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Organization Environmental Stewardship Program

Document Number FRNP-RPT-0040 Number of Pages 60

Accession Number (DMC only)

Document Title/Date National Emissions Standards for Hazardous Air Pollutants Annual Report for the 2017 U.S. Department of Energy Radiological Emissions at the Paducah Gaseous Diffusion Plant

Author Lee Campbell Corporate Author

Media (Check all that apply)

☒ Paper ☐ Photo ☐ Diskette ☐ Drawing ☐ Video ☐ CD ☐ Report/Letter ☐ Other

Project Subcontract/Task Order C11RPT

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DC David Hayden Date 6-26-18

TIO David Hayden Date 6-26-18

Reviewing Official[2] David Hayden Date 6-26-18

OPSEC David Hayden Date 6-26-18

[1] Provide exemption number and category; contact the Classification Office prior to use of circumvention of statute.

Department of Energy

Portsmouth/Paducah Project Office
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JUN 29 2018

Mr. Sean Alteri, Director
Division for Air Quality
Kentucky Department for Environmental Protection
300 Sower Boulevard, 2nd Floor
Frankfort, KY 40601-1403

PPPO-02-4905238-18A

Ms. Beverly Banister, Director
Air, Pesticides, and Toxics Management Division
U.S. Environmental Protection Agency, Region 4
61 Forsythe, SW, Suite 9T43
Atlanta, GA 30303-8960

Mr. Reid Rosnick
Office of Radiation and Indoor Air
U.S. Environmental Protection Agency
Headquarters MS6608J
1200 Pennsylvania Avenue, Northwest
Washington, DC 20460

Dear Mr. Alteri, Ms. Banister, and Mr. Rosnick:

SUBMITTAL OF THE NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS ANNUAL REPORT FOR 2017 U.S. DEPARTMENT OF ENERGY RADIOLOGICAL EMISSIONS AT THE PADUCAH GASEOUS DIFFUSION PLANT, (FRNP-RPT-0040)

Please find enclosed the *National Emissions Standards for Hazardous Air Pollutants Annual Report for 2017 U.S. Department of Energy Radiological Emissions at the Paducah Gaseous Diffusion Plant*, FRNP-RPT-0040, required by 40 Code of Federal Regulations (*CFR)* Part 61, Subpart H. This report summarizes airborne radionuclide emissions from the U.S. Department of Energy (DOE) Paducah Site. The total 2017 effective dose equivalent from DOE emissions was 0.00044 mrem. This is below the annual effective dose equivalent limit of 10 mrem per year established in 40 *CFR* § 61.92.

If you have any questions or require additional information, please contact Gilbert Whitehurst at (740) 897-2948.

Sincerely,

Jennifer Woodard

Jennifer Woodard
Paducah Site Lead
Portsmouth/Paducah Project Office

Enclosures:
1. Certification Pages
2. NESHAPs Annual Report for 2017, FRNP-RPT-0040

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CERTIFICATION

Document Identification: ***National Emissions Standards for Hazardous Air Pollutants Annual Report for 2017 U.S. Department of Energy Radiological Emissions at the Paducah Gaseous Diffusion Plant*, FRNP-RPT-0040**

This certification pertains to the following emission source:

Paducah Deactivation and Remediation Project

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.C.* 1001)

Myrna E. Redfield, Deputy Program Manager
Four Rivers Nuclear Partnership, LLC

6/28/18
Date Signed

Jennifer Woodard, Paducah Site Lead
U.S. Department of Energy

6/28/18
Date Signed

CERTIFICATION

Document Identification: ***National Emissions Standards for Hazardous Air Pollutants Annual Report for 2017 U.S. Department of Energy Radiological Emissions at the Paducah Gaseous Diffusion Plant*, FRNP-RPT-0040**

This certification pertains to the following emission source:

Depleted Uranium Hexafluoride Conversion Facility (MCS)

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.C.* 1001)

Alan Parker, President and Project Manager
Mid-America Conversion Services, LLC

6/26/18
Date Signed

FRNP-RPT-0040

National Emissions Standards for Hazardous Air Pollutants Annual Report for 2017 U.S. Department of Energy Radiological Emissions at the Paducah Gaseous Diffusion Plant

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National Emissions Standards for Hazardous Air Pollutants Annual Report for 2017 U.S. Department of Energy Radiological Emissions at the Paducah Gaseous Diffusion Plant

Date Issued—June 2018

U.S. DEPARTMENT OF ENERGY
Office of Environmental Management

Prepared by
Four Rivers Nuclear Partnership, LLC,
managing the
Deactivation and Remediation Project at the
Paducah Gaseous Diffusion Plant
under Contract DE-EM0004895

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CONTENTS

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TABLES

FIGURE

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ACRONYMS

CAP-88 PC	Clean Air Act Assessment Package-1988 Version 4
CFR	*Code of Federal Regulations*
DAC	derived air concentration
DOE	U.S. Department of Energy
DUF_6	depleted uranium hexafluoride
EDE	effective dose equivalent
EPA	U.S. Environmental Protection Agency
EW	extraction well
FGR	Federal Guidance Report
HEPA	high-efficiency particulate air
KAR	*Kentucky Administrative Regulations*
NEPCS	Northeast Plume Containment System
NESHAP	National Emission Standards for Hazardous Air Pollutants
PGDP	Paducah Gaseous Diffusion Plant
SX	seal exhaust
WA	wet air

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EXECUTIVE SUMMARY

The Kentucky Division for Air Quality regulates air emissions of radionuclides, other than radon, from U.S. Department of Energy (DOE) Paducah Site under 401 *KAR* 57:002 and 40 *CFR* Part 61, Subparts A and H. Submission of this report fulfills the annual reporting requirements of 40 *CFR* § 61.94.

Paducah Site radionuclide emissions include emissions from the depleted uranium hexafluoride (DUF_6) conversion facility, which began operation in 2011. The DUF_6 facility converts material generated by the uranium enrichment process to a more stable uranium oxide compound. Other emission sources include deactivation and remediation of the Paducah Gaseous Diffusion Plant activities, waste management facilities, inactive buildings, and environmental restoration operations.

DOE emissions were used to estimate the Paducah Site dose to the public. The dose to the public is calculated using the computer modeling program (CAP-88 PC Version 4) specified in 40 *CFR* § 61.93. Inputs to the computer program are obtained through continuous monitoring, engineering estimates, emission factors, and other U.S. Environmental Protection Agency-approved methods. This report meets the annual reporting requirements and establishes the total annual effective dose equivalent to the maximally exposed member of the public from Paducah Site emissions to be 0.00044 mrem for calendar year 2017. This is below the annual effective dose equivalent limit of 10 mrem per year set forth in 40 *CFR* § 61.92.

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1. FACILITY DESCRIPTION

Site Name: Paducah Site

Location: Paducah, Kentucky

Owner: U.S. Department of Energy
Portsmouth/Paducah Project Office
5501 Hobbs Road
Kevil, Kentucky 42053
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Mid-America Conversion Services, LLC (Paducah Office)
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Kevil, Kentucky 42053
Alan Parker, President and Project Manager
(859) 685-2060

2. INTRODUCTION

The U.S. Department of Energy (DOE) owns the Paducah Site, which has radionuclide air emissions. The site was established to enrich uranium and was known as the Paducah Gaseous Diffusion Plant (PGDP). When enrichment activities ceased in 2014, DOE subsequently began deactivation and remediation of the enrichment facilities, and the entire DOE-owned area was identified as the Paducah Site.

Paducah Site emissions include emissions from deactivation and remediation activities, waste management facilities, inactive buildings, environmental restoration operations, and the depleted uranium hexafluoride (DUF_6) conversion facility. The DUF_6 facility, which began operations in 2011, converts material generated by the enrichment process to a more stable uranium oxide compound.

Emissions from all of these sources were analyzed together and used to calculate the resultant dose.

3. SITE DESCRIPTION

The Paducah Site was established to support the nation's nuclear program. The Paducah Site, consisting of approximately 3,500 acres, is located in western McCracken County, 10 miles west of Paducah, Kentucky, and 3.5 miles south of the Ohio River. Roughly 650 acres of the site are enclosed within a fenced security area. An uninhabited buffer zone of at least 400 yards surrounds the entire fenced area.

During World War II, Kentucky Ordnance Works, a trinitrotoluene production facility, was operated in an area southwest of the plant on what is now a wildlife management area, not on the Paducah Site.

Construction of the PGDP facility began in 1951. The plant was fully operational by 1955, supplying enriched uranium for commercial reactors and defense uses. Enriched uranium is defined as uranium in which the concentration of the fissionable uranium-235 (U-235) isotope has been increased from its natural assay. Natural uranium is primarily uranium-238 (U-238), with about 0.71% U-235 and 0.0055% uranium-234 (U-234). Uranium mills process the ores to produce concentrated uranium oxide [triuranium octoxide (U_3O_8)], which then is converted commercially to uranium hexafluoride (UF_6). The UF_6 then was sent to PGDP for enrichment. In 2011, DOE began operation of a facility to convert the stored DUF_6, the depleted material remaining after enrichment, to a more stable uranium oxide, primarily U_3O_8.

The radioactive materials used at PGDP are associated with enrichment of the uranium isotope U-235 a gaseous diffusion process. During enriching operations from 1953 to 1975, UF_6 feed material derived from recycled uranium (called "reactor tails") from government reactors and "work for others" material also was used intermittently in addition to the UF_6 processed from uranium ore, which typically was used. Reactor tails were the spent fuel from nuclear reactors that is depleted in U-235 content that had been reprocessed to remove most of the fission products. The reactor fuel assemblies were processed at other DOE facilities (where most of the fission products were removed), and the enriched uranium and the remaining fission products were fed into the PGDP cascade system in the chemical form of UF_6. Use of the reactor tails resulted in the introduction of technetium-99 (Tc-99), a fission by-product, and transuranics, most notably neptunium-237 (Np-237) and plutonium-239 (Pu-239), into the cascade.

The West Kentucky Wildlife Management Area and lightly populated farmlands are in the immediate environs of PGDP. Based on population data from the 2010 census, the population within a 50-mile radius is approximately 534,000 persons. Of these, 89,000 live within 10 miles of the plant and 104,000 live within 20 miles of the plant. The unincorporated communities of Grahamville and Heath are 1.24 and 1.86 miles east of the plant, respectively. Portions of 28 counties—11 of which are in Kentucky, 4 in Missouri, 10 in Illinois, and 3 in Tennessee—are located within the 50-mile radius of the plant. Larger cities in the region include Paducah, Kentucky, located 10 air miles east of the plant; Cape Girardeau, Missouri, located 40 air miles to the west; and Metropolis, Illinois, located 6 air miles to the northeast. The nearest neighbor residences in each direction are observed and entered into the dose modeling software. The results of the dose modeling are presented in Section 6.

