2.3 Evaluation of Outdoor Airborne Radon Data

Outdoor airborne radon monitoring was performed at the SLDS using ATDs to measure radon emissions. Four detectors were co-located with the TLDs at locations shown in Figure 2-2. One additional detector was located at Monitoring Station DA-1 as a QC duplicate. A background ATD, co-located with the background TLD (see Section 2.2.1), was used to compare on-site exposure and off-site background exposure. In accordance with 40 *CFR* 192.02(b)(2), control of residual radioactive materials from a uranium mill tailings pile must be designed to provide reasonable assurance that releases of radon to the atmosphere will not increase the annual average concentration of radon outside the disposal site by more than 0.5 pCi/L. Although a uranium mill tailings pile is not associated with any of the SLS, these standards are used for comparative purposes. Outdoor airborne radon data were used as an input for calculation of

TEDE to the critical receptor (Section 6) and compared to the 0.5 pCi/L average annual concentration above background value as listed in 40 *CFR* 192.02(b)(2). The average annual radon concentration above background of 0.01 pCi/L at the SLDS monitoring stations met the 40 *CFR* 192.02(b)(2) limit of 0.5 pCi/L. A summary of outdoor airborne radon data is shown in Table 2-3. Outdoor ATD data is located in Appendix B of this report.

Table 2-3. Summary of SLDS Outdoor Airborne Radon (Rn-222) Data for CY 2012

Monitoring Location	Monitoring Station	Average Annual Concentration (pCi/L)		
		01/10/12 to 07/05/12 [a] (uncorrected)	07/05/12 to 01/07/13[a] (uncorrected)	Average Annual Concentration[b]
SLDS	DA-1	0.6	0.2	0.0
	DA-1[c]	0.9	0.4	0.2
	DA-2	0.7	0.3	0.05
	DA-3	0.3	0.2	0.0
	DA-6	0.6	0.3	0.0
Background	BA-1	0.7	0.2	---

[a] Detectors were installed and removed on the dates listed. Data are as reported from the vendor (gross data including background).
[b] Results reported from vendor for two periods are time-weighted and averaged to estimate an annual average radon concentration (pCi/L) above background.
[c] A QC duplicate is collected at the same time and location and is analyzed by the same method for evaluating precision in sampling and analysis.
--- Result calculation not required.

2.2.4 Evaluation of Indoor Airborne Radon Data

Indoor radon monitoring was performed at two SLDS buildings (Building 26 in Plant 1 and DT-4 South Storage Building) using one ATD placed in each building at a height of 4 ft (to approximate breathing zone conditions) to measure radon concentrations (Figure 2-2). The ATDs were installed in March CY 2012 at each monitoring location, collected for analysis after approximately three months of exposure, and replaced with another set that would represent radon exposure for the rest of the year. Recorded radon concentrations, listed in pCi/L, were converted to radon WLs and an indoor radon equilibrium factor of 0.4 (NCRP 1988) was applied.

The results (including background) were evaluated based on the criteria contained in 40 *CFR* 192.12(b). The average annual radon concentration was determined to be less than the 40 *CFR* 192.12(b) criterion of 0.02 WL in each building (SAIC 2013). Additional details of the data and calculation methodology used to determine indoor radon WLs in the SLDS buildings are located in Table 2-4. Indoor ATD data are located in Appendix B of this report.

Table 2-4. Summary of Indoor Airborne Radon (Rn-222) Data for CY 2012

Monitoring Location	Monitoring Station	Average Annual Concentration			
		03/26/12 to 07/09/12 [a] (pCi/L)	07/09/12 to 01/07/13[a] (pCi/L)	Annual Average (pCi/L)[b]	WL[c]
Plant 1 Building 26	DI-1	1	1.6	1.3	0.005
DT-4 South Storage Building	DI-2	1	1.7	1.35	0.005

[a] Detectors were installed and removed on the dates listed. Data are as reported from the vendor.
[b] Results reported from vendor for two periods are averaged to estimate an annual average radon concentration (pCi/L).
[c] The average annual WL is calculated by dividing the average pCi/L by 100 pCi/L per WL and multiplying by 0.4. The average annual WL must be less than 0.02 (40 CFR 192.12(b)).

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3.0 EXCAVATION-WATER MONITORING DATA

This section provides a description of the excavation-water discharge monitoring activities conducted at the SLDS during CY 2012. Excavation water is storm water and ground water that accumulates in excavations that are present at the SLDS as a result of RAs. Excavation-water effluent from the SLDS is discharged to a combined (sanitary and storm) MSD sewer inlet located at the SLDS and flows to the Bissell Point Sewage Treatment Plant under a special discharge authorization. This excavation water is collected, treated, and tested before being discharged to MSD inlets 17D4-353C and 17D3-022C. These MSD inlets are depicted on Figure 3-1.

The purpose of excavation-water discharge sampling at the SLDS is to maintain compliance with specific discharge limits to ensure protection of human health and the environment. The MSD is the regulatory authority for water discharges and has issued authorization letters for the SLDS that allow discharges of excavation water that meet discharge-limit-based criteria (MSD 1998, 2001, 2004, 2006, 2008, 2010, 2012). On October 30, 1998, the USACE received an MSD conditional authorization letter to discharge the excavation water collected at the SLDS resulting from USACE RAs (MSD 1998). On July 23, 2001, the MSD issued a separate conditional discharge authorization letter for discharges of excavation water that result from USACE RAs (MSD 2001). The MSD issued a change to the self-monitoring and special discharge authorization for the SLDS on October 13, 2004, and issued a two-year extension to that authorization dated June 19, 2006 (MSD 2004, 2006). On May 22, 2008, and May 10, 2010, the MSD issued extensions to the special discharge authorization for the SLDS that remained in effect until July 23, 2010 and July 23, 2012, respectively (MSD 2008, 2010). On May 24, 2012, the MSD issued an extension to the special discharge authorization for the SLDS that remains in effect until July 23, 2014 (MSD 2012).The results obtained from these monitoring activities are presented and evaluated with respect to the discharge limits as described in the EMICY12 (USACE 2012).

Section 2.2.2 of the EMICY12 outlines the parameters and annual average discharge limits for the excavation-water discharges at the site (USACE 2012). For cases where the local regulatory authorities have not provided discharge limits for the SLDS radiological contaminants of concern (COCs), parameters from 10 *CFR* 20 Appendix B water effluent values were used.

3.1 EVALUATION OF EXCAVATION-WATER DISCHARGE MONITORING RESULTS AT THE SLDS

During CY 2012, approximately 572,799 gallons of excavation water from 14 batches were discharged to MSD inlets 17D4-353C and 17D3-022C. The analytical results for all measured parameters by batch, along with the total activity discharged for each parameter, are included in Appendix C, Table C-1. A summary of the number of discharges, gallons of water discharged, and total radiological activity for the CY 2012 excavation-water discharges is provided in Table 3-1. All excavation-water monitoring required through implementation of the EMICY12 was conducted as planned during CY 2012. The evaluation of monitoring data demonstrated compliance with all MSD criteria.

Table 3-1. Excavation Water Discharged at the SLDS During CY 2012

Quarter	Number of Discharges	Number of Gallons Discharged [a]	Total Activity (Curies [Ci])		
			Th[b]	U (KPA) [c]	Ra[d]
1	5	161,541	1.6E-06	1.3E-05	7.5E-07
2	3	133,254	1.2E-06	4.6E-06	6.6E-07
3	3	168,070	9.2E-07	5.2E-06	8.8-07
4	3	109,934	9.9E-07	1.0E-05	7.1E-07
Annual Totals	14	572,799	4.7E-06	3.3E-05	3.0E-06

[a] Quantities based on actual quarterly discharges from the SLDS.
[b] Calculated value based on the addition of isotopic analyses: Th-228, Th-230, and Th-232.
[c] Activity based on total U results (kinetic phosphorescence analysis [KPA]).
[d] Calculated value based on the addition of isotopic analyses: Ra-226 and Ra-228.

4.0 GROUND-WATER MONITORING DATA

Ten ground-water monitoring wells were sampled at the SLDS during CY 2012. Ground water was sampled following a protocol for individual wells and analytes, and was analyzed for various radiological constituents and inorganic analytes. Static water levels were measured quarterly at the SLDS. In addition, field parameters were measured continuously during purging of the wells prior to sampling. The ground-water field parameter results for CY 2012 sampling at the SLDS are presented in Appendix D, Table D-1. Summary tables providing the SLDS ground-water analytical sampling results for CY 2012 are found in Appendix D, Table D-2.

Stratigraphy at the SLDS

Ground water at the SLDS is found within three hydrostratigraphic units (HUs). These units are, in order of increasing depth, the Upper HU (HU-A), which consists of fill overlying clay and silt; the Lower HU (HU-B), also referred to as the Mississippi Alluvial Aquifer, consisting of sandy silts and silty sands; and the Limestone Bedrock Unit, referred to as HU-C (Figures 4-1 and 4-2). The upper unit, HU-A, is not an aquifer and is not considered a potential source of drinking water because it has insufficient yield and poor natural water quality. HU-B is one of the principal aquifers in the St. Louis area, but expected future use as drinking water at the SLDS is minimal because the Mississippi and Missouri Rivers provide a readily available source and the water from the aquifer is of poor quality due to elevated concentrations of iron and manganese. HU-C would be an unlikely water supply source, as it is a deeper and less productive HU. There are no known drinking-water wells in the vicinity of the SLDS. The City of St. Louis has Ordinance 66777 which explicitly forbids the installation of wells into the subsurface for the purposes of using the ground water as a potable water supply (City of St. Louis 2005). The expected future use of SLDS ground water is not anticipated to change from its current use.

As shown in the geologic cross-section of the SLDS (Figure 4-2), the erosional surface of the bedrock dips eastward toward the river. HU-A overlies HU-B on the eastern side of the SLDS and overlies bedrock on the western side of the SLDS. HU-B thins westerly along the bedrock surface until it becomes absent beneath the SLDS. HU-C underlies the unconsolidated sediments at depths ranging from 6 meters (m) (19 ft) on the western side of SLDS to 24 m (80 ft) near the Mississippi River.

Ground-Water Criteria

The CY 2012 monitoring data for HU-B ground water at the SLDS are compared to the following ground-water criteria established in the ROD: 50 micrograms per liter (µg/L) arsenic, 5 µg/L cadmium, 20 µg/L total U, and 5 pCi/L combined Ra-226 and Ra-228. The ROD did not establish ground-water criteria for HU-A ground water. An evaluation of concentration trends is conducted for COCs detected in HU-A.

Summary of CY 2012 Ground-Water Monitoring Results for the SLDS

A decreasing arsenic concentration trend was observed in one HU-A well (B16W06S) and an increasing arsenic concentration trend was observed in one HU-B well (DW18) at the SLDS during CY 2012. No other significant changes in the concentrations of the COCs occurred in shallow or deep ground water during CY 2012. Trend analysis of the COCs detected in HU-A ground water indicates continued improvement in HU-A ground-water quality, as reflected in the decreasing trend in arsenic concentrations observed in HU-A well B16W06S.

Two COCs (arsenic and total U) were detected at concentrations above the ROD ground-water criteria in HU-B ground water during CY 2012. The arsenic concentration exceeded the

investigative limit (IL) (50 µg/L) in HU-B well DW18 (110 µg/L). The Mann-Kendall trend test results indicate that there is a statistically significant upward trend in arsenic concentrations in DW18. The total U concentration exceeded the IL (20 µg/L) in the fourth quarter sample from DW19 (38.4 µg/L). No statistically significant trend was observed in total U concentrations in DW19. The Total U concentration reported for the December 2012 sample from DW19 (38.4 µg/L) is the lowest concentration ever reported for this well.

4.1 GROUND-WATER MONITORING AT THE SLDS

The selected remedy presented in the ROD involves excavation and disposal of radiologically contaminated accessible soil and ground-water monitoring. The goal of the ground-water portion of the SLDS remedy is to maintain protection of the Mississippi Alluvial Aquifer (HU-B) and to establish the effectiveness of the source removal action. This goal is achieved by monitoring perimeter wells on a routine basis to ensure that there are no significant impacts from COCs on HU-B. The HU-B ground-water results for the SLDS COCs are compared to the following ROD ground-water criteria (USACE 1998a):

1) The ILs: 50 µg/L arsenic, 5 µg/L cadmium, and 20 µg/L total U; and
2) The concentration limits from the Uranium Mill Tailings Radiation Control Act regulations listed in 40 *CFR* 192.02, Table 1 to Subpart A: 5 pCi/L combined Ra-226 and Ra-228.

The concentration limits for other SLDS COCs listed in 40 *CFR* 192.02, Table 1 to Subpart A (50 µg/L arsenic, 10 µg/L cadmium, and 30 pCi/L combined U-234 and U-238) are not relevant or appropriate because these limits are equal to or less stringent than the ILs.

If monitoring of HU-B indicates that the concentrations of the SLDS COCs significantly exceed the above criteria, the ROD requires that a Ground-Water Remedial Action Alternative Assessment (GRAAA) be initiated to further assess the fate and transport of the COCs in HU-B and to determine if additional RAs are necessary. Total U concentrations were above the IL in HU-B well DW19 over an extended period, initiating Phase 1 of the GRAAA. The first phase of the GRAAA was completed in CY 2003 (USACE 2003). Phase 1 summarized the sampling data available for each of the monitoring wells completed in HU-B and provided recommendations for further investigation of HU-B. This EMDAR carefully reviews the HU-B data to provide additional information for future phases of the GRAAA. The ROD also specifies that a ground-water monitoring plan will be developed to assess the fate and transport of MED/AEC residual contaminants through and following the RA.

Because HU-A is not considered a potential source of drinking water, the ROD did not establish ground-water criteria for HU-A ground water. An evaluation of concentration trends is conducted for the COCs detected in HU-A ground water to support assessment of the effectiveness of the RA in the CERCLA five-year reviews. The results of the trend analysis are presented in Section 4.2.3.

4.2 EVALUATION OF GROUND-WATER MONITORING DATA

SLDS Monitoring Well Network

The EMP monitoring well network for the SLDS is shown on Figure 4-3. The screened HUs for the SLDS ground-water monitoring wells are identified in Table 4-1. Prior to initiating long-term monitoring of the HU-B aquifer, as specified by the ROD (USACE 1998a), there was no EMP sampling performed at the SLDS. In CY 2012, 10 monitoring wells (two HU-A and eight HU-B) were sampled for radionuclides and inorganic COCs at the SLDS. No new ground-water

monitoring wells were installed or transferred at the SLDS in CY 2012. In CY 2012, ground-water sampling at the SLDS was conducted on March 1 (first quarter); May 31 (second quarter); and December 10, 12, and 13 (fourth quarter). No sampling was conducted at SLDS during the third quarter of CY 2012. The CY 2012 analytical results for the SLDS are presented in Appendix D, Table D-2. For discussion purposes, the ground-water analytical data acquired from the CY 2012 sampling events at the SLDS are presented separately for HU-A and HU-B.

Table 4-1. Screened HUs for SLDS Ground-Water Monitoring Wells During CY 2012

Well ID	Screened HU
B16W06D[a]	HU-B
B16W06S[a]	HU-A
B16W07D[a]	HU-B
B16W08D	HU-B
B16W08S[a]	HU-A
B16W09D[a]	HU-B
B16W12S	HU-A
DW14	HU-B
DW15	HU-B
DW16[a]	HU-B
DW17[a]	HU-B
DW18[a]	HU-B
DW19[a]	HU-B
DW21	HU-A
DW22R[a]	HU-B

[a] Wells sampled in CY 2012

4.2.1 Evaluation of HU-A Ground-Water Monitoring Data

The results of the CY 2012 ground-water sampling of HU-A ground water at the SLDS are summarized in Table 4-2. During CY 2012, two HU-A monitoring wells (B16W06S and B16W08S) were sampled. B16W06S was sampled for arsenic, cadmium, Ra-226, Ra-228, Th-228, Th-230, Th-232, U-234, U-235, and U-238 during the second quarter and arsenic and cadmium during the fourth quarter. B16W08S was sampled for arsenic, cadmium, Ra-226, Ra-228, Th-228, Th-230, Th-232, U-234, U-235, and U-238 during the second quarter.

Table 4-2. Analytes Detected in HU-A Ground Water at the SLDS During CY 2012

Analyte	Units	Station	Minimum Detected	Maximum Detected	Mean Detected	Frequency of Detection
Arsenic	µg/L	B16W06S	31	167	99	2/2
Th-230	pCi/L	B16W06S	0.62 J	0.62 J	0.62 J	1/1
		B16W08S	1.04 J	1.04 J	1.04 J	1/1
U-234	pCi/L	B16W08S	3.02	3.02	3.02	1/1
U-238	pCi/L	B16W08S	1.38 J	1.38 J	1.38 J	1/1
Total U[a]	µg/L	B16W08S	4.12	4.12	4.12	1/1

[a] Total U values were calculated from isotopic concentrations in pCi/L and converted to µg/L using radionuclide-specific activities and assuming secular equilibrium.
J = Validation qualifier (VQ) indicating the analyte was identified as estimated quantity.

The analytes detected in HU-A ground water in CY 2012 are listed in Table 4-2. Because the historical results for these COCs were generally below or only slightly above their detection limits (DLs), a trend analysis was not conducted for Th-230, U-234, or U-238. Trend analysis was conducted for arsenic in B16W06S. Based on the graphs and quantitative evaluation of trends using the Mann-Kendall trend test (presented in Section 4.2.3), there is a statistically

significant downward trend in arsenic concentrations in B16W06S. Figures 4-4 and 4-5 provide the time-versus-concentration plots for arsenic and total U, respectively, at SLDS. Figure 4-6 provides an expanded version of the time-versus-concentration plot for arsenic in B16W06S. The remaining SLDS COCs (cadmium, Ra-226, Ra-228, Th-228, Th-232, and U-235) were not detected in the two HU-A ground-water wells monitored during CY 2012.

4.2.2 Evaluation of HU-B Ground-Water Monitoring Data

During CY 2012, eight SLDS wells completed in the Mississippi Alluvial Aquifer (HU-B) were monitored for various parameters, including the COCs arsenic, cadmium, Ra-226, Ra-228, Th-228, Th-230, Th-232, U-234, U-235, and U-238. Detected concentrations were compared to the respective ROD ground-water criteria. Table 4-3 lists the analytes that were detected in HU-B ground water during CY 2012 and compares the results with the ROD ground-water criteria.

Table 4-3. Analytes Detected in HU-B Ground Water at the SLDS During CY 2012

Analyte	ROD Ground-Water Criteria		Units	Station[b]	Minimum Detected	Maximum Detected	Mean Detected	# Detects > ROD Ground-Water Criteria	Frequency of Detection
	IL[a]	40 *CFR* 192.02 Table 1, Subpart A							
Arsenic	50	NA	µg/L	B16W09D	11	11	11	0	1/1
				DW16	31	31	31	0	1/1
				DW18	110	110	110	1	1/1
				DW22R	31.7	31.7	31.7	0	1/1
Cadmium	5	NA	µg/L	B16W09D	0.11	0.11	0.11	0	1/1
				DW16	0.48	0.48	0.48	0	1/1
				DW17	5.7	5.7	5.7	1	1/1
				DW18	0.3	0.3	0.3	0	1/1
Ra-226	---[c]	5[d]	pCi/L	B16W06D	2.42 J	2.42 J	2.42 J	0	1/1
				DW19	3.15 J	3.15 J	3.15 J	0	1/1
Th-228	NA	NA	pCi/L	B16W07D	0.422 J	0.422 J	0.422 J	NA	1/1
				DW17	0.352 J	0.352 J	0.352 J	NA	1/1
				DW18	2.28 J	2.28 J	2.28 J	NA	1/1
				DW19	1.25 J	1.25 J	1.25 J	NA	1/1
Th-230	NA	NA	pCi/L	B16W06D	1.18 J	1.18 J	1.18 J	NA	1/1
				B16W07D	0.985 J	0.985 J	0.985 J	NA	1/1
				DW17	0.882 J	0.882 J	0.882 J	NA	1/1
				DW18	6.76	6.76	6.76	NA	1/1
				DW19	1.13 J	1.13 J	1.13 J	NA	1/1
				DW22R	0.261 J	0.261 J	0.261 J	NA	1/1
Th-232	NA	NA	pCi/L	DW18	0.995 J	0.995 J	0.995 J	NA	1/1
Total U[e]	20	NA	µg/L	B16W07D	1.0	1.0	1.0	0	1/1
				DW17	6.9	6.9	6.9	0	1/1
				DW19	38.4	38.4	38.4	1	1/1
				DW22R	0.7	0.7	0.7	0	1/1

[a] USACE 1998a.
[b] Table lists only those stations at which the analyte was detected in HU-B ground water and lists only those analytes having ROD ground-water criteria.
[c] Although the ROD does not reference an IL for Ra-226, it does reference the maximum constituent concentration listed in 40 *CFR* 192.02, Table 1, Subpart A.
[d] Concentration limit for combined Ra-226 and Ra-228.
[e] Total U values were calculated from isotopic concentrations in pCi/L and converted to µg/L using radionuclide-specific activities and assuming secular equilibrium.
J Validation qualifier (VQ) indicating the analyte was identified as estimated quantity.
NA Not appropriate. No IL is specified or the concentration limits specified in Table 1 are the same or less stringent than the IL and thus are not relevant or appropriate.

Three SLDS COCs (arsenic, cadmium, and total U) were detected at concentrations above the ROD ground-water criteria in HU-B ground water during CY 2012. The concentration of arsenic exceeded the IL (50 µg/L) in the December 2012 sample from DW18 (110 µg/L). The concentration of cadmium in the March 2012 sample from DW17 (5.7 µg/L) exceeded the IL (5 µg/L). However, when measurement error is taken into account, the result was not above the IL. The concentration of total U exceeded the IL (20 µg/L) in the December 2012 sample from DW19 (38.4 µg/L). Figures 4-4 and 4-5 provide the time-versus-concentration plots for arsenic in DW18 and total U in DW19, respectively, at SLDS. Figure 4-6 provides an expanded version of the time-versus-concentration plot for arsenic in DW18.

4.2.3 Comparison of Historical Ground-Water Data at the SLDS

A quantitative evaluation of COC concentration trends in SLDS ground water was conducted based on available sampling data for the period from January 1999 through December 2012. Mann-Kendall trend testing is used to evaluate possible trends for those COCs that are detected in HU-A and for those COCs that exceed ROD ground-water criteria in HU-B during CY 2012. Mann-Kendall trend testing was not conducted for those COCs that have insufficient sampling data (fewer than six sampling results for the period January 1999 to December 2012), a detection frequency less than 50 percent, or historical results that were generally within the range of measurement error of their DLs. For HU-A, a trend analysis was not conducted for Th-230 in B16W06S or B16W08S because their historical results were generally below or only slightly above their DLs. Trend analysis was conducted for arsenic in HU-A well B16W06S. Mann-Kendall trend testing was also conducted for two COCs that exceeded the ILs in HU-B wells during CY 2012: arsenic in DW18 and total U in DW19. A trend analysis was not conducted for cadmium in DW17 because the CY 2012 result did not exceed the IL when measurement error was taken into account.

Statistical Method and Trend Analysis

Several statistical methods are available to evaluate contaminant trends in ground water. These include the Mann-Kendall trend test, the Wilcoxon Rank Sum test, and the Seasonal Kendall test (USEPA 2000). The latter two tests are applicable to data that may or may not exhibit seasonal behavior, but generally require larger sample sizes than the Mann-Kendall trend test. The Mann-Kendall trend test was selected for this project because this test can be used with small sample sizes (as few as four data points) and because a seasonal variation in concentrations was not indicated by the time-versus-concentration plots at the SLDS. The Mann-Kendall trend test is a non-parametric test and, as such, is not dependent upon assumptions of distribution, missing data, or irregularly-spaced monitoring periods. In addition, data reported as being less than the DL can be used (Gibbons 1994). The test can assess whether a time-ordered dataset exhibits an increasing or decreasing trend, within a predetermined level of significance. While the Mann-Kendall trend test can use as few as four data points, often this is not enough data to detect a trend. Therefore, the test was performed only at those monitoring stations where data have been collected for at least six sampling events.

A customized Microsoft Excel spreadsheet was used to perform the Mann-Kendall trend test. The test involves listing the sampling results in chronological order and computing all differences that may be formed between current measurements and earlier measurements. The value of the test statistic (S) is the difference between the number of strictly positive differences and the number of strictly negative differences. If S is a large positive value, then there is evidence of an increasing trend in the data. If S is a large negative value, then there is evidence

of a decreasing trend in the data. If there is no trend and all observations are independent, then all rank orderings of the annual statistics are equally likely (USEPA 2000). The results of the Mann-Kendall trend test are reported in terms of a p-value or Z-score, depending on sample size, N. If the sample size is ≤ 10, then the p-value is computed. If the p value ≤ 0.05, the test concludes that the trend is statistically significant. If the p value > 0.05, the test concludes there is no evidence of a significant trend. For dataset sizes larger than 10, the Z-score is compared to ±1.64, which is the comparison level at a 95 percent confidence level. If the Z-score is greater than +1.64, the test concludes that a significant upward trend exists. If the Z-score is less than -1.64, the test concludes that a significant downward trend exists. For Z-scores between -1.64 and +1.64, there is no evidence of a significant trend.

The results of the Mann-Kendall trend test are less reliable for datasets containing high numbers of non-detects, particularly if the DL changes over time. For that reason, for datasets where more than 50 percent of the time-series data are non-detect, the Mann-Kendall trend test was not conducted. There is no general consensus regarding the percentage of non-detects that can be handled by the Mann-Kendall trend test. However, because the Mann-Kendall trend test is a nonparametric test that uses relative magnitudes, not actual values, it is generally valid even in cases where there are large numbers of non-detects.

Only unfiltered data were used, and split sample and QC sample results were not included in the database for the Mann-Kendall trend test. The Mann-Kendall trend test is used to evaluate the data and determine trends without regard to isotopic analysis. In addition, for monitoring wells where the Mann-Kendall trend test has indicated a trend (either upward or downward), another analysis is performed to determine if the trend is due to inherent error associated with the analytical test method for each sample analysis. For each specific constituent, graphs are generated to depict the trends, if present, and the associated error bars.

Results of Trend Analysis for Ground Water at the SLDS

The Mann-Kendall trend test results are provided in Table 4-4. Figure 4-6 provides time-versus-concentration plots for those wells and analytes exhibiting a statistically significant trend based on the Mann-Kendall trend test results (i.e., arsenic in B16W06S and DW18).

Table 4-4. Results of Mann-Kendall Trend Test[a] for SLDS Ground Water During CY 2012

Analyte	Station	Hydrogeologic Unit	N[b]	Test Statistics[c]		Trend[d]
				S	Z	
Arsenic	B16W06S	HU-A	16	-62	-2.75	Downward Trend
	DW18	HU-B	23	118	3.09	Upward Trend
Total U	DW19	HU-B	25	-28	-0.63	No Trend

[a] One-tailed Mann-Kendall trend tests were performed at a 95 percent level of confidence. For non-radiological data, non-detected results were replaced with one half of the lowest DL.
[b] N is the number of unfiltered ground-water sample results for a particular analyte at the well for the period between January 1999 and December 2012.
[c] Test Statistics: S = the S-Statistic; Z = Z- score, or normalized test statistic (used if N>10).
[d] Trend: The Z-score is compared to ±1.64 to determine trend significance.

Inorganics

Based on the results of the Mann-Kendall trend test, one well exhibits a downward trend for arsenic (HU-A well B16W06S), and one well exhibits an upward trend for arsenic (HU-B well DW18). Because the Mann-Kendall trend test does not consider the effects of measurement error and does not provide any information concerning the magnitude of the trend, time-versus-concentration plots of arsenic in B16W06S and DW18 were used to evaluate these factors

(Figure 4-6). The plots also show the best-fit trend lines based on the data scatter. No other significant changes in the concentrations of the inorganic COCs occurred in shallow or deep ground water during CY 2012.

Radionuclides

The Mann-Kendall trend test results indicate that there is no trend for total U in HU-B well DW19. As shown in the time-versus-concentration plot on Figure 4-5, concentrations of total U have not shown significant increases since 1999; however, they have remained above the IL (20 µg/L) since 1999. The concentration of total U reported for the December 2012 sample from DW19 (38.4 µg/L) is the lowest concentration ever reported for a sample collected from this well.

4.2.4 Evaluation of Potentiometric Surface at the SLDS

Ground-water elevations were measured in monitoring wells at the SLDS in March, May, August, and December of CY 2012. Potentiometric surface maps were created from the May and December measurements to illustrate ground-water flow conditions in wet and dry seasons, respectively. The potentiometric maps for both HU-A and HU-B are presented on Figures 4-7 through 4-10.

The ground-water surface in HU-A under the eastern portion of the Mallinckrodt plant is generally sloping northeastward toward the Mississippi River (Figures 4-7 and 4-9). The ground water may be present in separate lenses or subunits of the heterogeneous HU-A. Comparison of Figure 4-7 (May) with Figure 4-9 (December) indicates ground-water flow direction patterns in HU-A are similar for the wet and dry season conditions, but the hydraulic gradient is higher (steeper) during the dry season. During CY 2012, the HU-A potentiometric surface elevations showed some seasonal fluctuation in ground-water elevations, with elevations averaging approximately 1.2 m (4.1 ft) higher during the wet season (May) than during the dry season (December). A larger difference between the dry and wet season elevations is observed in the two wells located near the river (B16W06S and B16W08S), with the December elevations averaging 2 m (6.7 ft) lower than the May elevations. The effects of seasonal fluctuations in river stage on the HU-A ground-water levels are generally limited to the area nearest to the river.

As shown in Figures 4-8 and 4-10, the ground-water flow direction and gradient in HU-B are strongly influenced by river stage. This indicates that ground water in HU-B is hydraulically connected to the Mississippi River. The water levels measured at the SLDS indicate that HU-B ground-water elevations averaged approximately 2.4 m (8.0 ft) higher on May 31 than on December 10; this generally corresponds to the difference in the daily river stage, which was approximately 2.7 m (9.0 ft) higher on May 31 (125.9 m [413 ft] above mean sea level [amsl]) than on December 10 (118.3 m [388 ft] amsl). Both the May and December 2012 potentiometric surface maps indicate the presence of relatively low hydraulic gradients in the vicinity of DW19 and the former location of Building 101. The potentiometric surface maps for HU-B indicate a potentiometric high located in the vicinity of DW16. The flow direction at the site is generally northeastward toward the Mississippi River.

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5.0 ENVIRONMENTAL QUALITY ASSURANCE PROGRAM

5.1 PROGRAM OVERVIEW

The environmental quality assurance (QA) program includes management of the QA and QC programs, plans, and procedures governing environmental monitoring activities at all SLS and at subcontracted vendor laboratories. This section describes the environmental monitoring standards at FUSRAP and the goals for these programs, plans, and procedures.

The environmental QA program provides FUSRAP with reliable, accurate, and precise monitoring data. The program furnishes guidance and directives to detect and prevent problems from the time a sample is collected until the associated data are evaluated. The Missouri Department of Natural Resources (MDNR) conducted site visits to observe and participate in the environmental monitoring activities. USEPA and MDNR regulatory oversight of sampling activities provided an additional level of QA/QC.

Key elements in achieving the goals of this program are maintaining compliance with the QA program, personnel training, compliance assessments, use of QC samples, documentation of field activities and laboratory analyses, and a review of data documents for precision, accuracy, and completeness.

General objectives are as follows:

- To provide data of sufficient quality and quantity to support ongoing remedial efforts, to aid in defining potential COCs, to meet the requirements of the EMG (USACE 1999a) and the *Sampling and Analysis Guide for the St. Louis Sites* (SAG) (USACE 2000), and to support the ROD (USACE 1998a).
- To provide data of sufficient quality to meet applicable State of Missouri and federal concerns (e.g., reporting requirements).
- To ensure samples were collected using approved techniques and are representative of existing site conditions.

5.2 QUALITY ASSURANCE PROGRAM PLAN

The Quality Assurance Program Plan (QAPP) for activities performed at the SLS is described within Section 3.0 of the SAG. The QAPP provides the organization, objectives, functional activities, and specific QA/QC activities associated with investigations and sampling activities at the SLS.

QA/QC procedures are performed in accordance with applicable professional technical standards, USEPA requirements, government regulations and guidelines, and specific project goals and requirements. The QAPP was prepared in accordance with USEPA and USACE guidance documents, including *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans* (USEPA 1991), *EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations* (USEPA 1994), and *Requirements for the Preparation of Sampling and Analysis Plans* (USACE 2001).

5.3 SAMPLING AND ANALYSIS GUIDE

The SAG summarizes standard operating procedures (SOPs) and data quality requirements for collecting and analyzing environmental data. The SAG integrates protocols and methodologies identified under various USACE and regulatory guidance. It describes administrative procedures

for managing environmental data and governs sampling plan preparation, data review, evaluation and validation, database administration, and data archiving. The structure for identified sampling/monitoring was delineated through programmatic documents such as the EMG (USACE 1999a), which is an upper tier companion document to the SAG (USACE 2000). The EMICY12 document outlines the analyses to be performed at each site for various media (USACE 2012).

Flexibility to address non-periodic environmental sampling, such as specific studies regarding environmental impacts, well installations, and/or in-situ waste characterizations, was accomplished by the issuance of work descriptions. Environmental monitoring data obtained during these sampling activities were reported to USEPA Region VII on a quarterly basis, per the requirements of the FFA.

5.4 FIELD SAMPLE COLLECTION AND MEASUREMENT

Prior to beginning field sampling, field personnel were trained, as necessary, and participated in a project-specific readiness review. These activities ensured that standard procedures were followed in sample collection and in completing field logbooks, chain-of-custody forms, labels, and custody seals. Documentation of training and readiness was submitted to the project file.

The master field investigation documents are the site field logbooks. The primary purpose of these documents is to record each day's field activities; personnel on each sampling team; and any administrative occurrences, conditions, or activities that may have affected the fieldwork or data quality of any environmental samples for any given day. Guidance for documenting specific types of field sampling activities in field logbooks or log sheets is provided in Appendix C of Engineer Manual (EM)-200-1-3 (USACE 2001).

At any point in the process of sample collection or data and document review, a non-conformance report may be initiated if non-conformances are identified (SAIC 2002). Data entered into the database may be flagged accordingly.

5.5 PERFORMANCE AND SYSTEM AUDITS

Performance and system audits of both field and laboratory activities are conducted to verify that sampling and analysis activities were performed in accordance with the procedures established in the SAG and activity-specific work description or EMICY documents.

5.5.1 Field Assessments

Internal assessments (audit or surveillance) of field activities (sampling and measurements) are conducted by the QA/QC Officer (or designee). Assessments include an examination of field sampling records, field instrument operating records, sample collection, handling and packaging procedures, maintenance of QA procedures, and chain-of-custody forms. These assessments occurred at the onset of the project to verify that all established procedures were followed (systems audit).

Performance assessments followed the systems audit to ensure that deficiencies had been corrected and to verify that QA practices/procedures were being maintained throughout the duration of the project. These assessments involved reviewing field measurement records, instrumentation calibration records, and sample documentation.

External assessments may be conducted at the discretion of the USACE, USEPA Region VII, or the State of Missouri.

5.5.2 Laboratory Audits

The on-site laboratories are subject to USACE periodic review(s) by the local USACE Chemist to demonstrate compliance with the *DOD Quality Systems Manual for Environmental Laboratories* (DOD-QSM) Version 4.2 (DOD 2010). In conjunction, blind third-party performance evaluation studies (performance audits) are participated in at least twice per year, and results are reported to the local USACE point(s) of contact. In addition, contract laboratories are required to be accredited under the U.S. Department of Defense (DOD) Environmental Laboratory Accreditation Program (ELAP). The DOD ELAP requires an annual audit and re-accreditation every three years.

These system audits include examining laboratory documentation of sample receipt, sample log-in, sample storage, chain-of-custody procedures, sample preparation and analysis, and instrument operating records. Performance audits consist of USACE laboratories receiving performance evaluation samples from an outside vendor for an ongoing assessment of laboratory precision and accuracy. The analytical results of the analysis of performance evaluation samples are evaluated by USACE Hazardous, Toxic and Radioactive Waste – Center of Expertise and/or the local oversight chemist to ensure that laboratories maintain acceptable performance.

Internal performance and system audits of laboratories were conducted by the Laboratory QA Manager as directed in the *Laboratory Quality Assurance Plan for the FUSRAP St. Louis Radiological Laboratory* (USACE 2013). These system audits included an examination of laboratory documentation of sample receipt, sample log-in, sample storage, chain-of-custody procedures, sample preparation and analysis, and instrument operating records against the requirements of the laboratory's SOPs. Internal performance audits were also conducted on a regular basis. Single-blind performance samples were prepared and submitted along with project samples to the laboratory for analysis. The Laboratory QA Manager evaluated the analytical results of these single-blind performance samples to ensure that the laboratory maintained acceptable performance. Quarterly QA/QC reports are generated and provided to the local USACE authority – the reports document the ongoing QC elements and provide for further monitoring of quality processes/status. Also, QA Plans and methodology are to follow the guidance as presented in the DOD-QSM (DOD 2010).

5.6 SUBCONTRACTED LABORATORY PROGRAMS

All samples collected during environmental monitoring activities were analyzed by USACE-approved laboratories. QA samples were collected for ground water and soil and were analyzed by the designated USACE QA laboratory. Each laboratory supporting this work maintained statements of qualifications, including organizational structure, QA Manual, and SOPs. Additionally, subcontracted laboratories are also required to be an accredited laboratory under the DOD ELAP.

Samples collected during these investigations were analyzed by USEPA SW-846 methods and by other documented USEPA or nationally recognized methods. Laboratory SOPs are based on the USEPA methods contained in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846*, Third Edition (USEPA 1993).

5.7 QUALITY ASSURANCE AND QUALITY CONTROL SAMPLES

QA/QC samples were collected and analyzed for the purpose of assessing the quality of the sampling effort and the reported analytical data. QA/QC samples include duplicate samples

(-1) and split samples (-2). The equation utilized for accuracy and precision can be found in Section 5.9.

5.7.1 Duplicate Samples

Duplicate samples measure precision and were collected by the sampling teams. Samples were submitted for analysis to the on-site laboratory or contract laboratories. The identity of duplicate samples is held blind to the analysts, and the purpose of these samples is to provide activity-specific, field-originated information regarding the homogeneity of the sampled matrix and the consistency of the sampling effort. These samples were collected concurrently with the primary environmental samples and equally represent the medium at a given time and location. Duplicate samples were collected from each medium addressed by this project and were submitted to the contracted laboratories for analysis. Approximately one duplicate sample was collected for every 20 field samples of each matrix and analyte across the SLS. Precision is measured by the relative percent difference (RPD) for radiological and non-radiological analyses or by the normalized absolute difference (NAD) for radiological analyses.

The non-radiological analyses RPDs are presented in Table 5-1. The radiological analyses RPDs and NADs are presented in Table 5-2. The overall precision for the CY 2012 environmental monitoring sampling activities was acceptable. See Section 5.9 for the evaluation process.

Table 5-1. Non-radiological Duplicate Sample Analysis for CY 2012[a]

Ground-water Sample Name	Arsenic	Cadmium
	RPD	RPD
HIS145172 / HIS145172-1	NC	NC
SLA142416 / SLA142416-1	11.76	3.39
SLA143658 / SLA143658-1	NC	NC

[a] The QA program includes both the SLDS and NC Sites. Since there were only 11 samples from the SLDS in CY 2012, QC samples from the NC Site were utilized.
NC Not calculated due to one or both concentrations being below DLs.
-1 Sample Duplicate

Table 5-2. Radiological Duplicate Sample Analysis for CY 2012[a]

Sample Name	Radium-226		Radium-228		Thorium-228		Thorium-230	
	RPD	NAD	RPD	NAD	RPD	NAD	RPD	NAD
HIS145172 / HIS145172-1	NC	NA	*	*	NC	NA	30.29	0.28
SLA142416 / SLA142416-1	NC	NA	*	*	24.71	NA	NC	NA
SLA143658 / SLA143658-1	NC	NA	*	*	NC	NA	2.73	NA
	Thorium-232		Uranium-234		Uranium-235		Uranium-238	
	RPD	NAD	RPD	NAD	RPD	NAD	RPD	NAD
HIS145172 / HIS145172-1	NC	NA	7.19	NA	NC	NA	18.89	NA
SLA142416 / SLA142416-1	NC	NA	107.20	1.62	NC	NA	**131.18**	**2.01**
SLA143658 / SLA143658-1	NC	NA	30.91	0.28	NC	NA	NC	NA

[a] The QA program includes both the SLDS and NC Sites. Since there were only 11 samples from the SLDS in CY 2012, QC samples from the NC Site were utilized.
NC Not calculated due to one or both concentrations being below DLs.
NA Not applicable; see RPD.
* Not calculated because either the parent or duplicate sample was not analyzed.
-1 Sample Duplicate
Boldface Values exceed the control limits. Values not in boldface are within control limits.

5.7.2 Split Samples

Split samples measure accuracy and were collected by the sampling team and sent to a USACE QA laboratory for analysis to provide an independent assessment of contractor and subcontractor laboratory performance. Approximately one split sample was collected for every 20 field samples of each matrix for non-radiological and radiological analytes across the SLS. The non-radiological analyses RPDs are presented in Table 5-3. The radiological analyses RPDs and NADs are presented in Table 5-4. See Section 5.9 for the evaluation process.

Table 5-3. Non-radiological Split Sample Analysis for CY 2012[a]

Ground-water Sample Name	Arsenic	Cadmium
	RPD	RPD
HIS145172 / HIS145172-2	NC	**41.67**
SLA142416 / SLA142416-2	22.22	**30.99**
SLA143658 / SLA143658-2	NC	**46.51**

[a] The QA program includes both the SLDS and NC Sites. Since there were only 11 samples from the SLDS in CY 2012, QC samples from the NC Site were utilized.
NC Not calculated due to one or both concentrations being below DLs.
Boldface Values exceed the control limits. Values not in boldface are within control limits.
-2 Sample Split

Table 5-4. Radiological Split Sample Analysis for CY 2012[a]

Sample Name	Radium-226		Radium-228		Thorium-228		Thorium-230	
	RPD	NAD	RPD	NAD	RPD	NAD	RPD	NAD
HIS145172 / HIS145172-1	NC	NA	*	*	NC	NA	46.79	0.40
SLA142416 / SLA142416-1	NC	NA	*	*	NC	NA	NC	NA
SLA143658 / SLA143658-1	NC	NA	*	*	NC	NA	NC	NA
	Thorium-232		Uranium-234		Uranium-235		Uranium-238	
	RPD	NAD	RPD	NAD	RPD	NAD	RPD	NAD
HIS145172 / HIS145172-1	NC	NA	53.63	0.90	NC	NA	13.07	NA
SLA142416 / SLA142416-1	NC	NA	100.00	1.69	NC	NA	**131.98**	**2.13**
SLA143658 / SLA143658-1	NC	NA	55.32	0.73	NC	NA	14.35	NA

[a] The QA program includes both the SLDS and NC Sites. Since there were only 11 samples from the SLDS in CY 2012, QC samples from the NC Site were utilized.
NC Not calculated due to one or both concentrations being below DLs.
NA Not applicable; see RPD.
* Not calculated because either the parent or duplicate sample was not analyzed.
Boldface Values exceed the control limits. Values not in boldface are within control limits.
-2 Sample Split

5.7.3 Equipment Rinsate Blanks

Equipment rinsate blanks are typically taken from the water rinsate collected from equipment decontamination activities and comprise samples of analyte-free water, which has been rinsed over sampling equipment for the purposes of decontamination, collected, and submitted for analysis of the parameters of interest. All of the monitoring wells have dedicated sampling equipment; therefore, equipment rinsate blanks were not employed to assess the effectiveness of the decontamination process because it does not apply.

5.8 DATA REVIEW, EVALUATION AND VALIDATION

All data packages received from the analytical laboratory were reviewed and either evaluated or validated by data management personnel. Data validation is the systematic process of ensuring that

the precision and accuracy of the analytical data are adequate for their intended use. Validation was performed in accordance with USEPA regional or National Functional Guidelines or with project-specific guidelines. General chemical data quality management guidance found in Engineer Regulation (ER)-1110-1-263 (USACE 1998b) was also used when planning for chemical data management and evaluation. Additional details of data review, evaluation, and validation are provided in the *FUSRAP Laboratory Data Management Process for the St. Louis Site* (USACE 1999b). Data assessment guidance, to determine the usability of data from Hazardous, Toxic and Radioactive Waste projects, was provided in EM-200-1-6 (USACE 1997).

One hundred (100) percent of the data generated from all analytical laboratories was independently reviewed and either evaluated or validated. The data review process documents the possible effects on the data that result from various QC failures; it does not determine data usability, nor does it include assignment of data qualifier flags. The data evaluation process uses the results of the data review to determine the usability of the data. The process of data evaluation summarizes the potential effects of QA/QC failures on the data, and the USACE District Chemist or District Health Physicist assesses their impact on the attainment of the project-specific data quality objectives (DQOs). Consistent with the data quality requirements, as defined in the DQOs, approximately 10 percent of all project data was validated.

5.9 PRECISION, ACCURACY, REPRESENTATIVENESS, COMPARABILITY, COMPLETENESS, AND SENSITIVITY

The data evaluation process considers precision, accuracy, representativeness, completeness, comparability, and sensitivity. The following subsections will provide detail to the particular parameters and to how the data was evaluated for each with discussion and tables to present the associated data.

Accuracy and precision can be measured by the RPD or the NAD using the following equations:

$$RPD = \left(\frac{|S - D|}{\frac{S + D}{2}} \right) \times 100$$

$$NAD = \frac{|S - D|}{\sqrt{U_S^2 + U_D^2}}$$

Where:
- S = Parent Sample Result
- D = Duplicate/Split Sample Result
- U_S = Parent Sample Uncertainty
- U_D = Duplicate/Split Sample Uncertainty

The RPD is calculated for all samples if a detectable result is reported for both the parent and the QA field split or field duplicate. For radiological samples, when the RPD is greater than 30 percent, the NAD is used to determine the accuracy or precision of the method. NAD accounts for uncertainty in the results, RPD does not. The NAD should be equal to or less than a value of 1.96. Neither equation is used when the analyte in one or both of the samples is not detected. In cases where neither equation can be used, the comparison is counted as acceptable in the overall number of comparisons.

Precision is a measure of mutual agreement among individual measurements performed under the same laboratory controls. To evaluate for precision, a field duplicate is submitted to the same laboratory as the original sample to be analyzed under the same laboratory conditions. The RPD and NAD between the two results was calculated and used as an indication of the precision of the

analyses performed (Tables 5-1 and 5-2). Sample collection precision was measured in the laboratory by the analyses of duplicates. The overall precision for the CY 2012 environmental monitoring sampling activities was acceptable.

Accuracy provides a gauge or measure of the agreement between an observed result and the true value for an analysis. The RPD and NAD between the two results was calculated and used as an indication of the accuracy of the analyses performed (Tables 5-3 and 5-4). For this report, accuracy is measured through the use of the field split samples through a comparison of the prime laboratory results versus the results of an independent laboratory. Representativeness expresses the degree to which data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition. Representativeness is a qualitative parameter that depends upon the proper design of the sampling program and proper laboratory protocols. Representativeness is satisfied through proper design of the sampling network, use of proper sampling techniques, following proper analytical procedures, and not exceeding holding times of the samples. Representativeness was determined by assessing the combined aspects of the QA program, QC measures, and data evaluations. The network design was developed from the EMICY12; the sampling protocols from the SAG have been followed; and, analytical procedures were conducted within the bounds of the QAPP. The overall representativeness of the CY 2012 environmental monitoring sampling activities was acceptable for the media and the media's sampling previously listed in this document.

Comparability expresses the confidence with which one dataset can be compared to another. The extent to which analytical data will be comparable depends upon the similarity of sampling and analytical methods, as well as sample-to-sample and historical comparability. Standardized and consistent procedures used to obtain analytical data are expected to provide comparable results. These most recent (post CY 1997) analytical data, however, may not be directly comparable to data collected before CY 1997 because of differences in DQOs. Some media, such as storm-water, and radiological monitoring have values that are primarily useful in the present and the comparison to historic data is not as relevant.

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount expected to be obtained under normal conditions. It is expected that laboratories will provide data meeting QC acceptance criteria for all samples tested. For the CY 2012 environmental monitoring sampling activities, the data completeness was 100 percent (FUSRAP DQO for completeness is 90 percent).

Sensitivity is the determination of minimum detectable concentration (MDC) values that allows the investigation to assess the relative confidence that can be placed in a value in comparison to the magnitude or level of analyte concentration observed. For this report, MDC is a term generically used to represent both the method detection limit (MDL) for non-radiological analytes and the minimum detectable activity (MDA) for radiological analytes. The closer a measured value comes to the MDC, the less confidence and more variation the measurement will have. Project sensitivity goals were expressed as quantitation level goals in the SAG. These levels were achieved or exceeded throughout the analytical process.

The MDC is reported for each result obtained by laboratory analysis. These very low MDCs are achieved through the use of gamma spectroscopy for all radionuclides of concern, with additional analyses from alpha spectroscopy for thorium, and inductively coupled plasma (ICP) for metals. Variations in MDCs for the same radiological analyte reflects variability in the detection efficiencies and conversion factors due to factors such as individual sample aliquot, sample density, and variations in analyte background radioactivity for gamma and alpha spec, at the laboratory.

Variations in MDLs for the same non-radiological analyte reflect variability in calibrations between laboratories, dilutions, and analytical methods. In order to complete the Data Evaluation (i.e. precision, accuracy, representativeness, and comparability), analytical results are desired that exceed the MDC of the analyte.

5.10 DATA QUALITY ASSESSMENT SUMMARY

The overall quality of the data meets the established project objectives. Through proper implementation of the project data review, evaluation, validation, and assessment process, project information has been determined to be acceptable for use.

Data, as presented, have been qualified as usable, but estimated when necessary. Data that have been estimated have concentrations/activities that are below the quantitation limit or are indicative of accuracy, precision, or sensitivity being less than desired but adequate for interpretation.

These data can withstand scientific scrutiny, are appropriate for their intended purpose, are technically defensible, and are of known and acceptable precision and accuracy. Data integrity has been documented through proper implementation of QA/QC measures. The environmental information presented has an established confidence, which allows utilization for the project objectives and provides data for future needs.

5.11 RESULTS FOR PARENT SAMPLES AND THE ASSOCIATED DUPLICATE AND SPLIT SAMPLES

Summaries of the QA parent sample results and associated duplicate and/or split sample results are presented in Tables 5-5 and 5-6.

Table 5-5. Non-Radiological Parent Samples and Associated Duplicate and Split Samples for CY 2012[a]

Ground-water Sample Name[c]	Arsenic[b]			Cadmium[b]		
	Result	MDC	VQ	Result	MDC	VQ
HIS145172	1.20	1.20	U	0.19	0.10	=
HIS145172-1	1.20	1.20	U	0.10	0.10	U
HIS145172-2	1.10	1.50	=	0.29	1.00	=
SLA142416	1.60	0.95	=	0.30	0.10	=
SLA142416-1	1.80	0.95	=	0.29	0.10	=
SLA142416-2	2.00	0.24	J	0.41	0.11	J
SLA143658	1.20	1.20	U	0.33	0.10	=
SLA143658-1	1.20	1.20	U	0.10	0.10	U
SLA143658-2	1.50	1.50	U	0.53	1.00	=

[a] The QA program includes both the SLDS and NC Sites. Since there were only 11 samples from the SLDS in CY 2012, QC samples from the NC Site were utilized.
[b] Results are expressed in µg/L.
[c] Samples ending in "-1" are duplicate samples. Samples ending in "-2" are split samples.
Validation Qualifier (VQ) symbols indicate: "=" for positively identified results, "U" for not detected, "J" analyte was identified as estimated quantity.
MDC Minimum detectable concentration.

Table 5-6. Radiological Parent Samples and Associated Duplicate and Split Samples for CY 2012[a]

Ground-water Sample Name[c]	Radium-226[b]				Radium-228[b]				Thorium-228[b]			
	Result	Error	MDC	VQ	Result	Error	MDC	VQ	Result	Error	MDC	VQ
HIS145172	1.39	1.05	0.54	J	*	*	*	*	0.03	0.29	0.70	UJ
HIS145172-1	0.00	0.00	0.62	U	*	*	*	*	0.34	0.31	0.18	J
HIS145172-2	0.17	0.14	0.20	U	*	*	*	*	0.06	0.17	0.34	UJ
SLA142416	-0.11	0.59	1.88	UJ	*	*	*	*	0.46	0.38	0.21	J
SLA142416-1	-0.21	0.29	1.52	UJ	*	*	*	*	0.59	0.41	0.37	J
SLA142416-2	0.39	0.16	0.15	=	*	*	*	*	0.05	0.08	0.13	UJ
SLA143658	0.35	0.90	1.95	UJ	*	*	*	*	0.12	0.22	0.44	UJ
SLA143658-1	0.10	0.67	1.69	UJ	*	*	*	*	0.38	0.35	0.41	U
SLA143658-2	0.08	0.10	0.16	UJ	*	*	*	*	0.14	0.15	0.23	UJ
	Thorium-230[b]				Thorium-232[b]				Uranium-234[b]			
	Result	Error	MDC	VQ	Result	Error	MDC	VQ	Result	Error	MDC	VQ
HIS145172	0.45	0.38	0.42	J	0.14	0.20	0.19	UJ	2.01	0.88	0.20	J
HIS145172-1	0.61	0.42	0.18	J	0.07	0.14	0.18	UJ	2.16	1.00	0.24	J
HIS145172-2	0.28	0.20	0.18	J	-0.02	0.02	0.18	UJ	1.16	0.36	0.16	=
SLA142416	0.58	0.45	0.46	J	0.04	0.17	0.46	UJ	1.92	0.72	0.33	=
SLA142416-1	0.22	0.26	0.37	UJ	0.12	0.18	0.17	UJ	0.58	0.40	0.37	J
SLA142416-2	0.05	0.09	0.17	UJ	0.01	0.05	0.11	UJ	0.64	0.24	0.12	=
SLA143658	0.83	0.48	0.44	J	0.00	0.00	0.16	U	0.48	0.40	0.44	J
SLA143658-1	0.85	0.51	0.41	J	0.07	0.14	0.19	UJ	0.65	0.48	0.46	J
SLA143658-2	0.11	0.11	0.14	U	0.01	0.05	0.11	UJ	0.84	0.29	0.17	=
	Uranium-235[b]				Uranium-238[b]							
	Result	Error	MDC	VQ	Result	Error	MDC	VQ				
HIS145172	0.05	0.21	0.55	UJ	1.63	0.77	0.20	=				
HIS145172-1	0.11	0.22	0.30	UJ	1.97	0.94	0.24	=				
HIS145172-2	0.15	0.14	0.08	J	1.43	0.40	0.07	=				
SLA142416	-0.03	0.07	0.40	UJ	2.05	0.74	0.15	=				
SLA142416-1	0.08	0.15	0.20	UJ	0.43	0.33	0.17	J				
SLA142416-2	0.00	0.01	0.07	UJ	0.42	0.19	0.09	=				
SLA143658	0.09	0.18	0.25	UJ	0.51	0.40	0.20	J				
SLA143658-1	-0.14	0.17	0.79	UJ	0.42	0.39	0.46	U				
SLA143658-2	0.10	0.11	0.12	UJ	0.59	0.24	0.14	=				

[a] The QA program includes both the SLDS and NC Sites. Since there were only 11 samples from the SLDS in CY 2012, QC samples from the NC Site were utilized.

[b] Results are expressed in pCi/l. Negative results are less than the laboratory system's background level.

[c] Samples ending in "-1" are duplicate samples. Samples ending in "-2" are split samples.

* Data for analyte not available from laboratory analysis. Ra-228 assumed to be in equilibrium with Th-228.

Validation Qualifier (VQ) symbols indicate: "=" for positively identified results, "U" for not detected, "J" analyte was identified as estimated quantity, and "UJ" analyte was not detected and had QC deficiencies.

MDC Minimum detectable concentration.

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6.0 RADIOLOGICAL DOSE ASSESSMENT

This section evaluates the cumulative dose to a hypothetically impacted individual from exposure to radiological contaminants at the SLDS and documents dose trends. The regulatory dose limit for members of the public is 100 mrem/yr as stated in 10 *CFR* 20.1301. Although 10 *CFR* 20.1301 is not an ARAR for the SLDS, the USACE has provided this evaluation to evaluate public exposures from FUSRAP cleanup operations. Compliance with the dose limit in §20.1301 can be demonstrated in one of the two following ways [§20.1302(b)(1) and (2)]:

1) Demonstrating by measurement or calculation that the TEDE to the individual likely to receive the highest dose from SLDS operations does not exceed the annual dose limit (i.e., 100 mrem/yr); or
2) Demonstrating that: (*i*) the annual average concentration of radioactive material released in gaseous and liquid effluents at the boundary of the unrestricted area does not exceed the values specified in Table 2 of Appendix B to Part 20; and (*ii*) if an individual were continuously present in an unrestricted area, the dose from external sources would not exceed 2 millirem per hour (mrem/hr).

USACE has elected to demonstrate compliance by calculation of the TEDE to a hypothetical individual likely to receive the highest dose from the SLDS operations (method 1, above). This section describes the methodology employed for this evaluation.

Dose calculations are presented for a hypothetical maximally exposed individual at the SLDS. The monitoring data used in the dose calculations are reported in the respective environmental monitoring sections of this report.

Dose calculations related to airborne emissions, as required by 40 *CFR* 61, Subpart I (*National Emission Standards for Emissions of Radionuclides Other Than Radon From Federal Facilities Other Than Nuclear Regulatory Commission Licensees and Not Covered By Subpart H*), are presented in Appendix A, the SLDS FUSRAP CY 2012 Radionuclide Emissions NESHAP Report.

6.1 SUMMARY OF ASSESSMENT RESULTS

The TEDE from the SLDS to the receptor from all complete/applicable pathways combined was 0.4 mrem/yr, estimated for an individual who works full-time at Thomas & Proetz Lumber Company (DT-10).

Figure 6-1 documents annual dose trends from CY 2000 to CY 2012 at the SLDS. Figure 6-2 provides a comparison of the maximum annual dose from CY 2000 to CY 2012 at the SLDS to the annual average natural background dose of approximately 300 mrem/yr.

6.2 PATHWAY ANALYSIS

Table 6-1 lists the four complete pathways for exposure from radiological contaminants evaluated by the St. Louis FUSRAP EMP. These pathways are used to identify data gaps in the EMP and to estimate potential radiological exposures from the site. Of the four complete pathways, three were applicable in CY 2012, and were thus incorporated into radiological dose estimates.

Table 6-1. Complete Radiological Exposure Pathways for the SLDS

Exposure Pathway	Pathway Description	Applicable to CY 2012 Dose Estimate
Liquid A	Ingestion of ground water from local wells downgradient from the site.	N
Airborne A	Inhalation of particulates dispersed through wind erosion and RAs.	Y
Airborne B	Inhalation of Rn-222 and decay products emitted from contaminated soils/wastes.	Y
External	Direct gamma radiation from contaminated soils/wastes.	Y

Data from SLDS storm-water discharges and MSD discharges are not applicable to the hypothesized recreational receptor; therefore, those data are not evaluated in this section.
N Not applicable for the site.
Y Applicable for the site.

In developing specific elements of the St. Louis FUSRAP EMP, potential exposure pathways of the radioactive materials present on-site are reviewed to determine which pathways are complete. Evaluation of each exposure pathway is based on hypothesized sources, release mechanisms, types, probable environmental fates of contaminants, and the locations and activities of potential receptors. Pathways are then reviewed to determine whether a link exists between one or more radiological contaminant sources, or between one or more environmental transport processes, to an exposure point where human receptors are present. If it is determined that a link exists, the pathway is termed complete. Each complete pathway is reviewed to determine whether a potential for exposure was present during CY 2012. If this is the case, the pathway is termed applicable. Only applicable pathways are considered in estimates of dose.

Table 6-1 shows the pathways that are applicable to the CY 2012 dose estimates for the SLDS. The Liquid A exposure pathway was not applicable in CY 2012 because the aquifer is of naturally low quality and it is not known to be used for any domestic purpose in the vicinity of the SLDS (DOE 1994).

6.3 EXPOSURE SCENARIOS

Dose calculations were performed for a maximally exposed individual at a critical receptor location for applicable exposure pathways (see Table 6-1) to assess dose due to radiological releases from the SLDS. A second set of dose equivalent calculations were performed to meet NESHAP requirements (Appendix A), which were also used for purposes of TEDE calculation.

The scenarios and models used to evaluate these radiological exposures are conservative, but appropriate. Although radiation doses can be calculated or measured for individuals, it is not appropriate to predict the health risk to a single individual using the methods prescribed here. Dose equivalents to a single individual are estimated by hypothesizing a maximally exposed individual and placing this individual in a reasonable, but conservative scenario. This method is acceptable when the magnitude of the dose to a hypothetical maximally exposed individual is small, as is the case for the SLDS. This methodology provides for reasonable estimates of potential exposure to the public and maintains a conservative approach. The scenarios and resulting estimated doses are outlined in Section 6.4.

6.4 DETERMINATION OF TOTAL EFFECTIVE DOSE EQUIVALENT FOR EXPOSURE SCENARIOS

The TEDE for the exposure scenario was calculated using CY 2012 monitoring data. Calculations for dose scenarios are provided in Appendix E. Dose equivalent estimates are well below the standards set by the NRC for annual public exposure and USEPA NESHAP limits.

The CY 2012 TEDE for a hypothetical maximally exposed individual near the SLDS is 0.4 mrem/yr.

This section discusses the estimated TEDE to a hypothetical maximally exposed individual assumed to frequent the perimeter of the SLDS and receive a radiation dose by the exposure pathways identified above. No private residences are adjacent to the site. Therefore, all calculations of dose equivalent due to the applicable pathway assume a realistic residence time that is less than 100 percent. A full-time employee business receptor was considered to be the maximally exposed individual from the SLDS.

The exposure scenario assumptions are as follows:

- Exposure to radiation from all SLDS sources occurs to the maximally exposed individual while working full-time outside at the receptor location facility located approximately 50 m from the assumed line source. Exposure time is 2,000 hours per year (SAIC 2013).
- Exposure from external gamma radiation was calculated using environmental TLD monitoring data at the site locations representative of areas accessible to the public between the source and the receptor. The site is assumed to represent a line-source to the receptor.
- Exposure from airborne radioactive particulates was estimated using soil concentration data and air particulate monitoring data to determine a source term and then running the CAP-88 PC modeling code to estimate dose to the receptor (SAIC 2013).
- Exposure from Rn-222 (and progeny) was calculated using a dispersion factor and Rn-222 (alpha track) monitoring data at the site locations representative of areas accessible to the public between the source and receptor (SAIC 2013).

Based on the exposure scenario and assumptions described above, a maximally exposed individual working outside at the receptor location facility received less than 0.1 mrem/yr from external gamma, 0.3 mrem/yr from airborne radioactive particulates, and less than 0.1 mrem/yr from Rn-222, for a TEDE of 0.4 mrem/yr (SAIC 2013). In comparison, the annual average exposure to natural background radiation in the United States results in a TEDE of approximately 300 millirem (NCRP 2009).

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FIGURES

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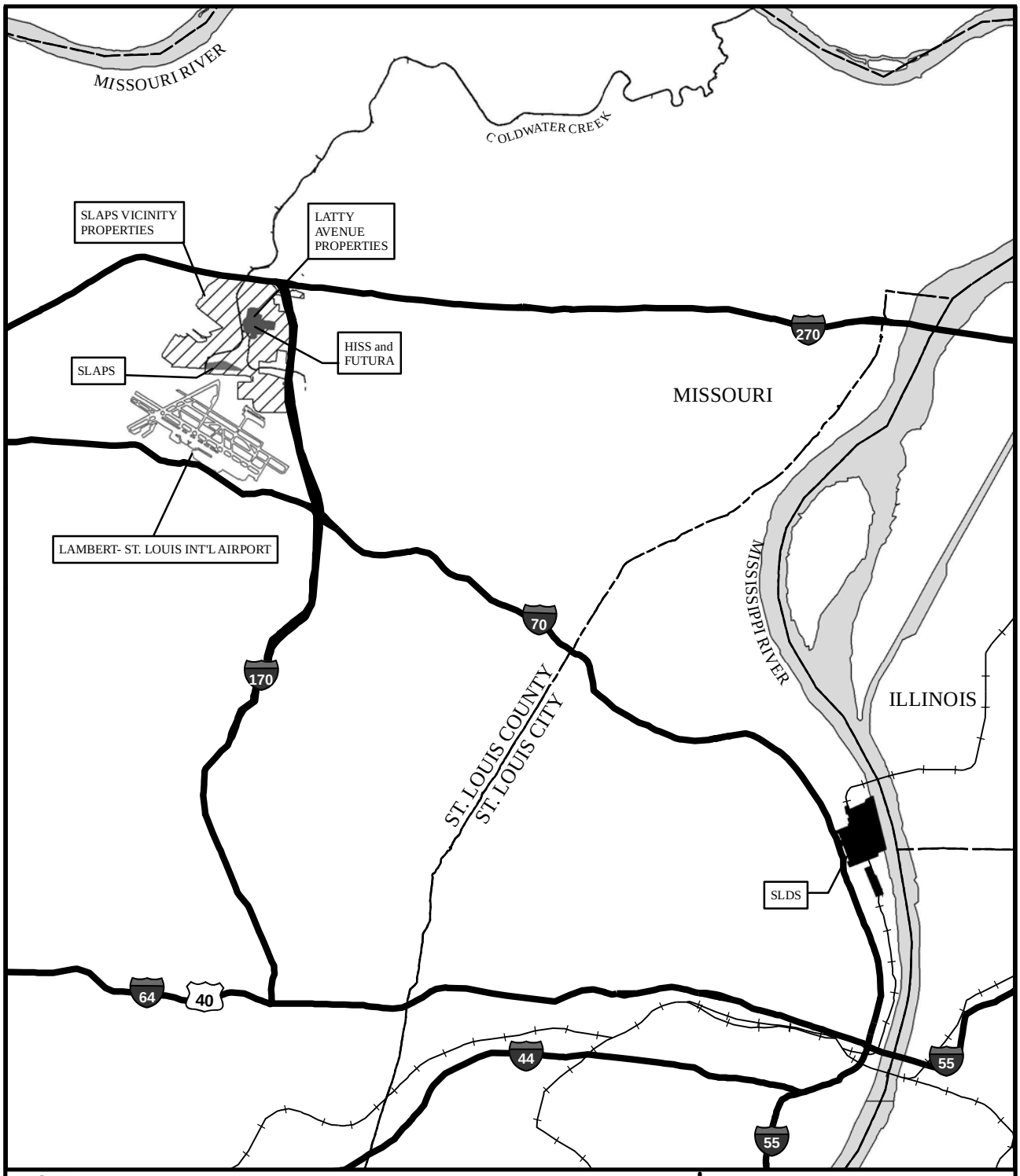


LEGEND:

- Interstate
- US Highway
- Railroad
- North St. Louis County Sites
- Airfield
- SLDS
- SLAPS & HISS/Futura
- River/Stream

N
W E
S

MO-East State Plane
(NAD 83, Feet)

0 5,500 11,000 Feet

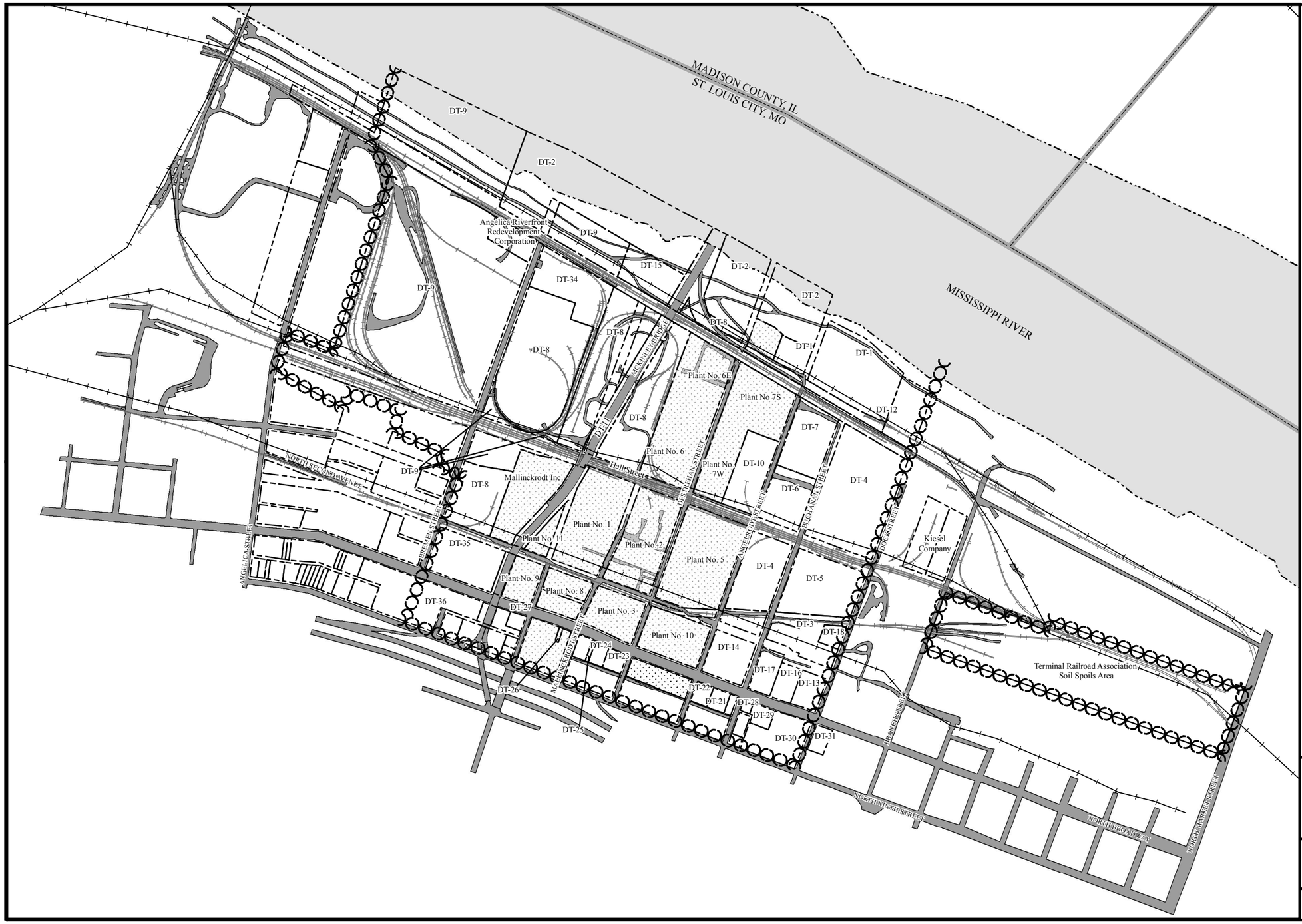
Figure 1-1.
Location Map of the
St. Louis Sites

FUSRAP

DRAWN BY:	REV:	DATE:
KLP	0	6-19-2013

Path: \\Corps-002\gis\GPS\EMDAR\SLDS Projects\FY2013\Rev0\Figure 1-1 Location Map of the St Louis Site.mxd

Path: \\Corps-002\gis\GPS\EMDAR\SLDS Projects\FY2013\Rev0\Figure 1-2 Plan View of the SLDS.mxd



Legend

- ROD Boundary
- State/County Boundary
- Vicinity Properties
- Railroad
- Mallinckrodt Property
- Road
- River/Stream

Map Rotated 48 Degrees

MO-East State Plane
(NAD 83, Feet)

0 325 650 Feet

Figure 1-2. Plan View of the SLDS

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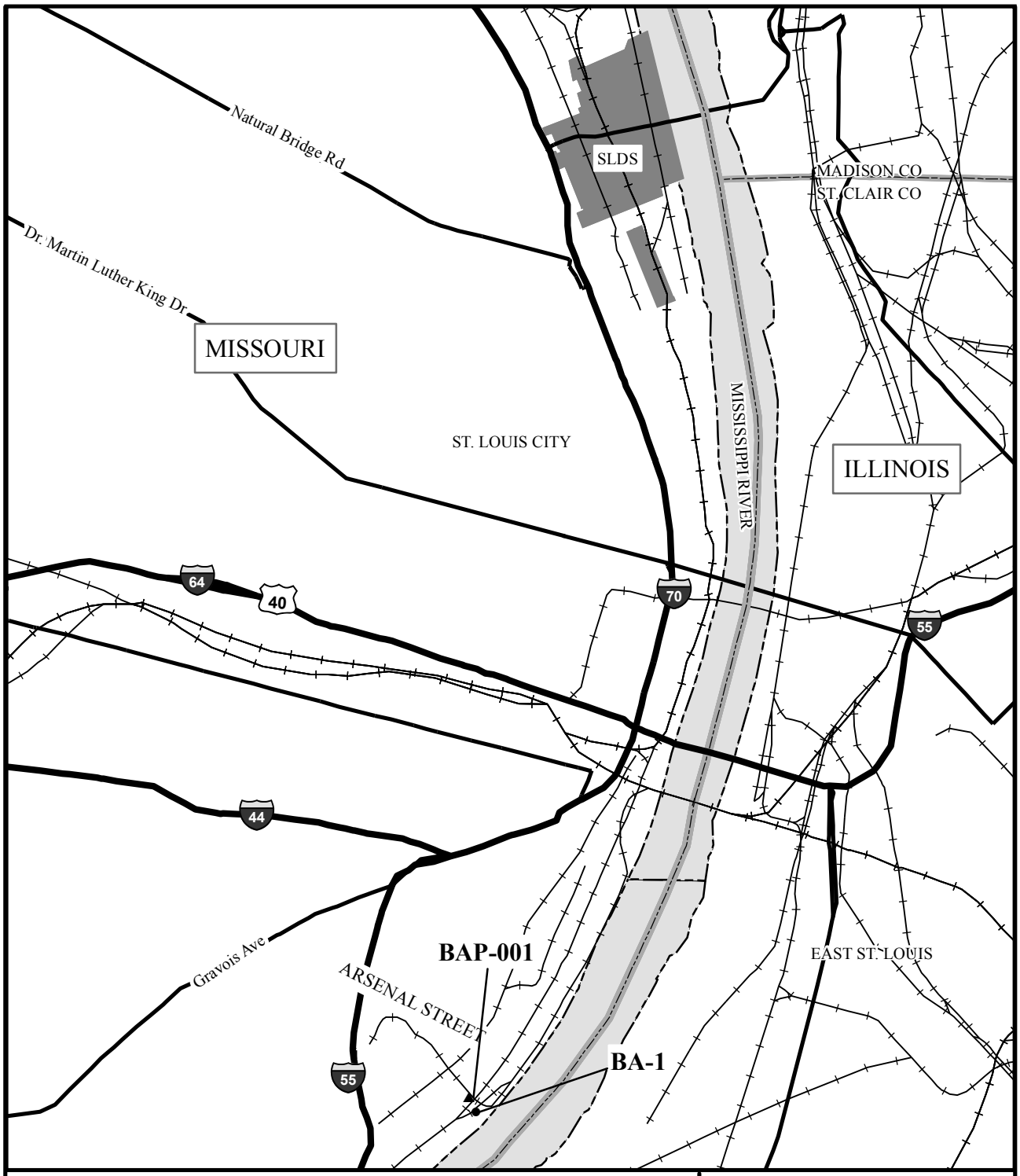

Legend

- Roads
- Railroad
- State/County Boundary
- SLDS
- River/Stream
- County Boundary

● BA = Background monitoring for external gamma (TLD) and radon monitor (alpha track)

▲ BAP = Background air particulate monitor

MO-East State Plane (NAD 83, Feet)

0 1,750 3,500 Feet

Figure 2-1. Gamma Radiation, Rn, and Particulate Air Monitoring at St. Louis Background Location - USACE Service Base

FUSRAP

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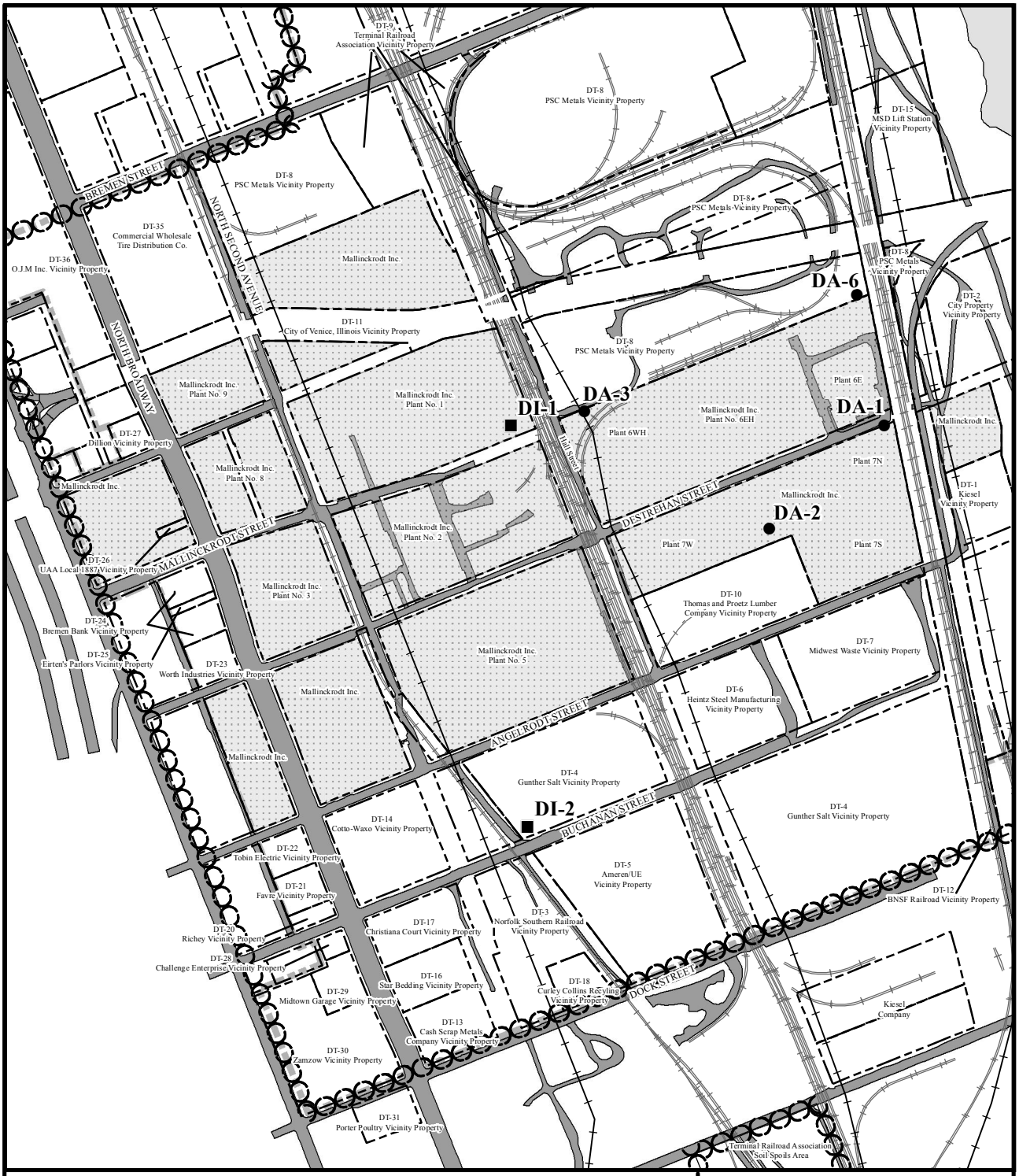
Path: \\Corps-002\gis\GPS\EMDAR\SLDS Projects\FY2013\Rev0\Figure 2-1 Gamma Radiation, Rn, and Particulate Air Monitoring at St Louis Background Location.mxd



Legend

- Vicinity Properties
- Railroad
- River/Stream
- Mallinckrodt Property
- Road
- ROD Boundary
- ● External Gamma (TLD) and Radon (ATD) Monitoring Location
- ■ DI =SLDS indoor air monitoring for radon monitoring (ATD)

N W E S

MO-East State Plane (NAD 83, Feet)

0 210 420 Feet

Figure 2-2. Gamma Radiation and Radon Monitoring Locations at the SLDS

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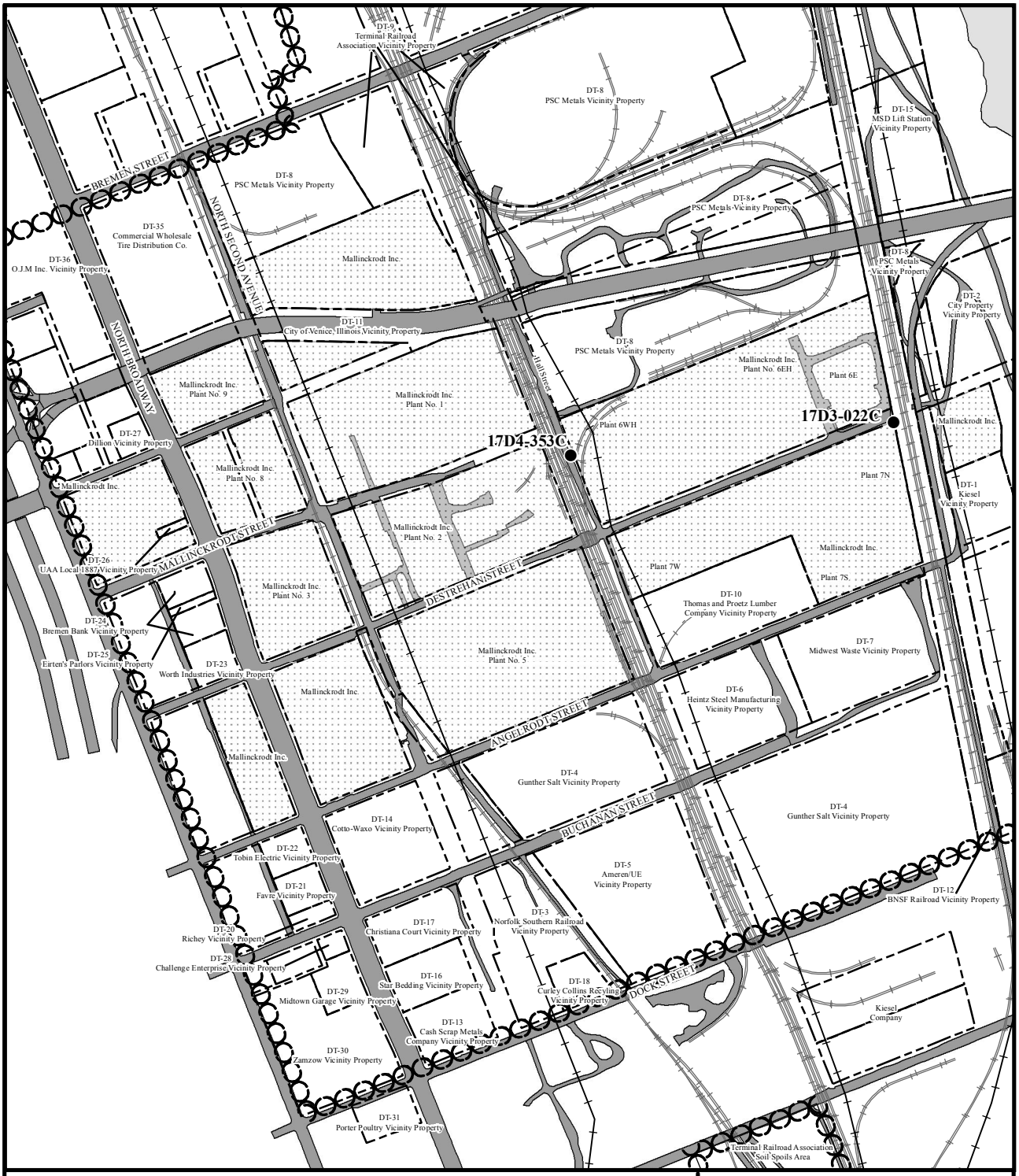
Path: \\Corps-002\gis\GPS\EMDAR\SLDS Projects\FY2013\Rev0\Figure 2-2 Gamma Radiation and Rn Monitoring Locations at the SLDS.mxd



Legend

- ROD Boundary
- Vicinity Properties
- Mallinckrodt Property
- River/Stream
- Railroad
- Road
- Metropolitan St. Louis Sewer District (MSD) Excavation Water Discharge Location

N
W E
S

MO-East State Plane (NAD 83, Feet)

0 230 460 Feet

Figure 3-1. Excavation-Water Discharge MSD Stations at the SLDS

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Path: \\Corps-002\gis\GPS\EMDAR\SLDS Projects\FY2013\Rev0\Figure 3-1 Excavation-Water Discharge Stations at the SLDS.mxd

Unit Designation	Approximate Thickness (ft)	Description
Upper Hydrostratigraphic Unit (HU-A)	0-25	**RUBBLE and FILL** Grayish black (N2) to brownish black (5YR2/1). Dry to slightly moist, generally becoming moist at 5-6 ft and saturated at 10-12 ft. Slight cohesion, variable with depth, moisture content and percentage of fines present. Consistency of relative density is unrepresentative due to large rubble fragments. Rubble is concrete, brick, glass, and coal slag. Percentage of fines as silt or clay increases with depth from 5 to 30 percent. Some weakly cemented aggregations of soil particles. Adhesion of fines to rubble increases with depth and higher moisture content. Degree of compaction is slight to moderate with frequent large voids.
	0-10	**Silty CLAY (CH)** Layers are mostly olive gray (5Y2/1), with some olive black (5Y2/1). Predominantly occurs at contact of undisturbed material, or at boundary of material with elevated activity. Abundant dark, decomposed organics. Variable percentages of silt and clay composition.
	0-5	**CLAY (CL)** Layers are light olive gray (5Y5/2), or dark greenish gray (5GY4/1). Slightly moist to moist, moderate cohesion, medium stiff consistency. Tends to have lowest moisture content. Slight to moderate plasticity.
	0-2.5	**Interbedded CLAY, silty CLAY, SILT and Sandy SILT (CL, ML, SM)** Dark greenish gray (5GY4/1) to light olive gray (5Y6/1). Moist to saturated, dependent on percentage of particle size. Contacts are sharp, with structure normal to sampler axis to less than 15 degrees downdip. Layer thicknesses are variable, random in alternation with no predictable vertical gradation or lateral continuity. Some very fine-grained, rounded silica sand as stringers. Silt in dark mafic, biotite flakes. Some decomposed organics.
Lower Hydrostratigraphic Unit (HU-B)	0-10	**Sandy SILT (ML)** Olive gray (5Y4/1). Moist with zones of higher sand content saturated. Slight to moderate cohesion, moderate compaction. Stiff to very stiff consistency, rapid dilatancy, nonplastic. Sand is well sorted, very fine and fine-grained rounded quartz particles.
	0-50	**Silty SAND and SAND (SM, SP, SW)** Olive gray (5Y4/1). Saturated, slight cohesion, becoming noncohesive with decrease of silt particles with depth. Dense, moderate compaction. Moderate to well-graded, mostly fine- and medium-grained, with some fine- and coarse-grained particles. Mostly rounded with coarse grains slightly subrounded. Gradual gradation from upper unit, silty sand has abundant dark mafic/biotite flakes. Sand is well-graded, fine gravel to fine sand. Mostly medium-grained, with some fine-grained and few coarse-grained and fine gravel.
Limestone Bedrock Unit (HU-C)	Total thickness not penetrated during drilling	**LIMESTONE** Light olive gray (5Y4/1) with interbedded chert nodules. Generally hard to very hard; difficult to scratch with knife. Slightly weathered, moderately fresh with little to no discoloration or staining. Top 5 ft is moderately fractured, with 99 percent of joints normal to the core axis. Joints are open, planar, and smooth. Some are slightly discolored with trace of hematite staining.

SOURCE: MODIFIED FROM DOE 1994.
NOTE: THE CODES IN PARENTHESES FOLLOWING THE LITHOLOGIES ARE THE UNIFIED SOIL CLASSIFICATION SYSTEM (USCS) CODES.

THE CODES IN PARENTHESES FOLLOWING THE COLORS REPRESENT CHROMA, HUE, AND VALUE FROM THE MUNSELL SOIL COLOR CHARTS.

NOT TO SCALE

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Figure 4-1. Generalized Stratigraphic Column for the SLDS

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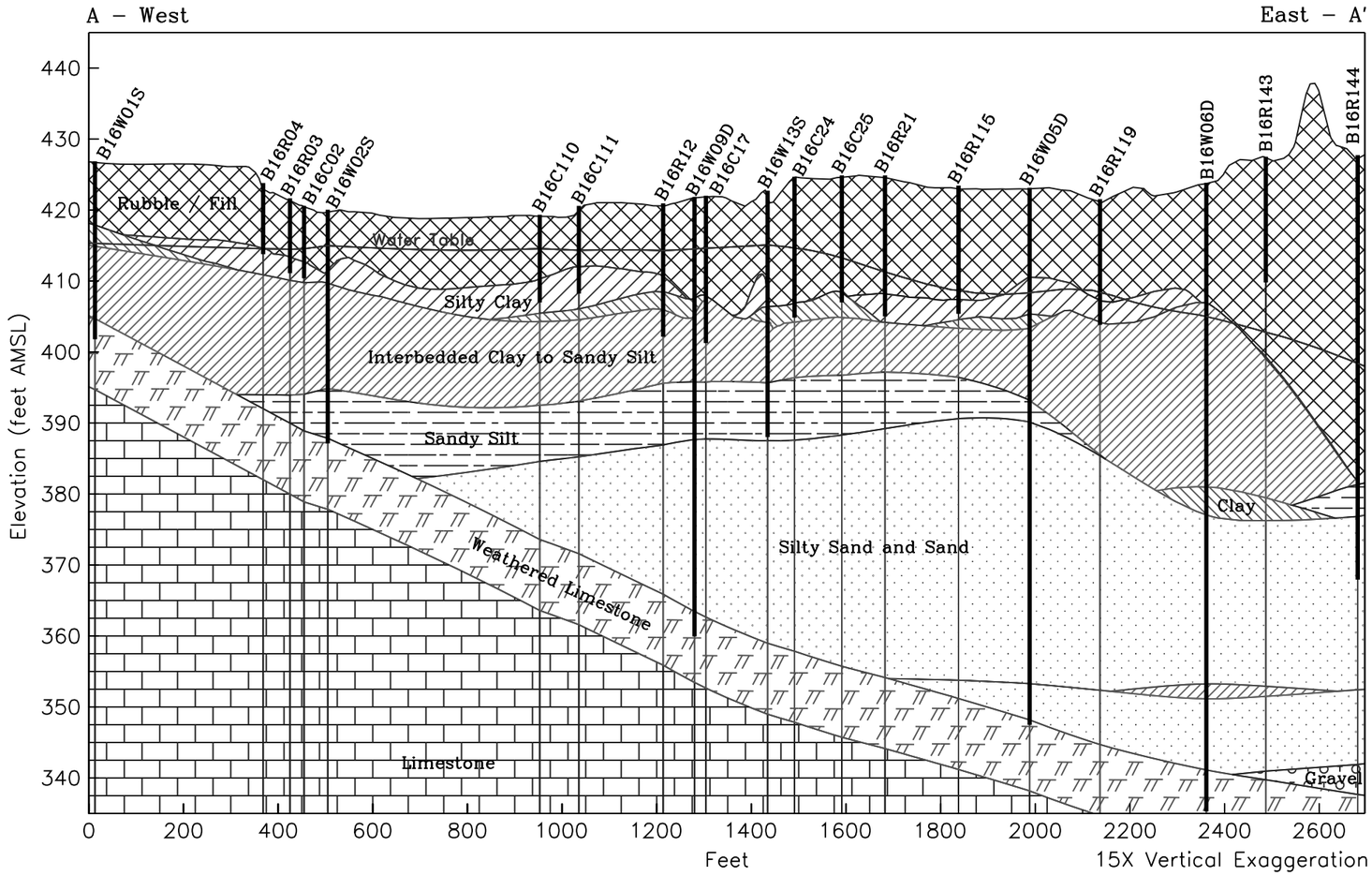

Geologic data used in the cross section collected prior to 1998.