Paducah is located in the humid continental zone. Summers generally are dry; precipitation occurs mainly in the spring and fall. Winters are characterized by moderately cold days; the average temperature during the coldest month, January, is about 35°F. Summers are warm and humid; the average temperature in July is 79°F. Yearly precipitation averages about 44 inches. The prevailing wind direction is south to southwest.

4. PADUCAH SITE SOURCE HANDLING AND PROCESSING DESCRIPTION

Radioactive material handling and processing that occurred last year, 2017, included conversion of DUF_6 to uranium oxides, clean out of the uranium enrichment processes, environmental remediation of hazardous and radioactive materials, and management of radioactive waste.

The point sources from shutdown and clean out of the enrichment processes are grouped as described in the following sections. Some of these activities will be reduced or may cease as deactivation of the enrichment facilities progresses.

4.1 DEPLETED URANIUM HEXAFLUORIDE CONVERSION FACILITY

The DUF_6 conversion facility has operated since 2011. The facility converts DUF_6 stored in cylinders to a more stable uranium oxide powder. The form of uranium oxide is primarily U_3O_8. Multiple prefilters and primary high-efficiency particulate air (HEPA) filter banks within the facility heating, ventilation, and air-conditioning system control particulate emissions of oxide powder. Prior to atmospheric venting of cascade off-gas through the stack, air passes through a secondary set of HEPA filter banks. The conversion building also is maintained at negative pressure to help eliminate the possibility of fugitive emissions. Radioactive emissions from the conversion operations are monitored continuously.

4.2 DEACTIVATION AND REMEDIATION OF THE PADUCAH GASEOUS DIFFUSION PLANT

The emission point sources previously analyzed for operation of PGDP also were emission sources for deactivation and remediation. These deactivation sources are grouped in the same manner as the enrichment source grouping. Groups no longer included were removed because their sources have been deactivated. The sources were grouped based on similar emissions, controls, and location.

4.2.1 Group A—the C-400 Group

This grouping includes all of the C-400 sources. Deactivation of the C-400 facility began in 2016.

4.2.1.1 C-400 laundry

The C-400 laundry washes and dries protective clothing used to prevent skin contamination on personnel working in radiological areas. The driers are equipped with lint filters. Emissions from the laundry are estimated using data from health physics lint filter surveys. Alpha radiation is assumed to be 10% Np-237 and 90% uranium. Beta emissions are assumed to be Tc-99. The emission factor for cloth filters in 40 *CFR* Part 61, Appendix D, is used to estimate the emissions. The C-400 laundry was removed from service in June 2016. The source was not operational during 2017; therefore, it is not included in the summary tables.

4.2.2 Group D—C-709/C-710 Laboratory Hoods

The C-709/C-710 laboratories are the main facilities for sample analysis and research at the Paducah Site. Laboratory hoods and canopies in the C-709/C-710 Buildings left in place were used for radiological activities during the year. The radionuclides involved in analyses consist primarily of uranium, with a slight potential for emissions of Tc-99, Np-237, Pu-239, and the thorium daughter products of uranium.

Four methods, depending on the type of operation occurring in the hood or radiological area in which each hood is located, are used to estimate emissions.

1. Estimation of the maximum quantity of uranium lost based on laboratory methods. (If an American Society for Testing and Materials analytical method specifies a maximum 1.6% mass loss during

analysis, all samples analyzed using the method were assumed to lose 1.6% of the uranium in the sample.)

2. 40 *CFR* Part 61, Appendix D, emission factors.

3. Chemical trap efficiencies and uranium throughput information.

4. Knowledge of analytical or sample preparation process.

All methods use the total inventory of uranium processed in the hood or radiological area as the basis for the emission estimate.

4.2.3 Group E—C-310 Stack

The C-310 stack is located near the southwest corner of the C-310 Product Withdrawal Building. It was the primary emission point of potential radionuclide air emissions during uranium enrichment operations. The effluent is routed through alumina traps prior to being emitted via the C-310 stack. The stack was inactive in 2017; therefore, the stack is not included in the summary tables.

4.2.4 Group F—Seal Exhaust/Wet Air Group

The seal exhaust (SX) and wet air (WA) systems have been evaluated for air emissions. It was determined the alumina traps, which are designed to protect pump oil and not to control emissions, are not pollution control devices under 40 *CFR* Part 61, Subpart H. The determination was forwarded to the U.S. Environmental Protection Agency (EPA) January 28, 1994.

4.2.4.1 Seal exhaust systems

Emissions from the SX systems are routed through alumina traps and pump oil prior to venting. Seals on the UF_6 compressors are supplied with an intricate array of air pressures to minimize releases during seal failure. A seal failure allows UF_6 to enter the seal exhaust system. If UF_6 reaches the pump by virtue of trap breakthrough, it reacts with the pump oil creating a thick sludge that quickly causes pump failure. In turn, pump failure limits the amount that can be emitted. Although the pump oil serves as an excellent uranium emission control device due to the reaction between UF_6 and pump oil, no credit is taken for it as a pollution control device.

There is one SX vent per cascade building, one on the C-310 Product Withdrawal Building, and one on the C-315 Tails Withdrawal Building. The locations of the six SX systems are as follows:

- C-310 Product Withdrawal Building
- C-315 Tails Withdrawal Building
- C-331 Cascade Building
- C-333 Cascade Building
- C-335 Cascade Building
- C-337 Cascade Building

Periodic confirmatory measurements are made on each type of SX/WA system to verify low emissions. Emissions from these systems were estimated based on results of a modified 40 *CFR* Part 60 Method 5 stack sampling that was performed in September 2017.

4.2.4.2 Wet air exhaust systems

When maintenance is required on cascade equipment, it is evacuated to other sections of the cascade or surge drums. The equipment is swept in a series of purges with dry plant air. After maintenance, the system is closed, and the ambient wet air is pumped from the system by the WA pumps. During dry air purges and WA evacuations, air is routed through alumina traps for uranium trapping to protect the WA pump oil and then to an exhaust vent. In cascade buildings C-310, C-335, and C-337, the exhaust vent is shared with the seal exhaust system for those buildings. As discussed under SX systems, emissions from the WA exhaust systems are estimated based on the most recent Method 5 stack sampling results. The following are the locations of the five wet airexhaust systems.

- C-310 Product Withdrawal Building (same as SX)
- C-331 Cascade Building
- C-333 Cascade Building
- C-335 Cascade Building (same as SX)
- C-337 Cascade Building (same as SX)

4.2.4.3 CFC-114/UF_6 separation system

The chlorofluorocarbon (CFC)-114/UF_6 separation system is located in C-335 and is used to freeze out UF_6 from cascade gas that has been contaminated significantly with CFC-114 coolant. Such mixtures usually result from equipment failure, but also may result from abnormal cascade operation. Surge drums are used to store these mixtures until they can be separated. The primary purpose of the CFC-114/UF_6 separation system is to remove the coolant and return the UF_6 to the cascade.

The separation system operates by freezing out the UF_6 from the cascade gas. To freeze out the UF_6, the UF_6/CFC-114 mixture is transferred from the surge drum through a refrigerated set of favorable geometry cold traps. The gas stream then passes through sodium fluoride traps and alumina traps to absorb any residual UF_6. Typically the gas stream flows through the alumina traps, although these traps can be bypassed. The trap discharge is connected to the SX/WA pump system and to atmosphere through the existing common discharge header. The UF_6 is sublimed back to cascade after the processing of the contaminated gas has been completed.

To improve nuclear criticality safety, modification of the CFC-114/UF_6 separation system was made, and initial baseline emissions testing completed in 2004. The modification reduced potential radionuclide emissions. The CFC-114/UF_6 separation system has been inactive since 2014.

4.2.4.4 Cylinder valve connection activities

Activities involving connection and disconnection to UF_6 cylinders include cold pressure checks, sampling activities, withdrawals and feeding activities, and cylinder burping. The cylinder valves are connected to the associated cascade via a “pigtail.” Pigtails consist of a single length of copper tubing and threaded couplings. Pigtail disconnection procedures require a series of purges to ensure that no UF_6 remains in the pigtail prior to disconnection. Although adherence to these procedures minimizes UF_6 emissions, rarely a small amount of UF_6 may be released during disconnection of the pigtails. Equipment containing a HEPA filter is used to minimize emissions. No credit is taken for the HEPA pollution control equipment. The following are the locations of the pigtail systems using HEPA filter equipment.

- C-310 Product Withdrawal Building
- C-315 Tails Withdrawal Building
- C-333-A Feed Facility

- C-337-A Feed Facility
- C-360 Transfer Facility (Group H)

Emissions are based on the number of pigtail disconnections in each facility. An assumed quantity of UF_6 in each pigtail, based on engineering calculations, is multiplied by the number of disconnections to determine emissions. There were no pigtail disconnections during 2017.

4.2.4.5 Building ventilation

Radiological areas within the cascade buildings at PGDP are established under health physics procedures, DOE Orders, and 10 *CFR* Part 835. Airborne radioactivity from these radiological areas contributes to Group F emissions. Emissions from airborne radiological areas are analyzed and included as a building ventilation source if the ambient building air radioactivity concentration is greater than 10% of a derived air concentration (DAC). No radiological area concentrations were greater than 10% of the DAC during 2017.

Airborne radiological contamination areas are evaluated by the following methodology. The areas are monitored by health physics using low-volume air samplers. The samplers use a low-volume pump (approximately 20 to 40 liters per minute) to draw building air through a filter. Typically, the samplers run 24 hours per day, and the filters are changed on a 2-, 3-, 4-, or 5-day basis, depending on filter loading and weekend/holiday schedules. After sample collection, the filters are counted for radioactivity concentrations.

Building ventilation sources from C-315, C-331, C-333, C-333-A, C-335, C-337, C-337-A, and C-720 are grouped with the SX/WA group. Building ventilation sources from C-310, C-360, C-400, and C-709/C-710 are grouped with their respective building emissions. Alpha and beta results from health physics air sampling are evaluated based on the most restrictive DAC applicable, listed in 10 *CFR* Part 20. For alpha emissions, Np-237 is used. For beta emissions, Tc-99 is used.