Cross Section Location Map

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Figure 4-2. SLDS Geologic Cross-Section A-A'

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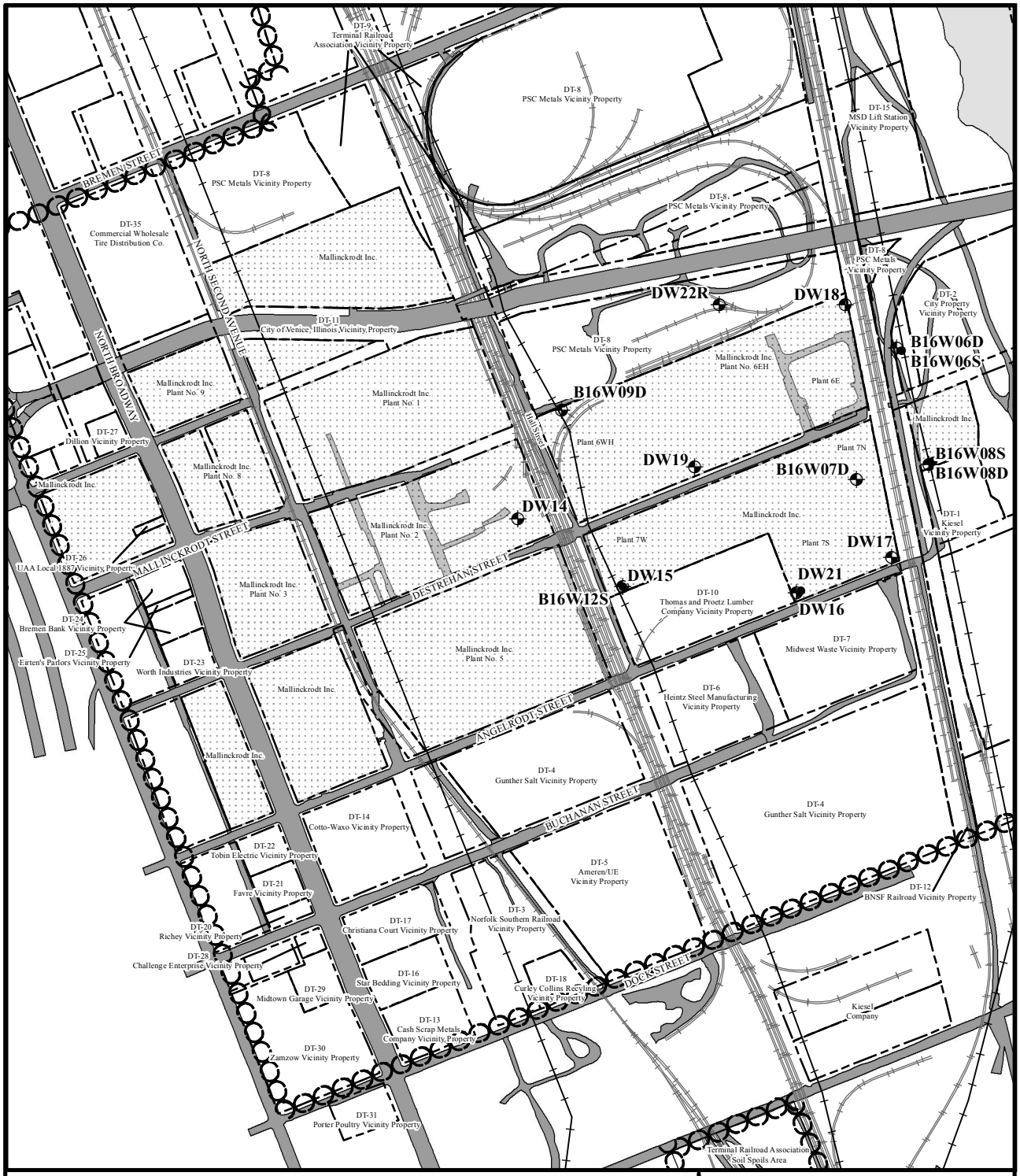

Figure 4-3.
Ground-Water Monitoring Well Locations at the SLDS

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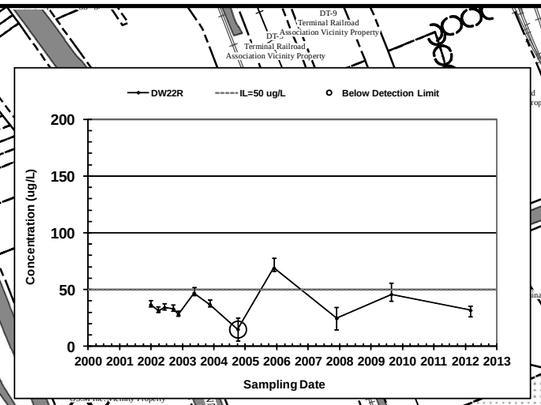
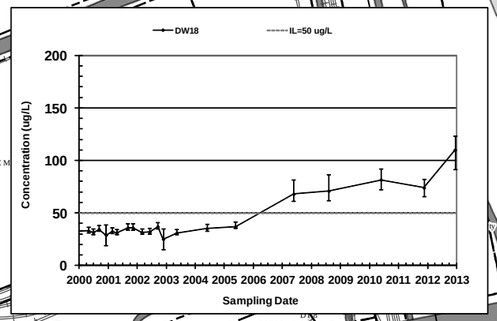
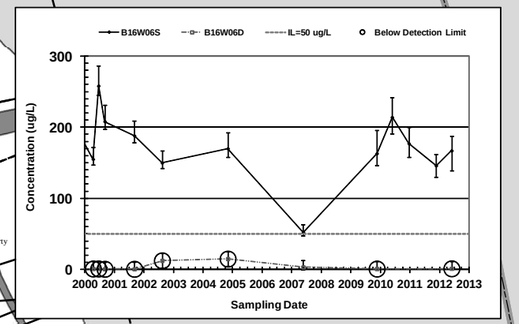
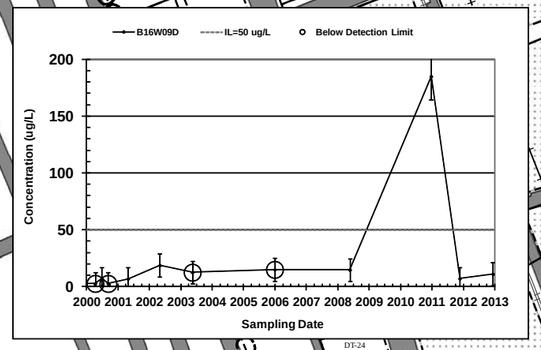
Path: \\Corps-002\gis\GPS\EMDAR\SLDS Projects\FY2013\Rev0\Figure 4-3 Ground-Water Monitoring Well Locations at the SLDS.mxd

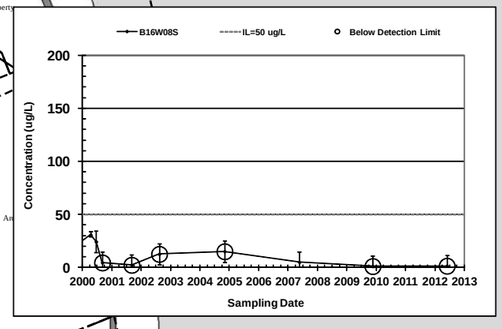
Path: \\Corps-002\gis\GPS\EMDAR\SLDS Projects\FY2013\Rev0\Figure 4-4 Arsenic Concentration Trends in Unfiltered Ground Water at the SLDS.mxd

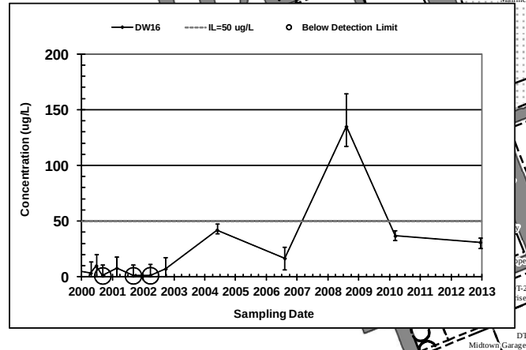


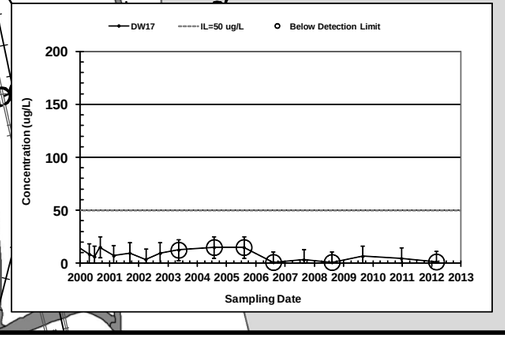












Legend

- ROD Boundary
- Vicinity Properties
- Road
- Mallinckrodt Property
- Railroad
- River/Stream
- Existing HU-A Monitoring Well
- Existing HU-B Monitoring Well
- Error Bars

N
W E
S

MO-East State Plane
(NAD 83, Feet)

0 87.5 175 Feet

Figure 4-4. Arsenic Concentration Trends in Unfiltered Ground Water at the SLDS

FUSRAP

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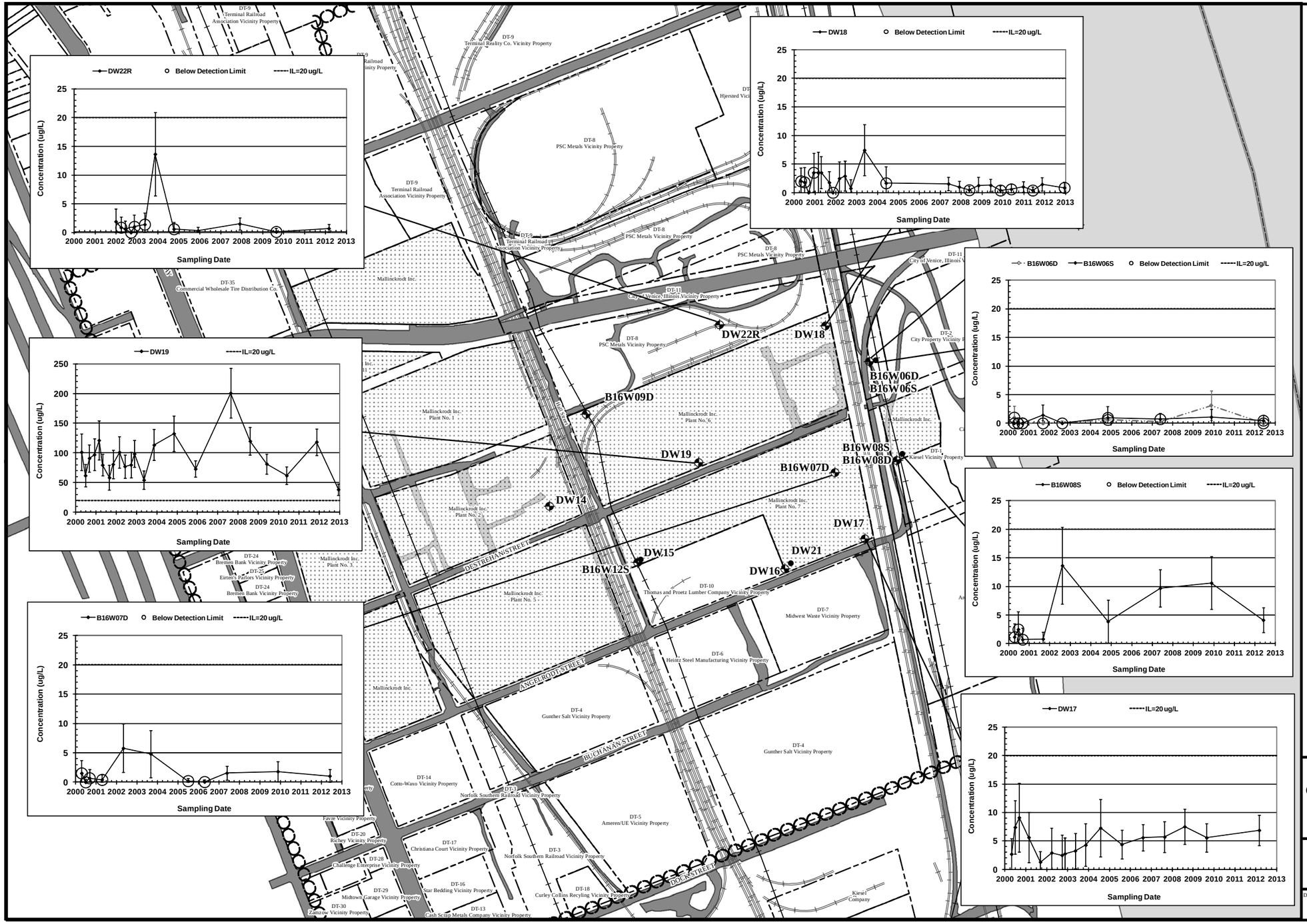
Path: U:\GPS\EMDAR\SLDS Projects\FY2013\Rev0\Figure 4-5 Total Uranium Concentrations in Unfiltered HZ-A Ground Water at the Latty Avenue Properties.mxd



Legend

- ROD Boundary
- Vicinity Properties
- Road
- Mallinckrodt Property
- Railroad
- River/Stream
- Existing HU-A Monitoring Well
- Existing HU-B Monitoring Well
- Error Bars

N
W E
S

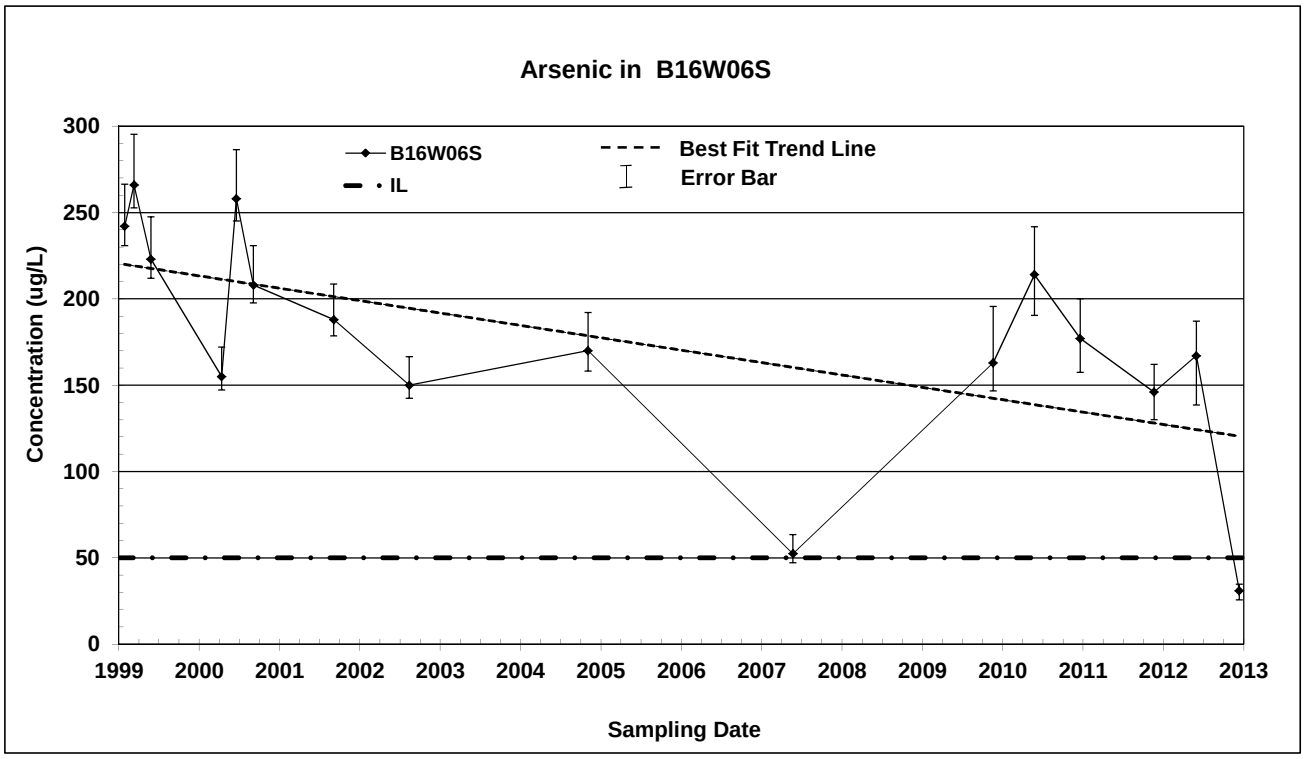
MO-East State Plane
(NAD 83, Feet)

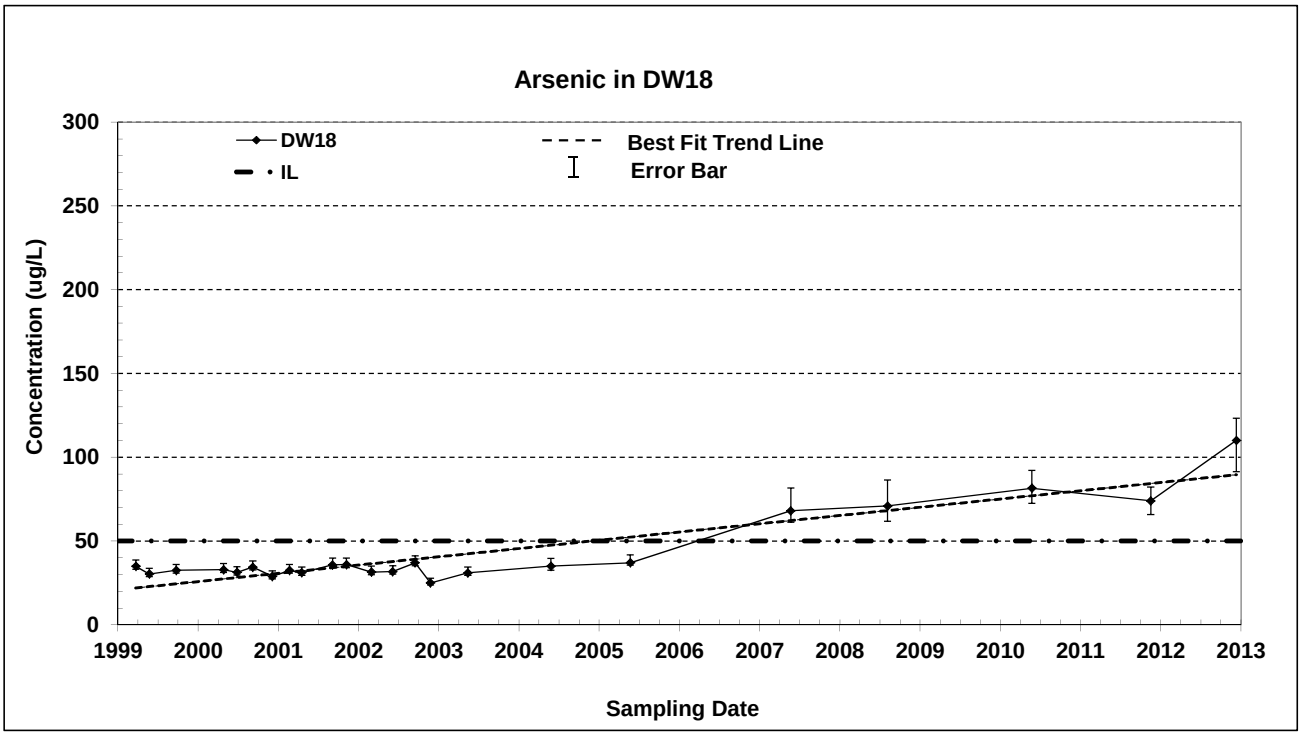
0 87.5 175 Feet

Figure 4-5. Total Uranium Concentration Trends in Unfiltered Ground Water at the SLDS

FUSRAP

DRAWN BY:	REV:	DATE:
KLP	0	7-16-2013

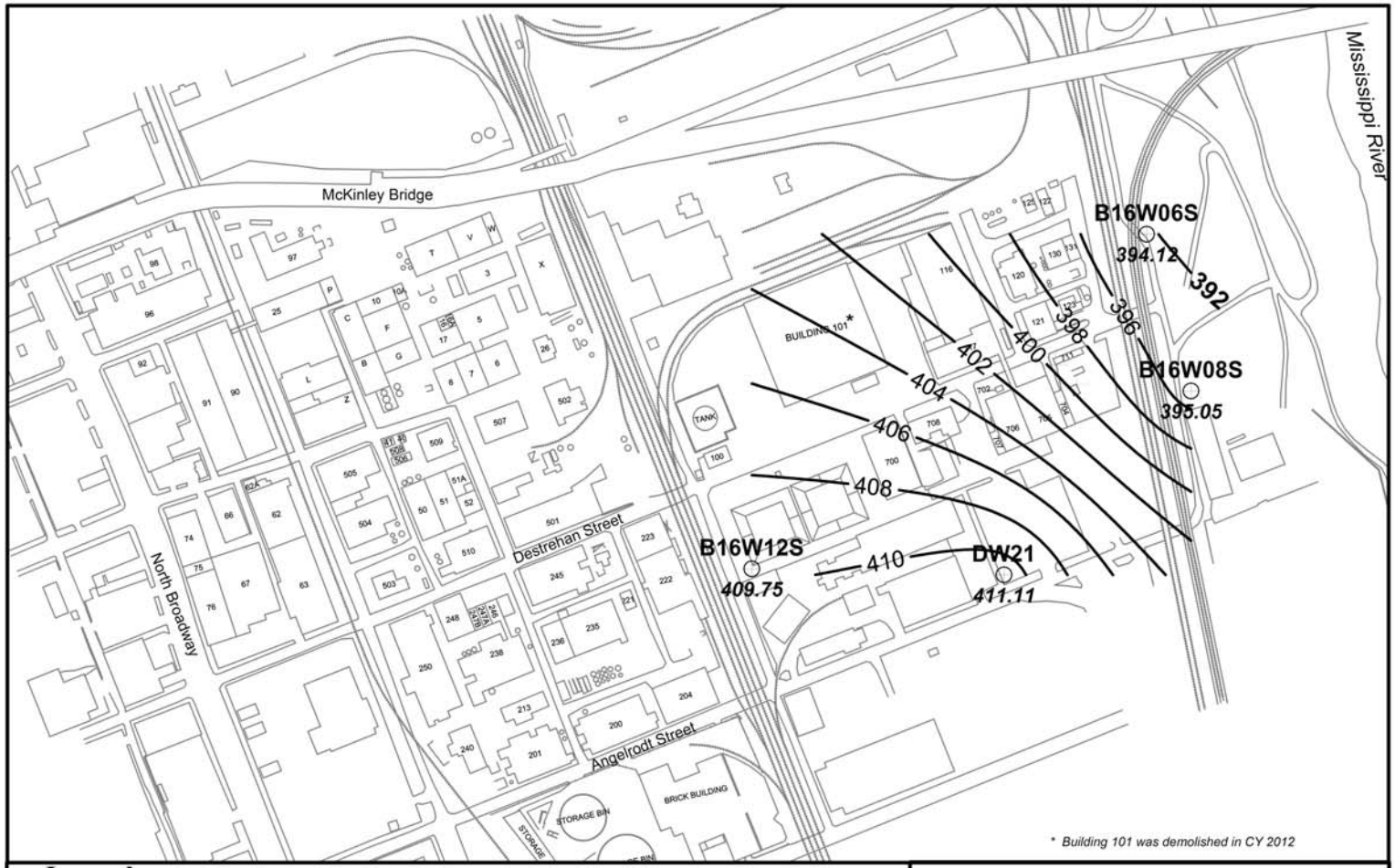




Notes:

For arsenic results less than 3 times the reporting limit (RL), the error bar represents ± RL.
For arsenic results exceeding 3 times the RL, the error bar represents the Upper and Lower Control Limits on the Control Spike Samples.
Arsenic error bars for 2003 and earlier are based on laboratory control limits for 2003. Error bars for 2004 and later are based on laboratory control limits reported for the respective years.

Figure 4-6. Time-Versus-Concentration Plots for Arsenic in Ground-Water Monitoring Wells B16W06S and DW18 at SLDS



Legend:

——— **HU-A Ground-Water Elevation Contours**

○ **HU-A Monitoring Well Locations**

Ground-water elevations in feet above mean sea level (amsl)
2.0 - foot contour interval; contours dashed where inferred.

SCALE: 1 inch = 400 ft

0 200 400 600 800

N

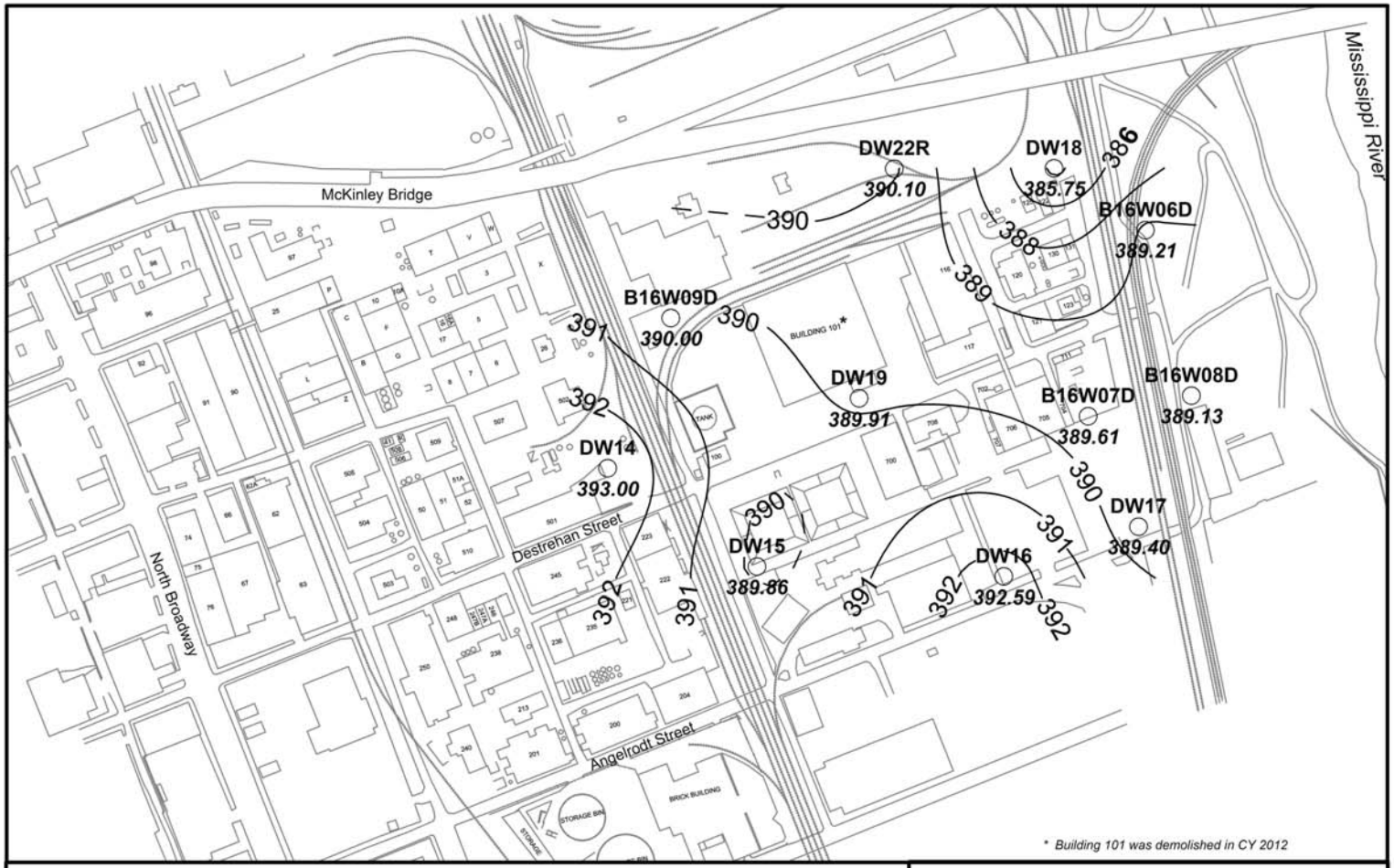
MO - East State Plane Coordinate System (NAD83, Feet)

FUSRAP

Figure 4-7. HU-A Potentiometric Surface at the SLDS (May 31, 2012)

DRAWN BY: CMW

REV. - DATE: 1 - 4/23/2013



Legend:

——— **HU-B Ground-Water Elevation Contours**

○ **HU-B Monitoring Well Locations**

Ground-water elevations in feet above mean sea level (amsl)
1.0 foot contour interval; contours dashed where inferred.

SCALE: 1 inch = 400 ft

0 200 400 600 800

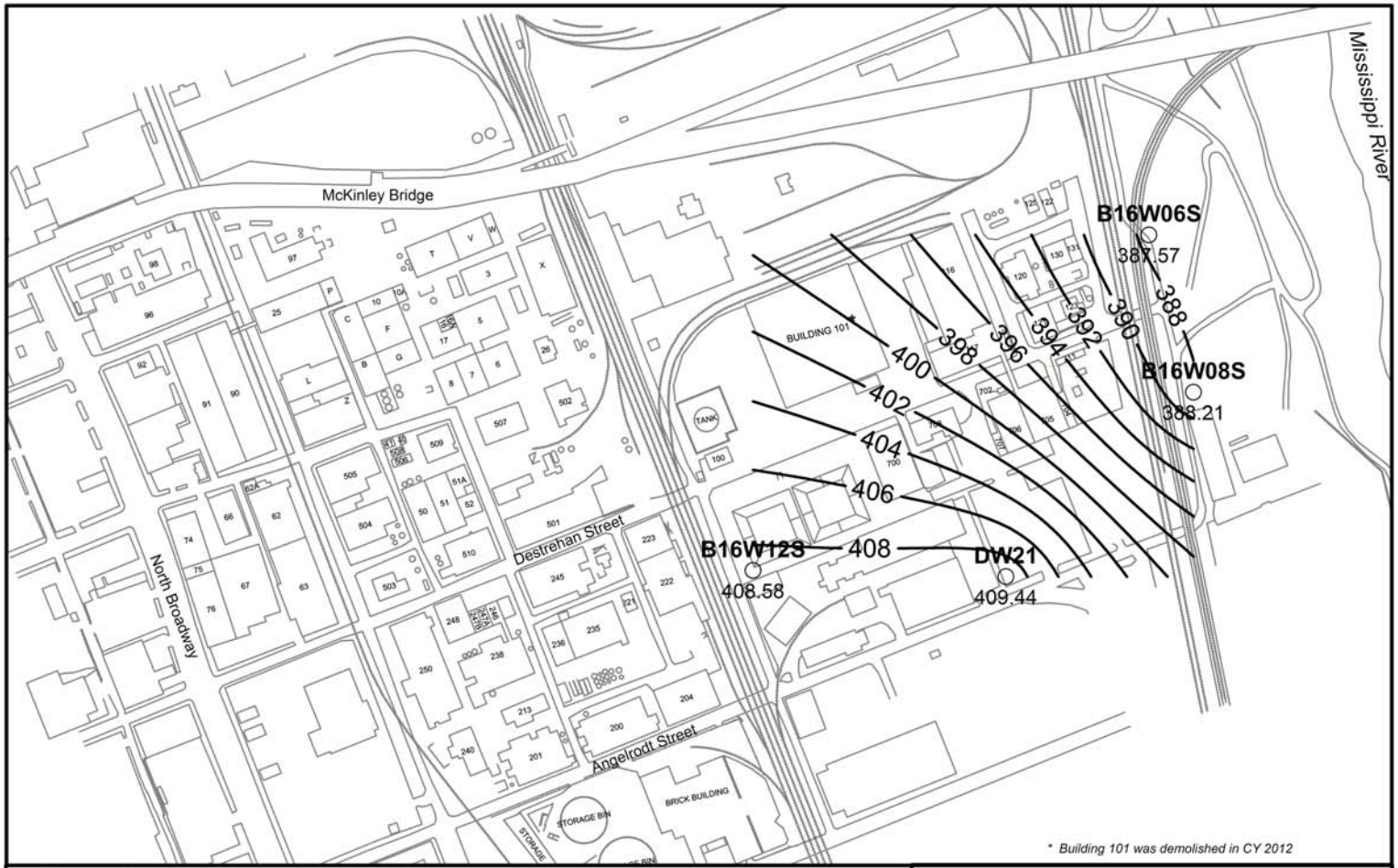
N

MO - East State Plane Coordinate System (NAD83, Feet)

FUSRAP

Figure 4-8. HU-B Potentiometric Surface at the SLDS (May 31, 2012)

DRAWN BY:	REV. - DATE:
CMW	1 - 4/23/13



Legend:

HU-A Ground-Water Elevation Contours

HU-A Monitoring Well Locations

Ground-water elevations in feet above mean sea level (amsl)
2.0 - foot contour interval; contours dashed where inferred.

SCALE: 1 inch = 400 ft

0 200 400 600 800

N

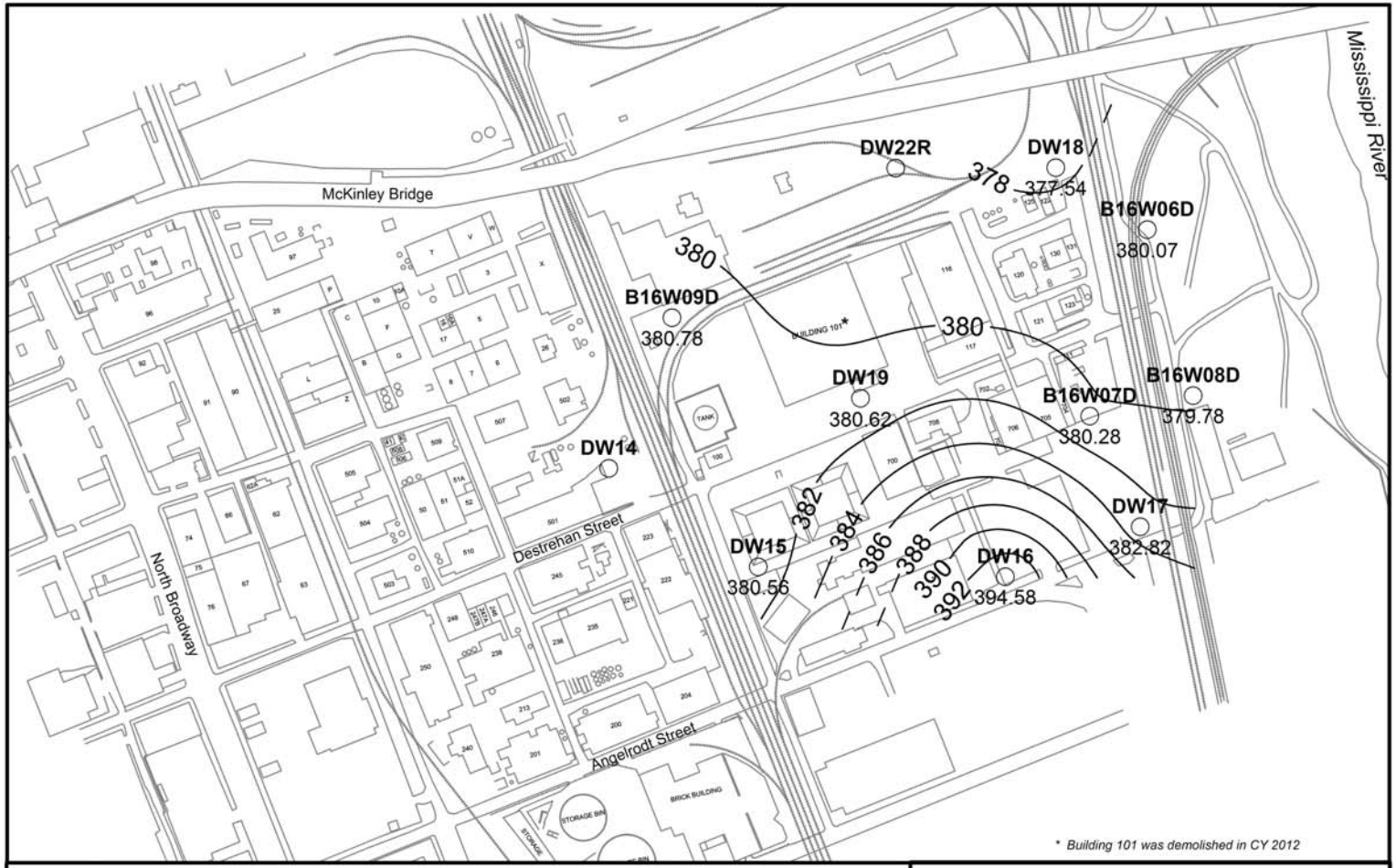
MO - East State Plane Coordinate System (NAD83, Feet)

FUSRAP

Figure 4-9 HU-A Potentiometric Surface at the SLDS (Dec. 10, 2012)

DRAWN BY: CMW

REV. - DATE: 1 - 4/23/2013



Legend:

HU-B Ground-Water Elevation Contours

HU-B Monitoring Well Locations

Ground-water elevations in feet above mean sea level (amsl)
2.0 foot contour interval; contours dashed where inferred.

SCALE: 1 inch = 400 ft

0 200 400 600 800

N

MO - East State Plane Coordinate System (NAD83, Feet)

FUSRAP

Figure 4-10. HU-B Potentiometric Surface at the SLDS (Dec. 10, 2012)

DRAWN BY:	REV. - DATE:
CMW	1 - 4/23/13

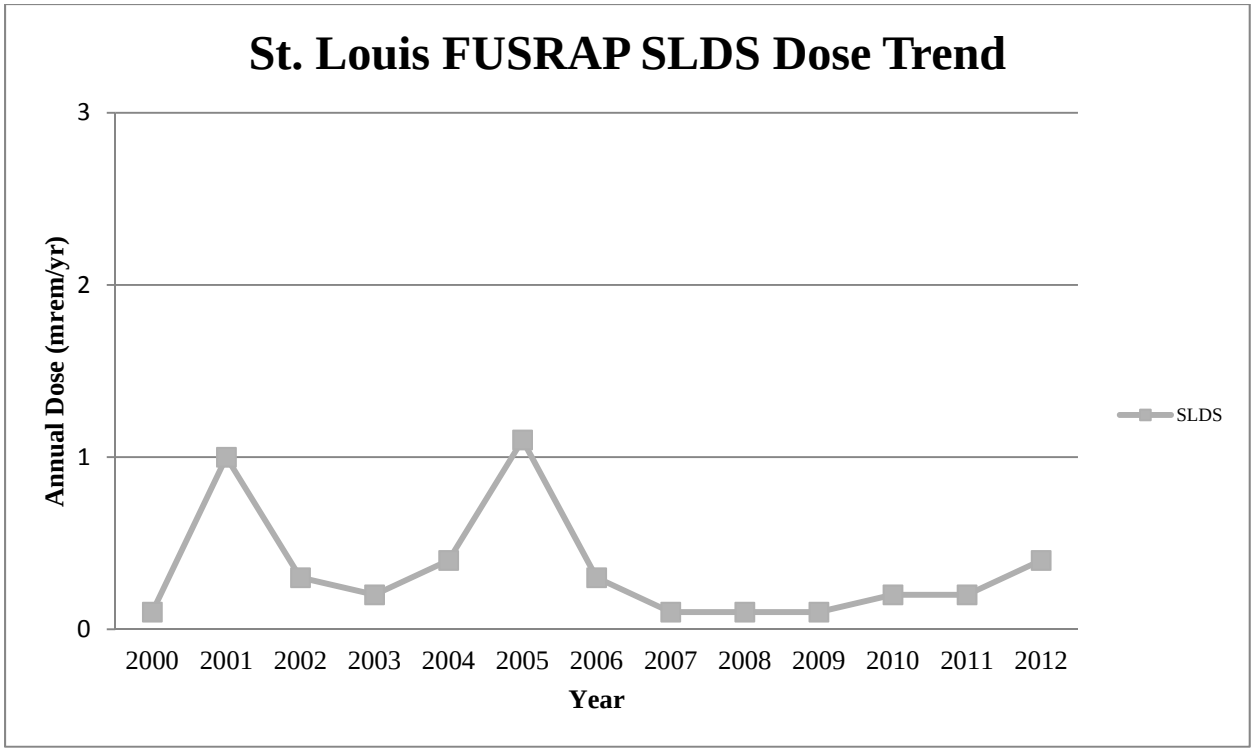


Figure 6-1. St. Louis FUSRAP SLDS Dose Trends

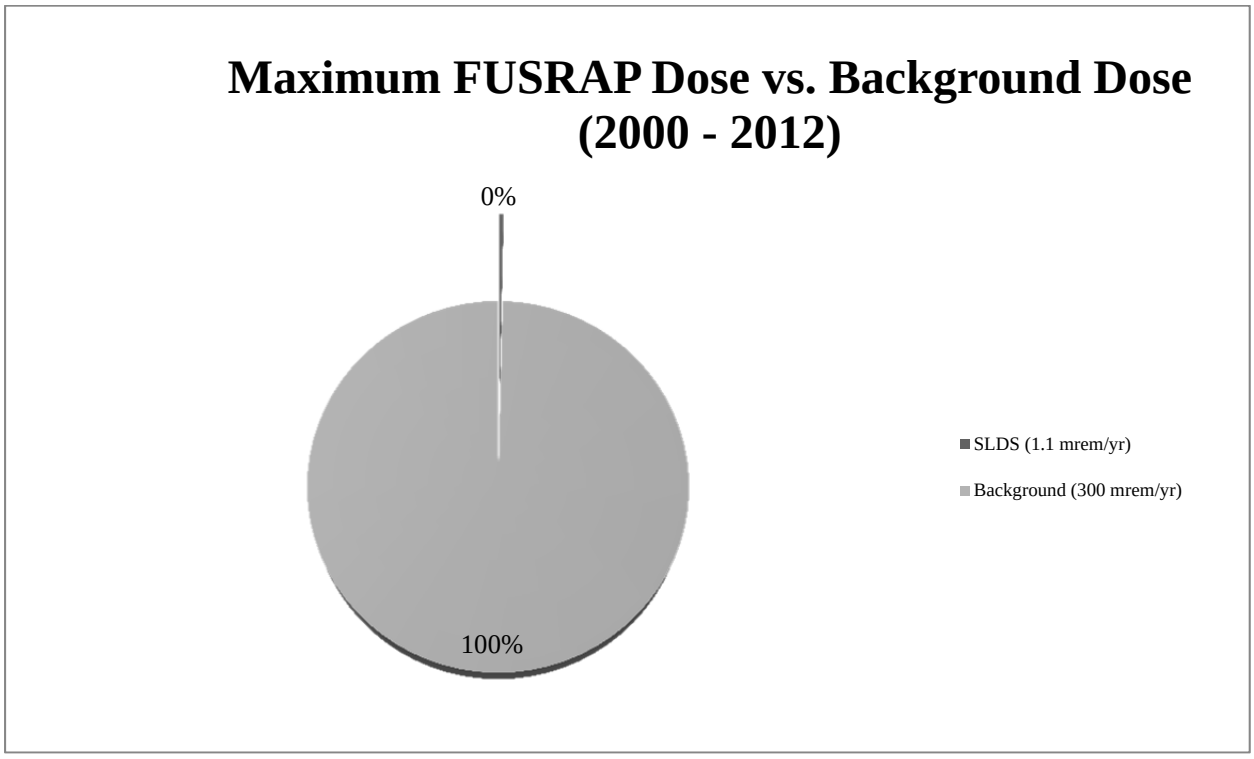


Figure 6-2. St. Louis FUSRAP SLDS Maximum Dose vs. Background Dose

APPENDIX A

ST. LOUIS DOWNTOWN SITE 2012 RADIONUCLIDE EMISSIONS NESHAP REPORT SUBMITTED IN ACCORDANCE WITH REQUIREMENTS OF 40 *CFR* 61, SUBPART I

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ACRONYMS AND ABBREVIATIONS

µCi/cm^3	microcurie per cubic centimeter
µCi/mL	microcurie per milliliter
AEC	U.S. Atomic Energy Commission
° C	degree(s) Celsius (centigrade)
CFR	*Code of Federal Regulations*
Ci/yr	curie per year
cm/yr	centimeter per year
CY	calendar year
EDE	effective dose equivalent
FUSRAP	Formerly Utilized Sites Remedial Action Program
GIS	geographic information system
m	meter(s)
m^2	square meter
Mallinckrodt	Mallinckrodt, LLC
MED	Manhattan Engineer District
m/min	meters per minute
m^3/min	cubic meter(s) per minute
mrem/yr	millirem per year
mSv/yr	millisievert per year
NESHAP	National Emission Standard for Hazardous Air Pollutants
SLDS	St. Louis Downtown Site
USEPA	U.S. Environmental Protection Agency
VP	vicinity property

EXECUTIVE SUMMARY AND DECLARATION STATEMENT

This report presents the results of National Emission Standard for Hazardous Air Pollutants (NESHAP) calculations for the St. Louis Formerly Utilized Sites Remedial Action Program (FUSRAP) St. Louis Downtown Site (SLDS) for calendar year (CY) 2012. NESHAP requires the calculation of the effective dose equivalent (EDE) from radionuclide emissions to critical receptors. The report follows the requirements and procedures contained in 40 *Code of Federal Regulations* (*CFR*) 61, Subpart I, *National Emission Standards for Radionuclide Emissions From Federal Facilities Other Than Nuclear Regulatory Commission Licensees and Not Covered by Subpart H* (USEPA 1989).

This report evaluates the SLDS properties where there was a reasonable potential for radionuclide emissions due to St. Louis FUSRAP activities. These sites include: City Property Vicinity Property (VP) (DT-2), Plant 7, Plant 6 and Plant 6 Loadout.

Emissions from the SLDS were evaluated for the entire CY 2012 to provide a conservative estimate of total emissions.

The NESHAP standard of EDE to a critical receptor from radionuclide emissions is 10 millirem per year (mrem/yr) (0.1 millisievert per year [mSv/yr]). The SLDS did not exceed this standard. The EDE from radionuclide emissions at the SLDS was calculated using soil characterization data, air particulate monitoring data, and the U.S. Environmental Protection Agency (USEPA) CAP88-PC modeling code, which resulted in an EDE at the SLDS of 0.3 mrem/yr (0.003 mSv/yr).

The evaluation for the SLDS resulted in less than 10 percent of the dose standard in 40 *CFR* 61.102. This site is exempt from the reporting requirements of 40 *CFR* 61.104(a).

DECLARATION STATEMENT – 40 *CFR* 61.104(a)(xvi)

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. See 18 *U.S.Code* 1001.

_____ _____

Signature Date

Office: U.S. Army Corps of Engineers, St. Louis District Office
Address: 8945 Latty Ave.
Berkeley, MO 63134
Contact: Jon Rankins

1.0 PURPOSE

This report calculates the EDE from radionuclide emissions (exclusive of radon) to critical receptors from the SLDS where there was a reasonable potential for radionuclide emissions due to St. Louis FUSRAP activities. These sites include: DT-2, Plant 7, Plant 6, and Plant 6 Loadout. The air emissions from the SLDS are ground releases of particulate radionuclides in soil as a result of windblown action and remedial activity in the form of excavation and off-site disposal of soil.

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2.0 METHOD

Emission rates for the SLDS were modeled using guidance documents referenced in 40 *CFR* 61, Appendix E, *Compliance Procedures Methods for Determining Compliance with Subpart I* (USEPA 1989), and were measured by collection of environmental air samples. Emission rates were input into the USEPA computer code CAP88-PC, along with appropriate meteorological data and distances to critical receptors[1], to obtain the EDE from the air emissions.

Although 40 *CFR* 61.103 requires the use of the USEPA computer code COMPLY, USEPA no longer supplies technical support for COMPLY. However, the USEPA lists both COMPLY and CAP88-PC as "Atmospheric transport models for assessing dose and risk from radioactive air emissions" (USEPA 2007). The USEPA continues to maintain and update the CAP88-PC modeling program and has updated it as recently as December 9, 2007. In previous FUSRAP NESHAP reports, both COMPLY and CAP88-PC results have been compared. This comparison indicated that CAP88-PC is a comparable and conservative method of demonstrating compliance with 40 *CFR* 61, Subpart I. For these reasons, CAP88-PC was used in this report to demonstrate compliance with the NESHAP standard.

2.1 EMISSION RATE

The method used to determine particulate radionuclide emission rates from the SLDS was 40 *CFR* 61, Appendix D, *Methods for Estimating Radionuclide Emissions*. Emissions during excavations were evaluated using air sampling data at the excavation and loadout perimeters.

2.2 EFFECTIVE DOSE EQUIVALENT

The EDE to critical receptors[1] is obtained using USEPA computer code CAP88-PC, Version 3.0 (USEPA 2007). CAP88-PC uses a Gaussian plume equation to estimate the dispersion of radionuclides and is referenced by the USEPA to demonstrate compliance with the NESHAP emissions criterion in 40 *CFR* 61. An area ground release at a height of one meter (m) is modeled for the SLDS.

The EDE is calculated by combining doses from ingestion, inhalation, air immersion, and external ground surface. CAP88-PC contains historical weather data libraries for major airports across the country, and the results can be modeled for receptors at multiple distances from the emissions source.

[1] "Critical receptors," as used in this report, are the locations for the nearest residence, school, business, and farm.

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3.0 METEOROLOGICAL DATA

Meteorological data was obtained from the CAP88-PC code for the St. Louis Lambert International Airport (wind file 13994.WND). Data in the file was accumulated from 1988 through 1992.