4.3 ENVIRONMENTAL REMEDIATION ACTIVITIES

DOE had three point sources for environmental remediation activities.

4.3.1 Northwest Plume Interim Remedial Action Project

On September 1, 1995, DOE began operation of a treatment system designed to remove trichloroethene (TCE) and Tc-99 from contaminated groundwater at PGDP. The facility, C-612, is located at the northwest corner of the PGDP site security area. The facility consists of an air stripper to remove volatile organics.

Historical sampling has shown very little change in the concentration of Tc-99 in the water when it passes through the air stripper. Emissions of Tc-99 were estimated using 40 *CFR* Part 61, Subpart H, Appendix D, emission factors and the analysis of the groundwater. The exhaust from the air stripper is passed through a carbon adsorption unit prior to release to the atmosphere. Historical data have shown that Tc-99 is not retained in the carbon; therefore, no reduction in Tc-99 emissions due to use of the adsorption unit was assumed. The results of the analysis of the estimated emissions are reported in Section 6.

4.3.2 Northeast Plume Containment System

DOE began normal operation of the Northeast Plume Containment System (C-614 Northeast Plume Treatment System), a second treatment system, on February 28, 1997, as an interim remedial action also to treat contaminated groundwater. The C-614 system extracted contaminated groundwater and pumped it to an air stripper for removal of TCE. Tc-99 was not identified as a contaminant of concern as part of this interim remedial action; however, low concentration Tc-99 was detected in the groundwater and, consequently, could have been emitted to the air since 2005. The original Northeast Plume Containment System (NEPCS) operated two extraction wells (EWs) (EW331 and EW332), which extracted the contaminated groundwater to treatment unit C-765, and the NEPCS was operated until August 2017. The original NEPCS treated 58,967,257 gal from January through August 2017.

The NEPCS underwent an optimization and was fully operational in October 2017 (NEPCS did not operate during September 2017). The optimized NEPCS consists of two new EWs (EW234 and EW235), each of which has its own treatment unit capable of operating independently. C-765 treatment unit is operated to treat water extracted from EW234, and the C-765-A treatment unit is operated to treat water extracted from EW235. The optimized NEPCS treated 30,140,486 gal from September through December 2017, with both treatment units operating at comparable flow rates. Because the C-765 treatment unit was in operation for the entire year and it was the only treatment unit in operation prior to optimization of the NEPCS, the point source location remained the same. The total treated gallons for the C-765 treatment unit were summed for all of 2017 and were input into CAP-88 PC Version 4 (CAP-88 PC) as one point location. C-765-A was added as a point source and input into CAP-88 PC for the period of September through December 2017.

Emissions of Tc-99 were estimated using 40 *CFR* Part 61, Subpart H, Appendix D, emission factors and the analysis of the groundwater. The results of the analysis of the estimated emissions are reported in Section 6.

4.4 FUGITIVE AND DIFFUSE SOURCES

Diffuse/fugitive emission sources include any source that is distributed spatially, diffuse in nature, or not emitted with forced air from a stack, vent, or other confined conduit. In this case, radionuclides are transported entirely by diffusion and/or thermally driven air currents. Typical examples of diffuse/fugitive emissions include emissions from building breathing; resuspension of contaminated soils, debris, or other materials; unventilated tanks; ponds, lakes, and streams; wastewater treatment systems; outdoor storage and processing areas; and leaks in piping, valves, or other cascade equipment. DOE has identified many potential fugitive and diffuse emission sources such as inactive facilities, building roofs, scrap metal storage yards, landfills, cylinder yards, and various contamination areas. Specific activities that could generate fugitive emissions include transport and disposal of waste, demolition of contaminated facilities, and most environmental remediation. The use of ambient air monitors to evaluate emissions from fugitive and diffuse sources is described in Section 9. In 2017, the Paducah Site had no airborne releases. Analyses of ambient air monitoring results for 2017 indicate that plant-derived radionuclides were not detected in concentrations greater than 40 *CFR* Part 61, Appendix E, Table 2, concentrations, as depicted in the tables provided in the appendix. DOE utilizes ambient air monitoring to verify insignificant levels of radionuclides in off-site ambient air. The ambient air monitors are not included in the annual dose calculation as a point source.

5. WAIVER OF CONSTRUCTION AND MODIFICATION ACTIVITIES

No construction or modification activities occurred in this reporting period that were waived under 40 *CFR* § 61.96.

6. SOURCE CHARACTERISTICS AND AIR EMISSIONS DATA

Tables 1 through 4 contain specific emission information for each Paducah Site emission point. Table 1 lists the emission points and efficiency of control devices, as required by 40 *CFR* § 61.94 (b) (4) and (5). It is assumed that control for the Northwest Plume Treatment System has 0% efficiency because no credit is taken for any Tc-99 removal as a result of carbon filtration. Table 2 lists the distances from each emission point to receptors of concern, as listed in 40 *CFR* § 61.94 (b) (6). Table 3 contains emission point information required to estimate the resulting potential exposure, as required by 40 *CFR* § 61.94 (b) (7). Table 4 contains a list of Paducah Site radioactive materials, as required by 40 *CFR* § 61.94 (b) (2), their emission rates, and total Paducah Site emissions by nuclide.

Table 1. Emission Point Effluent Controls and Efficiencies

Emission Points	Type Control	Efficiency %
Group D C-709/710 Laboratory Hoods	None	0
Group F SX/WA Group	Alumina Traps	98.60
Group F Cylinder Valve Disconnections	HEPA Filter	99.00
Group F Building Ventilation	None	0
Northwest Plume Treatment System	Carbon	0
Northeast Plume Treatment Unit SP234	None	0
Northeast Plume Treatment Unit SP235	None	0
DUF_6 Conversion Facility	HEPA	99.90

NOTE: The building ventilation and cylinder valve connection activities not serviced by a stack are grouped with the SX/WA group or respective building.

Table 2. Distances to Selected Receptors

Emission Points	Distances (m) to Selected Receptors			
	Nearest Farm	Nearest Business	Nearest School	Nearest Residence
Group D C-709/710 Laboratory Hoods	1,960	2,705	3,900	1,960
Group F SX/WA Group	1,490	2,438	3,840	1,490
Northwest Plume Treatment System	1,100	2,550	5,150	1,080
Northeast Plume Treatment Unit SP234	1,330	1,800	3,660	1,360
Northeast Plume Treatment Unit SP235	1,330	1,800	3,660	1,111
DUF_6 Conversion Facility	2,550	3,250	3,400	2,155

Table 3. Characteristics of Stacks, Vents, or Other Emission Points that Emit Radionuclides

Emission Points	Type	Height (m)	Diameter (m)	Gas Exit Velocity (m/s)	Gas Exit Temp. (°C)	Distance (m) & Direction to Maximally Exposed Individual for Each Source
Group D C-709/710 Laboratory Hoods	Point	7.09	0.50	0.00	Ambient	2,370 N
Group F SX/WA Group	Point	21.00	0.50	0.00	Ambient	2,350 N
Northwest Plume Treatment System	Point	7.00	0.36	9.45	Ambient	1,080 NNE
Northeast Plume Treatment Unit SP234	Point	5.94	0.19	10.76	Ambient	1360 SE
Northeast Plume Treatment Unit SP235	Point	5.94	0.19	10.76	Ambient	1111 ESE
DUF_6 Conversion Facility	Point	21.95	1.07	16.19	33.90	2325 SSW

Table 4. Radionuclide Materials and Emissions Data (Curies)

Nuclide	Group D C-709/710 Lab	Group F Seal Exhaust/ Wet Air	Northwest Plume	Northeast Plume HV161[a]/SP234	Northeast Plume SP235	DUF_6 Conversion Facility	Total Site Emissions
U-234	9.98E-04	4.18E-06	0	0	0	9.90E-07	1.00E-03
U-235	3.81E-05	2.27E-07	0	0	0	4.53E-08	3.84E-05
U-238	1.02E-04	1.68E-06	0	0	0	2.43E-06	1.06E-04
Tc-99	0	6.80E-07	9.53E-05	8.62E-06	2.92E-06	0	1.08E-04
Th-230	0	5.37E-06	0	0	0	0	5.37E-06
Th-231	0	0	0	0	0	3.53E-07	3.53E-07
Th-234	0	0	0	0	0	3.22E-05	3.22E-05
Np-237	0	0	0	0	0	0	0
Pu-239	0	0	0	0	0	0	0
Pa-234m	0	0	0	0	0	3.22E-05	3.22E-05
Total Curies/ Year	**1.14E-03**	**1.21E-05**	**9.53E-05**	**8.62E-06**	**2.92E-06**	**6.82E-05**	**1.33E-03**

[a] Sample Port HV161 for the Northeast Plume was in operation from January through August 2017. The treatment unit remained the same; thus, the point source location was unchanged. The total curies for Northeast Plume HV161/SP234 were summed and input into CAP-88 PC.

7. DOSE ASSESSMENT

7.1 DESCRIPTION OF DOSE MODEL

The CAP-88 PC model is a set of computer programs, databases, and associated utility programs for estimation of dose and risk from radionuclide emissions to air. CAP-88 PC is composed of modified versions of the AIRDOS-EPA and DARTAB computer codes. CAP-88 PC contains EPA's version of the AIRDOS-EPA computer code, which implements a steady-state, Gaussian plume, atmospheric dispersion

model to calculate environmental concentrations of released radionuclides; and then, food chain models are used to calculate human exposures, both internal and external, to the environmental concentrations.

CAP-88 PC, Version 4, incorporates age-dependent dose factors from DCFPAK-2.2 combined with factors and method of Federal Guidance Report (FGR) 13. The FGR 13 dose factors are based on the methods in 1996 Publication 72 of the International Commission on Radiological Protection. The dose factors are used to calculate effective doses. The effective dose is the weighted sum of equivalent doses to 12 specific tissues and organs, plus a general category that accounts for the remaining organs and tissues.

7.2 SUMMARY OF INPUT PARAMETERS

Default input parameters are used except for those provided in Section 6 and immediately below.