- Average Annual Wind Velocity: 4.446 meters/second
- Average Annual Precipitation Rate: 111 centimeters per year (cm/yr)
- Average Annual Air Temperature: 14.18 degrees Celsius (ºC)

Wind speed frequency data was obtained from St. Louis Lambert International Airport (see Table A.3-1).

Table A.3-1. St. Louis Wind Speed Frequency

Wind Speed Group, Knots[a]	Frequency
0 – 3	0.10
4 – 7	0.29
8 – 12	0.36
13 – 18	0.21
19 – 24	0.03
25 – 31	0.01

[a] knot = 1.151 miles per hour

Wind direction frequency was obtained from the CAP88-PC wind file, 13994.WND (see Table A.3-2).

Table A.3-2. St. Louis Wind Rose Frequency

Wind direction (wind toward)	Wind From	Wind Frequency	Wind direction (wind toward)	Wind From	Wind Frequency
N	S	0.131	S	N	0.056
NNW	SSE	0.074	SSE	NNW	0.043
NW	SE	0.068	SE	NW	0.061
WNW	ESE	0.069	ESE	WNW	0.087
W	E	0.055	E	W	0.090
WSW	ENE	0.028	ENE	WSW	0.068
SW	NE	0.031	NE	SW	0.054
SSW	NNE	0.037	NNE	SSW	0.050

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4.0 SLDS PROPERTIES UNDER ACTIVE REMEDIATION

4.1 SITE HISTORY

From 1942 until 1957, Mallinckrodt, LLC (Mallinckrodt) was contracted by the Manhattan Engineer District (MED) and the U.S. Atomic Energy Commission (AEC) to process uranium ore for the production of uranium metal. Residuals of the process, including spent pitchblende ore, and radium, thorium, uranium, and their radioactive decay products, were inadvertently released from the Mallinckrodt property into the environment. Residuals from the uranium process had elevated levels of radioactive radium, thorium, and uranium. From 1942 to 1945, Plants 1, 2, 6, 7, and 4 (now Plant 10) were involved in the development of uranium-processing techniques, uranium compounds and metal production, and uranium metal recovery from residues and scrap. Mallinckrodt decontaminated Plants 1 and 2 from 1948 through 1950 to meet the AEC criteria then in effect, and the AEC released these plants for use without radiological restrictions in 1951.

4.2 MATERIAL HANDLING AND PROCESSING FOR CY 2012

Excavation activities were performed at the SLDS areas of DT-2, Plant 7, and Plant 6. Additionally, loadout activities were performed at Plant 6. Excavated soils placed in the loadout area remained covered for most of the year, except during normal working hours. The excavated soils were removed from the site by rail. General area air samples were collected around excavation perimeters during CY 2012, with the results used to determine the excavation emissions. *In situ* emissions from inactive areas of SLDS were not calculated because the ground surface soil at SLDS is generally covered with asphalt or concrete that limits the potential for material to become airborne.

4.3 SOURCE DESCRIPTION – RADIONUCLIDE SOIL CONCENTRATIONS

For the SLDS excavation areas, the activity fraction for each radionuclide was determined from radionuclide concentrations listed in the *St. Louis FUSRAP Internal Dosimetry Technical Basis Manual* (USACE 1999) or in property-specific Pre-Design Investigation Reports. Attachment A-1 contains summary tables of the radionuclide concentrations for each area or plant and VPs. The averaged total alpha and total beta air particulate concentrations at each SLDS property and the activity fraction for each corresponding property were used to calculate the emission rate for each area.

4.4 LIST OF ASSUMED AIR RELEASES FOR CY 2012

Wind erosion during periods of remedial action excavations and periods where the loadout pile was uncovered is assumed for the particulate radionuclide emission determinations from the SLDS. Unexcavated plants and VPs do not contribute to the emission determinations for periods of inactivity due to the low activity and cover.

4.5 DISTANCES TO CRITICAL RECEPTORS

The distances to critical receptors are shown on Figure A-1 and are listed in Table A.4-1. Distances and directions to critical receptors are determined by using tools in a geographic information system (GIS).

Table A.4-1. SLDS Critical Receptors for CY 2012

Sources	Resident		Farm		Business		School	
	Distance (m)	Direction	Distance (m)	Direction	Distance (m)	Direction	Distance (m)	Direction
DT-2	875	SW	2,515	ENE	325	SW	1,165	WSW
Plant 7	615	SW	2,805	NE	75	SW	960	W
Plant 6	495	SW	2,915	NE	160	SSE	750	W
Plant 6 Loadout	495	SW	2,915	NE	160	SSE	750	W

4.6 EMISSIONS DETERMINATION

4.6.1 Measured Airborne Radioactive Particulate Emissions

Particulate air samples were collected from several locations around the perimeter of the SLDS excavation and loadout areas to measure the radionuclide emissions from remedial activities. The samplers were established at the start of each remedial activity and provide the basis for determining the radionuclide emission rates during CY 2012. The average gross alpha and beta concentrations in microcuries per milliliter (μCi/mL) are determined for each area or plant location for CY 2012. The area or plant average concentrations are presented in Table A.4-2.

Table A.4-2. SLDS Average Gross Alpha and Beta Airborne Particulate Emissions for CY 2012

Sampler Location	Average Concentration (μCi/mL)	
	Gross Alpha	Gross Beta
DT-2	3.21E-15	2.43E-14
Plant 7	2.68E-15	2.42E-14
Plant 6[a]	3.11E-15	3.46E-14
Background Concentration[b]	4.24E-15	2.05E-14

[a] Includes the emission rates from the remedial action and loadout.

[b] These concentrations are only provided for informational purposes. However, as a conservative approach, they were not subtracted from the gross average concentration during the determination of the EDE.

The activity fractions for all radionuclides at each SLDS property were determined as discussed in Section 4.3. The product of the radionuclide activity fraction and the gross concentration for each property provides the radionuclide emission concentration in microcuries per cubic centimeter (μCi/cm^3) for that area. The gross average concentration (μCi/cm^3) is converted to a release (emission) rate as measured in curies per year (Ci/yr) using Equations (1) and (2). The emission rates are summarized in Table A.4-5.

USEPA 1989 (page 3-21, [2]) provides Equation (1) for determination of the effective diameter of a non-circular stack or vent.

$$D = (1.3\ A)^{1/2} \qquad \textbf{Equation (1)}$$

where:

D is the effective diameter of the release (m), and

A is the area of the stack, vent or release point in square meters (m^2).

Table A.4-3 provides the effective surface area available for release of airborne radionuclides normalized to one year and the effective diameter for each area or plant of SLDS where excavation or loadout was conducted in CY 2012. Calculation of the effective surface area can be referenced in Attachment A-1.

Table A.4-3. SLDS Excavation Effective Areas and Effective Diameters for CY 2012

SLDS Location	Effective Area (m^2)	Effective Diameters (m)
DT-2	3144	64
Plant 7	1781	48
Plant 6	469	25
Plant 6 Loadout	460	24

The average annual wind speed for the St. Louis Lambert International Airport is provided in CAP88-PC as 4.446 meters/second. Conversion of this wind speed to a flow rate through stacks with the listed effective diameters for each area is completed using Equation (2).

$$V = (4)\ F / \pi\ (D)^2 \qquad \textbf{Equation (2)}$$

where:

V is the wind velocity (meters per minute [m/min]) = 266.76 m/min,
F is the flow rate (cubic meters per minute [m^3/min]),
π is a mathematical constant, and
D is the effective diameter of the release determined using Equation (1) above (m).

Converting the velocity of emissions from the sites to an effective flow rate results in the following site release flow rates for the SLDS areas, as listed in Table A.4-4. The product of the flow rate, the activity fraction associated with each radionuclide, and the appropriate conversion factors provide the site emission rate for each radionuclide, as illustrated in Table A.4-5. Attachment A-1 can be referenced for flow rate and average radionuclide concentration data.

Table A.4-4. SLDS Site Release Flow Rates for CY 2012

SLDS Location	Site Release Flow Rate (m^3/min.)
DT-2	8.6E+05
Plant 7	4.9E+05
Plant 6	1.3E+05
Plant 6 Loadout	1.3E+05

4.6.2 SLDS Total Airborne Radioactive Particulate Emission Rates

The CY 2012 emission rates for each excavated SLDS area are presented in Table A.4-5 and are based on the air samples collected from the perimeter of the excavated areas.

Table A.4-5. SLDS Area Airborne Radioactive Particulate Emission Rates Based on Excavation Perimeter Air Samples for CY 2012

Radionuclide	Emission (Ci/yr)[a]			
	DT-2	Plant 7	Plant 6	Plant 6 Loadout
U-238	5.3E-04	1.7E-04	7.4E-05	8.1E-05
U-235	2.5E-05	7.9E-06	3.7E-06	3.9E-06
U-234	5.2E-04	1.7E-04	7.4E-05	8.0E-05
Ra-226	1.4E-04	1.0E-04	1.4E-05	2.1E-05
Th-232	1.6E-05	4.0E-05	3.7E-06	4.9E-06
Th-230	1.3E-04	1.1E-04	2.8E-05	2.9E-05
Th-228	1.6E-05	4.0E-05	3.7E-06	4.9E-06
Ra-224	1.6E-05	4.0E-05	3.7E-06	4.9E-06
Th-234	5.2E-03	2.5E-03	1.1E-03	9.4E-04
Pa-234m	5.2E-03	2.5E-03	1.1E-03	9.4E-04
Th-231	2.4E-04	1.2E-04	5.5E-05	4.6E-05
Ra-228	1.5E-04	5.9E-04	5.5E-05	5.7E-05
Ac-228	1.5E-04	5.9E-04	5.5E-05	5.7E-05
Pa-231	2.5E-05	7.9E-06	3.7E-06	3.9E-06
Ac-227	2.5E-05	7.9E-06	3.7E-06	3.9E-06

[a] Release rate based on 366-day period at a respective flow rate (as presented in Table A.4-4) as determined from the average annual wind speed (4.446 meters/second) and the effective site area (as presented in Table A.4-3) for each location.

4.7 CAP88-PC RESULTS

The CAP88-PC report is contained in Attachment A-2. The effective area factor input was taken from Table A.4-3. This evaluation demonstrates that all SLDS critical receptors receive less than 10 percent of the dose standard in 40 *CFR* 61.102 and therefore, SLDS is exempt from the reporting requirements of 40 *CFR* 61.104(a). Table A.4-6 summarizes the results.

Table A.4-6. SLDS CAP88-PC Results for Critical Receptors for CY 2012

Source	Dose (mrem/yr)			
	Resident[a]	School[b]	Business[b]	Farm[a]
DT-2	<0.1	<0.1	<0.1	<0.1
Plant 7	0.18	<0.1	0.28	0.16
Plant 6	<0.1	<0.1	<0.1	<0.1
Plant 6 Loadout	<0.1	<0.1	<0.1	<0.1
SLDS Total Dose[c]	**0.23**	**<0.1**	**0.32**	**0.18**

[a] 100 percent occupancy factor.
[b] Corrected for the 23 percent occupancy factor (50 weeks/yr 40 hours/week).
[c] Combined dose from all sources at SLDS.

5.0 REFERENCES

USACE 1999. *St. Louis-FUSRAP Internal Dosimetry Technical Basis Manual*, U.S. Army Corps of Engineers, St. Louis District Office, FUSRAP, November.

USEPA 1989. EPA 520/1-89-002, *A Guide for Determining Compliance with the Clean Air Act Standards for Radionuclide Emissions from NRC-Licensed and Non-DOE Federal Facilities*, U.S. Environmental Protection Agency, Office of Radiation Programs, Washington, DC, October.

USEPA 2007. CAP88-PC Version 3.0 Computer Code, U.S. Environmental Protection Agency, December.

40 *CFR* 61, Subpart I. *National Emission Standards for Radionuclide Emissions from Federal Facilities Other Than Nuclear Regulatory Commission Licensees and Not Covered by Subpart H.*

40 *CFR* Subpart D. *Method for Estimating Radionuclide Emissions.*

40 *CFR* 61 Appendix E. *Compliance Procedures Methods for Determining Compliance with Subpart I.*

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APPENDIX A

FIGURE

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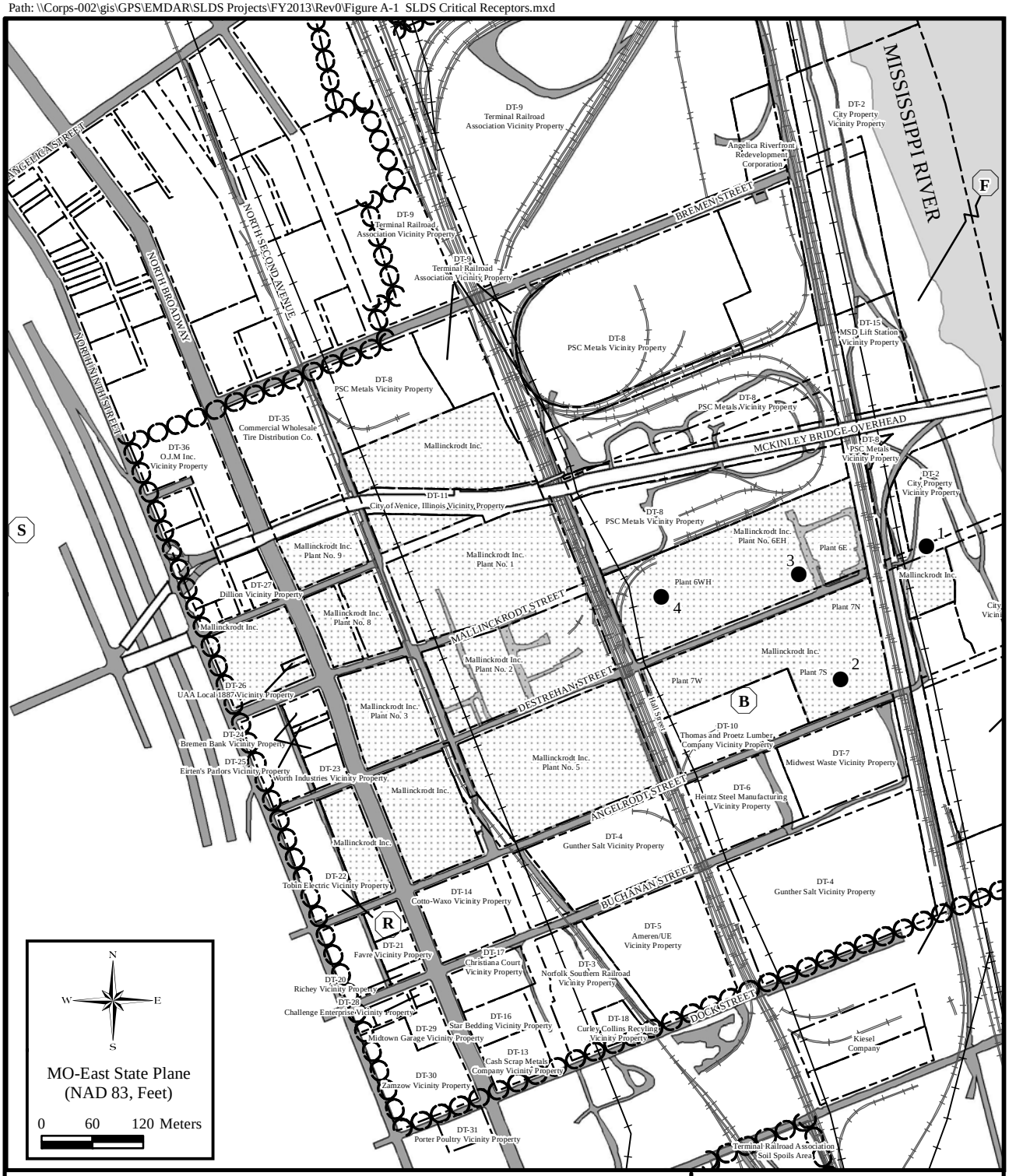
Path: \\Corps-002\gis\GPS\EMDAR\SLDS Projects\FY2013\Rev0\Figure A-1 SLDS Critical Receptors.mxd



Legend

- ROD Boundary
- Vicinity Properties
- Railroad
- Mallinckrodt Property
- Road
- River/Stream

Location	R Residential	F Farm	B Business	S School
1. DT-2	875 SW	2516 ENE	325 SW	1165 WSW
2. Plant 7	615 SW	2805 NE	75 SW	960 W
3. Plant 6	495 SW	2915 NE	160 SSE	750 W
4. Plant 6 Loadout	495 SW	2915 NE	160 SSE	750 W

*Distances from property to receptors are in meters

Figure A-1. SLDS Critical Receptors

FUSRAP

DRAWN BY:	REV:	DATE:
KLP	0	6-19-2013

ATTACHMENT A-1

CALCULATED EMISSION RATES FROM SLDS PROPERTIES

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Table A1-1. SLDS Excavation/Loadout Area Soil Radionuclide Concentrations for CY 2012

Property	DT-2[a]	Plant 7[a]	Plant 6[a]	Plant 6 Loadout[b]	Average[b]
Radionuclide	**Average Concentration (pCi/g)**				
U-238	75	21	140	79	79
U-235	3.5	1	7	4	4
U-234	74	21	140	78	78
Ra-226	20	13	27	20	20
Ra-228	2.2	5	7	5	5
Th-232	2.2	5	7	5	5
Th-230	19	14	52	28	28
Th-228	2.2	5	7	5	5

[a] Radionuclides and concentrations from *St. Louis-FUSRAP Internal Dosimetry Technical Basis Manual* (USACE 1999) or in property-specific Pre-Design Investigation Reports.
[b] Average concentration from SLDS CY 2012 excavated property and loadout area.
pCi/g = picocuries per gram

Table A1-2. SLDS Average Gross Alpha and Beta Airborne Particulate Concentrations for CY 2012

Location	Average Concentration (uCi/ml) for Location[a]	
	Gross Alpha	**Gross Beta**
DT-2	3.21E-15	2.43E-14
Plant 7	2.68E-15	2.42E-14
Plant 6	3.11E-15	3.46E-14
Plant 6 Loadout	3.46E-15	2.99E-14
Background Concentration[b]	4.24E-15	2.05E-14

[a] Average concentration values for the sampling period by location.
[b] These concentrations are only provided for informational purposes. However, as a conservative approach, they were not subtracted from the gross average concentration during the determination of EDE.

Table A1-3. SLDS Excavation Data for CY 2012

Excavation Location Name	Surface Area (m^2)	Start Date	Backfill Date
DT-2, Area 7, SU-4A	1,208	01/01/12	08/06/12
DT-2, Area 7, SU-4C	2,431	01/01/12	10/11/12
DT-2, Area 8, SU-4B	170	01/01/12	10/03/12
DT-2, Area 8, SU-4D	400	01/01/12	12/31/12
Plant 7W, SU-1	770	01/01/12	01/24/12
Plant 7W, SU-2	782	01/01/12	02/07/12
Plant 7W, SU-3	1,015	01/01/12	05/03/12
Plant 7W, SU-4	885	01/01/12	08/06/12
Plant 7W, SU-5A	285	01/01/12	08/13/12
Plant 7W, SU-5B	600	01/01/12	12/31/12
Plant 6WH, Bldg. 101	2,200	10/15/12	12/31/12
Plant 6 Loadout	2,000	01/01/12	12/31/12

Note: Open/close dates set to start or stop at the calendar year boundary.

Table A1-4. SLDS Average Surface Area and Flow Rate Per Location at SLDS for CY 2012

Location	Total Days	Surface Area * Total Days	Average Surface Area/yr (m^2) [a]	Diameter of Stack $D=(1.3*A)^{1/2}$(m)	Flow Rate $F=V*Pi*(D)^2/4$ (m^3/min.)
DT-2					
DT-2, Area 7, SU-4A	219	264,552			
DT-2, Area 7, SU-4C	285	692,835			
DT-2, Area 8, SU-4B	277	47,090			
DT-2, Area 8, SU-4D	366	146,400			
		1,150,877	3,144	64	**8.6E+05**
Plant 7					
Plant 7W, SU-1	24	18,480			
Plant 7W, SU-2	38	29,716			
Plant 7W, SU-3	124	125,860			
Plant 7W, SU-4	219	193,815			
Plant 7W, SU-5A	226	64,410			
Plant 7W, SU-5B	366	219,600			
	Total	651,881	1,781	48	**4.9E+05**
Plant 6WH					
Plant 6WH, Bldg. 101	78	171,600			
	Total	171,600	469	25	**1.3E+05**
Plant 6 Loadout					
Plant 6 Loadout [b]	366	168,360			
	Total	168,360	460	24	**1.3E+05**

[a] Average Surface Area/yr = [Σ(Surface Area x Total days)]/366.
[b] This value has been multiplied by a factor of 0.23 to account for the loadout pile being uncovered for only 2,000 hours per year.

Table A1-5. SLDS Airborne Radioactive Particulate Emissions Based on Excavation Perimeter Air Samples for CY 2012

Property	DT-2			Plant 7			Plant 6			Plant 6 Loadout		
Radionuclide	Activity Fraction[a]	Emission Conc. (uCi/cm^3)[b]	Release Rate (Ci/y)[c]	Activity Fraction[a]	Emission Conc. (uCi/cm^3)[b]	Release Rate (Ci/y)[c]	Activity Fraction[a]	Emission Conc. (uCi/cm^3)[b]	Release Rate (Ci/y)[c]	Activity Fraction[a]	Emission Conc. (uCi/cm^3)[b]	Release Rate (Ci/y)[c]
U-238	0.37	1.2E-15	5.3E-04	0.24	6.5E-16	1.7E-04	0.35	1.1E-15	7.4E-05	0.34	1.2E-15	8.1E-05
U-235	0.02	5.5E-17	2.5E-05	0.01	3.1E-17	7.9E-06	0.02	5.4E-17	3.7E-06	0.02	5.7E-17	3.9E-06
U-234[d]	0.36	1.2E-15	5.2E-04	0.24	6.5E-16	1.7E-04	0.35	1.1E-15	7.4E-05	0.34	1.2E-15	8.0E-05
Ra-226	0.10	3.1E-16	1.4E-04	0.15	4.0E-16	1.0E-04	0.07	2.1E-16	1.4E-05	0.09	3.0E-16	2.1E-05
Th-232	0.01	3.4E-17	1.6E-05	0.06	1.5E-16	4.0E-05	0.02	5.4E-17	3.7E-06	0.02	7.1E-17	4.9E-06
Th-230	0.09	3.0E-16	1.3E-04	0.16	4.3E-16	1.1E-04	0.13	4.0E-16	2.8E-05	0.12	4.2E-16	2.9E-05
Th-228[d]	0.01	3.4E-17	1.6E-05	0.06	1.5E-16	4.0E-05	0.02	5.4E-17	3.7E-06	0.02	7.1E-17	4.9E-06
Ra-224[d]	0.01	3.4E-17	1.6E-05	0.06	1.5E-16	4.0E-05	0.02	5.4E-17	3.7E-06	0.02	7.1E-17	4.9E-06
Th-234[d]	0.47	1.2E-14	5.2E-03	0.40	9.6E-15	2.5E-03	0.47	1.6E-14	1.1E-03	0.46	1.4E-14	9.4E-04
Pa-234m[d]	0.47	1.2E-14	5.2E-03	0.40	9.6E-15	2.5E-03	0.47	1.6E-14	1.1E-03	0.46	1.4E-14	9.4E-04
Th-231[d]	0.02	5.4E-16	2.4E-04	0.02	4.6E-16	1.2E-04	0.02	8.0E-16	5.5E-05	0.02	6.7E-16	4.6E-05
Ra-228[d]	0.01	3.4E-16	1.5E-04	0.09	2.3E-15	5.9E-04	0.02	8.0E-16	5.5E-05	0.03	8.3E-16	5.7E-05
Ac-228[d]	0.01	3.4E-16	1.5E-04	0.09	2.3E-15	5.9E-04	0.02	8.0E-16	5.5E-05	0.03	8.3E-16	5.7E-05
Pa-231[d]	0.02	5.5E-17	2.5E-05	0.01	3.1E-17	7.9E-06	0.02	5.4E-17	3.7E-06	0.02	5.7E-17	3.9E-06
Ac-227[d]	0.02	5.5E-17	2.5E-05	0.01	3.1E-17	7.9E-06	0.02	5.4E-17	3.7E-06	0.02	5.7E-17	3.9E-06

[a] Derived from the average soil radionuclide concentrations for SLDS, as presented in Table A1-1.

[b] Emission concentration is equal to the activity fraction * the gross alpha or gross beta airborne particulate concentrations listed in Table A1-2.

[c] Release rate based on 366-day period at measured flow rate (Table A1-4) for each site, as determined from the average annual wind speed (4.446 meters/second) and calculated site area (Table A1-4). (Note: 1 mL = 1 cm^3.)

[d] Note: When data was not available, the radionuclide was assumed to be in secular equilibrium with parent.

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ATTACHMENT A-2

CAP88-PC OUTPUT REPORT FOR SLDS PROPERTIES

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CAP88 OUTPUT RESULTS

DT-2

C A P 8 8 - P C

Version 3.0

Clean Air Act Assessment Package - 1988

D O S E A N D R I S K E Q U I V A L E N T S U M M A R I E S

Non-Radon Individual Assessment
Mar 8, 2013 11:27 am

Facility: DT-2 City Property
Address: Bremen
City: St. Louis
State: MO **Zip:** 63147

Source Category: Area
Source Type: Area
Emission Year: 2012

Comments: Air
Air

Dataset Name: DT-2 2012
Dataset Date: 3/8/2013 11:04:00 AM
Wind File: C:\Program Files\CAP88-PC30\WindLib\13994.WND

Mar 8, 2013 11:27 am **SUMMARY**
Page 1

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)
Adrenals	1.25E-03
B Surfac	2.47E-01
Breasts	1.33E-03
St Wall	1.28E-03
ULI Wall	1.39E-03
Kidneys	5.46E-03
Lungs	5.76E-02
Ovaries	3.15E-03
R Marrow	1.17E-02
Spleen	1.29E-03
Thymus	1.27E-03
Uterus	1.27E-03
Bld Wall	1.29E-03
Brain	1.27E-03
Esophagu	1.75E-02
SI Wall	1.28E-03
LLI Wall	1.63E-03
Liver	1.60E-02
Muscle	1.34E-03
Pancreas	1.25E-03
Skin	2.16E-02
Testes	3.25E-03
Thyroid	1.30E-03
EFFEC	2.51E-01

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)
INGESTION	8.77E-03
INHALATION	2.42E-01
AIR IMMERSION	1.24E-06
GROUND SURFACE	6.54E-04
INTERNAL	2.51E-01
EXTERNAL	6.55E-04
TOTAL	2.51E-01

Mar 8, 2013 11:27 am **SUMMARY**
Page 2

NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclide	Selected Individual (mrem/y)
U-238	3.27E-02
Th-234	9.21E-04
Pa-234m	2.10E-04
Pa-234	5.93E-06
U-234	3.90E-02
Th-230	3.91E-02
Ra-226	1.22E-02
Rn-222	2.32E-13
Po-218	1.21E-09
Pb-214	3.37E-05
Bi-214	2.02E-04
Po-214	1.11E-08
Pb-210	1.24E-05
Bi-210	3.76E-08
Po-210	1.05E-06
At-218	1.02E-10
U-235	1.67E-03
Th-231	2.10E-06
Pa-231	5.00E-02
Ac-227	3.89E-02
Th-227	4.21E-06
Ra-223	2.48E-05
Rn-219	0.00E+00
Po-215	2.52E-09
Pb-211	1.42E-06
Bi-211	6.60E-07
Tl-207	8.32E-07
Po-211	3.05E-10
Fr-223	4.48E-08
Th-232	8.50E-03
Ra-228	1.32E-02
Ac-228	1.77E-04
Th-228	1.35E-02
Ra-224	1.02E-03
Rn-220	2.44E-11
Po-216	4.03E-10
Pb-212	3.80E-06
Bi-212	5.60E-06
Po-212	0.00E+00
Tl-208	2.66E-05
TOTAL	2.51E-01

CANCER RISK SUMMARY

Cancer	Selected Individual Total Lifetime Fatal Cancer Risk
Esophagu	1.36E-10
Stomach	3.71E-10
Colon	1.43E-09
Liver	3.76E-09
LUNG	1.16E-07
Bone	3.29E-09
Skin	3.01E-11
Breast	2.16E-10
Ovary	5.25E-10
Bladder	3.19E-10
Kidneys	4.63E-10
Thyroid	2.85E-11
Leukemia	6.68E-10
Residual	1.48E-09
Total	1.28E-07
TOTAL	2.57E-07

PATHWAY RISK SUMMARY

Pathway	Selected Individual Total Lifetime Fatal Cancer Risk
INGESTION	3.08E-09
INHALATION	1.25E-07
AIR IMMERSION	5.68E-13
GROUND SURFACE	2.69E-10
INTERNAL	1.28E-07
EXTERNAL	2.69E-10
TOTAL	1.28E-07

Mar 8, 2013 11:27 am **SUMMARY**
Page 4

NUCLIDE RISK SUMMARY

Nuclide	Selected Individual Total Lifetime Fatal Cancer Risk
U-238	2.70E-08
Th-234	8.76E-10
Pa-234m	3.38E-11
Pa-234	3.23E-12
U-234	3.22E-08
Th-230	2.00E-08
Ra-226	9.36E-09
Rn-222	1.26E-19
Po-218	6.66E-16
Pb-214	1.80E-11
Bi-214	1.07E-10
Po-214	6.09E-15
Pb-210	4.11E-12
Bi-210	1.83E-14
Po-210	4.03E-13
At-218	4.85E-17
U-235	1.38E-09
Th-231	1.83E-12
Pa-231	4.72E-09
Ac-227	1.02E-08
Th-227	3.39E-12
Ra-223	1.35E-11
Rn-219	0.00E+00
Po-215	1.38E-15
Pb-211	4.73E-13
Bi-211	3.62E-13
Tl-207	1.06E-13
Po-211	1.67E-16
Fr-223	2.53E-14
Th-232	3.75E-09
Ra-228	5.91E-09
Ac-228	9.84E-11
Th-228	1.16E-08
Ra-224	8.73E-10
Rn-220	1.33E-17
Po-216	2.21E-16
Pb-212	2.21E-12
Bi-212	2.52E-12
Po-212	0.00E+00
Tl-208	1.45E-11
TOTAL	1.28E-07

Mar 8, 2013 11:27 am **SUMMARY**
Page 5

INDIVIDUAL EFFECTIVE DOSE EQUIVALENT RATE (mrem/y)
(All Radionuclides and Pathways)

	Distance (m)				
Direction	325	875	1165	2515	
N	2.5E-01	4.4E-02	2.9E-02	1.2E-02	
NNW	1.3E-01	2.6E-02	1.8E-02	9.3E-03	
NW	1.5E-01	2.9E-02	2.0E-02	9.8E-03	
WNW	1.9E-01	3.4E-02	2.3E-02	1.1E-02	
W	1.4E-01	2.7E-02	1.9E-02	9.5E-03	
WSW	7.1E-02	1.6E-02	1.2E-02	7.8E-03	School
SW	9.9E-02	2.0E-02	1.4E-02	8.4E-03	Business / Residence
SSW	1.2E-01	2.4E-02	1.6E-02	8.9E-03	
S	1.1E-01	2.2E-02	1.5E-02	8.7E-03	
SSE	7.6E-02	1.7E-02	1.3E-02	7.9E-03	
SE	1.1E-01	2.2E-02	1.6E-02	8.7E-03	
ESE	1.8E-01	3.3E-02	2.2E-02	1.0E-02	
E	2.4E-01	4.1E-02	2.7E-02	1.2E-02	
ENE	2.0E-01	3.5E-02	2.3E-02	1.1E-02	Farm
NE	1.2E-01	2.4E-02	1.7E-02	9.0E-03	
NNE	1.0E-01	2.1E-02	1.5E-02	8.6E-03	

Mar 8, 2013 11:27 am **SUMMARY**
Page 6

INDIVIDUAL LIFETIME RISK (deaths)
(All Radionuclides and Pathways)

	Distance (m)			
Direction	**325**	**875**	**1165**	**2515**
N	1.3E-07	2.2E-08	1.4E-08	5.3E-09
NNW	6.7E-08	1.2E-08	8.2E-09	3.8E-09
NW	7.8E-08	1.4E-08	9.1E-09	4.0E-09
WNW	9.5E-08	1.6E-08	1.1E-08	4.4E-09
W	7.2E-08	1.3E-08	8.5E-09	3.9E-09
WSW	3.6E-08	7.3E-09	5.2E-09	3.0E-09
SW	5.0E-08	9.4E-09	6.4E-09	3.3E-09
SSW	6.1E-08	1.1E-08	7.5E-09	3.6E-09
S	5.4E-08	1.0E-08	6.9E-09	3.5E-09
SSE	3.8E-08	7.8E-09	5.5E-09	3.1E-09
SE	5.5E-08	1.0E-08	7.0E-09	3.5E-09
ESE	9.2E-08	1.6E-08	1.0E-08	4.4E-09
E	1.2E-07	2.0E-08	1.3E-08	5.0E-09
ENE	1.0E-07	1.7E-08	1.1E-08	4.5E-09
NE	6.2E-08	1.1E-08	7.6E-09	3.6E-09
NNE	5.2E-08	9.8E-09	6.8E-09	3.4E-09

CAP88 OUTPUT RESULTS

Plant 7

C A P 8 8 - P C

Version 3.0

Clean Air Act Assessment Package - 1988

D O S E A N D R I S K E Q U I V A L E N T S U M M A R I E S

Non-Radon Individual Assessment
Mar 8, 2013 11:31 am

Facility: Plant 7
Address: Destrehan
City: St. Louis
State: MO **Zip:** 63147

Source Category: Area
Source Type: Area
Emission Year: 2012

Comments: Air
Air

Dataset Name: Plant 7 2012
Dataset Date: 3/8/2013 11:10:00 AM
Wind File: C:\Program Files\CAP88-PC30\WindLib\13994.WND

Mar 8, 2013 11:31 am **SUMMARY**
Page 1

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)
Adrenals	1.59E-02
B Surfac	2.09E+00
Breasts	1.73E-02
St Wall	1.65E-02
ULI Wall	1.75E-02
Kidneys	5.12E-02
Lungs	6.23E-01
Ovaries	2.91E-02
R Marrow	1.35E-01
Spleen	1.66E-02
Thymus	1.63E-02
Uterus	1.62E-02
Bld Wall	1.67E-02
Brain	1.64E-02
Esophagu	2.15E-01
SI Wall	1.64E-02
LLI Wall	1.99E-02
Liver	1.07E-01
Muscle	1.77E-02
Pancreas	1.59E-02
Skin	1.55E-01
Testes	3.09E-02
Thyroid	1.69E-02
EFFEC	2.47E+00

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)
INGESTION	2.33E-01
INHALATION	2.23E+00
AIR IMMERSION	3.10E-05
GROUND SURFACE	1.08E-02
INTERNAL	2.46E+00
EXTERNAL	1.08E-02
TOTAL	2.47E+00

Mar 8, 2013 11:31 am **SUMMARY**
Page 2

NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclide	Selected Individual (mrem/y)
U-238	1.28E-01
Th-234	5.35E-03
Pa-234m	1.10E-03
Pa-234	2.89E-05
U-234	1.55E-01
Th-230	4.04E-01
Ra-226	1.04E-01
Rn-222	1.94E-12
Po-218	1.01E-08
Pb-214	2.79E-04
Bi-214	1.68E-03
Po-214	9.20E-08
Pb-210	9.66E-05
Bi-210	3.06E-07
Po-210	8.18E-06
At-218	8.36E-10
U-235	6.43E-03
Th-231	1.19E-05
Pa-231	1.93E-01
Ac-227	1.50E-01
Th-227	1.54E-05
Ra-223	8.61E-05
Rn-219	0.00E+00
Po-215	9.25E-09
Pb-211	5.22E-06
Bi-211	2.42E-06
Tl-207	3.05E-06
Po-211	1.12E-09
Fr-223	1.68E-07
Th-232	2.59E-01
Ra-228	6.10E-01
Ac-228	8.18E-03
Th-228	4.14E-01
Ra-224	3.10E-02
Rn-220	7.15E-10
Po-216	1.43E-08
Pb-212	1.33E-04
Bi-212	1.99E-04
Po-212	0.00E+00
Tl-208	9.44E-04
TOTAL	2.47E+00

Mar 8, 2013 11:31 am SUMMARY
Page 3

CANCER RISK SUMMARY

Cancer	Selected Individual Total Lifetime Fatal Cancer Risk
Esophagu	1.81E-09
Stomach	6.54E-09
Colon	2.30E-08
Liver	3.12E-08
LUNG	1.20E-06
Bone	4.43E-08
Skin	2.92E-10
Breast	3.82E-09
Ovary	5.57E-09
Bladder	4.07E-09
Kidneys	5.19E-09
Thyroid	4.73E-10
Leukemia	1.11E-08
Residual	2.51E-08
Total	1.37E-06
TOTAL	2.73E-06

PATHWAY RISK SUMMARY

Pathway	Selected Individual Total Lifetime Fatal Cancer Risk
INGESTION	8.88E-08
INHALATION	1.27E-06
AIR IMMERSION	1.63E-11
GROUND SURFACE	5.34E-09
INTERNAL	1.36E-06
EXTERNAL	5.35E-09
TOTAL	1.37E-06

Mar 8, 2013 11:31 am **SUMMARY**
Page 4

NUCLIDE RISK SUMMARY

Nuclide	Selected Individual Total Lifetime Fatal Cancer Risk
U-238	1.06E-07
Th-234	5.07E-09
Pa-234m	1.76E-10
Pa-234	1.58E-11
U-234	1.29E-07
Th-230	2.07E-07
Ra-226	8.11E-08
Rn-222	1.06E-18
Po-218	5.51E-15
Pb-214	1.49E-10
Bi-214	8.90E-10
Po-214	5.05E-14
Pb-210	3.21E-11
Bi-210	1.44E-13
Po-210	3.13E-12
At-218	3.96E-16
U-235	5.31E-09
Th-231	1.07E-11
Pa-231	1.82E-08
Ac-227	3.95E-08
Th-227	1.23E-11
Ra-223	4.68E-11
Rn-219	0.00E+00
Po-215	5.07E-15
Pb-211	1.73E-12
Bi-211	1.33E-12
Tl-207	3.89E-13
Po-211	6.11E-16
Fr-223	9.56E-14
Th-232	1.15E-07
Ra-228	2.74E-07
Ac-228	4.55E-09
Th-228	3.54E-07
Ra-224	2.67E-08
Rn-220	3.91E-16
Po-216	7.85E-15
Pb-212	7.67E-11
Bi-212	8.94E-11
Po-212	0.00E+00
Tl-208	5.15E-10
TOTAL	1.37E-06

Mar 8, 2013 11:31 am **SUMMARY**
Page 5

INDIVIDUAL EFFECTIVE DOSE EQUIVALENT RATE (mrem/y)
(All Radionuclides and Pathways)

	Distance (m)				
Direction	75	615	960	2805	
N	2.4E+00	2.2E-01	1.9E-01	1.6E-01	
NNW	1.8E+00	1.9E-01	1.7E-01	1.6E-01	
NW	1.8E+00	2.0E-01	1.8E-01	1.6E-01	
WNW	2.0E+00	2.0E-01	1.8E-01	1.6E-01	
W	1.6E+00	1.9E-01	1.7E-01	1.6E-01	School
WSW	1.0E+00	1.8E-01	1.7E-01	1.6E-01	
SW	1.2E+00	1.8E-01	1.7E-01	1.6E-01	Business / Residence
SSW	1.3E+00	1.9E-01	1.7E-01	1.6E-01	
S	1.2E+00	1.8E-01	1.7E-01	1.6E-01	
SSE	1.0E+00	1.8E-01	1.7E-01	1.6E-01	
SE	1.3E+00	1.8E-01	1.7E-01	1.6E-01	
ESE	2.0E+00	2.0E-01	1.8E-01	1.6E-01	
E	2.5E+00	2.1E-01	1.8E-01	1.6E-01	
ENE	2.1E+00	2.0E-01	1.8E-01	1.6E-01	
NE	1.5E+00	1.9E-01	1.7E-01	1.6E-01	Farm
NNE	1.5E+00	1.8E-01	1.7E-01	1.6E-01	

Mar 8, 2013 11:31 am **SUMMARY**
Page 6

INDIVIDUAL LIFETIME RISK (deaths)
(All Radionuclides and Pathways)

	Distance (m)			
Direction	**75**	**615**	**960**	**2805**
N	**1.3E-06**	**9.4E-08**	**7.5E-08**	**6.4E-08**
NNW	**9.6E-07**	**7.8E-08**	**6.9E-08**	**6.3E-08**
NW	**9.7E-07**	**8.1E-08**	**7.0E-08**	**6.3E-08**
WNW	**1.1E-06**	**8.5E-08**	**7.1E-08**	**6.3E-08**
W	**8.7E-07**	**7.9E-08**	**6.9E-08**	**6.3E-08**
WSW	**5.5E-07**	**7.0E-08**	**6.5E-08**	**6.2E-08**
SW	**6.2E-07**	**7.3E-08**	**6.6E-08**	**6.2E-08**
SSW	**7.2E-07**	**7.6E-08**	**6.8E-08**	**6.2E-08**
S	**6.6E-07**	**7.5E-08**	**6.7E-08**	**6.2E-08**
SSE	**5.5E-07**	**7.1E-08**	**6.5E-08**	**6.2E-08**
SE	**7.2E-07**	**7.5E-08**	**6.7E-08**	**6.2E-08**
ESE	**1.1E-06**	**8.4E-08**	**7.1E-08**	**6.3E-08**
E	**1.4E-06**	**9.1E-08**	**7.4E-08**	**6.3E-08**
ENE	**1.2E-06**	**8.6E-08**	**7.2E-08**	**6.3E-08**
NE	**8.2E-07**	**7.6E-08**	**6.8E-08**	**6.2E-08**
NNE	**8.1E-07**	**7.4E-08**	**6.7E-08**	**6.2E-08**

CAP88 OUTPUT RESULTS

Plant 6

C A P 8 8 - P C

Version 3.0

Clean Air Act Assessment Package - 1988

D O S E A N D R I S K E Q U I V A L E N T S U M M A R I E S

Non-Radon Individual Assessment
Mar 8, 2013 11:35 am

Facility: Plant 6
Address: Destrehan
City: St. Louis
State: MO Zip: 63147

Source Category: Area
Source Type: Area
Emission Year: 2012

Comments: Air
Air

Dataset Name: Plant 6 2012
Dataset Date: 3/8/2013 11:19:00 AM
Wind File: C:\Program Files\CAP88-PC30\WindLib\13994.WND

Mar 8, 2013 11:35 am **SUMMARY**
Page 1

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)
Adrenals	8.31E-04
B Surfac	1.59E-01
Breasts	8.85E-04
St Wall	8.52E-04
ULI Wall	9.22E-04
Kidneys	3.49E-03
Lungs	3.70E-02
Ovaries	2.01E-03
R Marrow	8.04E-03
Spleen	8.58E-04
Thymus	8.46E-04
Uterus	8.42E-04
Bld Wall	8.59E-04
Brain	8.48E-04
Esophagu	1.20E-02
SI Wall	8.48E-04
LLI Wall	1.07E-03
Liver	9.57E-03
Muscle	8.95E-04
Pancreas	8.30E-04
Skin	1.53E-02
Testes	2.08E-03
Thyroid	8.69E-04
EFFEC	1.62E-01

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)
INGESTION	7.82E-03
INHALATION	1.53E-01
AIR IMMERSION	1.30E-06
GROUND SURFACE	4.75E-04
INTERNAL	1.61E-01
EXTERNAL	4.76E-04
TOTAL	1.62E-01

Mar 8, 2013 11:35 am **SUMMARY**
Page 2

NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclide	Selected Individual (mrem/y)
U-238	1.69E-02
Th-234	7.17E-04
Pa-234m	1.50E-04
Pa-234	3.94E-06
U-234	2.06E-02
Th-230	3.13E-02
Ra-226	4.46E-03
Rn-222	8.41E-14
Po-218	4.37E-10
Pb-214	1.21E-05
Bi-214	7.28E-05
Po-214	4.00E-09
Pb-210	4.23E-06
Bi-210	1.33E-08
Po-210	3.52E-07
At-218	0.00E+00
U-235	9.16E-04
Th-231	1.66E-06
Pa-231	2.75E-02
Ac-227	2.14E-02
Th-227	1.59E-06
Ra-223	1.26E-05
Rn-219	0.00E+00
Po-215	1.34E-09
Pb-211	7.58E-07
Bi-211	3.52E-07
Tl-207	4.43E-07
Po-211	8.06E-11
Fr-223	2.42E-08
Th-232	7.30E-03
Ra-228	1.75E-02
Ac-228	2.36E-04
Th-228	1.16E-02
Ra-224	8.73E-04
Rn-220	2.04E-11
Po-216	4.13E-10
Pb-212	3.82E-06
Bi-212	5.73E-06
Po-212	0.00E+00
Tl-208	2.72E-05
TOTAL	1.62E-01

Mar 8, 2013 11:35 am **SUMMARY**
Page 3

CANCER RISK SUMMARY

Cancer	Selected Individual Total Lifetime Fatal Cancer Risk
Esophagu	9.59E-11
Stomach	2.88E-10
Colon	1.08E-09
Liver	2.36E-09
LUNG	7.33E-08
Bone	2.36E-09
Skin	2.17E-11
Breast	1.67E-10
Ovary	3.55E-10
Bladder	2.21E-10
Kidneys	3.12E-10
Thyroid	2.16E-11
Leukemia	5.12E-10
Residual	1.08E-09
Total	8.22E-08
TOTAL	1.64E-07

PATHWAY RISK SUMMARY

Pathway	Selected Individual Total Lifetime Fatal Cancer Risk
INGESTION	2.88E-09
INHALATION	7.91E-08
AIR IMMERSION	6.21E-13
GROUND SURFACE	1.97E-10
INTERNAL	8.20E-08
EXTERNAL	1.97E-10
TOTAL	8.22E-08

Mar 8, 2013 11:35 am **SUMMARY**
Page 4

NUCLIDE RISK SUMMARY

Nuclide	Selected Individual Total Lifetime Fatal Cancer Risk
U-238	1.40E-08
Th-234	6.79E-10
Pa-234m	2.40E-11
Pa-234	2.15E-12
U-234	1.70E-08
Th-230	1.60E-08
Ra-226	3.46E-09
Rn-222	4.57E-20
Po-218	2.40E-16
Pb-214	6.47E-12
Bi-214	3.87E-11
Po-214	2.19E-15
Pb-210	1.40E-12
Bi-210	6.31E-15
Po-210	1.35E-13
At-218	0.00E+00
U-235	7.57E-10
Th-231	1.50E-12
Pa-231	2.59E-09
Ac-227	5.63E-09
Th-227	1.23E-12
Ra-223	6.85E-12
Rn-219	0.00E+00
Po-215	7.37E-16
Pb-211	2.52E-13
Bi-211	1.93E-13
Tl-207	5.66E-14
Po-211	4.42E-17
Fr-223	1.37E-14
Th-232	3.22E-09
Ra-228	7.84E-09
Ac-228	1.31E-10
Th-228	9.95E-09
Ra-224	7.51E-10
Rn-220	1.12E-17
Po-216	2.26E-16
Pb-212	2.20E-12
Bi-212	2.57E-12
Po-212	0.00E+00
Tl-208	1.48E-11
TOTAL	8.22E-08