Meteorological input information is from the National Weather Service at Paducah, except for the on-site joint frequency distribution information. The 2017 annual precipitation and average air temperature from the National Climatic Data Center "Climate at a Glance" database were used to account for current rainfall and air temperatures. The rainfall rate in 2017 (115.8 cm) was slightly less than the 1971–2000 average rainfall (149.8 cm). The mixing height of 542 m is based on evaluation of 2014 National Weather Service data for the Paducah area by K. Birdwell (Oak Ridge National Laboratory meteorologist) (ORNL 2015). The mixing height from 2014 was used for the 2017 CAP-88 PC runs. Typically, mixing heights do not vary much from year-to-year; however, they can vary more over a period of years.

Joint frequency distribution:	Five-year stability array (STAR) distribution from 60-m station on PGDP meteorological tower for the years 1988 through 1992.
Rainfall rate:	115.80 cm/year
Average air temperature:	16.11°C
Average mixing layer height:	542 m

Fraction of foodstuffs from (rural default values):

	Local Area	50-Mile Radius	Beyond 50 Miles
Vegetables and produce:	0.70	0.30	0.00
Meat:	0.40	0.60	0.00
Milk:	0.44	0.56	0.00

7.3 DOSE ESTIMATE

Effective dose equivalent (EDE) to maximally exposed individual for each individual point source and the Paducah Site, as well as the collective EDE to the 50-mile population, is provided in Table 5.

The maximally exposed individual from all plant emissions is located 1,080 m north-northeast of Northwest Plume Treatment System. The total annual EDE to the maximally exposed member of the public from Paducah Site emissions of 0.00044 mrem for calendar year 2017 was higher than in calendar year 2016. The higher EDE in 2017 can be contributed to processing of working reference material in the C-709/710 Laboratory and the placement of the new extraction wells closer to the elevated Tc-99 concentrations in the Northeast Plume.

Table 5. Dose Analysis

Emission Sources	EDE to the Maximum Exposed Individual for Each Source (mrem)	EDE to the Maximum Exposed Individual for the Plant (mrem)	Collective EDE to the 50-mile Population (person-rem)
Group D—C-709/C-710 Laboratory Hoods	3.2E-04	3.2E-04	3.1E-03
Group F—SX/WA Group	5.3E-05	5.3E-05	4.4E-04
Northwest Plume Treatment System	6.5E-05	6.5E-05	2.5E-04
Northeast Plume Treatment Unit SP234	2.7E-06	1.6E-06	2.2E-05
Northeast Plume Treatment Unit SP235	9.8E-07	5.0E-07	7.6E-06
DUF_6 Conversion Facility	1.3E-06	9.4E-07	1.6E-05
Total from All Sources		**4.4E-04**	**3.8E-03**

U.S. Census (2010) counts at the block level. These population counts were joined to their respective Census blocks, and then incorporated into a dasymetric computer model to distribute the counts spatially within each block. A dasymetric model uses a likelihood dataset (i.e., where the people are most likely to be located) to distribute the population mathematically. This likelihood dataset incorporated such things as land cover, distance to roads, building height, etc. The result was a 3-arc, second gridded population database. This grid was intersected with the sector-annuli rose to tabulate the final population counts. The resulting population data then were converted into a population data file by CAP-88 PC, Version 4. Based on population data from the 2010 census, the total collective EDE to the 50-mile population (approximately 534,000 persons) was 0.0038 person-rem. The total collective EDE to the 50-mile population is calculated by summing the total collective EDE from each source as generated from CAP-88 PC.

8. UNPLANNED RELEASES

There were no DOE unplanned radioactive airborne releases in 2017.

9. AMBIENT AIR MONITORING

In accordance with the *National Emission Standards for Hazardous Air Pollutants Management Plan for Emission of Radionuclides for the U.S. Department of Energy Operations at the Paducah Site, Paducah, Kentucky*, PAD-REG-1017, November 2013, DOE used ambient air monitoring data to verify insignificant levels of radionuclides in off-site ambient air. Ambient air stations collect radionuclide samples at sites surrounding the plant. The ambient air monitors capture airborne radionuclides emitted from all sources, including fugitive and diffuse sources. The locations of the ambient air monitoring stations are shown in Figure 1.

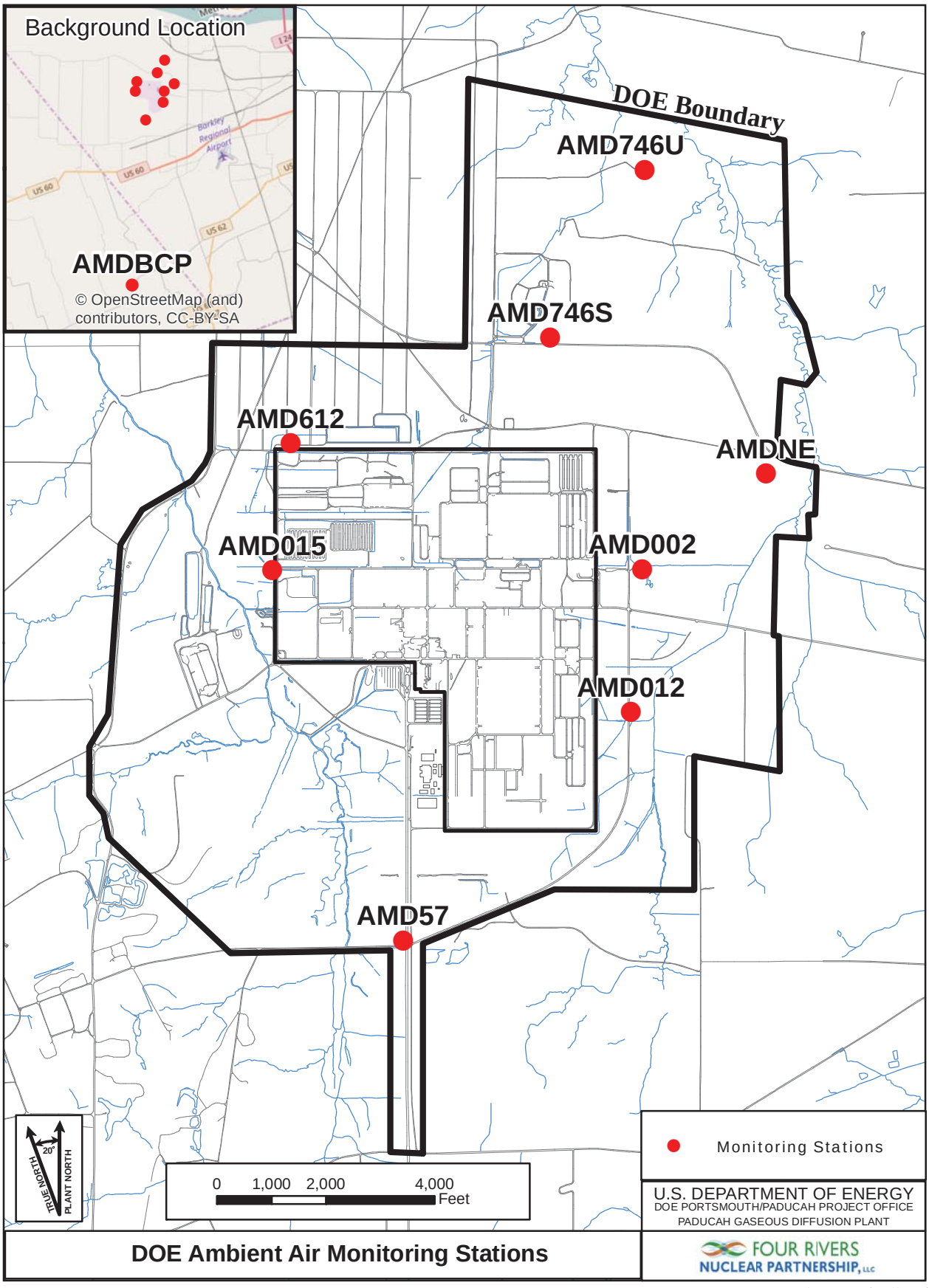

Figure 1. Location of Paducah Site Ambient Air Monitoring Stations

The ambient air monitoring stations operate continuously, drawing air through a filter paper to capture particles that may be radioactive. Filter paper is changed weekly; composited filter papers for a three-month period are measured for radioactivity by a laboratory.

The analyses of ambient air monitoring results indicate that plant-derived radionuclides were not detected in concentrations greater than 40 *CFR* Part 61, Appendix E, Table 2, concentrations; and, as stated in Section 8, there were no unplanned radioactive airborne releases from the Paducah Site in 2017. The actual results of each air monitoring station are listed in the appendix of this report. The "U" qualifier in front of the sample result on the enclosed report means that the result was less than the minimum detectable activity level and/or less than 2-sigma total propagated uncertainty. The "J" qualifier in front of the sample result on the enclosed report means that the result is estimated. The "UI" qualifier in front of the sample report means that the results are considered a false positive due to high counting uncertainty.

Facilities are requested to provide information on the models and the assumptions used in estimating the data so that data can be aggregated consistently and usefully. The "background" radiation levels used for comparison with off-site monitoring results and the locations at which the background levels were measured should be stated clearly. Summaries or tables of measured concentrations or activity should follow the guidance in § 8.5.2 of DOE-HDBK-1216-2015, *Environmental Radiological Effluent Monitoring and Environmental Surveillance* (March 2015, pp. 143–145), regarding the use of "Less-Than-Detectable-Values" for statistical analysis and data reporting.

10. STATUS OF 40 *CFR* PART 61, SUBPART H, COMPLIANCE

DOE remains in compliance with 40 *CFR* Part 61, Subpart H. Kentucky Division for Air Quality has received a delegation of authority to administer the National Emission Standards for Hazardous Air Pollutants (NESHAP) program. An update to the NESHAP Management Plan was approved by EPA Region 4 on February 6, 2014.

Ambient air monitors measure radionuclide emissions from Paducah Site point sources, fugitive air emission sources, and background levels of radionuclides. In accordance with the NESHAP Management Plan, ambient air monitors are used to confirm that radiological emissions from the site produce a dose less than the levels allowed by 40 *CFR* Part 61, Subpart H.

11. REFERENCE

ORNL (Oak Ridge National Laboratory) 2015. E-mail from P. Scofield, Oak Ridge National Laboratory, to S. Knaus, Fluor Federal Services, Inc., Paducah Deactivation Project, "2014 RadNeshaps Report and Tables," May 11.

DOE (U.S. Department of Energy) 2015. Part 8.5.2 of DOE-HDBK-1216-2015, *Environmental Radiological Effluent Monitoring and Environmental Surveillance*, pp. 143–145, March.