Mar 8, 2013 11:35 am **SUMMARY**
Page 5

INDIVIDUAL EFFECTIVE DOSE EQUIVALENT RATE (mrem/y)
(All Radionuclides and Pathways)

	Distance (m)				
Direction	160	495	750	2915	
N	1.6E-01	2.4E-02	1.4E-02	6.2E-03	
NNW	8.5E-02	1.5E-02	9.9E-03	5.8E-03	
NW	1.0E-01	1.7E-02	1.1E-02	5.9E-03	
WNW	1.2E-01	1.9E-02	1.2E-02	6.0E-03	
W	9.3E-02	1.6E-02	1.0E-02	5.8E-03	School
WSW	4.7E-02	1.0E-02	7.7E-03	5.6E-03	
SW	6.5E-02	1.3E-02	8.6E-03	5.7E-03	Residence
SSW	7.9E-02	1.4E-02	9.4E-03	5.8E-03	
S	6.9E-02	1.3E-02	9.0E-03	5.7E-03	
SSE	5.0E-02	1.1E-02	7.9E-03	5.6E-03	Business
SE	7.0E-02	1.3E-02	9.0E-03	5.7E-03	
ESE	1.2E-01	1.9E-02	1.2E-02	6.0E-03	
E	1.5E-01	2.3E-02	1.3E-02	6.1E-03	
ENE	1.3E-01	2.0E-02	1.2E-02	6.0E-03	
NE	7.9E-02	1.4E-02	9.5E-03	5.8E-03	Farm
NNE	6.7E-02	1.3E-02	8.8E-03	5.7E-03	

Mar 8, 2013 11:35 am **SUMMARY**
Page 6

INDIVIDUAL LIFETIME RISK (deaths)
(All Radionuclides and Pathways)

	Distance (m)			
Direction	**160**	**495**	**750**	**2915**
N	**8.2E-08**	**1.2E-08**	**6.5E-09**	**2.4E-09**
NNW	**4.3E-08**	**7.0E-09**	**4.3E-09**	**2.2E-09**
NW	**5.1E-08**	**7.9E-09**	**4.7E-09**	**2.2E-09**
WNW	**6.2E-08**	**9.2E-09**	**5.3E-09**	**2.3E-09**
W	**4.7E-08**	**7.4E-09**	**4.4E-09**	**2.2E-09**
WSW	**2.4E-08**	**4.6E-09**	**3.2E-09**	**2.1E-09**
SW	**3.3E-08**	**5.7E-09**	**3.6E-09**	**2.1E-09**
SSW	**4.0E-08**	**6.5E-09**	**4.0E-09**	**2.2E-09**
S	**3.5E-08**	**6.0E-09**	**3.8E-09**	**2.2E-09**
SSE	**2.5E-08**	**4.8E-09**	**3.3E-09**	**2.1E-09**
SE	**3.5E-08**	**6.1E-09**	**3.9E-09**	**2.2E-09**
ESE	**6.0E-08**	**9.0E-09**	**5.2E-09**	**2.3E-09**
E	**7.8E-08**	**1.1E-08**	**6.1E-09**	**2.4E-09**
ENE	**6.5E-08**	**9.5E-09**	**5.4E-09**	**2.3E-09**
NE	**4.0E-08**	**6.6E-09**	**4.1E-09**	**2.2E-09**
NNE	**3.4E-08**	**5.9E-09**	**3.8E-09**	**2.2E-09**

CAP88 OUTPUT RESULTS

Plant 6 Loadout

C A P 8 8 - P C

Version 3.0

Clean Air Act Assessment Package - 1988

D O S E A N D R I S K E Q U I V A L E N T S U M M A R I E S

Non-Radon Individual Assessment
Mar 8, 2013 11:38 am

Facility: Plant 6 Loadout
Address: Destrehan
City: St. Louis
State: MO **Zip:** 63147

Source Category: Area
Source Type: Area
Emission Year: 2012

Comments: Air
Air

Dataset Name: Plant 6 LDT 2012
Dataset Date: 3/8/2013 11:24:00 AM
Wind File: C:\Program Files\CAP88-PC30\WindLib\13994.WND

Mar 8, 2013 11:38 am **SUMMARY**
Page 1

ORGAN DOSE EQUIVALENT SUMMARY

Organ	Selected Individual (mrem/y)
Adrenals	9.10E-04
B Surfac	1.69E-01
Breasts	9.72E-04
St Wall	9.36E-04
ULI Wall	1.01E-03
Kidneys	3.75E-03
Lungs	4.20E-02
Ovaries	2.16E-03
R Marrow	8.57E-03
Spleen	9.43E-04
Thymus	9.29E-04
Uterus	9.24E-04
Bld Wall	9.44E-04
Brain	9.30E-04
Esophagu	1.35E-02
SI Wall	9.31E-04
LLI Wall	1.17E-03
Liver	1.01E-02
Muscle	9.84E-04
Pancreas	9.10E-04
Skin	1.42E-02
Testes	2.24E-03
Thyroid	9.53E-04
EFFEC	1.78E-01

PATHWAY EFFECTIVE DOSE EQUIVALENT SUMMARY

Pathway	Selected Individual (mrem/y)
INGESTION	8.45E-03
INHALATION	1.69E-01
AIR IMMERSION	1.25E-06
GROUND SURFACE	5.13E-04
INTERNAL	1.77E-01
EXTERNAL	5.14E-04
TOTAL	1.78E-01

Mar 8, 2013 11:38 am **SUMMARY**
Page 2

NUCLIDE EFFECTIVE DOSE EQUIVALENT SUMMARY

Nuclide	Selected Individual (mrem/y)
U-238	1.85E-02
Th-234	6.14E-04
Pa-234m	1.33E-04
Pa-234	3.63E-06
U-234	2.23E-02
Th-230	3.24E-02
Ra-226	6.69E-03
Rn-222	1.26E-13
Po-218	6.55E-10
Pb-214	1.82E-05
Bi-214	1.09E-04
Po-214	6.00E-09
Pb-210	6.34E-06
Bi-210	2.00E-08
Po-210	5.28E-07
At-218	0.00E+00
U-235	9.66E-04
Th-231	1.44E-06
Pa-231	2.89E-02
Ac-227	2.25E-02
Th-227	1.67E-06
Ra-223	1.33E-05
Rn-219	0.00E+00
Po-215	1.42E-09
Pb-211	7.99E-07
Bi-211	3.71E-07
Tl-207	4.67E-07
Po-211	8.49E-11
Fr-223	2.55E-08
Th-232	9.67E-03
Ra-228	1.81E-02
Ac-228	2.44E-04
Th-228	1.54E-02
Ra-224	1.16E-03
Rn-220	2.71E-11
Po-216	4.86E-10
Pb-212	4.56E-06
Bi-212	6.76E-06
Po-212	0.00E+00
Tl-208	3.20E-05
TOTAL	1.78E-01

Mar 8, 2013 11:38 am SUMMARY
Page 3

CANCER RISK SUMMARY

Cancer	Selected Individual Total Lifetime Fatal Cancer Risk
Esophagu	1.02E-10
Stomach	3.07E-10
Colon	1.14E-09
Liver	2.49E-09
LUNG	8.30E-08
Bone	2.52E-09
Skin	2.10E-11
Breast	1.78E-10
Ovary	3.75E-10
Bladder	2.36E-10
Kidneys	3.32E-10
Thyroid	2.30E-11
Leukemia	5.46E-10
Residual	1.18E-09
Total	9.24E-08
TOTAL	1.85E-07

PATHWAY RISK SUMMARY

Pathway	Selected Individual Total Lifetime Fatal Cancer Risk
INGESTION	3.09E-09
INHALATION	8.91E-08
AIR IMMERSION	6.08E-13
GROUND SURFACE	2.23E-10
INTERNAL	9.22E-08
EXTERNAL	2.24E-10
TOTAL	9.24E-08

Mar 8, 2013 11:38 am **SUMMARY**
Page 4

NUCLIDE RISK SUMMARY

Nuclide	Selected Individual Total Lifetime Fatal Cancer Risk
U-238	1.53E-08
Th-234	5.82E-10
Pa-234m	2.13E-11
Pa-234	1.98E-12
U-234	1.84E-08
Th-230	1.66E-08
Ra-226	5.19E-09
Rn-222	6.85E-20
Po-218	3.59E-16
Pb-214	9.70E-12
Bi-214	5.80E-11
Po-214	3.29E-15
Pb-210	2.10E-12
Bi-210	9.47E-15
Po-210	2.02E-13
At-218	0.00E+00
U-235	7.97E-10
Th-231	1.27E-12
Pa-231	2.73E-09
Ac-227	5.93E-09
Th-227	1.30E-12
Ra-223	7.22E-12
Rn-219	0.00E+00
Po-215	7.76E-16
Pb-211	2.65E-13
Bi-211	2.03E-13
Tl-207	5.96E-14
Po-211	4.65E-17
Fr-223	1.45E-14
Th-232	4.27E-09
Ra-228	8.12E-09
Ac-228	1.36E-10
Th-228	1.32E-08
Ra-224	9.94E-10
Rn-220	1.48E-17
Po-216	2.67E-16
Pb-212	2.64E-12
Bi-212	3.03E-12
Po-212	0.00E+00
Tl-208	1.75E-11
TOTAL	9.24E-08

Mar 8, 2013 11:38 am **SUMMARY**
Page 5

INDIVIDUAL EFFECTIVE DOSE EQUIVALENT RATE (mrem/y)
(All Radionuclides and Pathways)

	Distance (m)				
Direction	160	495	750	2915	
N	1.8E-01	2.7E-02	1.5E-02	6.7E-03	
NNW	9.4E-02	1.7E-02	1.1E-02	6.3E-03	
NW	1.1E-01	1.8E-02	1.2E-02	6.4E-03	
WNW	1.3E-01	2.1E-02	1.3E-02	6.5E-03	
W	1.0E-01	1.7E-02	1.1E-02	6.3E-03	School
WSW	5.2E-02	1.1E-02	8.4E-03	6.1E-03	
SW	7.2E-02	1.4E-02	9.4E-03	6.2E-03	Residence
SSW	8.7E-02	1.6E-02	1.0E-02	6.2E-03	
S	7.6E-02	1.4E-02	9.7E-03	6.2E-03	
SSE	5.5E-02	1.2E-02	8.6E-03	6.1E-03	Business
SE	7.7E-02	1.5E-02	9.8E-03	6.2E-03	
ESE	1.3E-01	2.1E-02	1.3E-02	6.5E-03	
E	1.7E-01	2.5E-02	1.5E-02	6.6E-03	
ENE	1.4E-01	2.2E-02	1.3E-02	6.5E-03	
NE	8.7E-02	1.6E-02	1.0E-02	6.3E-03	Farm
NNE	7.4E-02	1.4E-02	9.6E-03	6.2E-03	

Mar 8, 2013 11:38 am **SUMMARY**
Page 6

INDIVIDUAL LIFETIME RISK (deaths)
(All Radionuclides and Pathways)

	Distance (m)			
Direction	**160**	**495**	**750**	**2915**
N	**9.2E-08**	**1.3E-08**	**7.2E-09**	**2.6E-09**
NNW	**4.8E-08**	**7.8E-09**	**4.7E-09**	**2.4E-09**
NW	**5.7E-08**	**8.8E-09**	**5.2E-09**	**2.4E-09**
WNW	**6.9E-08**	**1.0E-08**	**5.8E-09**	**2.5E-09**
W	**5.3E-08**	**8.2E-09**	**4.9E-09**	**2.4E-09**
WSW	**2.6E-08**	**5.1E-09**	**3.5E-09**	**2.3E-09**
SW	**3.7E-08**	**6.3E-09**	**4.0E-09**	**2.3E-09**
SSW	**4.5E-08**	**7.3E-09**	**4.4E-09**	**2.4E-09**
S	**3.9E-08**	**6.6E-09**	**4.2E-09**	**2.3E-09**
SSE	**2.8E-08**	**5.3E-09**	**3.6E-09**	**2.3E-09**
SE	**4.0E-08**	**6.7E-09**	**4.2E-09**	**2.3E-09**
ESE	**6.7E-08**	**1.0E-08**	**5.7E-09**	**2.5E-09**
E	**8.8E-08**	**1.2E-08**	**6.8E-09**	**2.6E-09**
ENE	**7.3E-08**	**1.1E-08**	**6.0E-09**	**2.5E-09**
NE	**4.5E-08**	**7.3E-09**	**4.5E-09**	**2.4E-09**
NNE	**3.8E-08**	**6.5E-09**	**4.1E-09**	**2.3E-09**

APPENDIX B

ENVIRONMENTAL TLD, ALPHA TRACK, AND PERIMETER AIR DATA

(On CD-ROM on the Back Cover of this Report)

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Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD141659	6WH LOADOUT	01/03/12	Gross Alpha/Beta	Gross Alpha	3.899E-15	6.287E-15	1.015E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.26E-14	1.301E-14	1.57E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141660	6WH LOADOUT	01/03/12	Gross Alpha/Beta	Gross Alpha	4.211E-15	6.79E-15	1.097E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.873E-14	1.449E-14	1.696E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141661	6WH LOADOUT	01/03/12	Gross Alpha/Beta	Gross Alpha	-1.35E-15	4.393E-15	1.054E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.624E-14	1.38E-14	1.63E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141662	6WH LOADOUT	01/03/12	Gross Alpha/Beta	Gross Alpha	-1.442E-15	4.694E-15	1.127E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.917E-14	1.382E-14	1.742E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141663	6WH LOADOUT	01/04/12	Gross Alpha/Beta	Gross Alpha	-2.88E-16	5.23E-15	1.127E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.878E-14	1.481E-14	1.742E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141664	6WH LOADOUT	01/04/12	Gross Alpha/Beta	Gross Alpha	1.898E-15	5.795E-15	1.059E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.261E-14	1.447E-14	1.637E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141665	6WH LOADOUT	01/04/12	Gross Alpha/Beta	Gross Alpha	-2.59E-16	4.695E-15	1.011E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.242E-14	1.487E-14	1.564E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141666	6WH LOADOUT	01/04/12	Gross Alpha/Beta	Gross Alpha	-2.73E-16	4.959E-15	1.068E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.149E-14	1.446E-14	1.652E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141667	6WH LOADOUT	01/05/12	Gross Alpha/Beta	Gross Alpha	-2.83E-16	5.137E-15	1.106E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.027E-14	1.373E-14	1.711E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141668	6WH LOADOUT	01/05/12	Gross Alpha/Beta	Gross Alpha	7.93E-16	5.238E-15	1.032E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.569E-14	1.351E-14	1.596E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141669	6WH LOADOUT	01/05/12	Gross Alpha/Beta	Gross Alpha	1.842E-15	5.626E-15	1.028E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.424E-14	1.331E-14	1.59E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141670	6WH LOADOUT	01/05/12	Gross Alpha/Beta	Gross Alpha	8.77E-16	5.796E-15	1.142E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.118E-14	1.31E-14	1.766E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD141677	6WH LOADOUT	01/09/12	Gross Alpha/Beta	Gross Alpha	3.992E-15	5.654E-15	8.641E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.249E-14	1.642E-14	2.471E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD141678	6WH LOADOUT	01/09/12	Gross Alpha/Beta	Gross Alpha	2.903E-15	5.217E-15	8.641E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.18E-14	1.636E-14	2.471E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD141679	6WH LOADOUT	01/09/12	Gross Alpha/Beta	Gross Alpha	4.044E-15	5.728E-15	8.755E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.698E-14	1.699E-14	2.504E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141680	6WH LOADOUT	01/09/12	Gross Alpha/Beta	Gross Alpha	3.875E-15	5.487E-15	8.387E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.178E-14	1.507E-14	2.398E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD141681	6WH LOADOUT	01/10/12	Gross Alpha/Beta	Gross Alpha	8.724E-15	7.46E-15	9.032E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	3E-14	1.77E-14	2.583E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141682	6WH LOADOUT	01/10/12	Gross Alpha/Beta	Gross Alpha	6.334E-15	6.61E-15	8.871E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.151E-14	1.835E-14	2.537E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141683	6WH LOADOUT	01/10/12	Gross Alpha/Beta	Gross Alpha	2.854E-15	5.128E-15	8.494E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.278E-14	1.62E-14	2.429E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD141684	6WH LOADOUT	01/10/12	Gross Alpha/Beta	Gross Alpha	1.784E-15	4.66E-15	8.494E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.432E-14	1.714E-14	2.429E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141685	6WH LOADOUT	01/11/12	Gross Alpha/Beta	Gross Alpha	5.723E-15	5.973E-15	8.016E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.663E-14	1.571E-14	2.292E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141686	6WH LOADOUT	01/11/12	Gross Alpha/Beta	Gross Alpha	7.17E-16	4.157E-15	8.53E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.901E-14	1.678E-14	2.439E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141687	6WH LOADOUT	01/11/12	Gross Alpha/Beta	Gross Alpha	1.725E-15	4.507E-15	8.214E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.384E-14	1.663E-14	2.349E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141688	6WH LOADOUT	01/11/12	Gross Alpha/Beta	Gross Alpha	1.052E-14	7.774E-15	8.641E-15	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	4.596E-14	1.829E-14	2.471E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141689	6WH LOADOUT	01/12/12	Gross Alpha/Beta	Gross Alpha	9.636E-15	9.023E-15	1.147E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	2.894E-14	2.173E-14	3.281E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD141691	Plant 7W	01/12/12	Gross Alpha/Beta	Gross Alpha	9.37E-16	5.435E-15	1.115E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.882E-14	2.2E-14	3.189E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141692	6WH LOADOUT	01/12/12	Gross Alpha/Beta	Gross Alpha	-4.17E-16	4.143E-15	9.931E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.902E-14	1.914E-14	2.84E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141693	6WH LOADOUT	01/16/12	Gross Alpha/Beta	Gross Alpha	1.838E-15	4.533E-15	8.755E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.846E-14	1.845E-14	2.384E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air

Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD141694	6WH LOADOUT	01/16/12	Gross Alpha/Beta	Gross Alpha	-3.94E-16	3.52E-15	9.371E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.47E-14	1.845E-14	2.552E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD141695	6WH LOADOUT	01/16/12	Gross Alpha/Beta	Gross Alpha	1.822E-15	4.494E-15	8.678E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	6.863E-14	2.048E-14	2.363E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141696	6WH LOADOUT	01/16/12	Gross Alpha/Beta	Gross Alpha	7.8E-16	4.199E-15	9.284E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	9.64E-15	1.703E-14	2.528E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD141697	6WH LOADOUT	01/17/12	Gross Alpha/Beta	Gross Alpha	5.216E-15	6.008E-15	8.871E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.606E-14	1.922E-14	2.416E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141698	6WH LOADOUT	01/17/12	Gross Alpha/Beta	Gross Alpha	1.807E-15	4.455E-15	8.604E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	6.116E-14	1.983E-14	2.343E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141699	6WH LOADOUT	01/17/12	Gross Alpha/Beta	Gross Alpha	5.865E-15	5.936E-15	8.214E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.921E-14	1.828E-14	2.237E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141700	6WH LOADOUT	01/17/12	Gross Alpha/Beta	Gross Alpha	3.924E-15	5.339E-15	8.494E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.817E-14	1.871E-14	2.313E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141701	6WH LOADOUT	01/18/12	Gross Alpha/Beta	Gross Alpha	6.09E-15	6.164E-15	8.53E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.908E-14	1.652E-14	2.323E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD141702	6WH LOADOUT	01/18/12	Gross Alpha/Beta	Gross Alpha	4.676E-15	5.386E-15	7.952E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.604E-14	1.607E-14	2.165E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141703	6WH LOADOUT	01/18/12	Gross Alpha/Beta	Gross Alpha	5.988E-15	6.061E-15	8.387E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.943E-14	1.629E-14	2.284E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD141704	6WH LOADOUT	01/18/12	Gross Alpha/Beta	Gross Alpha	2.63E-15	4.508E-15	7.828E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.063E-14	1.541E-14	2.131E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD141705	6WH LOADOUT	01/19/12	Gross Alpha/Beta	Gross Alpha	4.87E-15	5.609E-15	8.282E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.631E-14	1.819E-14	2.255E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141706	6WH LOADOUT	01/19/12	Gross Alpha/Beta	Gross Alpha	8.685E-15	7.245E-15	8.991E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	4.309E-14	1.922E-14	2.448E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141707	6WH LOADOUT	01/19/12	Gross Alpha/Beta	Gross Alpha	9.143E-15	7.769E-15	9.545E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	5.484E-14	1.444E-14	1.537E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141708	6WH LOADOUT	01/19/12	Gross Alpha/Beta	Gross Alpha	3.372E-15	6.519E-15	1.037E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.996E-14	1.381E-14	1.67E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141709	6WH LOADOUT	01/23/12	Gross Alpha/Beta	Gross Alpha	7.04E-16	3.794E-15	8.387E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	6.766E-14	1.988E-14	2.284E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141710	6WH LOADOUT	01/23/12	Gross Alpha/Beta	Gross Alpha	-3.34E-16	2.987E-15	7.952E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	6.352E-14	1.881E-14	2.165E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141711	6WH LOADOUT	01/23/12	Gross Alpha/Beta	Gross Alpha	-2.574E-15	1.041E-15	8.755E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	6.433E-14	2.032E-14	2.384E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141712	6WH LOADOUT	01/23/12	Gross Alpha/Beta	Gross Alpha	3.858E-15	5.25E-15	8.352E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.87E-14	1.92E-14	2.274E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141713	6WH LOADOUT	01/24/12	Gross Alpha/Beta	Gross Alpha	6.96E-16	3.746E-15	8.282E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.3E-14	1.795E-14	2.255E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141714	6WH LOADOUT	01/24/12	Gross Alpha/Beta	Gross Alpha	7.35E-16	3.96E-15	8.755E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.545E-14	1.897E-14	2.384E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141715	6WH LOADOUT	01/24/12	Gross Alpha/Beta	Gross Alpha	5.723E-15	5.793E-15	8.016E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.354E-14	1.751E-14	2.183E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141716	6WH LOADOUT	01/24/12	Gross Alpha/Beta	Gross Alpha	2.903E-15	4.976E-15	8.641E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.244E-14	1.778E-14	2.353E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141717	6WH LOADOUT	01/25/12	Gross Alpha/Beta	Gross Alpha	2.749E-15	4.711E-15	8.18E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	7.253E-14	1.983E-14	2.228E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141718	6WH LOADOUT	01/25/12	Gross Alpha/Beta	Gross Alpha	4.85E-15	5.586E-15	8.248E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	6.259E-14	1.928E-14	2.246E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141719	6WH LOADOUT	01/25/12	Gross Alpha/Beta	Gross Alpha	1.739E-15	4.289E-15	8.282E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.234E-14	1.79E-14	2.255E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141720	6WH LOADOUT	01/25/12	Gross Alpha/Beta	Gross Alpha	5.655E-15	5.724E-15	7.921E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.631E-14	1.825E-14	2.157E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141721	6WH LOADOUT	01/26/12	Gross Alpha/Beta	Gross Alpha	-3.34E-16	2.987E-15	7.952E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	8.257E-15	1.459E-14	2.165E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air

Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD141722	6WH LOADOUT	01/26/12	Gross Alpha/Beta	Gross Alpha	-3.61E-16	3.232E-15	8.604E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.474E-14	1.711E-14	2.343E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141723	6WH LOADOUT	01/26/12	Gross Alpha/Beta	Gross Alpha	2.794E-15	4.79E-15	8.317E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.927E-14	1.616E-14	2.265E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD141724	6WH LOADOUT	01/26/12	Gross Alpha/Beta	Gross Alpha	7.23E-16	3.892E-15	8.604E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.237E-14	1.608E-14	2.343E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD141733	6WH LOADOUT	01/30/12	Gross Alpha/Beta	Gross Alpha	1.673E-15	3.98E-15	7.166E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.467E-14	1.754E-14	2.287E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141734	6WH LOADOUT	01/30/12	Gross Alpha/Beta	Gross Alpha	6.412E-15	6.31E-15	7.788E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	1.802E-14	1.75E-14	2.485E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD141735	6WH LOADOUT	01/30/12	Gross Alpha/Beta	Gross Alpha	5.012E-15	5.596E-15	7.416E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.755E-14	1.75E-14	2.366E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141736	6WH LOADOUT	01/30/12	Gross Alpha/Beta	Gross Alpha	3.678E-15	4.835E-15	6.961E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.091E-15	1.451E-14	2.221E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD141737	6WH LOADOUT	01/31/12	Gross Alpha/Beta	Gross Alpha	4.433E-15	4.95E-15	6.56E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.315E-14	1.539E-14	2.093E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141738	6WH LOADOUT	01/31/12	Gross Alpha/Beta	Gross Alpha	2.73E-15	4.506E-15	7.166E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.467E-14	1.754E-14	2.287E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141739	6WH LOADOUT	01/31/12	Gross Alpha/Beta	Gross Alpha	8.669E-15	6.562E-15	6.85E-15	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	3.442E-14	1.687E-14	2.186E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141740	6WH LOADOUT	01/31/12	Gross Alpha/Beta	Gross Alpha	5.288E-15	5.904E-15	7.824E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.419E-14	1.887E-14	2.497E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141741	6WH LOADOUT	02/01/12	Gross Alpha/Beta	Gross Alpha	6.67E-16	3.648E-15	7.753E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.373E-14	1.789E-14	2.474E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD141742	6WH LOADOUT	02/01/12	Gross Alpha/Beta	Gross Alpha	-4.48E-16	2.673E-15	7.289E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.959E-14	1.66E-14	2.326E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD141743	6WH LOADOUT	02/01/12	Gross Alpha/Beta	Gross Alpha	6.32E-16	3.46E-15	7.352E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.388E-14	1.708E-14	2.346E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141744	6WH LOADOUT	02/01/12	Gross Alpha/Beta	Gross Alpha	5.639E-15	5.55E-15	6.85E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	1.905E-14	1.565E-14	2.186E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD141745	6WH LOADOUT	02/02/12	Gross Alpha/Beta	Gross Alpha	2.685E-15	4.432E-15	7.048E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.278E-14	1.715E-14	2.249E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141746	6WH LOADOUT	02/02/12	Gross Alpha/Beta	Gross Alpha	4.078E-15	5.36E-15	7.717E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.363E-14	1.781E-14	2.463E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD141747	6WH LOADOUT	02/02/12	Gross Alpha/Beta	Gross Alpha	6.14E-16	3.358E-15	7.136E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.718E-14	1.609E-14	2.277E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD141748	6WH LOADOUT	02/02/12	Gross Alpha/Beta	Gross Alpha	-4.94E-16	2.95E-15	8.045E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.892E-14	1.969E-14	2.567E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141749	6WH LOADOUT	02/06/12	Gross Alpha/Beta	Gross Alpha	2.878E-15	5.272E-15	8.567E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.75E-14	1.867E-14	2.365E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141750	6WH LOADOUT	02/06/12	Gross Alpha/Beta	Gross Alpha	-1.3E-15	2.732E-15	7.737E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.116E-14	1.597E-14	2.136E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141751	6WH LOADOUT	02/06/12	Gross Alpha/Beta	Gross Alpha	-1.49E-15	3.132E-15	8.871E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.714E-14	1.842E-14	2.45E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141752	6WH LOADOUT	02/06/12	Gross Alpha/Beta	Gross Alpha	6.68E-16	3.989E-15	7.952E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.694E-14	1.602E-14	2.196E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141753	6WH LOADOUT	02/07/12	Gross Alpha/Beta	Gross Alpha	3.37E-15	6.172E-15	1.003E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.476E-14	1.861E-14	2.77E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD141754	6WH LOADOUT	02/07/12	Gross Alpha/Beta	Gross Alpha	3.789E-15	6.94E-15	1.128E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.83E-14	2.191E-14	3.114E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD141755	6WH LOADOUT	02/07/12	Gross Alpha/Beta	Gross Alpha	8.34E-16	4.982E-15	9.931E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.523E-14	2.013E-14	2.742E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141756	6WH LOADOUT	02/07/12	Gross Alpha/Beta	Gross Alpha	8.92E-16	5.326E-15	1.062E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.088E-14	2.097E-14	2.932E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141757	6WH LOADOUT	02/08/12	Gross Alpha/Beta	Gross Alpha	2.916E-15	5.34E-15	8.678E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.415E-14	1.622E-14	2.396E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air

Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD141758	6WH LOADOUT	02/08/12	Gross Alpha/Beta	Gross Alpha	-3.38E-16	3.491E-15	8.049E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.141E-14	1.73E-14	2.222E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141759	6WH LOADOUT	02/08/12	Gross Alpha/Beta	Gross Alpha	-1.517E-15	3.189E-15	9.032E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.329E-14	1.676E-14	2.494E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD141760	6WH LOADOUT	02/08/12	Gross Alpha/Beta	Gross Alpha	-2.319E-15	1.951E-15	7.889E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.169E-14	1.548E-14	2.178E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD141761	6WH LOADOUT	02/09/12	Gross Alpha/Beta	Gross Alpha	2.737E-15	5.013E-15	8.147E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.695E-14	1.636E-14	2.25E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141762	6WH LOADOUT	02/09/12	Gross Alpha/Beta	Gross Alpha	1.83E-15	4.893E-15	8.716E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	7.948E-15	1.575E-14	2.407E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD141763	6WH LOADOUT	02/09/12	Gross Alpha/Beta	Gross Alpha	2.35E-15	5.606E-15	1.07E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.518E-14	1.436E-14	1.765E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD141764	6WH LOADOUT	02/09/12	Gross Alpha/Beta	Gross Alpha	8.3E-17	4.049E-15	9.396E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.165E-14	1.354E-14	1.55E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141773	6WH LOADOUT	02/13/12	Gross Alpha/Beta	Gross Alpha	3.622E-15	4.781E-15	7.141E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	8.693E-15	1.378E-14	2.246E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD141774	6WH LOADOUT	02/13/12	Gross Alpha/Beta	Gross Alpha	2.71E-15	4.513E-15	7.48E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.285E-14	1.569E-14	2.352E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD141775	6WH LOADOUT	02/13/12	Gross Alpha/Beta	Gross Alpha	4.942E-15	5.528E-15	7.578E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.619E-14	1.528E-14	2.383E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD141776	6WH LOADOUT	02/13/12	Gross Alpha/Beta	Gross Alpha	3.652E-15	4.82E-15	7.2E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.67E-14	1.463E-14	2.265E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD141777	6WH LOADOUT	02/14/12	Gross Alpha/Beta	Gross Alpha	1.527E-15	3.718E-15	7.025E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.098E-15	1.293E-14	2.21E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD141778	6WH LOADOUT	02/14/12	Gross Alpha/Beta	Gross Alpha	5.74E-16	3.508E-15	7.924E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	9.1E-16	1.444E-14	2.492E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD141779	6WH LOADOUT	02/14/12	Gross Alpha/Beta	Gross Alpha	5.33E-16	3.256E-15	7.353E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.179E-14	1.537E-14	2.313E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD141780	6WH LOADOUT	02/14/12	Gross Alpha/Beta	Gross Alpha	5.4E-16	3.298E-15	7.448E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.454E-14	1.489E-14	2.342E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD141781	6WH LOADOUT	02/15/12	Gross Alpha/Beta	Gross Alpha	6.04E-15	5.949E-15	7.578E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	2.245E-14	1.584E-14	2.383E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD141782	6WH LOADOUT	02/15/12	Gross Alpha/Beta	Gross Alpha	-5.09E-16	2.351E-15	7.025E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.373E-14	1.578E-14	2.21E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD141783	6WH LOADOUT	02/15/12	Gross Alpha/Beta	Gross Alpha	2.832E-15	4.717E-15	7.817E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.388E-14	1.64E-14	2.458E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142423	6WH LOADOUT	02/15/12	Gross Alpha/Beta	Gross Alpha	3.73E-15	4.922E-15	7.353E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.111E-14	1.531E-14	2.313E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142424	6WH LOADOUT	02/16/12	Gross Alpha/Beta	Gross Alpha	2.495E-15	4.155E-15	6.886E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.887E-14	1.671E-14	2.166E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142425	6WH LOADOUT	02/16/12	Gross Alpha/Beta	Gross Alpha	8.655E-15	6.548E-15	7.025E-15	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	6.019E-14	1.782E-14	2.21E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142426	6WH LOADOUT	02/16/12	Gross Alpha/Beta	Gross Alpha	1.64E-15	3.993E-15	7.545E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.662E-14	1.778E-14	2.373E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142427	6WH LOADOUT	02/16/12	Gross Alpha/Beta	Gross Alpha	5.44E-16	3.326E-15	7.512E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.953E-14	1.87E-14	2.363E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142428	6WH LOADOUT	02/20/12	Gross Alpha/Beta	Gross Alpha	1.565E-15	3.811E-15	7.2E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.141E-14	1.415E-14	2.265E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142429	6WH LOADOUT	02/20/12	Gross Alpha/Beta	Gross Alpha	2.782E-15	4.633E-15	7.678E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.429E-14	1.528E-14	2.415E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142430	6WH LOADOUT	02/20/12	Gross Alpha/Beta	Gross Alpha	1.515E-15	3.688E-15	6.969E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	6.563E-15	1.327E-14	2.192E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142431	6WH LOADOUT	02/20/12	Gross Alpha/Beta	Gross Alpha	4.456E-15	4.984E-15	6.832E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.526E-14	1.471E-14	2.149E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142432	6WH LOADOUT	02/21/12	Gross Alpha/Beta	Gross Alpha	1.521E-15	3.703E-15	6.997E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.616E-14	1.593E-14	2.201E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air

Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD142433	6WH LOADOUT	02/21/12	Gross Alpha/Beta	Gross Alpha	2.746E-15	4.572E-15	7.578E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.176E-14	1.578E-14	2.383E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142434	6WH LOADOUT	02/21/12	Gross Alpha/Beta	Gross Alpha	4.491E-15	5.024E-15	6.886E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.344E-14	1.377E-14	2.166E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142435	6WH LOADOUT	02/21/12	Gross Alpha/Beta	Gross Alpha	-5.4E-16	2.493E-15	7.448E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.275E-14	1.563E-14	2.342E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142436	6WH LOADOUT	02/22/12	Gross Alpha/Beta	Gross Alpha	1.647E-15	4.01E-15	7.578E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.315E-14	1.59E-14	2.383E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142437	6WH LOADOUT	02/22/12	Gross Alpha/Beta	Gross Alpha	5.03E-16	3.073E-15	6.941E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	7.174E-15	1.328E-14	2.183E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142438	6WH LOADOUT	02/22/12	Gross Alpha/Beta	Gross Alpha	2.62E-15	4.363E-15	7.23E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.142E-14	1.511E-14	2.274E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142439	6WH LOADOUT	02/22/12	Gross Alpha/Beta	Gross Alpha	3.794E-15	5.007E-15	7.48E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.453E-14	1.669E-14	2.352E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142440	6WH LOADOUT	02/23/12	Gross Alpha/Beta	Gross Alpha	1.684E-15	4.1E-15	7.747E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	-5.516E-15	1.345E-14	2.436E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142441	6WH LOADOUT	02/23/12	Gross Alpha/Beta	Gross Alpha	4.563E-15	5.105E-15	6.997E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.009E-14	1.457E-14	2.201E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142442	6WH LOADOUT	02/23/12	Gross Alpha/Beta	Gross Alpha	4.582E-15	5.125E-15	7.025E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.049E-14	1.374E-14	2.21E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142443	6WH LOADOUT	02/23/12	Gross Alpha/Beta	Gross Alpha	4.836E-15	5.41E-15	7.416E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.72E-14	1.507E-14	2.332E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142451	6WH LOADOUT	02/27/12	Gross Alpha/Beta	Gross Alpha	3.071E-15	5.042E-15	8.397E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.48E-14	1.666E-14	2.38E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142452	6WH LOADOUT	02/27/12	Gross Alpha/Beta	Gross Alpha	8.48E-16	3.759E-15	7.887E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.749E-14	1.678E-14	2.235E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142453	6WH LOADOUT	02/27/12	Gross Alpha/Beta	Gross Alpha	4.786E-15	5.39E-15	7.67E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.336E-14	1.684E-14	2.174E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142454	6WH LOADOUT	02/27/12	Gross Alpha/Beta	Gross Alpha	4.247E-15	5.609E-15	8.582E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.534E-14	1.702E-14	2.432E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142455	6WH LOADOUT	02/28/12	Gross Alpha/Beta	Gross Alpha	2.031E-15	4.652E-15	8.582E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.447E-14	1.776E-14	2.432E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142456	6WH LOADOUT	02/28/12	Gross Alpha/Beta	Gross Alpha	4.304E-15	5.684E-15	8.697E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.138E-14	1.771E-14	2.465E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142457	6WH LOADOUT	02/28/12	Gross Alpha/Beta	Gross Alpha	4.068E-15	5.373E-15	8.22E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.638E-14	1.728E-14	2.33E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142458	6WH LOADOUT	02/28/12	Gross Alpha/Beta	Gross Alpha	-1.76E-16	3.279E-15	8.186E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.623E-14	1.72E-14	2.32E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142459	6WH LOADOUT	02/29/12	Gross Alpha/Beta	Gross Alpha	5.195E-15	5.851E-15	8.326E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.777E-14	1.594E-14	2.36E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142460	6WH LOADOUT	02/29/12	Gross Alpha/Beta	Gross Alpha	-1.78E-16	3.321E-15	8.29E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.973E-14	1.605E-14	2.35E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142461	6WH LOADOUT	02/29/12	Gross Alpha/Beta	Gross Alpha	-1.69E-16	3.147E-15	7.856E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.963E-14	1.61E-14	2.226E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142462	6WH LOADOUT	02/29/12	Gross Alpha/Beta	Gross Alpha	2.04E-15	4.673E-15	8.62E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.757E-14	1.727E-14	2.443E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142463	6WH LOADOUT	03/01/12	Gross Alpha/Beta	Gross Alpha	4.422E-15	5.841E-15	8.937E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.955E-14	1.878E-14	2.533E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142464	6WH LOADOUT	03/01/12	Gross Alpha/Beta	Gross Alpha	8.92E-16	3.951E-15	8.29E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.33E-14	1.716E-14	2.35E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142465	6WH LOADOUT	03/01/12	Gross Alpha/Beta	Gross Alpha	1.344E-15	5.67E-15	1.004E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.309E-14	1.279E-14	1.641E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142466	6WH LOADOUT	03/01/12	Gross Alpha/Beta	Gross Alpha	4.903E-15	7.28E-15	1.077E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.402E-14	1.574E-14	1.761E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142467	6WH LOADOUT	03/02/12	Gross Alpha/Beta	Gross Alpha	1.385E-15	5.844E-15	1.035E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.35E-14	1.318E-14	1.692E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air

Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD142468	6WH LOADOUT	03/02/12	Gross Alpha/Beta	Gross Alpha	4.512E-15	6.699E-15	9.912E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.633E-14	1.299E-14	1.621E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142469	6WH LOADOUT	03/02/12	Gross Alpha/Beta	Gross Alpha	2.561E-15	6.42E-15	1.063E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.231E-14	1.633E-14	1.737E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142470	6WH LOADOUT	03/03/12	Gross Alpha/Beta	Gross Alpha	1.367E-15	5.768E-15	1.021E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.435E-14	1.512E-14	1.67E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142471	6WH LOADOUT	03/03/12	Gross Alpha/Beta	Gross Alpha	3.311E-15	6.097E-15	9.512E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.33E-14	1.42E-14	1.555E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142472	6WH LOADOUT	03/03/12	Gross Alpha/Beta	Gross Alpha	-7.8E-16	4.628E-15	9.708E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.466E-14	1.456E-14	1.587E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142473	6WH LOADOUT	03/05/12	Gross Alpha/Beta	Gross Alpha	1.834E-15	4.721E-15	8.061E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.34E-14	1.676E-14	2.33E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142474	6WH LOADOUT	03/05/12	Gross Alpha/Beta	Gross Alpha	-2.75E-16	3.851E-15	8.448E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.314E-14	1.746E-14	2.441E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142475	6WH LOADOUT	03/05/12	Gross Alpha/Beta	Gross Alpha	8.701E-15	7.474E-15	8.636E-15	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	3.006E-14	1.835E-14	2.496E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142476	6WH LOADOUT	03/05/12	Gross Alpha/Beta	Gross Alpha	-2.59E-16	3.629E-15	7.961E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.952E-14	1.781E-14	2.301E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142477	6WH LOADOUT	03/06/12	Gross Alpha/Beta	Gross Alpha	4.798E-15	5.74E-15	7.769E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.896E-14	1.666E-14	2.245E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142478	6WH LOADOUT	03/06/12	Gross Alpha/Beta	Gross Alpha	8.31E-16	4.472E-15	8.522E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.912E-14	1.727E-14	2.463E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142479	6WH LOADOUT	03/06/12	Gross Alpha/Beta	Gross Alpha	7.89E-16	4.248E-15	8.094E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.283E-14	1.596E-14	2.339E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142480	6WH LOADOUT	03/06/12	Gross Alpha/Beta	Gross Alpha	4.136E-15	5.868E-15	8.485E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.184E-14	1.742E-14	2.452E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142481	6WH LOADOUT	03/07/12	Gross Alpha/Beta	Gross Alpha	8.17E-16	4.395E-15	8.375E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.224E-14	1.725E-14	2.42E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142482	6WH LOADOUT	03/07/12	Gross Alpha/Beta	Gross Alpha	1.811E-15	4.663E-15	7.961E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.902E-14	1.702E-14	2.301E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142483	6WH LOADOUT	03/07/12	Gross Alpha/Beta	Gross Alpha	4.287E-15	6.081E-15	8.793E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.988E-14	1.863E-14	2.541E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142484	6WH LOADOUT	03/07/12	Gross Alpha/Beta	Gross Alpha	-2.62E-16	3.675E-15	8.061E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.141E-14	1.66E-14	2.33E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142485	6WH LOADOUT	03/08/12	Gross Alpha/Beta	Gross Alpha	2.858E-15	5.123E-15	7.994E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.728E-14	1.615E-14	2.31E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142486	6WH LOADOUT	03/08/12	Gross Alpha/Beta	Gross Alpha	-2.418E-15	2.228E-15	8.267E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.242E-14	1.625E-14	2.389E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142487	6WH LOADOUT	03/08/12	Gross Alpha/Beta	Gross Alpha	-8.4E-17	5.727E-15	9.728E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.143E-14	1.218E-14	1.629E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142488	6WH LOADOUT	03/08/12	Gross Alpha/Beta	Gross Alpha	5.264E-15	7.729E-15	1.031E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.31E-14	1.183E-14	1.725E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142489	6WH LOADOUT	03/09/12	Gross Alpha/Beta	Gross Alpha	6.334E-15	8.021E-15	1.031E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.515E-14	1.207E-14	1.725E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142490	6WH LOADOUT	03/09/12	Gross Alpha/Beta	Gross Alpha	-8.3E-17	5.614E-15	9.537E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.847E-14	1.166E-14	1.597E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142491	6WH LOADOUT	03/09/12	Gross Alpha/Beta	Gross Alpha	2.087E-15	6.897E-15	1.048E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.379E-14	1.319E-14	1.755E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142492	6WH LOADOUT	03/09/12	Gross Alpha/Beta	Gross Alpha	-8.8E-17	5.965E-15	1.013E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.84E-14	1.332E-14	1.696E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142493	6WH LOADOUT	03/10/12	Gross Alpha/Beta	Gross Alpha	1.003E-15	6.573E-15	1.053E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.109E-14	1.295E-14	1.762E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142494	6WH LOADOUT	03/10/12	Gross Alpha/Beta	Gross Alpha	-3.478E-15	5.059E-15	1.086E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.958E-14	1.312E-14	1.818E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142495	6WH LOADOUT	03/10/12	Gross Alpha/Beta	Gross Alpha	-2.184E-15	5.148E-15	1.009E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.223E-14	1.263E-14	1.689E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air

Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD142496	6WH LOADOUT	03/10/12	Gross Alpha/Beta	Gross Alpha	-2.319E-15	5.465E-15	1.071E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.219E-14	1.213E-14	1.794E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142500	6WH LOADOUT	03/12/12	Gross Alpha/Beta	Gross Alpha	3.083E-15	7.021E-15	1.018E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.903E-14	1.237E-14	1.703E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142501	6WH LOADOUT	03/12/12	Gross Alpha/Beta	Gross Alpha	1.985E-15	6.558E-15	9.967E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	9.347E-15	1.105E-14	1.669E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142502	6WH LOADOUT	03/12/12	Gross Alpha/Beta	Gross Alpha	9.61E-16	6.3E-15	1.009E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.753E-14	1.212E-14	1.689E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142503	6WH LOADOUT	03/12/12	Gross Alpha/Beta	Gross Alpha	-9E-17	6.145E-15	1.044E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	9.789E-15	1.157E-14	1.747E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142506	6WH LOADOUT	03/13/12	Gross Alpha/Beta	Gross Alpha	4.056E-15	7.183E-15	9.967E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.66E-14	1.296E-14	1.669E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142507	6WH LOADOUT	03/13/12	Gross Alpha/Beta	Gross Alpha	2.162E-15	7.144E-15	1.086E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.681E-14	1.389E-14	1.818E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142508	6WH LOADOUT	03/13/12	Gross Alpha/Beta	Gross Alpha	3.304E-15	7.525E-15	1.091E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.146E-14	1.54E-14	1.826E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142509	6WH LOADOUT	03/13/12	Gross Alpha/Beta	Gross Alpha	1.043E-15	6.839E-15	1.096E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.216E-14	1.454E-14	1.834E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142510	6WH LOADOUT	03/14/12	Gross Alpha/Beta	Gross Alpha	6.734E-15	8.526E-15	1.096E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.049E-14	1.332E-14	1.834E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142511	6WH LOADOUT	03/14/12	Gross Alpha/Beta	Gross Alpha	4.457E-15	7.895E-15	1.096E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.027E-14	1.214E-14	1.834E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142512	6WH LOADOUT	03/14/12	Gross Alpha/Beta	Gross Alpha	-9E-17	6.092E-15	1.035E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	8.327E-15	1.13E-14	1.732E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142513	6WH LOADOUT	03/14/12	Gross Alpha/Beta	Gross Alpha	4.072E-15	7.212E-15	1.001E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.272E-14	1.26E-14	1.675E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142516	6WH LOADOUT	03/15/12	Gross Alpha/Beta	Gross Alpha	2.834E-15	5.081E-15	7.928E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.583E-14	1.591E-14	2.291E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142517	6WH LOADOUT	03/15/12	Gross Alpha/Beta	Gross Alpha	1.897E-15	4.884E-15	8.338E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	-8.089E-15	1.455E-14	2.41E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142518	6WH LOADOUT	03/15/12	Gross Alpha/Beta	Gross Alpha	8.5E-16	4.573E-15	8.714E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.668E-14	1.742E-14	2.518E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142519	6WH LOADOUT	03/15/12	Gross Alpha/Beta	Gross Alpha	8.42E-16	4.532E-15	8.636E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.725E-14	1.733E-14	2.496E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142521	6WH LOADOUT	03/19/12	Gross Alpha/Beta	Gross Alpha	1.485E-15	4.579E-15	8.607E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.488E-15	9.588E-15	1.616E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142522	6WH LOADOUT	03/19/12	Gross Alpha/Beta	Gross Alpha	1.549E-15	4.777E-15	8.979E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.975E-14	1.181E-14	1.686E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142523	6WH LOADOUT	03/19/12	Gross Alpha/Beta	Gross Alpha	2.814E-15	5.593E-15	9.559E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.953E-14	1.239E-14	1.795E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142525	6WH LOADOUT	03/20/12	Gross Alpha/Beta	Gross Alpha	1.51E-15	4.656E-15	8.752E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.403E-14	1.207E-14	1.643E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142526	6WH LOADOUT	03/20/12	Gross Alpha/Beta	Gross Alpha	4.748E-15	5.994E-15	8.826E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.045E-14	1.049E-14	1.657E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142527	6WH LOADOUT	03/20/12	Gross Alpha/Beta	Gross Alpha	7.647E-15	7.452E-15	9.784E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	2.075E-14	1.278E-14	1.837E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142528	6WH LOADOUT	03/20/12	Gross Alpha/Beta	Gross Alpha	3.924E-15	5.976E-15	9.428E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.589E-14	1.3E-14	1.77E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142530	6WH LOADOUT	03/21/12	Gross Alpha/Beta	Gross Alpha	3.552E-15	5.411E-15	8.536E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.077E-14	1.258E-14	1.603E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142531	6WH LOADOUT	03/21/12	Gross Alpha/Beta	Gross Alpha	2.544E-15	5.057E-15	8.643E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.508E-14	1.207E-14	1.623E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142532	6WH LOADOUT	03/21/12	Gross Alpha/Beta	Gross Alpha	4.5E-16	4.192E-15	8.864E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.88E-14	1.158E-14	1.664E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142533	6WH LOADOUT	03/21/12	Gross Alpha/Beta	Gross Alpha	2.576E-15	5.121E-15	8.752E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.31E-14	1.075E-14	1.643E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air

Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD142535	6WH LOADOUT	03/22/12	Gross Alpha/Beta	Gross Alpha	4.46E-16	4.156E-15	8.789E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.521E-14	1.106E-14	1.65E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142537	6WH LOADOUT	03/26/12	Gross Alpha/Beta	Gross Alpha	1.432E-15	4.414E-15	8.297E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.926E-14	1.215E-14	1.558E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142539	6WH LOADOUT	03/27/12	Gross Alpha/Beta	Gross Alpha	5.75E-16	5.36E-15	1.134E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	-7.37E-16	1.146E-14	2.128E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142540	6WH LOADOUT	03/29/12	Gross Alpha/Beta	Gross Alpha	8.973E-15	7.317E-15	8.752E-15	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	4.521E-14	1.428E-14	1.643E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142543	6WH LOADOUT	04/04/12	Gross Alpha/Beta	Gross Alpha	2.495E-15	5.863E-15	1.024E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.891E-14	1.939E-14	2.765E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142544	6WH LOADOUT	04/03/12	Gross Alpha/Beta	Gross Alpha	3.446E-15	5.911E-15	9.561E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.903E-14	1.902E-14	2.581E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142545	6WH LOADOUT	04/02/12	Gross Alpha/Beta	Gross Alpha	1.185E-15	4.886E-15	9.354E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.472E-14	1.834E-14	2.524E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142550	6WH LOADOUT	04/12/12	Gross Alpha/Beta	Gross Alpha	2.71E-15	5.212E-15	8.803E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.306E-14	1.537E-14	2.539E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142551	6WH LOADOUT	04/12/12	Gross Alpha/Beta	Gross Alpha	1.552E-15	4.524E-15	8.404E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.953E-14	1.613E-14	2.424E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142552	6WH LOADOUT	04/12/12	Gross Alpha/Beta	Gross Alpha	5.03E-16	3.911E-15	8.169E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.316E-14	1.604E-14	2.356E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142553	6WH LOADOUT	04/12/12	Gross Alpha/Beta	Gross Alpha	3.746E-15	5.573E-15	8.69E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	9.498E-15	1.487E-14	2.507E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142554	6WH LOADOUT	04/11/12	Gross Alpha/Beta	Gross Alpha	6.956E-15	6.694E-15	8.69E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	1.628E-14	1.548E-14	2.507E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142555	6WH LOADOUT	04/11/12	Gross Alpha/Beta	Gross Alpha	5.787E-15	6.236E-15	8.545E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.601E-14	1.522E-14	2.465E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142556	6WH LOADOUT	04/11/12	Gross Alpha/Beta	Gross Alpha	5.937E-15	6.397E-15	8.765E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.19E-14	1.608E-14	2.528E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142557	6WH LOADOUT	04/11/12	Gross Alpha/Beta	Gross Alpha	1.598E-15	4.659E-15	8.653E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.229E-14	1.594E-14	2.496E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142558	6WH LOADOUT	04/10/12	Gross Alpha/Beta	Gross Alpha	5.692E-15	6.133E-15	8.404E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.165E-14	1.548E-14	2.424E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142559	6WH LOADOUT	04/10/12	Gross Alpha/Beta	Gross Alpha	1.527E-15	4.451E-15	8.268E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.164E-15	1.379E-14	2.385E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142560	6WH LOADOUT	04/10/12	Gross Alpha/Beta	Gross Alpha	3.668E-15	5.457E-15	8.509E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.462E-14	1.504E-14	2.455E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142561	6WH LOADOUT	04/10/12	Gross Alpha/Beta	Gross Alpha	3.507E-15	5.217E-15	8.136E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.207E-14	1.421E-14	2.347E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142562	6WH LOADOUT	04/09/12	Gross Alpha/Beta	Gross Alpha	1.662E-15	4.843E-15	8.997E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.756E-14	1.608E-14	2.595E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142563	Plant 6WH	04/19/12	Gross Alpha/Beta	Gross Alpha	2.105E-15	2.269E-14	4.198E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.151E-14	5.464E-14	6.422E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142565	6WH LOADOUT	04/19/12	Gross Alpha/Beta	Gross Alpha	5.64E-16	6.078E-15	1.125E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.247E-14	1.547E-14	1.72E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142566	6WH LOADOUT	04/19/12	Gross Alpha/Beta	Gross Alpha	3.812E-15	6.977E-15	1.086E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.681E-14	1.447E-14	1.661E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142567	6WH LOADOUT	04/19/12	Gross Alpha/Beta	Gross Alpha	-5.45E-16	5.449E-15	1.086E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.775E-14	1.638E-14	1.661E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142568	6WH LOADOUT	04/19/12	Gross Alpha/Beta	Gross Alpha	5.16E-16	5.557E-15	1.028E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.79E-14	1.39E-14	1.573E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142569	6WH LOADOUT	04/18/12	Gross Alpha/Beta	Gross Alpha	-5.26E-16	5.267E-15	1.05E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.03E-14	1.438E-14	1.605E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142570	6WH LOADOUT	04/18/12	Gross Alpha/Beta	Gross Alpha	-4.935E-15	8.148E-15	1.968E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.149E-14	2.433E-14	3.01E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142571	6WH LOADOUT	04/18/12	Gross Alpha/Beta	Gross Alpha	-2.871E-15	4.741E-15	1.145E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.951E-14	1.636E-14	1.751E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air

Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD142572	6WH LOADOUT	04/18/12	Gross Alpha/Beta	Gross Alpha	1.599E-15	6.127E-15	1.063E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.397E-14	1.488E-14	1.626E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142573	6WH LOADOUT	04/17/12	Gross Alpha/Beta	Gross Alpha	1.613E-15	6.18E-15	1.072E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.004E-14	1.462E-14	1.64E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142577	6WH LOADOUT	04/17/12	Gross Alpha/Beta	Gross Alpha	5.05E-16	5.446E-15	1.008E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.05E-14	1.48E-14	1.541E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142578	6WH LOADOUT	04/17/12	Gross Alpha/Beta	Gross Alpha	9.178E-15	8.438E-15	1.077E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	1.252E-14	1.394E-14	1.647E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142579	6WH LOADOUT	04/17/12	Gross Alpha/Beta	Gross Alpha	1.579E-15	6.051E-15	1.05E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.637E-14	1.494E-14	1.605E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142580	6WH LOADOUT	04/16/12	Gross Alpha/Beta	Gross Alpha	-1.528E-15	4.673E-15	1.016E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	8.544E-15	1.283E-14	1.554E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142581	6WH LOADOUT	04/16/12	Gross Alpha/Beta	Gross Alpha	1.586E-15	6.076E-15	1.054E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.429E-14	1.385E-14	1.612E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142582	6WH LOADOUT	04/16/12	Gross Alpha/Beta	Gross Alpha	1.56E-15	5.976E-15	1.037E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	9.386E-15	1.316E-14	1.586E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142583	6WH LOADOUT	04/16/12	Gross Alpha/Beta	Gross Alpha	-5.03E-16	5.037E-15	1.004E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.489E-14	1.332E-14	1.535E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142585	6WH LOADOUT	04/23/12	Gross Alpha/Beta	Gross Alpha	3.257E-15	6.333E-15	8.76E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.951E-14	1.082E-14	1.474E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142586	6WH LOADOUT	04/23/12	Gross Alpha/Beta	Gross Alpha	2.492E-15	6.531E-15	9.475E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.647E-14	1.117E-14	1.594E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142587	6WH LOADOUT	04/23/12	Gross Alpha/Beta	Gross Alpha	2.394E-15	6.275E-15	9.104E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.17E-14	1.247E-14	1.531E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142588	6WH LOADOUT	04/23/12	Gross Alpha/Beta	Gross Alpha	1.387E-15	5.885E-15	8.998E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.714E-15	9.078E-15	1.514E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142590	6WH LOADOUT	04/24/12	Gross Alpha/Beta	Gross Alpha	5.496E-15	7.326E-15	9.323E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.596E-14	1.209E-14	1.568E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142591	6WH LOADOUT	04/24/12	Gross Alpha/Beta	Gross Alpha	3.753E-15	7.296E-15	1.009E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.402E-14	1.147E-14	1.698E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142592	6WH LOADOUT	04/24/12	Gross Alpha/Beta	Gross Alpha	4.48E-16	6.092E-15	9.878E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.855E-14	1.18E-14	1.662E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142593	6WH LOADOUT	04/24/12	Gross Alpha/Beta	Gross Alpha	8.291E-15	8.67E-15	1.027E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.072E-14	1.244E-14	1.728E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142594	6WH LOADOUT	04/25/12	Gross Alpha/Beta	Gross Alpha	7.72E-15	9.014E-15	1.105E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.158E-14	1.546E-14	1.86E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142596	6WH LOADOUT	04/25/12	Gross Alpha/Beta	Gross Alpha	4.982E-15	7.824E-15	1.036E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.97E-14	1.457E-14	1.743E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142597	6WH LOADOUT	04/25/12	Gross Alpha/Beta	Gross Alpha	4.015E-15	7.805E-15	1.08E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.986E-14	1.502E-14	1.816E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142598	6WH LOADOUT	04/25/12	Gross Alpha/Beta	Gross Alpha	9.026E-15	7.544E-15	9.009E-15	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	2.769E-14	1.867E-14	2.874E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142600	6WH LOADOUT	04/26/12	Gross Alpha/Beta	Gross Alpha	6.577E-15	6.019E-15	7.614E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	2.874E-14	1.623E-14	2.429E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142601	6WH LOADOUT	04/26/12	Gross Alpha/Beta	Gross Alpha	3.585E-15	5.019E-15	7.982E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.712E-14	1.758E-14	2.547E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD142602	6WH LOADOUT	04/26/12	Gross Alpha/Beta	Gross Alpha	9.14E-15	7.07E-15	8.017E-15	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	2.605E-14	1.673E-14	2.558E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142603	6WH LOADOUT	04/26/12	Gross Alpha/Beta	Gross Alpha	6.468E-15	5.92E-15	7.489E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	3.22E-14	1.628E-14	2.389E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142604	6WH LOADOUT	04/30/12	Gross Alpha/Beta	Gross Alpha	4.46E-16	6.512E-15	1.075E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.332E-14	1.353E-14	1.737E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142605	6WH LOADOUT	04/30/12	Gross Alpha/Beta	Gross Alpha	-2.766E-15	5.353E-15	1.075E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.293E-14	1.448E-14	1.737E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142607	6WH LOADOUT	04/30/12	Gross Alpha/Beta	Gross Alpha	-6.67E-16	6.567E-15	1.148E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	9.832E-15	1.4E-14	1.855E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air

Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD142608	6WH LOADOUT	04/30/12	Gross Alpha/Beta	Gross Alpha	4.536E-15	7.478E-15	1.031E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.081E-14	1.278E-14	1.666E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142609	6WH LOADOUT	05/02/12	Gross Alpha/Beta	Gross Alpha	3.582E-15	7.339E-15	1.052E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.313E-14	1.424E-14	1.701E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142610	6WH LOADOUT	05/02/12	Gross Alpha/Beta	Gross Alpha	-5.99E-16	5.9E-15	1.031E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.134E-14	1.382E-14	1.666E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142611	6WH LOADOUT	05/02/12	Gross Alpha/Beta	Gross Alpha	3.597E-15	7.369E-15	1.057E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.783E-14	1.378E-14	1.708E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142612	6WH LOADOUT	05/02/12	Gross Alpha/Beta	Gross Alpha	-3.726E-15	4.765E-15	1.044E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.094E-14	1.294E-14	1.687E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142614	6WH LOADOUT	05/03/12	Gross Alpha/Beta	Gross Alpha	2.534E-15	7.033E-15	1.052E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.574E-14	1.352E-14	1.701E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD142615	6WH LOADOUT	05/03/12	Gross Alpha/Beta	Gross Alpha	4.42E-16	6.457E-15	1.066E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	9.129E-15	1.3E-14	1.722E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142616	6WH LOADOUT	05/03/12	Gross Alpha/Beta	Gross Alpha	4.24E-16	6.197E-15	1.023E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.203E-14	1.281E-14	1.653E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142617	6WH LOADOUT	05/03/12	Gross Alpha/Beta	Gross Alpha	4.46E-16	6.512E-15	1.075E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	9.207E-15	1.311E-14	1.737E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142619	6WH LOADOUT	05/07/12	Gross Alpha/Beta	Gross Alpha	2.492E-15	6.918E-15	1.035E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.407E-14	1.413E-14	1.673E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142620	6WH LOADOUT	05/07/12	Gross Alpha/Beta	Gross Alpha	3.538E-15	7.249E-15	1.039E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.753E-14	1.355E-14	1.68E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD142621	6WH LOADOUT	05/07/12	Gross Alpha/Beta	Gross Alpha	-6.38E-16	6.283E-15	1.098E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.361E-14	1.382E-14	1.775E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD142622	6WH LOADOUT	05/07/12	Gross Alpha/Beta	Gross Alpha	2.632E-15	7.306E-15	1.093E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.495E-14	1.391E-14	1.767E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143451	6WH LOADOUT	05/08/12	Gross Alpha/Beta	Gross Alpha	2.492E-15	6.918E-15	1.035E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.085E-14	1.283E-14	1.673E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143452	6WH LOADOUT	05/08/12	Gross Alpha/Beta	Gross Alpha	-1.581E-15	5.378E-15	1.002E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.747E-15	1.182E-14	1.62E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143453	6WH LOADOUT	05/08/12	Gross Alpha/Beta	Gross Alpha	4.6E-16	6.711E-15	1.107E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.09E-14	1.365E-14	1.79E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143454	6WH LOADOUT	05/08/12	Gross Alpha/Beta	Gross Alpha	-1.755E-15	5.968E-15	1.112E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.947E-14	1.457E-14	1.798E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143456	6WH LOADOUT	05/09/12	Gross Alpha/Beta	Gross Alpha	-2.901E-15	5.615E-15	1.127E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	-4.2E-16	1.265E-14	1.822E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143457	6WH LOADOUT	05/09/12	Gross Alpha/Beta	Gross Alpha	2.655E-15	7.369E-15	1.103E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.926E-15	1.307E-14	1.782E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143458	6WH LOADOUT	05/09/12	Gross Alpha/Beta	Gross Alpha	3.552E-15	7.279E-15	1.044E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.609E-15	1.237E-14	1.687E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143459	6WH LOADOUT	05/09/12	Gross Alpha/Beta	Gross Alpha	3.673E-15	7.526E-15	1.079E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.131E-14	1.338E-14	1.744E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143461	6WH LOADOUT	05/10/12	Gross Alpha/Beta	Gross Alpha	-6.14E-16	6.047E-15	1.057E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.648E-14	1.364E-14	1.708E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143462	6WH LOADOUT	05/10/12	Gross Alpha/Beta	Gross Alpha	-4.211E-15	5.386E-15	1.18E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	6.34E-15	1.399E-14	1.907E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143463	6WH LOADOUT	05/10/12	Gross Alpha/Beta	Gross Alpha	-5.94E-16	5.852E-15	1.023E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	8.108E-15	1.24E-14	1.653E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143464	6WH LOADOUT	05/10/12	Gross Alpha/Beta	Gross Alpha	4.649E-15	7.665E-15	1.057E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.378E-14	1.337E-14	1.708E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143465	6WH LOADOUT	05/15/12	Gross Alpha/Beta	Gross Alpha	6.07E-16	4.645E-15	9.394E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.282E-14	1.568E-14	1.601E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143466	6WH LOADOUT	05/16/12	Gross Alpha/Beta	Gross Alpha	7.169E-15	7.223E-15	9.84E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.391E-14	1.55E-14	1.677E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143467	6WH LOADOUT	05/17/12	Gross Alpha/Beta	Gross Alpha	2.789E-15	5.71E-15	9.756E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.125E-14	1.42E-14	1.663E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air

Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD143468	6WH LOADOUT	05/14/12	Gross Alpha/Beta	Gross Alpha	1.078E-14	7.893E-15	9.205E-15	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	1.584E-14	1.39E-14	1.569E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143469	6WH LOADOUT	05/21/12	Gross Alpha/Beta	Gross Alpha	3.971E-15	6.266E-15	1.001E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.362E-14	1.571E-14	1.706E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143470	6WH LOADOUT	05/22/12	Gross Alpha/Beta	Gross Alpha	5.902E-15	6.684E-15	9.552E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.321E-14	1.505E-14	1.628E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143471	6WH LOADOUT	05/23/12	Gross Alpha/Beta	Gross Alpha	1.581E-15	4.889E-15	9.023E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.897E-14	1.484E-14	1.538E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143472	6WH LOADOUT	05/23/12	Gross Alpha/Beta	Gross Alpha	3.741E-15	5.903E-15	9.433E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.56E-14	1.51E-14	1.608E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143473	6WH LOADOUT	05/23/12	Gross Alpha/Beta	Gross Alpha	-4.37E-16	4.189E-15	9.472E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.302E-14	1.492E-14	1.614E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143474	6WH LOADOUT	05/23/12	Gross Alpha/Beta	Gross Alpha	2.766E-15	5.661E-15	9.673E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.556E-14	1.542E-14	1.648E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143475	6WH LOADOUT	05/24/12	Gross Alpha/Beta	Gross Alpha	9.347E-15	7.853E-15	9.84E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	2.181E-14	1.531E-14	1.677E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143476	6WH LOADOUT	05/24/12	Gross Alpha/Beta	Gross Alpha	4.613E-15	6.037E-15	9.095E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.758E-14	1.567E-14	1.55E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143477	6WH LOADOUT	05/24/12	Gross Alpha/Beta	Gross Alpha	3.869E-15	6.105E-15	9.756E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.993E-14	1.592E-14	1.663E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143478	6WH LOADOUT	05/24/12	Gross Alpha/Beta	Gross Alpha	1.005E-14	7.846E-15	9.472E-15	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	4.385E-14	1.67E-14	1.614E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143484	6WH LOADOUT	05/29/12	Gross Alpha/Beta	Gross Alpha	-3.31E-16	3.291E-15	7.889E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.738E-14	1.794E-14	2.289E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143485	6WH LOADOUT	05/29/12	Gross Alpha/Beta	Gross Alpha	2.916E-15	5.24E-15	8.678E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.843E-14	1.969E-14	2.518E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143486	6WH LOADOUT	05/29/12	Gross Alpha/Beta	Gross Alpha	2.866E-15	5.15E-15	8.53E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.198E-14	1.891E-14	2.475E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143487	6WH LOADOUT	05/29/12	Gross Alpha/Beta	Gross Alpha	7.2E-16	4.175E-15	8.567E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.503E-14	1.991E-14	2.486E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143488	6WH LOADOUT	05/30/12	Gross Alpha/Beta	Gross Alpha	-4.19E-16	4.164E-15	9.98E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.654E-15	2.137E-14	2.896E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143489	6WH LOADOUT	05/30/12	Gross Alpha/Beta	Gross Alpha	1.996E-15	5.215E-15	9.505E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.018E-14	2.156E-14	2.758E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143490	6WH LOADOUT	05/30/12	Gross Alpha/Beta	Gross Alpha	3.422E-15	6.149E-15	1.018E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.288E-15	2.162E-14	2.955E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143491	6WH LOADOUT	05/30/12	Gross Alpha/Beta	Gross Alpha	1.637E-15	4.278E-15	7.797E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.593E-14	1.764E-14	2.263E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143492	6WH LOADOUT	05/31/12	Gross Alpha/Beta	Gross Alpha	3.645E-15	5.162E-15	7.889E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.927E-14	1.807E-14	2.289E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143493	6WH LOADOUT	05/31/12	Gross Alpha/Beta	Gross Alpha	7.17E-16	4.157E-15	8.53E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.948E-14	1.945E-14	2.475E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143494	6WH LOADOUT	05/31/12	Gross Alpha/Beta	Gross Alpha	2.76E-15	4.96E-15	8.214E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.203E-14	1.895E-14	2.384E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143495	6WH LOADOUT	05/31/12	Gross Alpha/Beta	Gross Alpha	2.672E-15	4.802E-15	7.952E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.768E-14	1.879E-14	2.308E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143496	6WH LOADOUT	06/04/12	Gross Alpha/Beta	Gross Alpha	6.986E-15	6.44E-15	7.861E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	3.118E-14	2.094E-14	2.415E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143497	6WH LOADOUT	06/04/12	Gross Alpha/Beta	Gross Alpha	5.832E-15	5.997E-15	7.793E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.13E-14	2.144E-14	2.394E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143498	6WH LOADOUT	06/04/12	Gross Alpha/Beta	Gross Alpha	6.327E-15	6.506E-15	8.454E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.601E-14	2.201E-14	2.597E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143499	6WH LOADOUT	06/04/12	Gross Alpha/Beta	Gross Alpha	2.476E-15	4.512E-15	7.563E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.663E-14	1.992E-14	2.324E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143500	6WH LOADOUT	06/05/12	Gross Alpha/Beta	Gross Alpha	3.436E-15	4.843E-15	7.346E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.998E-14	1.895E-14	2.257E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air

Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD143501	6WH LOADOUT	06/05/12	Gross Alpha/Beta	Gross Alpha	1.497E-15	4.212E-15	8.002E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.465E-14	2.014E-14	2.458E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143502	6WH LOADOUT	06/05/12	Gross Alpha/Beta	Gross Alpha	6.069E-15	6.241E-15	8.11E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	7.635E-15	1.99E-14	2.492E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143503	6WH LOADOUT	06/05/12	Gross Alpha/Beta	Gross Alpha	2.704E-15	4.927E-15	8.26E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.027E-14	2.115E-14	2.538E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143504	6WH LOADOUT	06/06/12	Gross Alpha/Beta	Gross Alpha	3.35E-16	3.193E-15	7.169E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.285E-15	1.726E-14	2.203E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143505	6WH LOADOUT	06/06/12	Gross Alpha/Beta	Gross Alpha	-7.23E-16	2.672E-15	7.726E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	7.273E-15	1.895E-14	2.374E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143506	6WH LOADOUT	06/06/12	Gross Alpha/Beta	Gross Alpha	1.38E-15	3.883E-15	7.376E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.744E-14	1.884E-14	2.266E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143507	6WH LOADOUT	06/06/12	Gross Alpha/Beta	Gross Alpha	5.52E-15	5.676E-15	7.376E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.154E-14	1.843E-14	2.266E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143508	6WH LOADOUT	06/07/12	Gross Alpha/Beta	Gross Alpha	1.517E-15	4.269E-15	8.11E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.784E-14	2.131E-14	2.492E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143509	6WH LOADOUT	06/07/12	Gross Alpha/Beta	Gross Alpha	5.832E-15	5.997E-15	7.793E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.704E-14	1.981E-14	2.394E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143510	6WH LOADOUT	06/07/12	Gross Alpha/Beta	Gross Alpha	5.124E-15	7.081E-15	1.01E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.35E-14	1.206E-14	1.67E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143511	6WH LOADOUT	06/07/12	Gross Alpha/Beta	Gross Alpha	1.039E-14	8.411E-15	9.798E-15	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	2.491E-14	1.303E-14	1.619E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143520	6WH LOADOUT	06/11/12	Gross Alpha/Beta	Gross Alpha	5.48E-16	5.217E-15	1.172E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.353E-14	2.963E-14	3.599E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143521	6WH LOADOUT	06/11/12	Gross Alpha/Beta	Gross Alpha	5.479E-15	7.723E-15	1.172E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.937E-14	2.934E-14	3.599E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143522	6WH LOADOUT	06/11/12	Gross Alpha/Beta	Gross Alpha	1.582E-15	1.506E-14	3.382E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.289E-14	8.448E-14	1.039E-13	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143523	6WH LOADOUT	06/11/12	Gross Alpha/Beta	Gross Alpha	6.575E-15	1.85E-14	3.514E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.872E-14	8.734E-14	1.08E-13	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143524	6WH LOADOUT	06/12/12	Gross Alpha/Beta	Gross Alpha	2.717E-15	4.95E-15	8.298E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.036E-14	2.125E-14	2.549E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143525	6WH LOADOUT	06/12/12	Gross Alpha/Beta	Gross Alpha	3.881E-15	5.471E-15	8.298E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.446E-14	2.083E-14	2.549E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143526	6WH LOADOUT	06/12/12	Gross Alpha/Beta	Gross Alpha	4.954E-15	5.838E-15	8.147E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.869E-14	2.146E-14	2.503E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143527	6WH LOADOUT	06/12/12	Gross Alpha/Beta	Gross Alpha	7.846E-15	7.233E-15	8.829E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	3.737E-14	2.368E-14	2.713E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143528	6WH LOADOUT	06/13/12	Gross Alpha/Beta	Gross Alpha	1.427E-15	4.015E-15	7.627E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.125E-14	1.9E-14	2.343E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143529	6WH LOADOUT	06/13/12	Gross Alpha/Beta	Gross Alpha	2.54E-15	4.629E-15	7.759E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.093E-15	1.858E-14	2.384E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143530	6WH LOADOUT	06/13/12	Gross Alpha/Beta	Gross Alpha	3.677E-15	5.183E-15	7.861E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.348E-14	2.042E-14	2.415E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143531	6WH LOADOUT	06/13/12	Gross Alpha/Beta	Gross Alpha	6.069E-15	6.241E-15	8.11E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.206E-14	2.092E-14	2.492E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143532	6WH LOADOUT	06/14/12	Gross Alpha/Beta	Gross Alpha	3.73E-16	3.548E-15	7.966E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.364E-14	2.201E-14	2.447E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143533	6WH LOADOUT	06/14/12	Gross Alpha/Beta	Gross Alpha	4.976E-15	5.864E-15	8.184E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.284E-14	2.313E-14	2.514E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143534	6WH LOADOUT	06/14/12	Gross Alpha/Beta	Gross Alpha	5.035E-15	6.958E-15	9.925E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.805E-14	1.35E-14	1.641E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143535	6WH LOADOUT	06/14/12	Gross Alpha/Beta	Gross Alpha	2.927E-15	6.421E-15	1.024E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.675E-14	1.369E-14	1.692E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143536	6WH LOADOUT	06/18/12	Gross Alpha/Beta	Gross Alpha	8.05E-15	7.377E-15	9.592E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	3.249E-14	1.337E-14	1.625E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air

Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD143537	6WH LOADOUT	06/18/12	Gross Alpha/Beta	Gross Alpha	2.85E-15	5.865E-15	9.969E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.306E-14	1.382E-14	1.689E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143538	6WH LOADOUT	06/18/12	Gross Alpha/Beta	Gross Alpha	5.079E-15	6.674E-15	1.001E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.61E-14	1.313E-14	1.697E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143539	6WH LOADOUT	06/18/12	Gross Alpha/Beta	Gross Alpha	1.778E-15	5.531E-15	1.015E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.437E-14	1.414E-14	1.719E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143540	6WH LOADOUT	06/19/12	Gross Alpha/Beta	Gross Alpha	4.845E-15	6.367E-15	9.552E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.88E-14	1.184E-14	1.618E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143541	6WH LOADOUT	06/19/12	Gross Alpha/Beta	Gross Alpha	7.169E-15	7.247E-15	9.84E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.518E-14	1.171E-14	1.667E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143542	6WH LOADOUT	06/19/12	Gross Alpha/Beta	Gross Alpha	4.928E-15	6.475E-15	9.714E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.326E-14	1.251E-14	1.646E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143543	6WH LOADOUT	06/19/12	Gross Alpha/Beta	Gross Alpha	2.777E-15	5.716E-15	9.714E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	9.476E-15	1.088E-14	1.646E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143544	6WH LOADOUT	06/20/12	Gross Alpha/Beta	Gross Alpha	8.05E-15	7.377E-15	9.592E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	2.092E-14	1.213E-14	1.625E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143545	6WH LOADOUT	06/20/12	Gross Alpha/Beta	Gross Alpha	5.927E-15	6.737E-15	9.592E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.412E-14	1.133E-14	1.625E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143546	6WH LOADOUT	06/20/12	Gross Alpha/Beta	Gross Alpha	-4.58E-16	4.429E-15	9.925E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.672E-14	1.198E-14	1.682E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143547	6WH LOADOUT	06/20/12	Gross Alpha/Beta	Gross Alpha	5.927E-15	6.737E-15	9.592E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.229E-14	1.228E-14	1.625E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143548	6WH LOADOUT	06/21/12	Gross Alpha/Beta	Gross Alpha	1.747E-15	5.434E-15	9.969E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.316E-14	1.276E-14	1.689E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143549	6WH LOADOUT	06/21/12	Gross Alpha/Beta	Gross Alpha	2.875E-15	5.917E-15	1.006E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.409E-14	1.18E-14	1.704E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143550	6WH LOADOUT	06/21/12	Gross Alpha/Beta	Gross Alpha	6.133E-15	6.971E-15	9.925E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.531E-14	1.181E-14	1.682E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143551	6WH LOADOUT	06/21/12	Gross Alpha/Beta	Gross Alpha	6.003E-15	6.823E-15	9.714E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.533E-14	1.274E-14	1.646E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143564	6WH LOADOUT	06/25/12	Gross Alpha/Beta	Gross Alpha	8.294E-15	7.601E-15	9.883E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	3.979E-14	1.44E-14	1.674E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143565	6WH LOADOUT	06/25/12	Gross Alpha/Beta	Gross Alpha	1.695E-15	5.273E-15	9.673E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.277E-14	1.348E-14	1.639E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143566	6WH LOADOUT	06/25/12	Gross Alpha/Beta	Gross Alpha	5.952E-15	6.766E-15	9.632E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.741E-14	1.39E-14	1.632E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143567	6WH LOADOUT	06/25/12	Gross Alpha/Beta	Gross Alpha	8.223E-15	7.535E-15	9.798E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	4.222E-14	1.455E-14	1.66E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143568	6WH LOADOUT	06/26/12	Gross Alpha/Beta	Gross Alpha	8.618E-15	8.711E-15	1.183E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.573E-14	1.377E-14	2.004E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143569	6WH LOADOUT	06/26/12	Gross Alpha/Beta	Gross Alpha	6.3E-16	4.86E-15	9.756E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.505E-14	1.161E-14	1.653E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143570	6WH LOADOUT	06/26/12	Gross Alpha/Beta	Gross Alpha	6.354E-15	7.223E-15	1.028E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.024E-14	1.275E-14	1.742E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143571	6WH LOADOUT	06/26/12	Gross Alpha/Beta	Gross Alpha	2.994E-15	6.161E-15	1.047E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.764E-14	1.264E-14	1.774E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143572	6WH LOADOUT	06/27/12	Gross Alpha/Beta	Gross Alpha	1.009E-14	8.498E-15	1.062E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	2.241E-14	1.334E-14	1.799E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143573	6WH LOADOUT	06/27/12	Gross Alpha/Beta	Gross Alpha	-4.72E-16	4.568E-15	1.024E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.507E-14	1.21E-14	1.735E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143574	6WH LOADOUT	06/27/12	Gross Alpha/Beta	Gross Alpha	1.068E-14	9.001E-15	1.125E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	2.772E-14	1.457E-14	1.905E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143575	6WH LOADOUT	06/27/12	Gross Alpha/Beta	Gross Alpha	2.901E-15	5.97E-15	1.015E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.213E-14	1.283E-14	1.719E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143576	6WH LOADOUT	06/28/12	Gross Alpha/Beta	Gross Alpha	8.33E-15	7.634E-15	9.925E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	2.236E-14	1.263E-14	1.682E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air

Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD143577	6WH LOADOUT	06/28/12	Gross Alpha/Beta	Gross Alpha	1.298E-14	9.526E-15	1.108E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	4.697E-14	1.638E-14	1.878E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143578	6WH LOADOUT	06/28/12	Gross Alpha/Beta	Gross Alpha	1.028E-14	8.66E-15	1.082E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	2.744E-14	1.41E-14	1.833E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143579	6WH LOADOUT	06/28/12	Gross Alpha/Beta	Gross Alpha	5.24E-15	6.885E-15	1.033E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.107E-14	1.289E-14	1.75E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143580	6WH LOADOUT	07/02/12	Gross Alpha/Beta	Gross Alpha	8.672E-15	8.542E-15	9.363E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	2.766E-14	1.597E-14	2.452E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143581	6WH LOADOUT	07/02/12	Gross Alpha/Beta	Gross Alpha	3.493E-15	7.553E-15	1.006E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.078E-14	1.808E-14	2.634E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143582	6WH LOADOUT	07/02/12	Gross Alpha/Beta	Gross Alpha	4.593E-15	7.795E-15	9.919E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.241E-14	1.801E-14	2.598E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143583	6WH LOADOUT	07/02/12	Gross Alpha/Beta	Gross Alpha	5.539E-15	7.84E-15	9.569E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.653E-14	1.783E-14	2.506E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143584	6WH LOADOUT	07/03/12	Gross Alpha/Beta	Gross Alpha	1.154E-15	6.734E-15	9.964E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.042E-14	1.527E-14	2.61E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143585	6WH LOADOUT	07/03/12	Gross Alpha/Beta	Gross Alpha	4.531E-15	7.69E-15	9.785E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.598E-14	1.553E-14	2.563E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143586	6WH LOADOUT	07/03/12	Gross Alpha/Beta	Gross Alpha	4.701E-15	7.977E-15	1.015E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.744E-14	1.794E-14	2.659E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143587	6WH LOADOUT	07/03/12	Gross Alpha/Beta	Gross Alpha	0	5.795E-15	9.127E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.156E-14	1.418E-14	2.39E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143588	6WH LOADOUT	07/05/12	Gross Alpha/Beta	Gross Alpha	0	6.213E-15	9.785E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.819E-14	1.663E-14	2.563E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143597	6WH LOADOUT	07/09/12	Gross Alpha/Beta	Gross Alpha	4.477E-15	6.342E-15	9.967E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.156E-14	1.587E-14	2.514E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143598	6WH LOADOUT	07/09/12	Gross Alpha/Beta	Gross Alpha	1.08E-14	8.06E-15	9.492E-15	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	3.227E-14	1.616E-14	2.394E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143599	6WH LOADOUT	07/09/12	Gross Alpha/Beta	Gross Alpha	7.366E-15	7.754E-15	1.086E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.664E-14	1.757E-14	2.738E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143600	6WH LOADOUT	07/09/12	Gross Alpha/Beta	Gross Alpha	1.068E-14	8.536E-15	1.044E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	3.625E-14	1.784E-14	2.634E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143601	6WH LOADOUT	07/10/12	Gross Alpha/Beta	Gross Alpha	2.171E-15	5.407E-15	9.877E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.65E-14	1.788E-14	2.491E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143602	6WH LOADOUT	07/10/12	Gross Alpha/Beta	Gross Alpha	5.86E-15	7.03E-15	1.039E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.248E-14	1.655E-14	2.621E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143603	6WH LOADOUT	07/10/12	Gross Alpha/Beta	Gross Alpha	1.048E-15	4.954E-15	9.967E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.968E-14	1.745E-14	2.514E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143604	6WH LOADOUT	07/10/12	Gross Alpha/Beta	Gross Alpha	3.162E-15	5.61E-15	9.451E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.694E-14	1.649E-14	2.384E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143605	6WH LOADOUT	07/11/12	Gross Alpha/Beta	Gross Alpha	4.477E-15	6.342E-15	9.967E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.663E-14	1.633E-14	2.514E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143606	6WH LOADOUT	07/11/12	Gross Alpha/Beta	Gross Alpha	1.163E-14	8.172E-15	9.291E-15	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	3.293E-14	1.593E-14	2.344E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143607	6WH LOADOUT	07/11/12	Gross Alpha/Beta	Gross Alpha	9.708E-15	7.76E-15	9.492E-15	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	4.055E-14	1.685E-14	2.394E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143608	6WH LOADOUT	07/11/12	Gross Alpha/Beta	Gross Alpha	1.407E-14	9.358E-15	1.03E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	5.595E-14	1.923E-14	2.597E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143609	6WH LOADOUT	07/12/12	Gross Alpha/Beta	Gross Alpha	7.498E-15	7.091E-15	9.451E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	5.962E-14	1.829E-14	2.384E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143610	6WH LOADOUT	07/12/12	Gross Alpha/Beta	Gross Alpha	9.05E-15	7.82E-15	9.967E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	5.272E-14	1.851E-14	2.514E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143611	6WH LOADOUT	07/12/12	Gross Alpha/Beta	Gross Alpha	3.304E-15	5.862E-15	9.877E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	6.158E-14	1.906E-14	2.491E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143612	6WH LOADOUT	07/12/12	Gross Alpha/Beta	Gross Alpha	4.037E-15	5.719E-15	8.987E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	6.191E-14	1.778E-14	2.267E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air

Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD143613	6WH LOADOUT	07/16/12	Gross Alpha/Beta	Gross Alpha	3.069E-15	5.445E-15	9.175E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.918E-14	1.455E-14	2.314E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143614	6WH LOADOUT	07/16/12	Gross Alpha/Beta	Gross Alpha	-1.145E-15	3.469E-15	9.213E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.182E-15	1.305E-14	2.324E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143615	6WH LOADOUT	07/16/12	Gross Alpha/Beta	Gross Alpha	1.944E-15	4.84E-15	8.842E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.339E-15	1.266E-14	2.23E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD143616	6WH LOADOUT	07/16/12	Gross Alpha/Beta	Gross Alpha	2.034E-15	5.065E-15	9.252E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.732E-14	1.449E-14	2.334E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143617	6WH LOADOUT	07/17/12	Gross Alpha/Beta	Gross Alpha	8.167E-15	7.724E-15	1.03E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	1.927E-14	1.612E-14	2.597E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143618	6WH LOADOUT	07/17/12	Gross Alpha/Beta	Gross Alpha	4.518E-15	6.401E-15	1.006E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.688E-14	1.648E-14	2.537E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143619	6WH LOADOUT	07/17/12	Gross Alpha/Beta	Gross Alpha	1.025E-15	4.844E-15	9.746E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.746E-14	1.609E-14	2.458E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143620	6WH LOADOUT	07/17/12	Gross Alpha/Beta	Gross Alpha	3.289E-15	5.836E-15	9.833E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.413E-14	1.592E-14	2.48E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD143621	6WH LOADOUT	07/18/12	Gross Alpha/Beta	Gross Alpha	3.742E-15	6.64E-15	1.119E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.454E-14	1.959E-14	2.822E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143622	6WH LOADOUT	07/18/12	Gross Alpha/Beta	Gross Alpha	2.351E-15	5.855E-15	1.07E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.025E-14	1.854E-14	2.698E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143623	6WH LOADOUT	07/18/12	Gross Alpha/Beta	Gross Alpha	7.019E-15	7.388E-15	1.034E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.741E-14	1.78E-14	2.609E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143624	6WH LOADOUT	07/18/12	Gross Alpha/Beta	Gross Alpha	3.365E-15	5.97E-15	1.006E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.273E-14	1.699E-14	2.537E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143625	6WH LOADOUT	07/19/12	Gross Alpha/Beta	Gross Alpha	4.539E-15	6.43E-15	1.011E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.774E-14	1.662E-14	2.549E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143626	6WH LOADOUT	07/19/12	Gross Alpha/Beta	Gross Alpha	3.38E-15	5.998E-15	1.011E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.141E-14	1.694E-14	2.549E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143627	6WH LOADOUT	07/19/12	Gross Alpha/Beta	Gross Alpha	3.396E-15	6.025E-15	1.015E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.229E-14	1.709E-14	2.561E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143628	6WH LOADOUT	07/19/12	Gross Alpha/Beta	Gross Alpha	3.38E-15	5.998E-15	1.011E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.023E-14	1.769E-14	2.549E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143637	6WH LOADOUT	07/23/12	Gross Alpha/Beta	Gross Alpha	9.7E-17	5.477E-15	1.099E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.535E-14	1.5E-14	1.877E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143638	6WH LOADOUT	07/23/12	Gross Alpha/Beta	Gross Alpha	5.708E-15	7.307E-15	1.065E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.649E-14	1.57E-14	1.819E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143639	6WH LOADOUT	07/23/12	Gross Alpha/Beta	Gross Alpha	5.633E-15	7.211E-15	1.051E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.593E-14	1.455E-14	1.795E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143640	6WH LOADOUT	07/23/12	Gross Alpha/Beta	Gross Alpha	2.382E-15	6.297E-15	1.084E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.901E-14	1.42E-14	1.852E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143641	6WH LOADOUT	07/24/12	Gross Alpha/Beta	Gross Alpha	7.849E-15	7.864E-15	1.051E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.38E-14	1.434E-14	1.795E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143642	6WH LOADOUT	07/24/12	Gross Alpha/Beta	Gross Alpha	3.462E-15	6.58E-15	1.065E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.705E-14	1.38E-14	1.819E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143643	6WH LOADOUT	07/24/12	Gross Alpha/Beta	Gross Alpha	-1.108E-15	5.176E-15	1.146E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.292E-14	1.419E-14	1.958E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143644	6WH LOADOUT	07/24/12	Gross Alpha/Beta	Gross Alpha	6.058E-15	7.755E-15	1.13E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.017E-14	1.58E-14	1.93E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD143645	6WH LOADOUT	07/25/12	Gross Alpha/Beta	Gross Alpha	-1.077E-15	5.032E-15	1.114E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.927E-14	1.346E-14	1.903E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143646	6WH LOADOUT	07/25/12	Gross Alpha/Beta	Gross Alpha	1.25E-15	5.92E-15	1.094E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.262E-14	1.362E-14	1.869E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143647	6WH LOADOUT	07/25/12	Gross Alpha/Beta	Gross Alpha	5.811E-15	7.44E-15	1.084E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.948E-14	1.318E-14	1.852E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143648	6WH LOADOUT	07/25/12	Gross Alpha/Beta	Gross Alpha	3.525E-15	6.699E-15	1.084E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.095E-14	1.334E-14	1.852E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air

Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD143649	6WH LOADOUT	07/26/12	Gross Alpha/Beta	Gross Alpha	-1.098E-15	5.127E-15	1.136E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.271E-14	1.405E-14	1.94E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD143650	6WH LOADOUT	07/26/12	Gross Alpha/Beta	Gross Alpha	-2.317E-15	4.577E-15	1.146E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.672E-14	1.349E-14	1.958E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD144689	6WH LOADOUT	07/26/12	Gross Alpha/Beta	Gross Alpha	-1.124E-15	5.251E-15	1.163E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.64E-14	1.474E-14	1.987E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144690	6WH LOADOUT	07/26/12	Gross Alpha/Beta	Gross Alpha	1.382E-15	6.548E-15	1.21E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.583E-14	1.516E-14	2.067E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144692	6WH LOADOUT	07/30/12	Gross Alpha/Beta	Gross Alpha	4.865E-15	6.154E-15	9.592E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.128E-14	1.495E-14	1.627E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144693	6WH LOADOUT	07/30/12	Gross Alpha/Beta	Gross Alpha	2.838E-15	5.558E-15	9.925E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.92E-14	1.515E-14	1.683E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144694	6WH LOADOUT	07/31/12	Gross Alpha/Beta	Gross Alpha	8.114E-15	7.951E-15	1.114E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	5.899E-14	1.834E-14	1.889E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144695	6WH LOADOUT	07/31/12	Gross Alpha/Beta	Gross Alpha	3.064E-15	6.001E-15	1.072E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.917E-14	1.698E-14	1.818E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144696	6WH LOADOUT	07/31/12	Gross Alpha/Beta	Gross Alpha	-4.94E-16	4.373E-15	1.072E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.525E-14	1.752E-14	1.818E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144697	6WH LOADOUT	07/31/12	Gross Alpha/Beta	Gross Alpha	3.936E-15	5.976E-15	9.925E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.356E-14	1.461E-14	1.683E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144698	6WH LOADOUT	08/01/12	Gross Alpha/Beta	Gross Alpha	4.097E-15	6.22E-15	1.033E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	6.058E-14	1.752E-14	1.752E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144699	6WH LOADOUT	08/02/12	Gross Alpha/Beta	Gross Alpha	1.878E-15	5.512E-15	1.072E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.852E-14	1.599E-14	1.818E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144700	6WH LOADOUT	08/02/12	Gross Alpha/Beta	Gross Alpha	6.501E-15	7.14E-15	1.052E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.781E-14	1.57E-14	1.784E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144701	6WH LOADOUT	08/02/12	Gross Alpha/Beta	Gross Alpha	1.181E-14	9.027E-15	1.114E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	3.371E-14	1.6E-14	1.889E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144702	6WH LOADOUT	08/02/12	Gross Alpha/Beta	Gross Alpha	-5.01E-16	4.436E-15	1.087E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.447E-14	1.673E-14	1.844E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144703	6WH LOADOUT	08/06/12	Gross Alpha/Beta	Gross Alpha	3.753E-15	5.886E-15	1.009E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.547E-14	1.279E-14	1.712E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144704	6WH LOADOUT	08/06/12	Gross Alpha/Beta	Gross Alpha	1.673E-15	5.372E-15	1.085E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.526E-14	1.234E-14	1.84E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD144705	6WH LOADOUT	08/06/12	Gross Alpha/Beta	Gross Alpha	6.11E-15	6.835E-15	1.036E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.687E-14	1.321E-14	1.758E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144706	6WH LOADOUT	08/06/12	Gross Alpha/Beta	Gross Alpha	3.77E-15	5.912E-15	1.014E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.699E-14	1.3E-14	1.72E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144707	6WH LOADOUT	08/07/12	Gross Alpha/Beta	Gross Alpha	4.111E-15	6.446E-15	1.105E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.943E-14	1.418E-14	1.875E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144708	6WH LOADOUT	08/07/12	Gross Alpha/Beta	Gross Alpha	5.214E-15	6.753E-15	1.085E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.251E-14	1.533E-14	1.84E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144709	6WH LOADOUT	08/07/12	Gross Alpha/Beta	Gross Alpha	5.497E-15	7.119E-15	1.144E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.364E-14	1.501E-14	1.94E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144710	6WH LOADOUT	08/07/12	Gross Alpha/Beta	Gross Alpha	7.72E-15	7.678E-15	1.105E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	6.182E-14	1.737E-14	1.875E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144711	6WH LOADOUT	08/08/12	Gross Alpha/Beta	Gross Alpha	7.336E-15	7.296E-15	1.05E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	3.749E-14	1.448E-14	1.782E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144712	6WH LOADOUT	08/08/12	Gross Alpha/Beta	Gross Alpha	7.237E-15	7.198E-15	1.036E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	6.374E-14	1.679E-14	1.758E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144713	6WH LOADOUT	08/08/12	Gross Alpha/Beta	Gross Alpha	1.361E-14	9.291E-15	1.095E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	5.284E-14	1.643E-14	1.858E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144714	6WH LOADOUT	08/08/12	Gross Alpha/Beta	Gross Alpha	5.976E-15	6.686E-15	1.014E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	6.164E-14	1.636E-14	1.72E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144715	6WH LOADOUT	08/09/12	Gross Alpha/Beta	Gross Alpha	-1.869E-15	3.483E-15	1.085E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.418E-14	1.448E-14	1.84E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air

Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD144716	6WH LOADOUT	08/09/12	Gross Alpha/Beta	Gross Alpha	1.117E-14	8.615E-15	1.09E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	2.674E-14	1.373E-14	1.849E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144717	6WH LOADOUT	08/09/12	Gross Alpha/Beta	Gross Alpha	1.627E-15	5.226E-15	1.055E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.957E-14	1.369E-14	1.79E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144718	6WH LOADOUT	08/09/12	Gross Alpha/Beta	Gross Alpha	6.249E-15	6.991E-15	1.06E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.379E-14	1.31E-14	1.798E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144719	6WH LOADOUT	08/13/12	Gross Alpha/Beta	Gross Alpha	-1.062E-15	3.017E-15	8.63E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.067E-14	1.839E-14	2.628E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144720	6WH LOADOUT	08/13/12	Gross Alpha/Beta	Gross Alpha	4.754E-15	6.026E-15	8.67E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.786E-14	1.824E-14	2.641E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144721	6WH LOADOUT	08/13/12	Gross Alpha/Beta	Gross Alpha	5.632E-15	6.147E-15	8.25E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.039E-14	1.92E-14	2.513E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144722	6WH LOADOUT	08/13/12	Gross Alpha/Beta	Gross Alpha	3.607E-15	5.583E-15	8.711E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.39E-14	1.714E-14	2.653E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD144723	6WH LOADOUT	08/14/12	Gross Alpha/Beta	Gross Alpha	4.961E-15	6.288E-15	9.047E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.37E-14	1.94E-14	2.755E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144724	6WH LOADOUT	08/14/12	Gross Alpha/Beta	Gross Alpha	3.462E-15	5.359E-15	8.361E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.833E-14	1.688E-14	2.546E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD144725	6WH LOADOUT	08/14/12	Gross Alpha/Beta	Gross Alpha	4.844E-15	6.139E-15	8.834E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.343E-14	1.977E-14	2.69E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144726	6WH LOADOUT	08/14/12	Gross Alpha/Beta	Gross Alpha	3.675E-15	5.689E-15	8.876E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.172E-14	1.811E-14	2.703E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD144727	6WH LOADOUT	08/15/12	Gross Alpha/Beta	Gross Alpha	8.097E-15	7.12E-15	8.513E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	5.055E-14	1.97E-14	2.593E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144728	6WH LOADOUT	08/15/12	Gross Alpha/Beta	Gross Alpha	1.127E-14	7.967E-15	8.324E-15	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	5.934E-14	1.998E-14	2.535E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144729	6WH LOADOUT	08/15/12	Gross Alpha/Beta	Gross Alpha	7.882E-15	6.931E-15	8.287E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	4.568E-14	1.891E-14	2.524E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144730	6WH LOADOUT	08/15/12	Gross Alpha/Beta	Gross Alpha	1.098E-14	8.272E-15	9.004E-15	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	4.733E-14	2.038E-14	2.742E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144731	6WH LOADOUT	08/16/12	Gross Alpha/Beta	Gross Alpha	6.959E-15	6.119E-15	7.316E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	5.029E-14	1.743E-14	2.228E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144732	6WH LOADOUT	08/16/12	Gross Alpha/Beta	Gross Alpha	3.89E-15	4.93E-15	7.094E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.246E-14	1.569E-14	2.16E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144733	6WH LOADOUT	08/16/12	Gross Alpha/Beta	Gross Alpha	2.893E-15	4.479E-15	6.988E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.722E-14	1.508E-14	2.128E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144734	6WH LOADOUT	08/16/12	Gross Alpha/Beta	Gross Alpha	2.769E-15	4.287E-15	6.689E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.858E-14	1.539E-14	2.037E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144735	6WH LOADOUT	08/20/12	Gross Alpha/Beta	Gross Alpha	2.952E-15	5.802E-15	1.076E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.941E-14	1.778E-14	1.902E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144736	6WH LOADOUT	08/20/12	Gross Alpha/Beta	Gross Alpha	6.231E-15	6.813E-15	1.032E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.347E-14	1.669E-14	1.826E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144737	6WH LOADOUT	08/20/12	Gross Alpha/Beta	Gross Alpha	9.243E-15	8.192E-15	1.123E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	3.957E-14	1.843E-14	1.986E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144738	6WH LOADOUT	08/20/12	Gross Alpha/Beta	Gross Alpha	2.884E-15	5.67E-15	1.051E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.63E-14	1.719E-14	1.859E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144739	6WH LOADOUT	08/21/12	Gross Alpha/Beta	Gross Alpha	5.098E-15	6.425E-15	1.032E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.347E-14	1.669E-14	1.826E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144740	6WH LOADOUT	08/21/12	Gross Alpha/Beta	Gross Alpha	5.168E-15	6.513E-15	1.047E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.349E-14	1.774E-14	1.851E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144741	6WH LOADOUT	08/21/12	Gross Alpha/Beta	Gross Alpha	2.807E-15	5.518E-15	1.023E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.756E-14	1.776E-14	1.809E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144742	6WH LOADOUT	08/21/12	Gross Alpha/Beta	Gross Alpha	2.858E-15	5.618E-15	1.042E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.597E-14	1.703E-14	1.842E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144743	6WH LOADOUT	08/22/12	Gross Alpha/Beta	Gross Alpha	4.019E-15	6.094E-15	1.047E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.73E-14	1.633E-14	1.851E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air

Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD144744	6WH LOADOUT	08/22/12	Gross Alpha/Beta	Gross Alpha	5.098E-15	6.425E-15	1.032E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.146E-14	1.738E-14	1.826E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144745	6WH LOADOUT	08/22/12	Gross Alpha/Beta	Gross Alpha	2.832E-15	5.568E-15	1.032E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.363E-14	1.756E-14	1.826E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144746	6WH LOADOUT	08/22/12	Gross Alpha/Beta	Gross Alpha	-5.93E-16	4.134E-15	1.081E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.188E-14	1.806E-14	1.911E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144747	6WH LOADOUT	08/23/12	Gross Alpha/Beta	Gross Alpha	5.121E-15	6.454E-15	1.037E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	6.863E-14	1.96E-14	1.834E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144748	6WH LOADOUT	08/23/12	Gross Alpha/Beta	Gross Alpha	-5.52E-16	3.845E-15	1.005E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	6.795E-14	1.91E-14	1.778E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144749	6WH LOADOUT	08/23/12	Gross Alpha/Beta	Gross Alpha	1.56E-15	4.667E-15	9.474E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.737E-14	1.671E-14	1.675E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144750	6WH LOADOUT	08/23/12	Gross Alpha/Beta	Gross Alpha	6.345E-15	6.938E-15	1.051E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.517E-14	1.794E-14	1.859E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144751	6WH LOADOUT	08/27/12	Gross Alpha/Beta	Gross Alpha	1.556E-15	5.243E-15	1.009E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	9.564E-15	1.072E-14	1.761E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD144752	6WH LOADOUT	08/27/12	Gross Alpha/Beta	Gross Alpha	2.763E-15	5.916E-15	1.05E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.142E-14	1.134E-14	1.833E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD144753	6WH LOADOUT	08/27/12	Gross Alpha/Beta	Gross Alpha	4.68E-16	4.866E-15	1.032E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.554E-14	1.169E-14	1.8E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD144754	6WH LOADOUT	08/28/12	Gross Alpha/Beta	Gross Alpha	4.39E-16	4.562E-15	9.672E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.156E-14	1.39E-14	1.688E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144755	6WH LOADOUT	08/28/12	Gross Alpha/Beta	Gross Alpha	3.786E-15	6.148E-15	1.018E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.604E-14	1.162E-14	1.776E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD144756	6WH LOADOUT	08/28/12	Gross Alpha/Beta	Gross Alpha	4.034E-15	6.55E-15	1.085E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.752E-14	1.468E-14	1.893E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144757	6WH LOADOUT	08/28/12	Gross Alpha/Beta	Gross Alpha	6.958E-15	7.094E-15	9.963E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.419E-14	1.445E-14	1.738E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144758	6WH LOADOUT	08/29/12	Gross Alpha/Beta	Gross Alpha	1.115E-14	8.212E-15	9.836E-15	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	3.54E-14	1.345E-14	1.716E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144759	6WH LOADOUT	08/29/12	Gross Alpha/Beta	Gross Alpha	6.055E-15	6.963E-15	1.027E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.911E-14	1.426E-14	1.792E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144760	6WH LOADOUT	08/29/12	Gross Alpha/Beta	Gross Alpha	8.183E-15	7.548E-15	1.014E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	3.294E-14	1.349E-14	1.769E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144761	6WH LOADOUT	08/29/12	Gross Alpha/Beta	Gross Alpha	6.783E-15	6.916E-15	9.713E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.292E-14	1.307E-14	1.695E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144762	6WH LOADOUT	08/30/12	Gross Alpha/Beta	Gross Alpha	1.118E-14	7.764E-15	8.998E-15	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	3.301E-14	1.237E-14	1.57E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144763	6WH LOADOUT	08/30/12	Gross Alpha/Beta	Gross Alpha	1.197E-14	8.311E-15	9.632E-15	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	4.474E-14	1.417E-14	1.681E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144764	6WH LOADOUT	08/30/12	Gross Alpha/Beta	Gross Alpha	1.276E-14	8.863E-15	1.027E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	4.413E-14	1.476E-14	1.792E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144765	6WH LOADOUT	08/30/12	Gross Alpha/Beta	Gross Alpha	1.424E-14	8.937E-15	9.754E-15	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	4.599E-14	1.441E-14	1.702E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144766	6WH LOADOUT	09/04/12	Gross Alpha/Beta	Gross Alpha	8.7E-17	4.169E-15	8.927E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.076E-14	1.696E-14	2.286E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144767	6WH LOADOUT	09/04/12	Gross Alpha/Beta	Gross Alpha	3.328E-15	5.708E-15	9.233E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.208E-14	1.833E-14	2.364E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144768	6WH LOADOUT	09/05/12	Gross Alpha/Beta	Gross Alpha	2.35E-15	5.521E-15	9.647E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.467E-14	1.765E-14	2.47E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD144769	6WH LOADOUT	09/05/12	Gross Alpha/Beta	Gross Alpha	5.372E-15	6.338E-15	9.039E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.316E-14	1.733E-14	2.315E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144770	6WH LOADOUT	09/05/12	Gross Alpha/Beta	Gross Alpha	8.69E-15	8.135E-15	1.049E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	2.217E-14	1.882E-14	2.687E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD144771	6WH LOADOUT	09/06/12	Gross Alpha/Beta	Gross Alpha	6.538E-15	6.795E-15	9.194E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.531E-14	1.851E-14	2.354E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air

Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD144772	6WH LOADOUT	09/06/12	Gross Alpha/Beta	Gross Alpha	2.113E-15	4.964E-15	8.675E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.661E-14	1.774E-14	2.221E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144773	6WH LOADOUT	09/06/12	Gross Alpha/Beta	Gross Alpha	4.407E-15	6.103E-15	9.233E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.387E-14	1.77E-14	2.364E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144774	6WH LOADOUT	09/10/12	Gross Alpha/Beta	Gross Alpha	8.6E-16	5.817E-15	1.12E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.756E-14	1.267E-14	1.919E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD144775	6WH LOADOUT	09/10/12	Gross Alpha/Beta	Gross Alpha	1.787E-15	5.57E-15	9.973E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.293E-14	1.212E-14	1.71E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144776	6WH LOADOUT	09/10/12	Gross Alpha/Beta	Gross Alpha	4.829E-14	5.979E-14	8.977E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.121E-13	1.662E-13	2.399E-13	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD144777	6WH LOADOUT	09/10/12	Gross Alpha/Beta	Gross Alpha	5.12E-15	6.967E-15	1.053E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.651E-14	1.192E-14	1.804E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD144778	6WH LOADOUT	09/11/12	Gross Alpha/Beta	Gross Alpha	4.339E-15	7.11E-15	1.13E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.274E-14	1.447E-14	1.937E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144779	6WH LOADOUT	09/11/12	Gross Alpha/Beta	Gross Alpha	7.775E-15	8.128E-15	1.125E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.913E-14	1.291E-14	1.928E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD144780	6WH LOADOUT	09/11/12	Gross Alpha/Beta	Gross Alpha	7.67E-15	8.018E-15	1.11E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.477E-14	1.341E-14	1.902E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144781	6WH LOADOUT	09/11/12	Gross Alpha/Beta	Gross Alpha	2.063E-15	6.429E-15	1.151E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.182E-14	1.457E-14	1.973E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144782	6WH LOADOUT	09/12/12	Gross Alpha/Beta	Gross Alpha	1.519E-14	9.325E-15	1.005E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	3.916E-14	1.389E-14	1.723E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144783	6WH LOADOUT	09/12/12	Gross Alpha/Beta	Gross Alpha	4.167E-15	6.828E-15	1.085E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.01E-14	1.478E-14	1.86E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144784	6WH LOADOUT	09/12/12	Gross Alpha/Beta	Gross Alpha	7.739E-15	8.091E-15	1.12E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.808E-14	1.59E-14	1.919E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144785	6WH LOADOUT	09/12/12	Gross Alpha/Beta	Gross Alpha	1.98E-15	6.169E-15	1.105E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.037E-14	1.597E-14	1.893E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144786	6WH LOADOUT	09/13/12	Gross Alpha/Beta	Gross Alpha	3.083E-15	6.513E-15	1.095E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.682E-14	1.454E-14	1.877E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144787	6WH LOADOUT	09/13/12	Gross Alpha/Beta	Gross Alpha	4.077E-15	6.681E-15	1.062E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.277E-14	1.481E-14	1.82E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144788	6WH LOADOUT	09/13/12	Gross Alpha/Beta	Gross Alpha	2.025E-14	1.76E-14	2.26E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	4.745E-14	2.697E-14	3.874E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144789	6WH LOADOUT	09/13/12	Gross Alpha/Beta	Gross Alpha	5.302E-15	7.214E-15	1.09E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.723E-14	1.349E-14	1.868E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144790	6WH LOADOUT	09/17/12	Gross Alpha/Beta	Gross Alpha	6.832E-15	7.282E-15	1.035E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	6.803E-14	1.974E-14	1.993E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144791	6WH LOADOUT	09/17/12	Gross Alpha/Beta	Gross Alpha	4.085E-15	6.015E-15	9.815E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.819E-14	1.726E-14	1.889E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144792	6WH LOADOUT	09/17/12	Gross Alpha/Beta	Gross Alpha	9.829E-15	7.868E-15	9.587E-15	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	4.48E-14	1.665E-14	1.845E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144793	6WH LOADOUT	09/18/12	Gross Alpha/Beta	Gross Alpha	7.961E-15	6.904E-15	8.812E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	2.236E-14	1.345E-14	1.696E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144794	6WH LOADOUT	09/19/12	Gross Alpha/Beta	Gross Alpha	4.45E-16	3.897E-15	8.775E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.406E-14	1.458E-14	1.689E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144795	6WH LOADOUT	09/19/12	Gross Alpha/Beta	Gross Alpha	4.67E-16	4.088E-15	9.204E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.19E-14	1.39E-14	1.772E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144796	6WH LOADOUT	09/19/12	Gross Alpha/Beta	Gross Alpha	3.683E-15	5.423E-15	8.85E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.665E-14	1.394E-14	1.704E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144797	6WH LOADOUT	09/20/12	Gross Alpha/Beta	Gross Alpha	4.53E-16	3.965E-15	8.926E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.335E-14	1.37E-14	1.718E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144798	6WH LOADOUT	09/20/12	Gross Alpha/Beta	Gross Alpha	5.422E-15	5.779E-15	8.218E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.125E-14	1.36E-14	1.582E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144799	6WH LOADOUT	09/20/12	Gross Alpha/Beta	Gross Alpha	4.721E-15	5.788E-15	8.775E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.169E-14	1.531E-14	1.689E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air

Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD144800	6WH LOADOUT	09/24/12	Gross Alpha/Beta	Gross Alpha	3.984E-15	5.949E-15	9.79E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.823E-14	1.239E-14	1.613E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144801	6WH LOADOUT	09/24/12	Gross Alpha/Beta	Gross Alpha	3.144E-15	5.924E-15	1.038E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.732E-14	1.169E-14	1.71E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144802	6WH LOADOUT	09/24/12	Gross Alpha/Beta	Gross Alpha	9.76E-16	5.013E-15	1.025E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.056E-14	1.195E-14	1.688E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144803	6WH LOADOUT	09/24/12	Gross Alpha/Beta	Gross Alpha	9.36E-16	4.81E-15	9.83E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.973E-14	1.147E-14	1.62E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144804	6WH LOADOUT	09/25/12	Gross Alpha/Beta	Gross Alpha	2.373E-15	4.471E-15	7.832E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.734E-14	1.041E-14	1.291E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144805	6WH LOADOUT	09/26/12	Gross Alpha/Beta	Gross Alpha	1.606E-15	2.399E-15	3.948E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.816E-14	6.579E-15	6.506E-15	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144806	6WH LOADOUT	09/26/12	Gross Alpha/Beta	Gross Alpha	1.727E-15	2.579E-15	4.245E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.887E-14	7.766E-15	6.995E-15	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144807	6WH LOADOUT	09/26/12	Gross Alpha/Beta	Gross Alpha	1.243E-15	2.341E-15	4.101E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.091E-14	6.973E-15	6.758E-15	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144808	6WH LOADOUT	09/27/12	Gross Alpha/Beta	Gross Alpha	5.537E-15	6.962E-15	1.084E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	6.927E-14	1.738E-14	1.786E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144809	6WH LOADOUT	09/27/12	Gross Alpha/Beta	Gross Alpha	-9E-17	4.617E-15	1.042E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.184E-14	1.537E-14	1.717E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144810	6WH LOADOUT	09/27/12	Gross Alpha/Beta	Gross Alpha	7.586E-15	7.458E-15	1.056E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	4.966E-14	1.53E-14	1.74E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144811	6WH LOADOUT	09/27/12	Gross Alpha/Beta	Gross Alpha	3.406E-15	6.417E-15	1.124E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.682E-14	1.571E-14	1.852E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144812	6WH LOADOUT	10/01/12	Gross Alpha/Beta	Gross Alpha	-7.39E-16	3.718E-15	9.193E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.541E-14	1.933E-14	2.504E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144813	6WH LOADOUT	10/01/12	Gross Alpha/Beta	Gross Alpha	1.445E-15	4.757E-15	8.995E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.64E-14	1.83E-14	2.45E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144814	6WH LOADOUT	10/01/12	Gross Alpha/Beta	Gross Alpha	3.61E-16	4.235E-15	8.995E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.296E-14	1.804E-14	2.45E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD144815	6WH LOADOUT	10/01/12	Gross Alpha/Beta	Gross Alpha	7.653E-15	6.865E-15	8.659E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	4.46E-14	1.901E-14	2.359E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144816	6WH LOADOUT	10/02/12	Gross Alpha/Beta	Gross Alpha	2.435E-15	5.033E-15	8.659E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.078E-14	1.727E-14	2.359E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD144817	6WH LOADOUT	10/02/12	Gross Alpha/Beta	Gross Alpha	2.717E-15	5.615E-15	9.661E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.54E-14	1.943E-14	2.632E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD144818	6WH LOADOUT	10/02/12	Gross Alpha/Beta	Gross Alpha	-7.69E-16	3.871E-15	9.573E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.102E-14	1.97E-14	2.608E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144819	6WH LOADOUT	10/02/12	Gross Alpha/Beta	Gross Alpha	3.726E-15	5.836E-15	9.275E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.368E-14	1.86E-14	2.527E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD144820	6WH LOADOUT	10/03/12	Gross Alpha/Beta	Gross Alpha	-7.45E-16	3.751E-15	9.275E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.714E-14	1.96E-14	2.527E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144821	6WH LOADOUT	10/03/12	Gross Alpha/Beta	Gross Alpha	2.729E-15	5.642E-15	9.706E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.442E-14	2.019E-14	2.644E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144822	6WH LOADOUT	10/03/12	Gross Alpha/Beta	Gross Alpha	4.759E-15	6.141E-15	9.113E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.58E-14	1.921E-14	2.482E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144823	6WH LOADOUT	10/03/12	Gross Alpha/Beta	Gross Alpha	1.62E-15	5.332E-15	1.008E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.343E-14	2.004E-14	2.746E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD144824	6WH LOADOUT	10/04/12	Gross Alpha/Beta	Gross Alpha	4.954E-15	6.392E-15	9.486E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	6.842E-14	2.215E-14	2.584E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144825	6WH LOADOUT	10/04/12	Gross Alpha/Beta	Gross Alpha	9.581E-15	7.351E-15	8.518E-15	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	6.209E-14	1.993E-14	2.32E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144826	6WH LOADOUT	10/04/12	Gross Alpha/Beta	Gross Alpha	7.882E-15	7.07E-15	8.918E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	6.978E-14	2.118E-14	2.429E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144827	6WH LOADOUT	10/04/12	Gross Alpha/Beta	Gross Alpha	1.062E-14	8.149E-15	9.443E-15	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	8.759E-14	2.329E-14	2.572E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air

Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD144828	6WH LOADOUT	10/08/12	Gross Alpha/Beta	Gross Alpha	8.24E-15	6.874E-15	8.53E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	4.997E-14	1.965E-14	2.43E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144829	6WH LOADOUT	10/08/12	Gross Alpha/Beta	Gross Alpha	3.875E-15	5.272E-15	8.387E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.563E-14	1.683E-14	2.39E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD144830	6WH LOADOUT	10/08/12	Gross Alpha/Beta	Gross Alpha	3.674E-15	4.999E-15	7.952E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.117E-14	1.646E-14	2.266E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD144831	6WH LOADOUT	10/09/12	Gross Alpha/Beta	Gross Alpha	3.493E-15	4.753E-15	7.561E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.006E-14	1.712E-14	2.154E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144832	6WH LOADOUT	10/09/12	Gross Alpha/Beta	Gross Alpha	4.79E-15	5.518E-15	8.147E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.364E-14	1.701E-14	2.321E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144833	6WH LOADOUT	10/09/12	Gross Alpha/Beta	Gross Alpha	6.706E-15	6.111E-15	7.984E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	3.911E-14	1.785E-14	2.275E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144834	6WH LOADOUT	10/09/12	Gross Alpha/Beta	Gross Alpha	-1.38E-15	2.288E-15	8.214E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.499E-14	1.799E-14	2.34E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144835	6WH LOADOUT	10/10/12	Gross Alpha/Beta	Gross Alpha	2.994E-15	5.132E-15	8.911E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	8.067E-15	1.719E-14	2.539E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD144836	6WH LOADOUT	10/11/12	Gross Alpha/Beta	Gross Alpha	1.923E-15	4.741E-15	9.156E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.218E-14	1.878E-14	2.609E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD144841	6WH LOADOUT	10/11/12	Gross Alpha/Beta	Gross Alpha	2.149E-14	1.077E-14	1.003E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	1.798E-13	2.585E-14	2.436E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144846	6WH LOADOUT	10/15/12	Gross Alpha/Beta	Gross Alpha	-1.913E-15	3.915E-15	9.82E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.436E-14	1.776E-14	2.385E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144847	6WH LOADOUT	10/15/12	Gross Alpha/Beta	Gross Alpha	8.462E-15	8.356E-15	1.111E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	3.68E-14	1.816E-14	2.699E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144848	6WH LOADOUT	10/15/12	Gross Alpha/Beta	Gross Alpha	3.433E-15	6.328E-15	1.02E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.44E-14	1.829E-14	2.478E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144849	6WH LOADOUT	10/15/12	Gross Alpha/Beta	Gross Alpha	4.497E-15	6.661E-15	1.016E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.691E-14	1.842E-14	2.467E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144850	6WH LOADOUT	10/16/12	Gross Alpha/Beta	Gross Alpha	2.339E-15	5.919E-15	1.016E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.98E-14	1.71E-14	2.467E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144851	6WH LOADOUT	10/16/12	Gross Alpha/Beta	Gross Alpha	1.048E-14	8.713E-15	1.076E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	3.781E-14	1.776E-14	2.613E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144852	6WH LOADOUT	10/17/12	Gross Alpha/Beta	Gross Alpha	3.024E-15	2.986E-15	3.971E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	3.348E-14	7.997E-15	9.644E-15	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144853	6WH LOADOUT	10/17/12	Gross Alpha/Beta	Gross Alpha	-2.533E-15	5.184E-15	1.3E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.431E-14	2.051E-14	3.158E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144854	6WH LOADOUT	10/17/12	Gross Alpha/Beta	Gross Alpha	2.838E-15	7.183E-15	1.233E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.754E-14	1.901E-14	2.994E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD144855	6WH LOADOUT	10/18/12	Gross Alpha/Beta	Gross Alpha	-4.304E-15	2.768E-15	1.057E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.966E-15	1.438E-14	2.566E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD144856	6WH LOADOUT	10/18/12	Gross Alpha/Beta	Gross Alpha	-9.84E-16	5.02E-15	1.111E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.435E-14	1.619E-14	2.699E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD144857	6WH LOADOUT	10/22/12	Gross Alpha/Beta	Gross Alpha	1.817E-15	2.725E-15	4.13E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.095E-14	5.409E-15	6.791E-15	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144858	6WH LOADOUT	10/23/12	Gross Alpha/Beta	Gross Alpha	2.685E-15	6.651E-15	1.115E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.607E-15	1.174E-14	1.834E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD144859	6WH LOADOUT	10/23/12	Gross Alpha/Beta	Gross Alpha	4.67E-16	5.913E-15	1.125E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.275E-14	1.503E-14	1.85E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144860	6WH LOADOUT	10/23/12	Gross Alpha/Beta	Gross Alpha	-2.628E-15	7.388E-15	1.666E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	6.464E-15	1.766E-14	2.739E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD144861	6WH LOADOUT	10/23/12	Gross Alpha/Beta	Gross Alpha	-1.948E-15	5.478E-15	1.235E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.355E-14	1.625E-14	2.031E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144862	6WH LOADOUT	10/24/12	Gross Alpha/Beta	Gross Alpha	6.268E-15	8.004E-15	1.161E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.005E-14	1.513E-14	1.91E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144863	6WH LOADOUT	10/24/12	Gross Alpha/Beta	Gross Alpha	3.434E-15	6.342E-15	1.009E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.328E-14	1.385E-14	1.659E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air

Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD144864	6WH LOADOUT	10/24/12	Gross Alpha/Beta	Gross Alpha	-1.863E-15	1.558E-14	3.205E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	-4.146E-15	3.19E-14	5.27E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD144865	6WH LOADOUT	10/24/12	Gross Alpha/Beta	Gross Alpha	1.33E-15	1.684E-14	3.205E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.073E-14	3.498E-14	5.27E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD144866	6WH LOADOUT	10/25/12	Gross Alpha/Beta	Gross Alpha	2.988E-15	7.401E-15	1.241E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.606E-15	1.276E-14	2.041E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD144867	6WH LOADOUT	10/25/12	Gross Alpha/Beta	Gross Alpha	-6.29E-16	5.261E-15	1.082E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.38E-14	1.367E-14	1.779E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144876	6WH LOADOUT	10/29/12	Gross Alpha/Beta	Gross Alpha	1.003E-14	7.99E-15	1.013E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	2.404E-14	1.469E-14	1.698E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144877	6WH LOADOUT	10/29/12	Gross Alpha/Beta	Gross Alpha	3.682E-15	6.225E-15	1.058E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.217E-14	1.407E-14	1.773E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD144878	6WH LOADOUT	10/30/12	Gross Alpha/Beta	Gross Alpha	9.305E-15	7.995E-15	1.053E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	3.503E-14	1.619E-14	1.765E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144879	6WH LOADOUT	10/30/12	Gross Alpha/Beta	Gross Alpha	3.602E-15	6.09E-15	1.035E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.638E-14	1.695E-14	1.735E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144880	6WH LOADOUT	10/31/12	Gross Alpha/Beta	Gross Alpha	9.603E-15	8.25E-15	1.087E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	3.467E-14	1.658E-14	1.822E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144881	6WH LOADOUT	11/01/12	Gross Alpha/Beta	Gross Alpha	1.442E-15	5.433E-15	1.077E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.019E-14	1.409E-14	1.805E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD144882	6WH LOADOUT	11/01/12	Gross Alpha/Beta	Gross Alpha	1.087E-14	8.653E-15	1.097E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	4.692E-14	1.777E-14	1.839E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144883	6WH LOADOUT	10/31/12	Gross Alpha/Beta	Gross Alpha	5.159E-15	7.099E-15	1.133E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.386E-14	1.797E-14	1.9E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144884	6WH LOADOUT	11/01/12	Gross Alpha/Beta	Gross Alpha	9.473E-15	8.139E-15	1.072E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	5.388E-14	1.804E-14	1.797E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144885	6WH LOADOUT	11/01/12	Gross Alpha/Beta	Gross Alpha	-2.198E-15	4.008E-15	1.173E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.936E-14	1.893E-14	1.965E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144886	6WH LOADOUT	11/05/12	Gross Alpha/Beta	Gross Alpha	1.376E-14	9.612E-15	1.142E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	4.622E-14	1.519E-14	1.721E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD144887	6WH LOADOUT	11/05/12	Gross Alpha/Beta	Gross Alpha	1.328E-15	5.735E-15	1.08E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.281E-14	1.223E-14	1.627E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD144888	6WH LOADOUT	11/05/12	Gross Alpha/Beta	Gross Alpha	7.177E-15	8.053E-15	1.168E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.664E-14	1.23E-14	1.759E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD150897	6WH LOADOUT	11/05/12	Gross Alpha/Beta	Gross Alpha	2.7E-16	5.417E-15	1.098E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.086E-14	1.098E-14	1.655E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD150898	6WH LOADOUT	11/06/12	Gross Alpha/Beta	Gross Alpha	2.98E-16	5.974E-15	1.211E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.029E-14	1.311E-14	1.825E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD150899	6WH LOADOUT	11/06/12	Gross Alpha/Beta	Gross Alpha	5.259E-15	7.939E-15	1.258E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.915E-14	1.558E-14	1.896E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150900	6WH LOADOUT	11/06/12	Gross Alpha/Beta	Gross Alpha	5.184E-15	7.825E-15	1.24E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.155E-14	1.351E-14	1.869E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD150901	6WH LOADOUT	11/07/12	Gross Alpha/Beta	Gross Alpha	2.472E-15	6.326E-15	1.117E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.22E-14	1.249E-14	1.684E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD150902	6WH LOADOUT	11/08/12	Gross Alpha/Beta	Gross Alpha	3.699E-15	6.937E-15	1.157E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.6E-14	1.433E-14	1.744E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150903	6WH LOADOUT	11/08/12	Gross Alpha/Beta	Gross Alpha	2.655E-15	6.795E-15	1.2E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.685E-14	1.375E-14	1.808E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD150912	6WH LOADOUT	11/12/12	Gross Alpha/Beta	Gross Alpha	3.74E-16	4.031E-15	9.316E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.322E-14	1.683E-14	2.509E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD150913	6WH LOADOUT	11/12/12	Gross Alpha/Beta	Gross Alpha	1.51E-15	4.656E-15	9.4E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.926E-14	1.746E-14	2.532E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150914	6WH LOADOUT	11/13/12	Gross Alpha/Beta	Gross Alpha	3.693E-15	5.528E-15	9.193E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.314E-14	1.826E-14	2.476E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150915	6WH LOADOUT	11/13/12	Gross Alpha/Beta	Gross Alpha	4.01E-16	4.32E-15	9.985E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.407E-14	1.791E-14	2.689E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air

Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD150916	6WH LOADOUT	11/14/12	Gross Alpha/Beta	Gross Alpha	-7.59E-16	3.393E-15	9.443E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.655E-14	1.73E-14	2.543E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150917	6WH LOADOUT	11/14/12	Gross Alpha/Beta	Gross Alpha	2.31E-15	4.525E-15	8.216E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.929E-14	1.484E-14	2.213E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD150918	6WH LOADOUT	11/14/12	Gross Alpha/Beta	Gross Alpha	3.567E-15	5.339E-15	8.88E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.759E-14	1.569E-14	2.392E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD150919	6WH LOADOUT	11/15/12	Gross Alpha/Beta	Gross Alpha	6.042E-15	6.498E-15	9.4E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.998E-14	1.752E-14	2.532E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150920	6WH LOADOUT	11/15/12	Gross Alpha/Beta	Gross Alpha	7.408E-15	7.106E-15	9.706E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	4.202E-14	1.815E-14	2.614E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150921	6WH LOADOUT	11/15/12	Gross Alpha/Beta	Gross Alpha	3.367E-15	5.039E-15	8.381E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.205E-14	1.614E-14	2.257E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150922	6WH LOADOUT	11/19/12	Gross Alpha/Beta	Gross Alpha	2.599E-15	8.452E-15	1.161E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	6.947E-14	1.833E-14	1.686E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150923	6WH LOADOUT	11/19/12	Gross Alpha/Beta	Gross Alpha	1.456E-15	7.811E-15	1.11E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.943E-14	1.618E-14	1.612E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150924	6WH LOADOUT	11/19/12	Gross Alpha/Beta	Gross Alpha	2.299E-15	7.474E-15	1.027E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	7.231E-14	1.702E-14	1.491E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150925	6WH LOADOUT	11/20/12	Gross Alpha/Beta	Gross Alpha	-3.904E-15	6.693E-15	1.176E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	7.451E-14	1.888E-14	1.708E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150926	6WH LOADOUT	11/20/12	Gross Alpha/Beta	Gross Alpha	7.206E-15	9.903E-15	1.213E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.972E-14	1.732E-14	1.761E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150927	6WH LOADOUT	11/20/12	Gross Alpha/Beta	Gross Alpha	2.788E-15	9.064E-15	1.245E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.181E-14	1.786E-14	1.809E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150928	6WH LOADOUT	11/21/12	Gross Alpha/Beta	Gross Alpha	1.641E-15	8.805E-15	1.251E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.425E-14	1.812E-14	1.817E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150929	6WH LOADOUT	11/21/12	Gross Alpha/Beta	Gross Alpha	3.941E-15	9.353E-15	1.245E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	6.206E-14	1.869E-14	1.809E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150930	6WH LOADOUT	11/21/12	Gross Alpha/Beta	Gross Alpha	4.468E-15	8.449E-15	1.092E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.635E-14	1.655E-14	1.586E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150938	6WH LOADOUT	11/26/12	Gross Alpha/Beta	Gross Alpha	4.808E-15	7.199E-15	1.194E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	6.082E-14	1.593E-14	1.755E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150939	6WH LOADOUT	11/26/12	Gross Alpha/Beta	Gross Alpha	-3.995E-15	4.541E-15	1.331E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.182E-14	1.539E-14	1.956E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150940	6WH LOADOUT	11/26/12	Gross Alpha/Beta	Gross Alpha	1.74E-15	6.507E-15	1.25E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	7.766E-14	1.784E-14	1.838E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150941	6WH LOADOUT	11/27/12	Gross Alpha/Beta	Gross Alpha	-1.627E-15	5.516E-15	1.307E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.564E-14	1.648E-14	1.921E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150942	6WH LOADOUT	11/27/12	Gross Alpha/Beta	Gross Alpha	5.603E-15	7.174E-15	1.142E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.417E-14	1.4E-14	1.679E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150943	6WH LOADOUT	11/27/12	Gross Alpha/Beta	Gross Alpha	5.335E-15	7.988E-15	1.325E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.498E-14	1.466E-14	1.947E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150944	6WH LOADOUT	11/28/12	Gross Alpha/Beta	Gross Alpha	-1.55E-15	5.255E-15	1.245E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	6.135E-14	1.643E-14	1.83E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150945	6WH LOADOUT	11/28/12	Gross Alpha/Beta	Gross Alpha	1.778E-15	6.651E-15	1.278E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.158E-14	1.492E-14	1.878E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150946	6WH LOADOUT	11/29/12	Gross Alpha/Beta	Gross Alpha	6.49E-16	6.205E-15	1.267E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.698E-14	1.437E-14	1.862E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150947	6WH LOADOUT	11/29/12	Gross Alpha/Beta	Gross Alpha	2.94E-15	7.114E-15	1.295E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.48E-14	1.334E-14	1.903E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD150948	6WH LOADOUT	12/03/12	Gross Alpha/Beta	Gross Alpha	0	4.27E-15	9.441E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.542E-14	1.494E-14	2.447E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD150949	6WH LOADOUT	12/04/12	Gross Alpha/Beta	Gross Alpha	7.657E-15	8.005E-15	1.102E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.776E-14	1.833E-14	2.857E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD150950	6WH LOADOUT	12/05/12	Gross Alpha/Beta	Gross Alpha	1.159E-14	8.631E-15	1.001E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
				Gross Beta	8.973E-15	1.514E-14	2.593E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air

Table B-1. SLDS Perimeter Air Data Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD150951	6WH LOADOUT	12/06/12	Gross Alpha/Beta	Gross Alpha	2.122E-15	5.117E-15	9.162E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	8.216E-15	1.386E-14	2.374E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD150960	6WH LOADOUT	12/10/12	Gross Alpha/Beta	Gross Alpha	1.186E-15	5.205E-15	1.024E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.504E-14	1.697E-14	2.654E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD150961	6WH LOADOUT	12/11/12	Gross Alpha/Beta	Gross Alpha	8.148E-15	7.666E-15	1.005E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	3.198E-14	1.73E-14	2.605E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD150962	6WH LOADOUT	12/12/12	Gross Alpha/Beta	Gross Alpha	8.262E-15	7.774E-15	1.02E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	1.891E-14	1.635E-14	2.642E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD150963	6WH LOADOUT	12/13/12	Gross Alpha/Beta	Gross Alpha	3.524E-15	6.136E-15	1.015E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.35E-14	1.84E-14	2.63E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150964	6WH LOADOUT	12/17/12	Gross Alpha/Beta	Gross Alpha	2.99E-15	7.204E-15	1.137E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.532E-14	1.656E-14	1.883E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150965	6WH LOADOUT	12/18/12	Gross Alpha/Beta	Gross Alpha	8.045E-15	7.966E-15	9.967E-15	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	6.502E-14	1.603E-14	1.651E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150966	6WH LOADOUT	12/18/12	Gross Alpha/Beta	Gross Alpha	1.712E-15	6.605E-15	1.11E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	8.392E-14	1.884E-14	1.839E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150967	6WH LOADOUT	12/18/12	Gross Alpha/Beta	Gross Alpha	3.614E-15	6.512E-15	9.719E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	7.683E-14	1.677E-14	1.61E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150968	6WH LOADOUT	12/19/12	Gross Alpha/Beta	Gross Alpha	1.505E-15	5.807E-15	9.759E-15	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	6.029E-14	1.54E-14	1.617E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150969	6WH LOADOUT	12/19/12	Gross Alpha/Beta	Gross Alpha	6.769E-15	8.467E-15	1.148E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	9.155E-14	1.988E-14	1.902E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150970	6WH LOADOUT	12/19/12	Gross Alpha/Beta	Gross Alpha	6.99E-15	7.697E-15	1.001E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	8.397E-14	1.767E-14	1.658E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150971	6WH LOADOUT	12/20/12	Gross Alpha/Beta	Gross Alpha	7.929E-15	1.162E-14	1.649E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.643E-14	1.683E-14	2.732E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD150972	6WH LOADOUT	12/20/12	Gross Alpha/Beta	Gross Alpha	1.49E-14	1.348E-14	1.627E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
				Gross Beta	2.856E-14	1.82E-14	2.694E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD150978	6WH LOADOUT	12/26/12	Gross Alpha/Beta	Gross Alpha	1.605E-15	1.044E-14	1.302E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	2.26E-14	1.317E-14	1.821E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD150979	6WH LOADOUT	12/26/12	Gross Alpha/Beta	Gross Alpha	-5.335E-15	9.081E-15	1.338E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.213E-14	1.225E-14	1.87E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD150980	6WH LOADOUT	12/26/12	Gross Alpha/Beta	Gross Alpha	4.32E-16	9.318E-15	1.191E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	9.483E-15	1.075E-14	1.665E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
SLD150981	6WH LOADOUT	12/27/12	Gross Alpha/Beta	Gross Alpha	-4.494E-15	7.649E-15	1.127E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.146E-14	1.047E-14	1.575E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD150982	6WH LOADOUT	12/27/12	Gross Alpha/Beta	Gross Alpha	-4.115E-15	9.248E-15	1.32E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.342E-14	1.226E-14	1.845E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD150983	6WH LOADOUT	12/27/12	Gross Alpha/Beta	Gross Alpha	-4.042E-15	9.084E-15	1.296E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	1.748E-14	1.255E-14	1.812E-14	uCi/mL	U	T04, T05	SLDS (General Area)-Perimeter Air
SLD150984	6WH LOADOUT	12/31/12	Gross Alpha/Beta	Gross Alpha	-2.202E-15	5.855E-15	1.539E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	3.042E-14	1.931E-14	2.408E-14	uCi/mL	J	T04	SLDS (General Area)-Perimeter Air
SLD150985	6WH LOADOUT	12/31/12	Gross Alpha/Beta	Gross Alpha	-2.1E-15	5.582E-15	1.468E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	5.535E-14	2.095E-14	2.296E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air
SLD150986	6WH LOADOUT	12/31/12	Gross Alpha/Beta	Gross Alpha	-6.56E-16	6.71E-15	1.558E-14	uCi/mL	UJ	T06	SLDS (General Area)-Perimeter Air
				Gross Beta	4.279E-14	2.075E-14	2.438E-14	uCi/mL	=	(blank)	SLDS (General Area)-Perimeter Air

µCi/mL--microcurie(s) per milliliter

Table B-2. SLDS TLD (External Gamma Radiation) Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD141536	DA-1	03/26/12	Radiological	External gamma radiation	15.1	0	0.1	mrem	J	Y01	SLDS Air (TLDs)-Environmental Monitoring
SLD141536-1	DA-1dup	03/26/12	Radiological	External gamma radiation	16.1	0	0.1	mrem	J	Y01	SLDS Air (TLDs)-Environmental Monitoring
SLD141537	DA-2	03/26/12	Radiological	External gamma radiation	18.9	0	0.1	mrem	J	Y01	SLDS Air (TLDs)-Environmental Monitoring
SLD141538	DA-3	03/26/12	Radiological	External gamma radiation	16.2	0	0.1	mrem	J	Y01	SLDS Air (TLDs)-Environmental Monitoring
SLD141539	DA-6	03/26/12	Radiological	External gamma radiation	16.7	0	0.1	mrem	J	Y01	SLDS Air (TLDs)-Environmental Monitoring
SLD141540	DA-1	07/05/12	Radiological	External gamma radiation	25.7	0	0.1	mrem	J	Y01	SLDS Air (TLDs)-Environmental Monitoring
SLD141540-1	DA-1dup	07/05/12	Radiological	External gamma radiation	24.7	0	0.1	mrem	J	Y01	SLDS Air (TLDs)-Environmental Monitoring
SLD141541	DA-2	07/05/12	Radiological	External gamma radiation	27.1	0	0.1	mrem	J	Y01	SLDS Air (TLDs)-Environmental Monitoring
SLD141542	DA-3	07/05/12	Radiological	External gamma radiation	25.5	0	0.1	mrem	J	Y01	SLDS Air (TLDs)-Environmental Monitoring
SLD141543	DA-6	07/05/12	Radiological	External gamma radiation	26.8	0	0.1	mrem	J	Y01	SLDS Air (TLDs)-Environmental Monitoring
SLD141544	DA-1	10/01/12	Radiological	External gamma radiation	22.3	0	0.1	mrem	J	Y01	SLDS Air (TLDs)-Environmental Monitoring
SLD141544-1	DA-1dup	10/01/12	Radiological	External gamma radiation	24.3	0	0.1	mrem	J	Y01	SLDS Air (TLDs)-Environmental Monitoring
SLD141545	DA-2	10/01/12	Radiological	External gamma radiation	26.2	0	0.1	mrem	J	Y01	SLDS Air (TLDs)-Environmental Monitoring
SLD141546	DA-3	10/01/12	Radiological	External gamma radiation	24.1	0	0.1	mrem	J	Y01	SLDS Air (TLDs)-Environmental Monitoring
SLD141547	DA-6	10/01/12	Radiological	External gamma radiation	28	0	0.1	mrem	J	Y01	SLDS Air (TLDs)-Environmental Monitoring
SLD151656	DA-1	01/07/13	Radiological	External gamma radiation	17	0	0.1	mrem	J	Y01	SLDS Air (TLDs)-Environmental Monitoring
SLD151657	DA-1dup	01/07/13	Radiological	External gamma radiation	17	0	0.1	mrem	J	Y01	SLDS Air (TLDs)-Environmental Monitoring
SLD151657-1	DA-2	01/07/13	Radiological	External gamma radiation	18.9	0	0.1	mrem	J	Y01	SLDS Air (TLDs)-Environmental Monitoring
SLD151658	DA-3	01/07/13	Radiological	External gamma radiation	17.6	0	0.1	mrem	J	Y01	SLDS Air (TLDs)-Environmental Monitoring
SLD151659	DA-6	01/07/13	Radiological	External gamma radiation	19.1	0	0.1	mrem	J	Y01	SLDS Air (TLDs)-Environmental Monitoring

mrem--millirem

Table B-3. SLDS Radon-222 Results for CY 2012

Sample Name	Station Name	Sample Collection Date	Method Type	Analyte Name	Analytical Result	Measurement Error	Detection Limit	Units	Validation Qualifier	Validation Reason Code	Sampling Event Name
SLD141318	DA-1	07/05/12	Radiological	Radon-222	0.6	0	0.2	pCi/L	J	Y01	SLDS Air (Alpha Tracks)-Environmental Monitoring
SLD141318-1	DA-1dup	07/05/12	Radiological	Radon-222	0.9	0	0.2	pCi/L	J	Y01	SLDS Air (Alpha Tracks)-Environmental Monitoring
SLD141319	DA-2	07/05/12	Radiological	Radon-222	0.7	0	0.2	pCi/L	J	Y01	SLDS Air (Alpha Tracks)-Environmental Monitoring
SLD141320	DA-3	07/05/12	Radiological	Radon-222	0.3	0	0.2	pCi/L	UJ	Y01	SLDS Air (Alpha Tracks)-Environmental Monitoring
SLD141321	DA-6	07/05/12	Radiological	Radon-222	0.6	0	0.2	pCi/L	J	Y01	SLDS Air (Alpha Tracks)-Environmental Monitoring
SLD141530	Dl-1	07/05/12	Radiological	Radon-222	1.6	0	0.2	pCi/L	J	Y01	SLDS Air (Alpha Tracks)-Environmental Monitoring
SLD141531	Dl-2	07/05/12	Radiological	Radon-222	1.7	0	0.2	pCi/L	J	Y01	SLDS Air (Alpha Tracks)-Environmental Monitoring
SLD151628	DA-1	01/07/13	Radiological	Radon-222	0.2	0	0.2	pCi/L	J	Y01	SLDS Air (Alpha Tracks)-Environmental Monitoring
SLD151628-1	DA-1dup	01/07/13	Radiological	Radon-222	0.4	0	0.2	pCi/L	J	Y01	SLDS Air (Alpha Tracks)-Environmental Monitoring
SLD151629	DA-2	01/07/13	Radiological	Radon-222	0.3	0	0.2	pCi/L	J	Y01	SLDS Air (Alpha Tracks)-Environmental Monitoring
SLD151630	DA-3	41281	Radiological	Radon-222	0.2	0	0.2	pCi/L	UJ	Y01	SLDS Air (Alpha Tracks)-Environmental Monitoring
SLD151631	DA-6	41281	Radiological	Radon-222	0.3	0	0.2	pCi/L	J	Y01	SLDS Air (Alpha Tracks)-Environmental Monitoring
SLD151636	DI-1	41281	Radiological	Radon-222	1	0	0.2	pCi/L	J	Y01	SLDS Air (Alpha Tracks)-Environmental Monitoring
SLD151637	DI-2	41281	Radiological	Radon-222	1	0	0.2	pCi/L	J	Y01	SLDS Air (Alpha Tracks)-Environmental Monitoring

APPENDIX C

STORM-WATER, WASTE-WATER, AND EXCAVATION-WATER DATA

(On CD-ROM on the Back Cover of this Report)

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Table C-1. First Quarter Self-Monitoring Report for Excavation-Water Discharge at SLDS During CY 2012

Parameter	Batch Number	Date of Discharge	Batch Results[a]		Amount Discharged (Gallons)	Total Activity per Discharge[b] (Ci)	MSD Discharge Limit		SOR
Gross Alpha (raw water)	SLDS-BK492	01/03/12 (City Property)	23	pCi/L	1,000	8.7E-08	3,000	pCi/L	0.03
Gross Beta			<11	pCi/L		2.1E-08	N/A		
Th-228			<0.5	pCi/L		9.7E-10	2,000	pCi/L	
Th-230			22	pCi/L		8.3E-08	1,000	pCi/L	
Th-232			<0.2	pCi/L		3.6E-10	300	pCi/L	
Uranium (KPA)			10	pCi/L		3.8E-08	3,000	pCi/L	
Ra-226[c]			2	pCi/L		7.6E-09	10	pCi/L	
Ra-228[d,e]			<0.5	pCi/L		9.7E-10	30	pCi/L	
TSS			20	mg/L		-	-		
Gross Alpha (raw water)	SLDS-BK493	01/25/12 - 01/30/12 (6WH)	22	pCi/L	43,968	3.7E-06	3,000	pCi/L	0.01
Gross Beta			18	pCi/L		3.0E-06	N/A		
Th-228			<0.3	pCi/L		2.7E-08	2,000	pCi/L	
Th-230			1	pCi/L		1.7E-07	1,000	pCi/L	
Th-232			<0.3	pCi/L		2.7E-08	300	pCi/L	
Uranium (KPA)			24	pCi/L		4.0E-06	3,000	pCi/L	
Ra-226[c]			<2	pCi/L		1.3E-07	10	pCi/L	
Ra-228[d,e]			<0.3	pCi/L		2.7E-08	30	pCi/L	
TSS			23	mg/L		-	-		
Gross Alpha (raw water)	SLDS-BK494	02/07/12 - 02/23/12 (6WH)	28	pCi/L	42,288	4.5E-06	3,000	pCi/L	0.02
Gross Beta			21	pCi/L		3.4E-06	N/A		
Th-228			0.5	pCi/L		8.3E-08	2,000	pCi/L	
Th-230			3	pCi/L		4.8E-07	1,000	pCi/L	
Th-232			<0.5	pCi/L		3.8E-08	300	pCi/L	
Uranium (KPA)			32	pCi/L		5.1E-06	3,000	pCi/L	
Ra-226[c]			<2	pCi/L		1.3E-07	10	pCi/L	
Ra-228[d,e]			0.5	pCi/L		8.3E-08	30	pCi/L	
TSS			47	mg/L		-	-		
Gross Alpha (raw water)	SLDS-BK495	02/09/12 (City Property)	<9	pCi/L	12,554	2.1E-07	3,000	pCi/L	0.01
Gross Beta			16	pCi/L		7.6E-07	N/A		
Th-228			<0.2	pCi/L		4.5E-09	2,000	pCi/L	
Th-230			0.4	pCi/L		1.9E-08	1,000	pCi/L	
Th-232			<0.4	pCi/L		9.7E-09	300	pCi/L	
Uranium (KPA)			10	pCi/L		4.8E-07	3,000	pCi/L	
Ra-226[c]			<3	pCi/L		6.3E-08	10	pCi/L	
Ra-228[d,e]			<0.2	pCi/L		4.5E-09	30	pCi/L	
TSS			<2	mg/L		-	-		
Gross Alpha (raw water)	SLDS-BK496	03/14/12 - 03/27/12 (6WH)	13	pCi/L	61,731	3.0E-06	3,000	pCi/L	0.01
Gross Beta			<11	pCi/L		1.3E-06	N/A		
Th-228			<1	pCi/L		7.6E-08	2,000	pCi/L	
Th-230			2	pCi/L		5.1E-07	1,000	pCi/L	
Th-232			<0.5	pCi/L		4.9E-08	300	pCi/L	
Uranium (KPA)			15	pCi/L		3.5E-06	3,000	pCi/L	
Ra-226[c]			<2	pCi/L		2.3E-07	10	pCi/L	
Ra-228[d,e]			<1	pCi/L		7.6E-08	30	pCi/L	
TSS			38	mg/L		-	-		

Total Activity Discharged in 1st Quarter of CY 2012 (Ci)	
Th-228	1.9E-07
Th-230	1.3E-06
Th-232	1.2E-07
Uranium (KPA)	1.3E-05
Ra-226	5.6E-07
Ra-228[b]	1.9E-07

Total Activity Discharged through 03/31/12 (Ci)	
Th-228	1.9E-07
Th-230	1.3E-06
Th-232	1.2E-07
Uranium (KPA)	1.3E-05
Ra-226	5.6E-07
Ra-228[b]	1.9E-07

Total Volume Discharged in 1st Quarter of CY 2012 (gallons)	
Gallons	161,541

Total Volume Discharged through 03/31/12 (gallons)	
Gallons	161,541

NOTES:

[a] Non detect sample results are converted to half the detection limit.