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APPENDIX

AMBIENT AIR MONITORING

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Table A.1. Air Monitoring Calculations for 2017

Station	Client Sample ID	Date Collected	Analysis	Result	Units	Concentration	Concentration	Standard	Fraction of Standard	Qualifier	Assessment Code
1st Quarter January through March											
	Quarter Air Flow	7391	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD002	Q2AMD0022-17	02-May-17	Americium-241	1.87	pCi/sample	2.53E-04	2.53E-16	1.90E-15	1.33E-01	U	
AMD002	Q2AMD0022-17	02-May-17	Neptunium-237	3.08	pCi/sample	4.17E-04	4.17E-16	1.20E-15	3.47E-01	U	
AMD002	Q2AMD0022-17	02-May-17	Plutonium-238	4.04	pCi/sample	5.47E-04	5.47E-16	2.10E-15	2.60E-01		
AMD002	Q2AMD0022-17	02-May-17	Plutonium-239/240	0.126	pCi/sample	1.70E-05	1.70E-17	2.00E-15	8.52E-03	U	
AMD002	Q2AMD0022-17	02-May-17	Technetium-99	59.4	pCi/sample	8.04E-03	8.04E-15	1.40E-13	5.74E-02	U	
AMD002	Q2AMD0022-17	02-May-17	Thorium-234	-109	pCi/sample	-1.47E-02	-1.47E-14	2.20E-12	-6.70E-03	U	
AMD002	Q2AMD0022-17	02-May-17	Uranium-234	2.18	pCi/sample	2.95E-04	2.95E-16	7.70E-15	3.83E-02		
AMD002	Q2AMD0022-17	02-May-17	Uranium-235	0.229	pCi/sample	3.10E-05	3.10E-17	7.10E-15	4.36E-03	U	
AMD002	Q2AMD0022-17	02-May-17	Uranium-238	1.74	pCi/sample	2.35E-04	2.35E-16	8.30E-15	2.84E-02		
								Sum of the Fractions of the Standard	8.71E-01		
	Quarter Air Flow	7772	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD012	Q2AMD0122-17	02-May-17	Americium-241	3	pCi/sample	3.86E-04	3.86E-16	1.90E-15	2.03E-01	U	
AMD012	Q2AMD0122-17	02-May-17	Neptunium-237	3.12	pCi/sample	4.01E-04	4.01E-16	1.20E-15	3.35E-01	U	
AMD012	Q2AMD0122-17	02-May-17	Plutonium-238	3.24	pCi/sample	4.17E-04	4.17E-16	2.10E-15	1.99E-01		
AMD012	Q2AMD0122-17	02-May-17	Plutonium-239/240	0.0294	pCi/sample	3.78E-06	3.78E-18	2.00E-15	1.89E-03	U	
AMD012	Q2AMD0122-17	02-May-17	Technetium-99	28.7	pCi/sample	3.69E-03	3.69E-15	1.40E-13	2.64E-02	U	
AMD012	Q2AMD0122-17	02-May-17	Thorium-234	5.93	pCi/sample	7.63E-04	7.63E-16	2.20E-12	3.47E-04	U	
AMD012	Q2AMD0122-17	02-May-17	Uranium-234	1.26	pCi/sample	1.62E-04	1.62E-16	7.70E-15	2.11E-02		
AMD012	Q2AMD0122-17	02-May-17	Uranium-235	0.202	pCi/sample	2.60E-05	2.60E-17	7.10E-15	3.66E-03	U	
AMD012	Q2AMD0122-17	02-May-17	Uranium-238	2.15	pCi/sample	2.77E-04	2.77E-16	8.30E-15	3.33E-02		
								Sum of the Fractions of the Standard	8.23E-01		
	Quarter Air Flow	7393	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD015	Q2AMD0152-17	02-May-17	Americium-241	1.12	pCi/sample	1.51E-04	1.51E-16	1.90E-15	7.97E-02	U	
AMD015	Q2AMD0152-17	02-May-17	Neptunium-237	-1.83	pCi/sample	-2.48E-04	-2.48E-16	1.20E-15	-2.06E-01	U	
AMD015	Q2AMD0152-17	02-May-17	Plutonium-238	4.1	pCi/sample	5.55E-04	5.55E-16	2.10E-15	2.64E-01		
AMD015	Q2AMD0152-17	02-May-17	Plutonium-239/240	-0.0497	pCi/sample	-6.72E-06	-6.72E-18	2.00E-15	-3.36E-03	U	
AMD015	Q2AMD0152-17	02-May-17	Technetium-99	1.48	pCi/sample	2.00E-04	2.00E-16	1.40E-13	1.43E-03	U	
AMD015	Q2AMD0152-17	02-May-17	Thorium-234	-54.8	pCi/sample	-7.41E-03	-7.41E-15	2.20E-12	-3.37E-03	U	
AMD015	Q2AMD0152-17	02-May-17	Uranium-234	1.92	pCi/sample	2.60E-04	2.60E-16	7.70E-15	3.37E-02		
AMD015	Q2AMD0152-17	02-May-17	Uranium-235	0.339	pCi/sample	4.59E-05	4.59E-17	7.10E-15	6.46E-03	U	
AMD015	Q2AMD0152-17	02-May-17	Uranium-238	1.65	pCi/sample	2.23E-04	2.23E-16	8.30E-15	2.69E-02		
								Sum of the Fractions of the Standard	1.99E-01		

Table A.1. Air Monitoring Calculations for 2017 (Continued)

Station	Client Sample ID	Date Collected	Analysis	Result	Units	Concentration	Concentration	Standard	Fraction of Standard	Qualifier	Assessment Code
	Quarter Air Flow	7401	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD57	Q2AMD572-17	02-May-17	Americium-241	2.37	pCi/sample	3.20E-04	3.20E-16	1.90E-15	1.69E-01	U	
AMD57	Q2AMD572-17	02-May-17	Neptunium-237	-0.453	pCi/sample	-6.12E-05	-6.12E-17	1.20E-15	-5.10E-02	U	
AMD57	Q2AMD572-17	02-May-17	Plutonium-238	0.184	pCi/sample	2.49E-05	2.49E-17	2.10E-15	1.18E-02	U	
AMD57	Q2AMD572-17	02-May-17	Plutonium-239/240	-0.0558	pCi/sample	-7.54E-06	-7.54E-18	2.00E-15	-3.77E-03	U	
AMD57	Q2AMD572-17	02-May-17	Technetium-99	54.7	pCi/sample	7.39E-03	7.39E-15	1.40E-13	5.28E-02	U	
AMD57	Q2AMD572-17	02-May-17	Thorium-234	-30.8	pCi/sample	-4.16E-03	-4.16E-15	2.20E-12	-1.89E-03	U	
AMD57	Q2AMD572-17	02-May-17	Uranium-234	1.58	pCi/sample	2.13E-04	2.13E-16	7.70E-15	2.77E-02		
AMD57	Q2AMD572-17	02-May-17	Uranium-235	0.187	pCi/sample	2.53E-05	2.53E-17	7.10E-15	3.56E-03	U	
AMD57	Q2AMD572-17	02-May-17	Uranium-238	1.47	pCi/sample	1.99E-04	1.99E-16	8.30E-15	2.39E-02		
								Sum of the Fractions of the Standard	2.32E-01		
	Quarter Air Flow	7253	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD612	Q2AMD6122-17	02-May-17	Americium-241	2.37	pCi/sample	3.27E-04	3.27E-16	1.90E-15	1.72E-01	U	
AMD612	Q2AMD6122-17	02-May-17	Neptunium-237	-1.46	pCi/sample	-2.01E-04	-2.01E-16	1.20E-15	-1.68E-01	U	
AMD612	Q2AMD6122-17	02-May-17	Plutonium-238	0	pCi/sample	0.00E+00	0.00E+00	2.10E-15	0.00E+00	U	
AMD612	Q2AMD6122-17	02-May-17	Plutonium-239/240	0.00322	pCi/sample	4.44E-07	4.44E-19	2.00E-15	2.22E-04	U	
AMD612	Q2AMD6122-17	02-May-17	Technetium-99	26.5	pCi/sample	3.65E-03	3.65E-15	1.40E-13	2.61E-02	U	
AMD612	Q2AMD6122-17	02-May-17	Thorium-234	-45.3	pCi/sample	-6.25E-03	-6.25E-15	2.20E-12	-2.84E-03	U	
AMD612	Q2AMD6122-17	02-May-17	Uranium-234	1.94	pCi/sample	2.67E-04	2.67E-16	7.70E-15	3.47E-02		
AMD612	Q2AMD6122-17	02-May-17	Uranium-235	0.391	pCi/sample	5.39E-05	5.39E-17	7.10E-15	7.59E-03	U	
AMD612	Q2AMD6122-17	02-May-17	Uranium-238	1.75	pCi/sample	2.41E-04	2.41E-16	8.30E-15	2.91E-02		
								Sum of the Fractions of the Standard	9.91E-02		
	Quarter Air Flow	8145	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD746S	Q2AMD746S2-17	02-May-17	Americium-241	-5.89	pCi/sample	-7.23E-04	-7.23E-16	1.90E-15	-3.81E-01	U	
AMD746S	Q2AMD746S2-17	02-May-17	Neptunium-237	-0.569	pCi/sample	-6.99E-05	-6.99E-17	1.20E-15	-5.82E-02	U	
AMD746S	Q2AMD746S2-17	02-May-17	Plutonium-238	-0.0341	pCi/sample	-4.19E-06	-4.19E-18	2.10E-15	-1.99E-03	U	
AMD746S	Q2AMD746S2-17	02-May-17	Plutonium-239/240	-0.0312	pCi/sample	-3.83E-06	-3.83E-18	2.00E-15	-1.92E-03	U	
AMD746S	Q2AMD746S2-17	02-May-17	Technetium-99	21.6	pCi/sample	2.65E-03	2.65E-15	1.40E-13	1.89E-02	U	
AMD746S	Q2AMD746S2-17	02-May-17	Thorium-234	81.4	pCi/sample	9.99E-03	9.99E-15	2.20E-12	4.54E-03	U	
AMD746S	Q2AMD746S2-17	02-May-17	Uranium-234	1.45	pCi/sample	1.78E-04	1.78E-16	7.70E-15	2.31E-02		
AMD746S	Q2AMD746S2-17	02-May-17	Uranium-235	0.0853	pCi/sample	1.05E-05	1.05E-17	7.10E-15	1.48E-03	U	
AMD746S	Q2AMD746S2-17	02-May-17	Uranium-238	2.61	pCi/sample	3.20E-04	3.20E-16	8.30E-15	3.86E-02		
								Sum of the Fractions of the Standard	-3.56E-01		
	Quarter Air Flow	7274	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD746U	Q2AMD746U2-17	02-May-17	Americium-241	2.27	pCi/sample	3.12E-04	3.12E-16	1.90E-15	1.64E-01	U	
AMD746U	Q2AMD746U2-17	02-May-17	Neptunium-237	4.01	pCi/sample	5.51E-04	5.51E-16	1.20E-15	4.59E-01	U	
AMD746U	Q2AMD746U2-17	02-May-17	Plutonium-238	0.00286	pCi/sample	3.93E-07	3.93E-19	2.10E-15	1.87E-04	U	
AMD746U	Q2AMD746U2-17	02-May-17	Plutonium-239/240	0.00285	pCi/sample	3.92E-07	3.92E-19	2.00E-15	1.96E-04	U	
AMD746U	Q2AMD746U2-17	02-May-17	Technetium-99	40.5	pCi/sample	5.57E-03	5.57E-15	1.40E-13	3.98E-02	U	
AMD746U	Q2AMD746U2-17	02-May-17	Thorium-234	3.31	pCi/sample	4.55E-04	4.55E-16	2.20E-12	2.07E-04	U	
AMD746U	Q2AMD746U2-17	02-May-17	Uranium-234	2.05	pCi/sample	2.82E-04	2.82E-16	7.70E-15	3.66E-02		
AMD746U	Q2AMD746U2-17	02-May-17	Uranium-235	-0.0431	pCi/sample	-5.92E-06	-5.92E-18	7.10E-15	-8.34E-04	U	
AMD746U	Q2AMD746U2-17	02-May-17	Uranium-238	2.82	pCi/sample	3.88E-04	3.88E-16	8.30E-15	4.67E-02		
								Sum of the Fractions of the Standard	7.46E-01		

Table A.1. Air Monitoring Calculations for 2017 (Continued)

Station	Client Sample ID	Date Collected	Analysis	Result	Units	Concentration	Concentration	Standard	Fraction of Standard	Qualifier	Assessment Code
	Quarter Air Flow	7336	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMDBCP	Q2AMDBCP2-17	02-May-17	Americium-241	-3.08	pCi/sample	-4.20E-04	-4.20E-16	1.90E-15	-2.21E-01	U	
AMDBCP	Q2AMDBCP2-17	02-May-17	Neptunium-237	0.672	pCi/sample	9.16E-05	9.16E-17	1.20E-15	7.63E-02	U	
AMDBCP	Q2AMDBCP2-17	02-May-17	Plutonium-238	0.0355	pCi/sample	4.84E-06	4.84E-18	2.10E-15	2.30E-03	U	
AMDBCP	Q2AMDBCP2-17	02-May-17	Plutonium-239/240	0.104	pCi/sample	1.42E-05	1.42E-17	2.00E-15	7.09E-03	U	
AMDBCP	Q2AMDBCP2-17	02-May-17	Technetium-99	4.5	pCi/sample	6.13E-04	6.13E-16	1.40E-13	4.38E-03	U	
AMDBCP	Q2AMDBCP2-17	02-May-17	Thorium-234	4.7	pCi/sample	6.41E-04	6.41E-16	2.20E-12	2.91E-04	U	
AMDBCP	Q2AMDBCP2-17	02-May-17	Uranium-234	1.27	pCi/sample	1.73E-04	1.73E-16	7.70E-15	2.25E-02		
AMDBCP	Q2AMDBCP2-17	02-May-17	Uranium-235	0.118	pCi/sample	1.61E-05	1.61E-17	7.10E-15	2.27E-03	U	
AMDBCP	Q2AMDBCP2-17	02-May-17	Uranium-238	1.64	pCi/sample	2.24E-04	2.24E-16	8.30E-15	2.69E-02		
								Sum of the Fractions of the Standard	-7.89E-02		
	Quarter Air Flow	7403	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMDNE	Q2AMDNE2-17	02-May-17	Americium-241	1.16	pCi/sample	1.57E-04	1.57E-16	1.90E-15	8.25E-02	U	
AMDNE	Q2AMDNE2-17	02-May-17	Neptunium-237	-0.71	pCi/sample	-9.59E-05	-9.59E-17	1.20E-15	-7.99E-02	U	
AMDNE	Q2AMDNE2-17	02-May-17	Plutonium-238	0.537	pCi/sample	7.25E-05	7.25E-17	2.10E-15	3.45E-02		
AMDNE	Q2AMDNE2-17	02-May-17	Plutonium-239/240	0.0188	pCi/sample	2.54E-06	2.54E-18	2.00E-15	1.27E-03	U	
AMDNE	Q2AMDNE2-17	02-May-17	Technetium-99	54	pCi/sample	7.29E-03	7.29E-15	1.40E-13	5.21E-02	U	
AMDNE	Q2AMDNE2-17	02-May-17	Thorium-234	35.5	pCi/sample	4.80E-03	4.80E-15	2.20E-12	2.18E-03	U	
AMDNE	Q2AMDNE2-17	02-May-17	Uranium-234	2.31	pCi/sample	3.12E-04	3.12E-16	7.70E-15	4.05E-02		
AMDNE	Q2AMDNE2-17	02-May-17	Uranium-235	0.0656	pCi/sample	8.86E-06	8.86E-18	7.10E-15	1.25E-03	U	
AMDNE	Q2AMDNE2-17	02-May-17	Uranium-238	1.71	pCi/sample	2.31E-04	2.31E-16	8.30E-15	2.78E-02		
								Sum of the Fractions of the Standard	1.62E-01		

Table A.1. Air Monitoring Calculations for 2017

Station	Client Sample ID	Date Collected	Analysis	Result	Units	Concentration	Concentration	Standard	Fraction of Standard	Qualifier	Assessment Code
2nd Quarter April through June											
	Quarter Air Flow	7000	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD002	Q3AMD0023-17	19-Jul-17	Americium-241	-5.83	pCi/Sample	-8.33E-04	-8.33E-16	1.90E-15	-4.38E-01	U	
AMD002	Q3AMD0023-17	19-Jul-17	Neptunium-237	-2.9	pCi/Sample	-4.14E-04	-4.14E-16	1.20E-15	-3.45E-01	U	
AMD002	Q3AMD0023-17	19-Jul-17	Plutonium-238	0.183	pCi/Sample	2.61E-05	2.61E-17	2.10E-15	1.24E-02	U	
AMD002	Q3AMD0023-17	19-Jul-17	Plutonium-239/240	-0.0337	pCi/Sample	-4.81E-06	-4.81E-18	2.00E-15	-2.41E-03	U	
AMD002	Q3AMD0023-17	19-Jul-17	Technetium-99	10.8	pCi/Sample	1.54E-03	1.54E-15	1.40E-13	1.10E-02	U	
AMD002	Q3AMD0023-17	19-Jul-17	Thorium-234	-202	pCi/Sample	-2.89E-02	-2.89E-14	2.20E-12	-1.31E-02	U	
AMD002	Q3AMD0023-17	19-Jul-17	Uranium-234	2.68	pCi/Sample	3.83E-04	3.83E-16	7.70E-15	4.97E-02		
AMD002	Q3AMD0023-17	19-Jul-17	Uranium-235	0.257	pCi/Sample	3.67E-05	3.67E-17	7.10E-15	5.17E-03		
AMD002	Q3AMD0023-17	19-Jul-17	Uranium-238	1.99	pCi/Sample	2.84E-04	2.84E-16	8.30E-15	3.43E-02		
								Sum of the Fractions of the Standard	-6.86E-01		
	Quarter Air Flow	8000	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD012	Q3AMD0123-17	19-Jul-17	Americium-241	-0.824	pCi/Sample	-1.03E-04	-1.03E-16	1.90E-15	-5.42E-02	U	
AMD012	Q3AMD0123-17	19-Jul-17	Neptunium-237	-0.319	pCi/Sample	-3.99E-05	-3.99E-17	1.20E-15	-3.32E-02	U	
AMD012	Q3AMD0123-17	19-Jul-17	Plutonium-238	-0.00751	pCi/Sample	-9.39E-07	-9.39E-19	2.10E-15	-4.47E-04	U	
AMD012	Q3AMD0123-17	19-Jul-17	Plutonium-239/240	-0.18	pCi/Sample	-2.25E-05	-2.25E-17	2.00E-15	-1.13E-02	U	
AMD012	Q3AMD0123-17	19-Jul-17	Technetium-99	-15.5	pCi/Sample	-1.94E-03	-1.94E-15	1.40E-13	-1.38E-02	U	
AMD012	Q3AMD0123-17	19-Jul-17	Thorium-234	-28	pCi/Sample	-3.50E-03	-3.50E-15	2.20E-12	-1.59E-03	U	
AMD012	Q3AMD0123-17	19-Jul-17	Uranium-234	1.82	pCi/Sample	2.28E-04	2.28E-16	7.70E-15	2.95E-02		
AMD012	Q3AMD0123-17	19-Jul-17	Uranium-235	0.0822	pCi/Sample	1.03E-05	1.03E-17	7.10E-15	1.45E-03	U	
AMD012	Q3AMD0123-17	19-Jul-17	Uranium-238	2.41	pCi/Sample	3.01E-04	3.01E-16	8.30E-15	3.63E-02		
								Sum of the Fractions of the Standard	-4.73E-02		
	Quarter Air Flow	7411	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD015	Q3AMD0153-17	19-Jul-17	Americium-241	-1.71	pCi/Sample	-2.31E-04	-2.31E-16	1.90E-15	-1.21E-01	U	
AMD015	Q3AMD0153-17	19-Jul-17	Neptunium-237	-5.32	pCi/Sample	-7.18E-04	-7.18E-16	1.20E-15	-5.98E-01	U	
AMD015	Q3AMD0153-17	19-Jul-17	Plutonium-238	0.0516	pCi/Sample	6.96E-06	6.96E-18	2.10E-15	3.32E-03	U	
AMD015	Q3AMD0153-17	19-Jul-17	Plutonium-239/240	-0.0976	pCi/Sample	-1.32E-05	-1.32E-17	2.00E-15	-6.59E-03	U	
AMD015	Q3AMD0153-17	19-Jul-17	Technetium-99	-8.29	pCi/Sample	-1.12E-03	-1.12E-15	1.40E-13	-7.99E-03	U	
AMD015	Q3AMD0153-17	19-Jul-17	Thorium-234	-47.2	pCi/Sample	-6.37E-03	-6.37E-15	2.20E-12	-2.90E-03	U	
AMD015	Q3AMD0153-17	19-Jul-17	Uranium-234	2.06	pCi/Sample	2.78E-04	2.78E-16	7.70E-15	3.61E-02		
AMD015	Q3AMD0153-17	19-Jul-17	Uranium-235	0.183	pCi/Sample	2.47E-05	2.47E-17	7.10E-15	3.48E-03	U	
AMD015	Q3AMD0153-17	19-Jul-17	Uranium-238	2.02	pCi/Sample	2.73E-04	2.73E-16	8.30E-15	3.28E-02		
								Sum of the Fractions of the Standard	-6.61E-01		