[b] The weighted average was used to calculate the total activity.

[c] 10 *CFR* 20 limit is 600 pCi/L for Ra-226.

[d] Ra-228 assumed to be in equilibrium with Th-228.

[e] 10 *CFR* 20 limit is 600 pCi/L for Ra-228.

mg/L - milligram(s) per liter

N/A - Not applicable

SOR - sum of ratios

pCi/L - picocurie(s) per liter

Ci - curie(s)

- No data/No limit

Table C-1. Second Quarter Self-Monitoring Report for Excavation-Water Discharge at SLDS During CY 2012

Parameter	Batch Number	Date of Discharge	Batch Results[a]		Amount Discharged (Gallons)	Total Activity per Discharge[b] (Ci)	MSD Discharge Limit		SOR
Gross Alpha (raw water)	SLDS-BK497	04/05/12 - 04/30/12 (6WH)	<9	pCi/L	86,370	1.4E-06	3,000	pCi/L	0.01
Gross Beta			<11	pCi/L		1.7E-06	N/A		
Th-228			<1	pCi/L		1.2E-07	2,000	pCi/L	
Th-230			2	pCi/L		6.5E-07	1,000	pCi/L	
Th-232			<0.3	pCi/L		4.7E-08	300	pCi/L	
Uranium (KPA)			7	pCi/L		2.3E-06	3,000	pCi/L	
Ra-226[c]			<2	pCi/L		3.1E-07	10	pCi/L	
Ra-228[d,e]			<1	pCi/L		1.2E-07	30	pCi/L	
TSS			58	mg/L		-	-		
Gross Alpha (raw water)	SLDS-BK498	05/10/12 (6WH)	<9	pCi/L	18,446	3.1E-07	3,000	pCi/L	0.01
Gross Beta			<12	pCi/L		4.1E-07	N/A		
Th-228			<1	pCi/L		2.7E-08	2,000	pCi/L	
Th-230			2	pCi/L		1.4E-07	1,000	pCi/L	
Th-232			<1	pCi/L		2.4E-08	300	pCi/L	
Uranium (KPA)			11	pCi/L		7.7E-07	3,000	pCi/L	
Ra-226[c]			<2	pCi/L		7.3E-08	10	pCi/L	
Ra-228[d,e]			<1	pCi/L		2.7E-08	30	pCi/L	
TSS			16	mg/L		-	-		
Gross Alpha (raw water)	SLDS-BK499	06/13/12 (6WH)	<20	pCi/L	28,438	1.1E-06	3,000	pCi/L	0.01
Gross Beta			<25	pCi/L		1.3E-06	N/A		
Th-228			0.4	pCi/L		4.3E-08	2,000	pCi/L	
Th-230			1	pCi/L		1.1E-07	1,000	pCi/L	
Th-232			0.3	pCi/L		3.2E-08	300	pCi/L	
Uranium (KPA)			14	pCi/L		1.5E-06	3,000	pCi/L	
Ra-226[c]			<2	pCi/L		8.3E-08	10	pCi/L	
Ra-228[d,e]			0.4	pCi/L		4.3E-08	30	pCi/L	
TSS			38	mg/L		-	-		

Total Activity Discharged in 2nd Quarter of CY 2012 (Ci)	
Th-228	1.9E-07
Th-230	9.0E-07
Th-232	1.0E-07
Uranium (KPA)	4.6E-06
Ra-226	4.6E-07
Ra-228[b]	1.9E-07

Total Activity Discharged through 06/30/12 (Ci)	
Th-228	3.9E-07
Th-230	2.2E-06
Th-232	2.3E-07
Uranium (KPA)	1.8E-05
Ra-226	1.0E-06
Ra-228[b]	3.9E-07

Total Volume Discharged in 2nd Quarter of CY 2012 (gallons)	
Gallons	133,254

Total Volume Discharged through 06/30/12 (gallons)	
Gallons	294,795

NOTES:

[a] Non detect sample results are converted to half the detection limit.

[b] The weighted average was used to calculate the total activity.

[c] 10 *CFR* 20 limit is 600 pCi/L for Ra-226.

[d] Ra-228 assumed to be in equilibrium with Th-228.

[e] 10 *CFR* 20 limit is 600 pCi/L for Ra-228.

mg/L - milligram(s) per liter

N/A - Not applicable

SOR - sum of ratios

pCi/L - picocurie(s) per liter

Table C-1. Third Quarter Self-Monitoring Report for Excavation-Water Discharge at SLDS During CY 2012

Parameter	Batch Number	Date of Discharge	Batch Results[a]		Amount Discharged (Gallons)	Total Activity per Discharge[b] (Ci)	MSD Discharge Limit		SOR
Gross Alpha (raw water)	SLDS-BK500	07/25/12 (6WH)	13	pCi/L	15,780	7.7E-07	3,000	pCi/L	0.01
Gross Beta			12	pCi/L		7.4E-07	N/A		
Th-228			<1	pCi/L		1.5E-08	2,000	pCi/L	
Th-230			1	pCi/L		6.0E-08	1,000	pCi/L	
Th-232			<0.2	pCi/L		6.6E-09	300	pCi/L	
Uranium (KPA)			24	pCi/L		1.4E-06	3,000	pCi/L	
Ra-226[c]			<2	pCi/L		5.1E-08	10	pCi/L	
Ra-228[d,e]			<1	pCi/L		1.5E-08	30	pCi/L	
TSS			5	mg/L		-	-		
Gross Alpha (raw water)	SLDS-BK501	08/08/12 -08/29/12 (6WH)	10	pCi/L	41,182	1.6E-06	3,000	pCi/L	0.01
Gross Beta			<12	pCi/L		9.7E-07	N/A		
Th-228			<0.4	pCi/L		2.9E-08	2,000	pCi/L	
Th-230			1	pCi/L		1.6E-07	1,000	pCi/L	
Th-232			<0.5	pCi/L		3.5E-08	300	pCi/L	
Uranium (KPA)			11	pCi/L		1.7E-06	3,000	pCi/L	
Ra-226[c]			<2	pCi/L		1.6E-07	10	pCi/L	
Ra-228[d,e]			<0.4	pCi/L		2.9E-08	30	pCi/L	
TSS			12	mg/L		-	-		
Gross Alpha (raw water)	SLDS-BK502	09/01/12 - 09/26/12 (6WH)	<10	pCi/L	111,108	2.1E-06	3,000	pCi/L	0.01
Gross Beta			<12	pCi/L		2.6E-06	N/A		
Th-228			<0.5	pCi/L		1.1E-07	2,000	pCi/L	
Th-230			1	pCi/L		4.2E-07	1,000	pCi/L	
Th-232			<0.4	pCi/L		9.0E-08	300	pCi/L	
Uranium (KPA)			5	pCi/L		2.1E-06	3,000	pCi/L	
Ra-226[c]			<2	pCi/L		5.1E-07	10	pCi/L	
Ra-228[d,e]			<0.5	pCi/L		1.1E-07	30	pCi/L	
TSS			49	mg/L		-	-		

Total Activity Discharged in 3rd Quarter of CY 2012 (Ci)	
Th-228	1.6E-07
Th-230	6.4E-07
Th-232	1.3E-07
Uranium (KPA)	5.2E-06
Ra-226	7.2E-07
Ra-228[b]	1.6E-07

Total Activity Discharged through 09/30/12 (Ci)	
Th-228	5.4E-07
Th-230	2.8E-06
Th-232	3.6E-07
Uranium (KPA)	2.3E-05
Ra-226	1.7E-06
Ra-228[b]	5.4E-07

Total Volume Discharged in 3rd Quarter of CY 2012 (gallons)	
Gallons	168,070

Total Volume Discharged through 09/30/12 (gallons)	
Gallons	462,865

NOTES:

[a] Non detect sample results are converted to half the detection limit.

[b] The weighted average was used to calculate the total activity.

[c] 10 *CFR* 20 limit is 600 pCi/L for Ra-226.

[d] Ra-228 assumed to be in equilibrium with Th-228.

[e] 10 *CFR* 20 limit is 600 pCi/L for Ra-228.

mg/L - milligram(s) per liter

N/A - Not applicable

SOR - sum of ratios

pCi/L - picocurie(s) per liter

Table C-1. Fourth Quarter Self-Monitoring Report for Excavation-Water Discharge at SLDS During CY 2012

Parameter	Batch Number	Date of Discharge	Batch Results[a]		Amount Discharged (Gallons)	Total Activity per Discharge[b] (Ci)	MSD Discharge Limit		SOR
Gross Alpha (raw water)	SLDS-BK503	10/01/12 - 10/25/12 (6WH)	21	pCi/L	47,250	3.8E-06	3,000	pCi/L	0.01
Gross Beta			<12	pCi/L		1.1E-06	N/A		
Th-228			<0.5	pCi/L		4.3E-08	2,000	pCi/L	
Th-230			1	pCi/L		1.4E-07	1,000	pCi/L	
Th-232			<0.6	pCi/L		5.7E-08	300	pCi/L	
Uranium (KPA)			22	pCi/L		3.9E-06	3,000	pCi/L	
Ra-226[c]			<2	pCi/L		2.1E-07	10	pCi/L	
Ra-228[d,e]			<0.5	pCi/L		4.3E-08	30	pCi/L	
TSS			18	mg/L		-	-		
Gross Alpha (raw water)	SLDS-BK504	11/15/12 (6WH)	22	pCi/L	28,756	2.4E-06	3,000	pCi/L	0.01
Gross Beta			<12	pCi/L		6.6E-07	N/A		
Th-228			<0.5	pCi/L		2.8E-08	2,000	pCi/L	
Th-230			1	pCi/L		1.1E-07	1,000	pCi/L	
Th-232			<0.4	pCi/L		2.2E-08	300	pCi/L	
Uranium (KPA)			17	pCi/L		1.9E-06	3,000	pCi/L	
Ra-226[c]			<2	pCi/L		1.3E-07	10	pCi/L	
Ra-228[d,e]			<0.5	pCi/L		2.8E-08	30	pCi/L	
TSS			33	mg/L		-	-		
Gross Alpha (raw water)	SLDS-BK505	12/06/12 - 12/19/12 (6WH)	24	pCi/L	33,928	3.1E-06	3,000	pCi/L	0.02
Gross Beta			25	pCi/L		3.2E-06	N/A		
Th-228			<0.6	pCi/L		3.9E-08	2,000	pCi/L	
Th-230			4	pCi/L		5.1E-07	1,000	pCi/L	
Th-232			<0.5	pCi/L		3.5E-08	300	pCi/L	
Uranium (KPA)			34	pCi/L		4.4E-06	3,000	pCi/L	
Ra-226[c]			2	pCi/L		2.6E-07	10	pCi/L	
Ra-228[d,e]			<0.6	pCi/L		3.9E-08	30	pCi/L	
TSS			149	mg/L		-	-		

Total Activity Discharged in 4th Quarter of CY 2012 (Ci)

Th-228	1.1E-07
Th-230	7.7E-07
Th-232	1.1E-07
Uranium (KPA)	1.0E-05
Ra-226	6.0E-07
Ra-228[b]	1.1E-07

Total Activity Discharged through 12/31/12 (Ci)

Th-228	6.5E-07
Th-230	3.6E-06
Th-232	4.7E-07
Uranium (KPA)	3.3E-05
Ra-226	2.4E-06
Ra-228[b]	6.5E-07

Total Volume Discharged in 4th Quarter of CY 2012 (gallons)

Gallons	109,934

Total Volume Discharged through 12/31/12 (gallons)

Gallons	572,799

NOTES:

[a] Non detect sample results are converted to half the detection limit.

[b] The weighted average was used to calculate the total activity.

[c] 10 *CFR* 20 limit is 600 pCi/L for Ra-226.

[d] Ra-228 assumed to be in equilibrium with Th-228.

[e] 10 *CFR* 20 limit is 600 pCi/L for Ra-228.

TSS - total suspended solid(s)

mg/L - milligram(s) per liter

N/A - Not applicable

SOR - sum of ratios

pCi/L - picocurie(s) per liter

Ci - curie(s)

APPENDIX D

GROUND-WATER FIELD PARAMETER DATA FOR CY 2012, ANALYTICAL DATA RESULTS FOR CY 2012

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Table D-1. Ground-Water Monitoring
First Quarter 2012 - Field Parameters for SLDS

Site	Station ID	Date Sampled	Purge Rate (mL/min)	mL Removed (mL)	pH	Conductivity (µS/cm)	Turbidity (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	Depth to Water (ft) at Sampling Time	Depth to Water (ft) (BTOC) 03/01/12
SLDS	B16W06D	---	---	---	---	---	---	---	---	---	---	36.56
SLDS	B16W06S	---	---	---	---	---	---	---	---	---	---	35.54
SLDS	B16W07D	---	---	---	---	---	---	---	---	---	---	39.04
SLDS	B16W08D	---	---	---	---	---	---	---	---	---	---	39.15
SLDS	B16W08S	---	---	---	---	---	---	---	---	---	---	33.29
SLDS	B16W09D	---	---	---	---	---	---	---	---	---	---	34.81
SLDS	B16W12S	---	---	---	---	---	---	---	---	---	---	18.40
SLDS	DW14	---	---	---	---	---	---	---	---	---	---	---
SLDS	DW15	---	---	---	---	---	---	---	---	---	---	40.53
SLDS	DW16	---	---	---	---	---	---	---	---	---	---	27.8
SLDS	DW17	03/01/12	300	5400	6.33	0.205	940	1.93	15.4	182	34.71	34.71
SLDS	DW18	---	---	---	---	---	---	---	---	---	---	40.41
SLDS	DW19	---	---	---	---	---	---	---	---	---	---	36.84
SLDS	DW21	---	---	---	---	---	---	---	---	---	---	12.61
SLDS	DW22R	03/01/12	250	3000	6.64	0.187	32.7	1.75	15.8	-198	37.78	37.78

--- monitoring well was not sampled during this event.

BTOC - below top of casing

°C - degrees Celsius

mg/L - milligram(s) per liter

mL - milliliter(s)

mL/min - milliliter(s) per minute

mV - millivolt(s)

NTU - nephelometric turbidity unit

µS/cm - microSiemen(s) per centimeter

Table D-1. Ground-Water Monitoring
Second Quarter 2012 - Field Parameters for SLDS

Site	Station ID	Date Sampled	Purge Rate (mL/min)	mL Removed (mL)	pH	Conductivity (µS/cm)	Turbidity (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	Depth to Water (ft) at Sampling Time	Depth to Water (ft) (BTOC) 05/31/12
SLDS	B16W06D	05/31/12	200	2400	6.25	1.24	100	0.59	16.8	-159	33.81	33.80
SLDS	B16W06S	05/31/12	100	1500	6.63	0.191	125	0.99	17.1	-193	33.49	32.66
SLDS	B16W07D	05/31/12	100	1500	6.46	0.241	49.7	0.61	17.3	-205	35.81	35.79
SLDS	B16W08D	---	---	---	---	---	---	---	---	---	---	36.10
SLDS	B16W08S	05/31/12	70	1260	6.59	0.126	20.8	1.13	16.4	-4	30.21	29.65
SLDS	B16W09D	---	---	---	---	---	---	---	---	---	---	31.38
SLDS	B16W12S	---	---	---	---	---	---	---	---	---	---	17.25
SLDS	DW14	---	---	---	---	---	---	---	---	---	---	24.81
SLDS	DW15	---	---	---	---	---	---	---	---	---	---	36.99
SLDS	DW16	---	---	---	---	---	---	---	---	---	---	29.65
SLDS	DW17	---	---	---	---	---	---	---	---	---	---	31.42
SLDS	DW18	---	---	---	---	---	---	---	---	---	---	37.39
SLDS	DW19	---	---	---	---	---	---	---	---	---	---	33.42
SLDS	DW21	---	---	---	---	---	---	---	---	---	---	11.36
SLDS	DW22R	---	---	---	---	---	---	---	---	---	---	34.50

--- monitoring well was not sampled during this event.

BTOC - below top of casing

°C - degrees Celsius

mg/L - milligram(s) per liter

mL - milliliter(s)

mL/min - milliliter(s) per minute

mV - millivolt(s)

NTU - nephelometric turbidity unit

µS/cm - microSiemen(s) per centimeter

Table D-1. Ground-Water Monitoring
Third Quarter 2012 - Field Parameters for SLDS

Site	Station ID	Date Sampled	Purge Rate (mL/min)	mL Removed (mL)	pH	Conductivity (µS/cm)	Turbidity (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	Depth to Water (ft) at Sampling Time	Depth to Water (ft) (BTOC) 08/22/12
SLDS	B16W06D	---	---	---	---	---	---	---	---	---	---	41.72
SLDS	B16W06S	---	---	---	---	---	---	---	---	---	---	39.23
SLDS	B16W07D	---	---	---	---	---	---	---	---	---	---	43.54
SLDS	B16W08D	---	---	---	---	---	---	---	---	---	---	44.09
SLDS	B16W08S	---	---	---	---	---	---	---	---	---	---	35.30
SLDS	B16W09D	---	---	---	---	---	---	---	---	---	---	38.87
SLDS	B16W12S	---	---	---	---	---	---	---	---	---	---	18.69
SLDS	DW14	---	---	---	---	---	---	---	---	---	---	32.5*
SLDS	DW15	---	---	---	---	---	---	---	---	---	---	44.29
SLDS	DW16	---	---	---	---	---	---	---	---	---	---	29.44
SLDS	DW17	---	---	---	---	---	---	---	---	---	---	38*
SLDS	DW18	---	---	---	---	---	---	---	---	---	---	45*
SLDS	DW19	---	---	---	---	---	---	---	---	---	---	40.86
SLDS	DW21	---	---	---	---	---	---	---	---	---	---	13.12
SLDS	DW22R	---	---	---	---	---	---	---	---	---	---	42.17

--- monitoring well was not sampled during this event.

BTOC - below top of casing

°C - degrees Celsius

mg/L - milligram(s) per liter

mL - milliliter(s)

mL/min - milliliter(s) per minute

mV - millivolt(s)

NTU - nephelometric turbidity unit

µS/cm - microSiemen(s) per centimeter

*Water level below top of dedicated pump in well

Table D-1. Ground-Water Monitoring
Fourth Quarter 2012 - Field Parameters for SLDS

Site	Station ID	Date Sampled	Purge Rate (mL/min)	mL Removed (mL)	pH	Conductivity (µS/cm)	Turbidity (NTU)	DO (mg/L)	Temp (°C)	ORP (mV)	Depth to Water (ft) at Sampling Time	Depth to Water (ft) (BTOC) 12/10/12
SLDS	B16W06D	---	---	---	---	---	---	---	---	---	---	42.94
SLDS	B16W06S	12/12/12	100	1500	6.3	0.178	60.8	0.62	15.7	-127	39.5	39.21
SLDS	B16W07D	---	---	---	---	---	---	---	---	---	---	45.12
SLDS	B16W08D	---	---	---	---	---	---	---	---	---	---	45.45
SLDS	B16W08S	---	---	---	---	---	---	---	---	---	---	36.49
SLDS	B16W09D	12/10/12	250	4500	6.39	0.284	21.7	0.55	16.6	-196	40.6	40.6
SLDS	B16W12S	---	---	---	---	---	---	---	---	---	---	18.42
SLDS	DW14	---	---	---	---	---	---	---	---	---	---	---
SLDS	DW15	---	---	---	---	---	---	---	---	---	---	46.29
SLDS	DW16	12/12/12	290	2030	6.26	0.163	164	0.37	14.2	-103	29.4	27.66
SLDS	DW17	---	---	---	---	---	---	---	---	---	---	38*
SLDS	DW18	12/12/12	300	2700	6.63	0.163	67.2	5.02	14.9	-181	45.58	45.6*
SLDS	DW19	12/12/12	250	3000	6.61	0.167	39.2	1.08	14.6	-100	42.7	42.71
SLDS	DW21	---	---	---	---	---	---	---	---	---	---	13.03
SLDS	DW22R	---	---	---	---	---	---	---	---	---	---	---

--- monitoring well was not sampled during this event.

BTOC - below top of casing

°C - degrees Celsius

mg/L - milligram(s) per liter

mL - milliliter(s)

mL/min - milliliter(s) per minute

mV - millivolt(s)

NTU - nephelometric turbidity unit

µS/cm - microSiemen(s) per centimeter

*Water level below top of dedicated pump in well

Table D-2. CY 2012 Ground-Water Sampling Data for the SLDS - Unfiltered

Site: SLDS										
Sample Name	**Station Name**	**Sample Collect Date**	**Analytical Method**	**Analyte**	**Analytical Result**	**Measurement Error**	**Detection Limit**	**Units**	**Validation Qualifier[a]**	**Validation Reason Code(s)[b]**
SLD143651	B16W06D	05/31/12	SW846 6010B	Arsenic	2.7		2.7	µg/L	U	
SLD143651	B16W06D	05/31/12	SW846 6010B	Cadmium	0.91		0.91	µg/L	U	
SLD143651	B16W06D	05/31/12	ML-006	Radium-226	2.42	1.56	1.62	pCi/L	J	T04
SLD143651	B16W06D	05/31/12	ML-005	Thorium-228	0.707	0.555	0.729	pCi/L	U	T04, T05
SLD143651	B16W06D	05/31/12	ML-005	Thorium-230	1.18	0.665	0.579	pCi/L	J	F01, T04
SLD143651	B16W06D	05/31/12	ML-005	Thorium-232	0.0785	0.157	0.213	pCi/L	UJ	T06
SLD143651	B16W06D	05/31/12	ML-015	Uranium-234	0.0886	0.281	0.653	pCi/L	UJ	T06
SLD143651	B16W06D	05/31/12	ML-015	Uranium-235	-0.164	0.192	0.919	pCi/L	UJ	T06
SLD143651	B16W06D	05/31/12	ML-015	Uranium-238	0	0	0.239	pCi/L	U	
SLD143652	B16W06S	05/31/12	SW846 6010B	Arsenic	167		2.7	µg/L	=	
SLD143652	B16W06S	05/31/12	SW846 6010B	Cadmium	0.91		0.91	µg/L	U	
SLD143652	B16W06S	05/31/12	ML-006	Radium-226	0.538	0.776	1.29	pCi/L	UJ	T06
SLD143652	B16W06S	05/31/12	ML-005	Thorium-228	0.165	0.31	0.608	pCi/L	UJ	T06
SLD143652	B16W06S	05/31/12	ML-005	Thorium-230	0.62	0.485	0.496	pCi/L	J	F01, T04
SLD143652	B16W06S	05/31/12	ML-005	Thorium-232	0	0	0.224	pCi/L	U	
SLD143652	B16W06S	05/31/12	ML-015	Uranium-234	-0.000007475	0.198	0.594	pCi/L	UJ	T06
SLD143652	B16W06S	05/31/12	ML-015	Uranium-235	0.249	0.362	0.597	pCi/L	UJ	T06
SLD143652	B16W06S	05/31/12	ML-015	Uranium-238	0.121	0.242	0.482	pCi/L	UJ	T06
SLD151191	B16W06S	12/12/12	SW846 6020	Antimony	1.7		1.7	µg/L	U	
SLD151191	B16W06S	12/12/12	SW846 6020	Arsenic	31		1.2	µg/L	=	
SLD151191	B16W06S	12/12/12	SW846 6020	Barium	370		0.22	µg/L	=	
SLD151191	B16W06S	12/12/12	SW846 6020	Cadmium	0.1		0.1	µg/L	U	
SLD151191	B16W06S	12/12/12	SW846 6020	Chromium	3.3		3.3	µg/L	U	
SLD151191	B16W06S	12/12/12	SW846 6020	Molybdenum	1		1	µg/L	U	
SLD151191	B16W06S	12/12/12	SW846 6020	Nickel	3.3		0.4	µg/L	=	
SLD151191	B16W06S	12/12/12	SW846 6020	Selenium	1.6		1.6	µg/L	U	
SLD151191	B16W06S	12/12/12	SW846 6020	Thallium	0.55		0.55	µg/L	U	
SLD151191	B16W06S	12/12/12	SW846 6020	Vanadium	2.4		2.4	µg/L	U	
SLD143653	B16W07D	05/31/12	ML-006	Radium-226	0.984	1	1.31	pCi/L	UJ	T06
SLD143653	B16W07D	05/31/12	ML-005	Thorium-228	0.422	0.35	0.191	pCi/L	J	T04
SLD143653	B16W07D	05/31/12	ML-005	Thorium-230	0.985	0.548	0.191	pCi/L	J	F01, T04
SLD143653	B16W07D	05/31/12	ML-005	Thorium-232	-0.0351	0.0705	0.421	pCi/L	UJ	T06
SLD143653	B16W07D	05/31/12	ML-015	Uranium-234	0.687	0.475	0.207	pCi/L	J	T04
SLD143653	B16W07D	05/31/12	ML-015	Uranium-235	0.0471	0.211	0.565	pCi/L	UJ	T06
SLD143653	B16W07D	05/31/12	ML-015	Uranium-238	0.342	0.354	0.456	pCi/L	UJ	T06
SLD143654	B16W08S	05/31/12	SW846 6010B	Arsenic	2.7		2.7	µg/L	U	
SLD143654	B16W08S	05/31/12	SW846 6010B	Cadmium	0.91		0.91	µg/L	U	
SLD143654	B16W08S	05/31/12	ML-006	Radium-226	-0.108	0.217	1.3	pCi/L	UJ	T06
SLD143654	B16W08S	05/31/12	ML-005	Thorium-228	0.163	0.236	0.391	pCi/L	UJ	T06
SLD143654	B16W08S	05/31/12	ML-005	Thorium-230	1.04	0.545	0.177	pCi/L	J	F01, T04
SLD143654	B16W08S	05/31/12	ML-005	Thorium-232	0.0326	0.146	0.391	pCi/L	UJ	T06
SLD143654	B16W08S	05/31/12	ML-015	Uranium-234	3.02	1.16	0.601	pCi/L	=	
SLD143654	B16W08S	05/31/12	ML-015	Uranium-235	0	0	0.273	pCi/L	U	
SLD143654	B16W08S	05/31/12	ML-015	Uranium-238	1.38	0.718	0.22	pCi/L	J	T04

Table D-2. CY 2012 Ground-Water Sampling Data for the SLDS - Unfiltered

Site: SLDS										
Sample Name	**Station Name**	**Sample Collect Date**	**Analytical Method**	**Analyte**	**Analytical Result**	**Measurement Error**	**Detection Limit**	**Units**	**Validation Qualifier[a]**	**Validation Reason Code(s)[b]**
SLD151192	B16W09D	12/10/12	SW846 6020	Antimony	1.7		1.7	µg/L	U	
SLD151192	B16W09D	12/10/12	SW846 6020	Arsenic	11		1.2	µg/L	=	
SLD151192	B16W09D	12/10/12	SW846 6020	Barium	890		0.22	µg/L	=	
SLD151192	B16W09D	12/10/12	SW846 6020	Cadmium	0.11		0.1	µg/L	=	
SLD151192	B16W09D	12/10/12	SW846 6020	Chromium	3.3		3.3	µg/L	U	
SLD151192	B16W09D	12/10/12	SW846 6020	Molybdenum	1		1	µg/L	=	
SLD151192	B16W09D	12/10/12	SW846 6020	Nickel	2.6		0.4	µg/L	=	
SLD151192	B16W09D	12/10/12	SW846 6020	Selenium	1.6		1.6	µg/L	U	
SLD151192	B16W09D	12/10/12	SW846 6020	Thallium	1.3		0.55	µg/L	J	N03
SLD151192	B16W09D	12/10/12	SW846 6020	Vanadium	2.4		2.4	µg/L	U	
SLD151194	DW16	12/13/12	SW846 6020	Antimony	1.7		1.7	µg/L	U	
SLD151194	DW16	12/13/12	SW846 6020	Arsenic	31		1.2	µg/L	=	
SLD151194	DW16	12/13/12	SW846 6020	Barium	550		0.22	µg/L	=	
SLD151194	DW16	12/13/12	SW846 6020	Cadmium	0.48		0.1	µg/L	=	
SLD151194	DW16	12/13/12	SW846 6020	Chromium	3.3		3.3	µg/L	U	
SLD151194	DW16	12/13/12	SW846 6020	Molybdenum	2.3		1	µg/L	=	
SLD151194	DW16	12/13/12	SW846 6020	Nickel	1.9		0.4	µg/L	=	
SLD151194	DW16	12/13/12	SW846 6020	Selenium	1.6		1.6	µg/L	U	
SLD151194	DW16	12/13/12	SW846 6020	Thallium	0.55		0.55	µg/L	U	
SLD151194	DW16	12/13/12	SW846 6020	Vanadium	2.4		2.4	µg/L	U	
SLD142413	DW17	03/01/12	SW846 6010B	Arsenic	2.7		2.7	µg/L	U	
SLD142413	DW17	03/01/12	SW846 6010B	Cadmium	5.7		0.91	µg/L	=	
SLD142413	DW17	03/01/12	ML-006	Radium-226	0.105	0.469	1.26	pCi/L	UJ	T06
SLD142413	DW17	03/01/12	ML-005	Thorium-228	0.352	0.32	0.191	pCi/L	J	T04
SLD142413	DW17	03/01/12	ML-005	Thorium-230	0.882	0.531	0.423	pCi/L	J	F01, T04
SLD142413	DW17	03/01/12	ML-005	Thorium-232	0.141	0.2	0.191	pCi/L	UJ	T06
SLD142413	DW17	03/01/12	ML-015	Uranium-234	1.91	0.766	0.172	pCi/L	=	
SLD142413	DW17	03/01/12	ML-015	Uranium-235	0.157	0.223	0.212	pCi/L	UJ	T06
SLD142413	DW17	03/01/12	ML-015	Uranium-238	2.28	0.85	0.171	pCi/L	=	
SLD151195	DW18	12/12/12	SW846 6020	Antimony	1.7		1.7	µg/L	U	
SLD151195	DW18	12/12/12	SW846 6020	Arsenic	110		1.2	µg/L	=	
SLD151195	DW18	12/12/12	SW846 6020	Barium	360		0.22	µg/L	=	
SLD151195	DW18	12/12/12	SW846 6020	Cadmium	0.3		0.1	µg/L	=	
SLD151195	DW18	12/12/12	SW846 6020	Chromium	3.3		3.3	µg/L	U	
SLD151195	DW18	12/12/12	SW846 6020	Molybdenum	3.4		1	µg/L	=	
SLD151195	DW18	12/12/12	SW846 6020	Nickel	0.92		0.4	µg/L	=	
SLD151195	DW18	12/12/12	ML-006	Radium-226	-0.00001865	0.698	1.87	pCi/L	UJ	T06
SLD151195	DW18	12/12/12	SW846 6020	Selenium	1.6		1.6	µg/L	U	
SLD151195	DW18	12/12/12	SW846 6020	Thallium	0.55		0.55	µg/L	U	
SLD151195	DW18	12/12/12	ML-005	Thorium-228	2.28	0.916	0.765	pCi/L	J	F01
SLD151195	DW18	12/12/12	ML-005	Thorium-230	6.76	1.69	0.524	pCi/L	=	
SLD151195	DW18	12/12/12	ML-005	Thorium-232	0.995	0.577	0.523	pCi/L	J	T04
SLD151195	DW18	12/12/12	ML-015	Uranium-234	0.122	0.246	0.488	pCi/L	UJ	T06
SLD151195	DW18	12/12/12	ML-015	Uranium-235	0	0	0.272	pCi/L	U	

Table D-2. CY 2012 Ground-Water Sampling Data for the SLDS - Unfiltered

Site: SLDS										
Sample Name	**Station Name**	**Sample Collect Date**	**Analytical Method**	**Analyte**	**Analytical Result**	**Measurement Error**	**Detection Limit**	**Units**	**Validation Qualifier[a]**	**Validation Reason Code(s)[b]**
SLD151195	DW18	12/12/12	ML-015	Uranium-238	0.284	0.339	0.486	pCi/L	UJ	T06
SLD151195	DW18	12/12/12	SW846 6020	Vanadium	2.4		2.4	µg/L	U	
SLD151196	DW19	12/12/12	ML-006	Radium-226	3.15E+00	1.79	1.82	pCi/L	J	T04
SLD151196	DW19	12/12/12	ML-005	Thorium-228	1.25	0.584	0.169	pCi/L	J	F01
SLD151196	DW19	12/12/12	ML-005	Thorium-230	1.13	0.552	0.17	pCi/L	J	F01
SLD151196	DW19	12/12/12	ML-005	Thorium-232	0.25	0.252	0.169	pCi/L	UJ	T02
SLD151196	DW19	12/12/12	ML-015	Uranium-234	13.5	3.38	0.539	pCi/L	=	
SLD151196	DW19	12/12/12	ML-015	Uranium-235	0.316	0.378	0.542	pCi/L	UJ	T06
SLD151196	DW19	12/12/12	ML-015	Uranium-238	12.8	3.24	0.198	pCi/L	=	
SLD142414	DW22R	03/01/12	SW846 6010B	Arsenic	31.7		2.7	µg/L	=	
SLD142414	DW22R	03/01/12	SW846 6010B	Cadmium	0.91		0.91	µg/L	U	
SLD142414	DW22R	03/01/12	ML-006	Radium-226	0.746	0.88	1.28	pCi/L	UJ	T06
SLD142414	DW22R	03/01/12	ML-005	Thorium-228	0.13	0.244	0.479	pCi/L	UJ	T06
SLD142414	DW22R	03/01/12	ML-005	Thorium-230	0.261	0.263	0.177	pCi/L	J	F01, T02
SLD142414	DW22R	03/01/12	ML-005	Thorium-232	-0.0325	0.0652	0.39	pCi/L	UJ	T06
SLD142414	DW22R	03/01/12	ML-015	Uranium-234	0.169	0.197	0.153	pCi/L	J	T02
SLD142414	DW22R	03/01/12	ML-015	Uranium-235	0.0696	0.14	0.189	pCi/L	UJ	T06
SLD142414	DW22R	03/01/12	ML-015	Uranium-238	0.225	0.228	0.152	pCi/L	J	T02

[a] Validation Qualifiers:

= Indicates that the data met all QA/QC requirements, and that the parameter has been positively identified and the associated concentration value is accurate.

J Indicates that the parameter was positively identified; the associated numerical value is the approximate concentration of the parameter in the sample.

U Indicates that the data met all QA/QC requirements, and that the parameter was analyzed for but was not detected above the reported sample quantitation limit.

UJ Indicates that the parameter was not detected above the reported sample quantitation limit.and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. However, the reported quantitation limit is approximate

[b] Validation Reason Codes:

F01 Blanks: Sample data were qualified as a result of the method blank.

N03 Compound Quantitation and Reported LLC/CRQLs: Professional judgment used to qualify the data.

T02 Radionuclide Quantitation: Analytical uncertainties were not met and/or not reported.

T04 Radionuclide Quantitation: Professional judgment was used to qualify the data.

T05 Radionuclide Quantitation: Analytical result is less than the associated MDA, but greater than the counting uncertainty.

T06 Radionuclide Quantitation: Analytical result is less than both the associated counting uncertainty and MDA.

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APPENDIX E

DOSE ASSESSMENT ASSUMPTIONS

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DOSE ASSESSMENT ASSUMPTIONS

A. Dose from the SLDS to a Maximally Exposed Individual

An off-site, worker-based receptor is the most realistic choice to represent the hypothetical maximally exposed individual because of the proximity of the receptor, approximately 50 m southeast of the Mallinckrodt fenceline (DT-10), and because of the time the individual will spend at this location. Thus, a realistic assessment of dose can be performed using conservative assumptions of occupancy rate and distance from the source.

The following dose assessment is for a maximally exposed individual who works full-time (2,000 hours per year) at a location approximately 50 m southeast of the external gamma and radon monitoring location and 75 to 325 m from the SLDS excavation areas.

1. Airborne Radioactive Particulates

An EDE of 0.3 mrem/yr to the receptor was calculated by using activity fractions to determine a source term, and then combining the dose results for DT-2, Plant 7, Plant 6, and Plant 6 Loadout. The USEPA CAP88-PC modeling code was used to calculate dose to the receptor at 75 to 325 m from the SLDS excavation areas and loadout (SAIC 2013). Figure A-1 of Appendix A presents the distances and directions of the maximally exposed receptor from the excavated areas. Details related to calculation of EDE for the maximally exposed receptor are presented in Appendix A.

2. External Gamma Pathway

Because station DA-2 was the closest TLD to the receptor, the TLD results from this location were used for the dose calculations. The station DA-2 TLD measured an annual exposure, above background, of 0 mrem/yr, based on 8,760 hours of continuous detector exposure. The EDE due to gamma exposure for the maximally exposed individual is estimated by assuming that the site approximates a line source with a source strength (H_1) that is the average of the TLD measurements between the source and the receptor (Cember 1996).

$$H_1 = \frac{(0)\,\text{mrem/yr}}{1} = 0\ \text{mrem/yr}$$

Based on 100 percent occupancy rate, the exposure rate (H_2) to the receptor was calculated as follows:

$$H_2 = H_1 \times \frac{h_1}{h_2} \times \frac{\tan^{-1}(L/h_2)}{\tan^{-1}(L/h_1)}$$

$$H_2 = 0\ \text{mrem/yr}$$

where:

- H_2 = exposure rate to the receptor
- H_1 = exposure rate to the TLDs
- h_2 = distance from the source to the receptor = 50 m
- h_1 = distance from the source to the TLDs = 1.6 m
- L = average distance from centerline of the line source (H_1) to the end of the line source = 150 m

The actual dose to the maximally exposed individual who is only present during a normal work year is calculated as follows:

$$H_{MEI} = H_2 \times \frac{2{,}000 \text{ hours/work year}}{8{,}760 \text{ hours/total year}}$$

$$H_{MEI} = 0 \text{ mrem/yr}$$

3. Airborne Radon Pathway

Like external gamma calculations, only the radon data from Stations DA-2 was used to determine dose due to radon and progeny. Appendix D presents the radon results at all stations. Station DA-2 ATDs measured annual exposures above background of 0.05 pCi/L based on 8,760 hours of continuous exposure. Exposure to the receptor from radon (and progeny) was estimated using a dispersion factor (C_2) and the average ATD monitoring data at the site perimeter between the source and the receptor.

In order to calculate the dispersion factor, the effective dose equivalents were determined to a receptor located at 1 m and 50 m respectively, southwest of the SLDS by inputting a radon release rate of 1 Ci/yr, the Lambert Airport wind file, and a surface area of 5,854 m^2 into the CAP-88 model. Effective surface area was determined by summing the time-weighted average annual open surface areas for all SLDS excavation areas and loadout. The CAP88 input data and the result of the CAP88 run are highlighted and presented in Appendix A. The radon dispersion factor (C_2) for the site was calculated as follows.

$$C_2 = \left[\frac{0.17 \ mrem/yr}{0.62 \ mrem/yr} \right] = 0.27$$

The average of ATD monitoring data (S_1) at the site perimeter (Plant 7/Thomas and Proetz fenceline) was calculated as follows:

$$S_1 = \left[\frac{(0.05) \ \text{pCi/L}}{1} \right] = 0.05 \text{ pCi/L}$$

The actual radon exposure dose to the hypothetical maximally exposed individual was calculated as follows:

$$S_{MEI} = S_1 \times F \times DCF \times T \times C_1 \times C_2$$

$$S_{MEI} = 0.05 \text{pCi/L} \times 0.0005 \frac{\text{WL}}{\text{pCi/L}} \times 1{,}250 \frac{\text{mrem}}{\text{WLM}} \times \frac{2{,}000 hrs}{yr} \ x \ \frac{1 \text{month}}{170 \text{hrs}} \times 0.27 = 9.9E-02 \text{ mrem/yr}$$

where:

S_1 = Fenceline average of ATD measurements between source and receptor
S_{MEI} = Radon exposure to the hypothetical maximally exposed individual.
F = Equilibrium fraction of 0.05 WL per 100 pCi/L (DOE 1998)
DCF = Dose Conversion Factor (USEPA 1989) = 1,250 mrem/WLM
T = Exposure time for the hypothetical maximally exposed receptor = 2,000 hrs/yr.

C_1 = Occupancy factor constant = 1 month per 170 hours
C_2 = Dispersion Factor
WL = working level (concentration unit)
WLM = working level month (exposure unit)

4. Total Effective Dose Equivalent

$$TEDE = CEDE\ (\text{airborne particulates}) + H_{MEI}\ (\text{external gamma}) + S_{MEI}\ (\text{airborne radon})$$

$$TEDE = 0.3\ \text{mrem/yr} + 0\ \text{mrem/yr} + 0.1\ \text{mrem/yr} = 0.4\ \text{mrem/yr}$$

where:

CEDE = committed effective dose equivalent

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