Table A.1. Air Monitoring Calculations for 2017 (Continued)

Station	Client Sample ID	Date Collected	Analysis	Result	Units	Concentration	Concentration	Standard	Fraction of Standard	Qualifier	Assessment Code
	Quarter Air Flow	7395	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD57	Q3AMD573-17	19-Jul-17	Americium-241	4.32	pCi/Sample	5.84E-04	5.84E-16	1.90E-15	3.07E-01	U	
AMD57	Q3AMD573-17	19-Jul-17	Neptunium-237	-0.927	pCi/Sample	-1.25E-04	-1.25E-16	1.20E-15	-1.04E-01	U	
AMD57	Q3AMD573-17	19-Jul-17	Plutonium-238	-0.0772	pCi/Sample	-1.04E-05	-1.04E-17	2.10E-15	-4.97E-03	U	
AMD57	Q3AMD573-17	19-Jul-17	Plutonium-239/240	0.0225	pCi/Sample	3.04E-06	3.04E-18	2.00E-15	1.52E-03	U	
AMD57	Q3AMD573-17	19-Jul-17	Technetium-99	-5.35	pCi/Sample	-7.23E-04	-7.23E-16	1.40E-13	-5.17E-03	U	
AMD57	Q3AMD573-17	19-Jul-17	Thorium-234	-140	pCi/Sample	-1.89E-02	-1.89E-14	2.20E-12	-8.60E-03	U	
AMD57	Q3AMD573-17	19-Jul-17	Uranium-234	2.7	pCi/Sample	3.65E-04	3.65E-16	7.70E-15	4.74E-02		
AMD57	Q3AMD573-17	19-Jul-17	Uranium-235	0	pCi/Sample	0.00E+00	0.00E+00	7.10E-15	0.00E+00	U	
AMD57	Q3AMD573-17	19-Jul-17	Uranium-238	2.2	pCi/Sample	2.97E-04	2.97E-16	8.30E-15	3.58E-02		
								Sum of the Fractions of the Standard	2.69E-01		
	Quarter Air Flow	7432	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD612	Q3AMD6123-17	19-Jul-17	Americium-241	-1.66	pCi/Sample	-2.23E-04	-2.23E-16	1.90E-15	-1.18E-01	U	
AMD612	Q3AMD6123-17	19-Jul-17	Neptunium-237	-2.36	pCi/Sample	-3.18E-04	-3.18E-16	1.20E-15	-2.65E-01	U	
AMD612	Q3AMD6123-17	19-Jul-17	Plutonium-238	0	pCi/Sample	0.00E+00	0.00E+00	2.10E-15	0.00E+00	U	
AMD612	Q3AMD6123-17	19-Jul-17	Plutonium-239/240	-0.0726	pCi/Sample	-9.77E-06	-9.77E-18	2.00E-15	-4.88E-03	U	
AMD612	Q3AMD6123-17	19-Jul-17	Technetium-99	22.4	pCi/Sample	3.01E-03	3.01E-15	1.40E-13	2.15E-02	U	
AMD612	Q3AMD6123-17	19-Jul-17	Thorium-234	77.1	pCi/Sample	1.04E-02	1.04E-14	2.20E-12	4.72E-03	U	
AMD612	Q3AMD6123-17	19-Jul-17	Uranium-234	1.76	pCi/Sample	2.37E-04	2.37E-16	7.70E-15	3.08E-02		
AMD612	Q3AMD6123-17	19-Jul-17	Uranium-235	0.285	pCi/Sample	3.83E-05	3.83E-17	7.10E-15	5.40E-03	U	
AMD612	Q3AMD6123-17	19-Jul-17	Uranium-238	1.93	pCi/Sample	2.60E-04	2.60E-16	8.30E-15	3.13E-02		
								Sum of the Fractions of the Standard	-2.93E-01		
	Quarter Air Flow	8151	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD746S	Q3AMD746S3-17	19-Jul-17	Americium-241	0.321	pCi/Sample	3.94E-05	3.94E-17	1.90E-15	2.07E-02	U	
AMD746S	Q3AMD746S3-17	19-Jul-17	Neptunium-237	0.974	pCi/Sample	1.19E-04	1.19E-16	1.20E-15	9.96E-02	U	
AMD746S	Q3AMD746S3-17	19-Jul-17	Plutonium-238	-0.113	pCi/Sample	-1.39E-05	-1.39E-17	2.10E-15	-6.60E-03	U	
AMD746S	Q3AMD746S3-17	19-Jul-17	Plutonium-239/240	-0.113	pCi/Sample	-1.39E-05	-1.39E-17	2.00E-15	-6.93E-03	U	
AMD746S	Q3AMD746S3-17	19-Jul-17	Technetium-99	-6.1	pCi/Sample	-7.48E-04	-7.48E-16	1.40E-13	-5.35E-03	U	
AMD746S	Q3AMD746S3-17	19-Jul-17	Thorium-234	70	pCi/Sample	8.59E-03	8.59E-15	2.20E-12	3.90E-03	U	
AMD746S	Q3AMD746S3-17	19-Jul-17	Uranium-234	3.38	pCi/Sample	4.15E-04	4.15E-16	7.70E-15	5.39E-02		
AMD746S	Q3AMD746S3-17	19-Jul-17	Uranium-235	0.606	pCi/Sample	7.44E-05	7.44E-17	7.10E-15	1.05E-02		
AMD746S	Q3AMD746S3-17	19-Jul-17	Uranium-238	2.4	pCi/Sample	2.94E-04	2.94E-16	8.30E-15	3.55E-02		
								Sum of the Fractions of the Standard	2.05E-01		
	Quarter Air Flow	7409	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD746U	Q3AMD746U3-17	19-Jul-17	Americium-241	1.33	pCi/Sample	1.80E-04	1.80E-16	1.90E-15	9.45E-02	U	
AMD746U	Q3AMD746U3-17	19-Jul-17	Neptunium-237	-0.337	pCi/Sample	-4.55E-05	-4.55E-17	1.20E-15	-3.79E-02	U	
AMD746U	Q3AMD746U3-17	19-Jul-17	Plutonium-238	-0.0587	pCi/Sample	-7.92E-06	-7.92E-18	2.10E-15	-3.77E-03	U	
AMD746U	Q3AMD746U3-17	19-Jul-17	Plutonium-239/240	-0.0163	pCi/Sample	-2.20E-06	-2.20E-18	2.00E-15	-1.10E-03	U	
AMD746U	Q3AMD746U3-17	19-Jul-17	Technetium-99	-8.81	pCi/Sample	-1.19E-03	-1.19E-15	1.40E-13	-8.49E-03	U	
AMD746U	Q3AMD746U3-17	19-Jul-17	Thorium-234	-14.4	pCi/Sample	-1.94E-03	-1.94E-15	2.20E-12	-8.83E-04	U	
AMD746U	Q3AMD746U3-17	19-Jul-17	Uranium-234	2.14	pCi/Sample	2.89E-04	2.89E-16	7.70E-15	3.75E-02		
AMD746U	Q3AMD746U3-17	19-Jul-17	Uranium-235	0.386	pCi/Sample	5.21E-05	5.21E-17	7.10E-15	7.34E-03	U	
AMD746U	Q3AMD746U3-17	19-Jul-17	Uranium-238	2.42	pCi/Sample	3.27E-04	3.27E-16	8.30E-15	3.94E-02		
								Sum of the Fractions of the Standard	1.27E-01		

Table A.1. Air Monitoring Calculations for 2017 (Continued)

Station	Client Sample ID	Date Collected	Analysis	Result	Units	Concentration	Concentration	Standard	Fraction of Standard	Qualifier	Assessment Code
	Quarter Air Flow	7411	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMDBCP	Q3AMDBCP3-17	19-Jul-17	Americium-241	2.86	pCi/Sample	3.86E-04	3.86E-16	1.90E-15	2.03E-01	U	
AMDBCP	Q3AMDBCP3-17	19-Jul-17	Neptunium-237	1.39	pCi/Sample	1.88E-04	1.88E-16	1.20E-15	1.56E-01	U	
AMDBCP	Q3AMDBCP3-17	19-Jul-17	Plutonium-238	0.0555	pCi/Sample	7.49E-06	7.49E-18	2.10E-15	3.57E-03	U	
AMDBCP	Q3AMDBCP3-17	19-Jul-17	Plutonium-239/240	-0.193	pCi/Sample	-2.60E-05	-2.60E-17	2.00E-15	-1.30E-02	U	
AMDBCP	Q3AMDBCP3-17	19-Jul-17	Technetium-99	-14.2	pCi/Sample	-1.92E-03	-1.92E-15	1.40E-13	-1.37E-02	U	
AMDBCP	Q3AMDBCP3-17	19-Jul-17	Thorium-234	-70.1	pCi/Sample	-9.46E-03	-9.46E-15	2.20E-12	-4.30E-03	U	
AMDBCP	Q3AMDBCP3-17	19-Jul-17	Uranium-234	2.27	pCi/Sample	3.06E-04	3.06E-16	7.70E-15	3.98E-02		
AMDBCP	Q3AMDBCP3-17	19-Jul-17	Uranium-235	0.61	pCi/Sample	8.23E-05	8.23E-17	7.10E-15	1.16E-02		
AMDBCP	Q3AMDBCP3-17	19-Jul-17	Uranium-238	1.98	pCi/Sample	2.67E-04	2.67E-16	8.30E-15	3.22E-02		
							Sum of the Fractions of the Standard		4.16E-01		
	Quarter Air Flow	7409	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMDNE	Q3AMDNE3-17	19-Jul-17	Americium-241	1.55	pCi/Sample	2.09E-04	2.09E-16	1.90E-15	1.10E-01	U	
AMDNE	Q3AMDNE3-17	19-Jul-17	Neptunium-237	-2.57	pCi/Sample	-3.47E-04	-3.47E-16	1.20E-15	-2.89E-01	U	
AMDNE	Q3AMDNE3-17	19-Jul-17	Plutonium-238	0.167	pCi/Sample	2.25E-05	2.25E-17	2.10E-15	1.07E-02	U	
AMDNE	Q3AMDNE3-17	19-Jul-17	Plutonium-239/240	-0.0106	pCi/Sample	-1.43E-06	-1.43E-18	2.00E-15	-7.15E-04	U	
AMDNE	Q3AMDNE3-17	19-Jul-17	Technetium-99	0.11	pCi/Sample	1.48E-05	1.48E-17	1.40E-13	1.06E-04	U	
AMDNE	Q3AMDNE3-17	19-Jul-17	Thorium-234	43.1	pCi/Sample	5.82E-03	5.82E-15	2.20E-12	2.64E-03	U	
AMDNE	Q3AMDNE3-17	19-Jul-17	Uranium-234	2.4	pCi/Sample	3.24E-04	3.24E-16	7.70E-15	4.21E-02		
AMDNE	Q3AMDNE3-17	19-Jul-17	Uranium-235	0.338	pCi/Sample	4.56E-05	4.56E-17	7.10E-15	6.43E-03	U	
AMDNE	Q3AMDNE3-17	19-Jul-17	Uranium-238	1.91	pCi/Sample	2.58E-04	2.58E-16	8.30E-15	3.11E-02		
							Sum of the Fractions of the Standard		-8.66E-02		

Table A.1. Air Monitoring Calculations for 2017

Station	Client Sample ID	Date Collected	Analysis	Result	Units	Concentration	Concentration	Standard	Fraction of Standard	Qualifier	Assessment Code
3rd Quarter July through September											
	Quarter Air Flow	7403	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD002	Q4AMD0024-17	16-Oct-17	Americium-241	0.082	pCi/Sample	1.11E-05	1.11E-17	1.90E-15	5.83E-03	U	
AMD002	Q4AMD0024-17	16-Oct-17	Neptunium-237	-1.35	pCi/Sample	-1.82E-04	-1.82E-16	1.20E-15	-1.52E-01	U	
AMD002	Q4AMD0024-17	16-Oct-17	Plutonium-238	0.161	pCi/Sample	2.17E-05	2.17E-17	2.10E-15	1.04E-02	U	
AMD002	Q4AMD0024-17	16-Oct-17	Plutonium-239/240	-0.0726	pCi/Sample	-9.81E-06	-9.81E-18	2.00E-15	-4.90E-03	U	
AMD002	Q4AMD0024-17	16-Oct-17	Technetium-99	-0.616	pCi/Sample	-8.32E-05	-8.32E-17	1.40E-13	-5.94E-04	U	
AMD002	Q4AMD0024-17	16-Oct-17	Thorium-234	27	pCi/Sample	3.65E-03	3.65E-15	2.20E-12	1.66E-03	U	
AMD002	Q4AMD0024-17	16-Oct-17	Uranium-234	2.22	pCi/Sample	3.00E-04	3.00E-16	7.70E-15	3.89E-02		
AMD002	Q4AMD0024-17	16-Oct-17	Uranium-235	0.0894	pCi/Sample	1.21E-05	1.21E-17	7.10E-15	1.70E-03	U	
AMD002	Q4AMD0024-17	16-Oct-17	Uranium-238	1.9	pCi/Sample	2.57E-04	2.57E-16	8.30E-15	3.09E-02		
							Sum of the Fractions of the Standard		-6.80E-02		
	Quarter Air Flow	8008	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD012	Q4AMD0124-17	16-Oct-17	Americium-241	8.63	pCi/Sample	1.08E-03	1.08E-15	1.90E-15	5.67E-01	U	
AMD012	Q4AMD0124-17	16-Oct-17	Neptunium-237	1.03	pCi/Sample	1.29E-04	1.29E-16	1.20E-15	1.07E-01	U	
AMD012	Q4AMD0124-17	16-Oct-17	Plutonium-238	0.0239	pCi/Sample	2.98E-06	2.98E-18	2.10E-15	1.42E-03	U	
AMD012	Q4AMD0124-17	16-Oct-17	Plutonium-239/240	0.109	pCi/Sample	1.36E-05	1.36E-17	2.00E-15	6.81E-03	U	
AMD012	Q4AMD0124-17	16-Oct-17	Technetium-99	2.18	pCi/Sample	2.72E-04	2.72E-16	1.40E-13	1.94E-03	U	
AMD012	Q4AMD0124-17	16-Oct-17	Thorium-234	-27.3	pCi/Sample	-3.41E-03	-3.41E-15	2.20E-12	-1.55E-03	U	
AMD012	Q4AMD0124-17	16-Oct-17	Uranium-234	1.83	pCi/Sample	2.29E-04	2.29E-16	7.70E-15	2.97E-02		
AMD012	Q4AMD0124-17	16-Oct-17	Uranium-235	0.119	pCi/Sample	1.49E-05	1.49E-17	7.10E-15	2.09E-03	U	
AMD012	Q4AMD0124-17	16-Oct-17	Uranium-238	2.32	pCi/Sample	2.90E-04	2.90E-16	8.30E-15	3.49E-02		
							Sum of the Fractions of the Standard		7.50E-01		
	Quarter Air Flow	7386	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD015	Q4AMD0154-17	16-Oct-17	Americium-241	-5.44	pCi/Sample	-7.37E-04	-7.37E-16	1.90E-15	-3.88E-01	U	
AMD015	Q4AMD0154-17	16-Oct-17	Neptunium-237	0.963	pCi/Sample	1.30E-04	1.30E-16	1.20E-15	1.09E-01	U	
AMD015	Q4AMD0154-17	16-Oct-17	Plutonium-238	0.0607	pCi/Sample	8.22E-06	8.22E-18	2.10E-15	3.91E-03	U	
AMD015	Q4AMD0154-17	16-Oct-17	Plutonium-239/240	-0.0319	pCi/Sample	-4.32E-06	-4.32E-18	2.00E-15	-2.16E-03	U	
AMD015	Q4AMD0154-17	16-Oct-17	Technetium-99	41	pCi/Sample	5.55E-03	5.55E-15	1.40E-13	3.97E-02	U	
AMD015	Q4AMD0154-17	16-Oct-17	Thorium-234	-80.3	pCi/Sample	-1.09E-02	-1.09E-14	2.20E-12	-4.94E-03	U	
AMD015	Q4AMD0154-17	16-Oct-17	Uranium-234	2.35	pCi/Sample	3.18E-04	3.18E-16	7.70E-15	4.13E-02		
AMD015	Q4AMD0154-17	16-Oct-17	Uranium-235	0.501	pCi/Sample	6.78E-05	6.78E-17	7.10E-15	9.55E-03		
AMD015	Q4AMD0154-17	16-Oct-17	Uranium-238	1.56	pCi/Sample	2.11E-04	2.11E-16	8.30E-15	2.54E-02		
							Sum of the Fractions of the Standard		-1.66E-01		
	Quarter Air Flow	7385	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD57	Q4AMD574-17	16-Oct-17	Americium-241	-12.1	pCi/Sample	-1.64E-03	-1.64E-15	1.90E-15	-8.62E-01	U	
AMD57	Q4AMD574-17	16-Oct-17	Neptunium-237	0.158	pCi/Sample	2.14E-05	2.14E-17	1.20E-15	1.78E-02	U	
AMD57	Q4AMD574-17	16-Oct-17	Plutonium-238	0.0493	pCi/Sample	6.68E-06	6.68E-18	2.10E-15	3.18E-03	U	
AMD57	Q4AMD574-17	16-Oct-17	Plutonium-239/240	-0.013	pCi/Sample	-1.76E-06	-1.76E-18	2.00E-15	-8.80E-04	U	
AMD57	Q4AMD574-17	16-Oct-17	Technetium-99	11.4	pCi/Sample	1.54E-03	1.54E-15	1.40E-13	1.10E-02	U	
AMD57	Q4AMD574-17	16-Oct-17	Thorium-234	-30.3	pCi/Sample	-4.10E-03	-4.10E-15	2.20E-12	-1.86E-03	U	
AMD57	Q4AMD574-17	16-Oct-17	Uranium-234	2.16	pCi/Sample	2.92E-04	2.92E-16	7.70E-15	3.80E-02		
AMD57	Q4AMD574-17	16-Oct-17	Uranium-235	-0.0149	pCi/Sample	-2.02E-06	-2.02E-18	7.10E-15	-2.84E-04	U	
AMD57	Q4AMD574-17	16-Oct-17	Uranium-238	2.04	pCi/Sample	2.76E-04	2.76E-16	8.30E-15	3.33E-02		
							Sum of the Fractions of the Standard		-7.62E-01		

Table A.1. Air Monitoring Calculations for 2017 (Continued)

Station	Client Sample ID	Date Collected	Analysis	Result	Units	Concentration	Concentration	Standard	Fraction of Standard	Qualifier	Assessment Code
	Quarter Air Flow	7406	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD612	Q4AMD6124-17	16-Oct-17	Americium-241	8.36	pCi/Sample	1.13E-03	1.13E-15	1.90E-15	5.94E-01	U	
AMD612	Q4AMD6124-17	16-Oct-17	Neptunium-237	0.433	pCi/Sample	5.85E-05	5.85E-17	1.20E-15	4.87E-02	U	
AMD612	Q4AMD6124-17	16-Oct-17	Plutonium-238	-0.0201	pCi/Sample	-2.71E-06	-2.71E-18	2.10E-15	-1.29E-03	U	
AMD612	Q4AMD6124-17	16-Oct-17	Plutonium-239/240	0.107	pCi/Sample	1.44E-05	1.44E-17	2.00E-15	7.22E-03	U	
AMD612	Q4AMD6124-17	16-Oct-17	Technetium-99	-12.3	pCi/Sample	-1.66E-03	-1.66E-15	1.40E-13	-1.19E-02	U	
AMD612	Q4AMD6124-17	16-Oct-17	Thorium-234	232	pCi/Sample	3.13E-02	3.13E-14	2.20E-12	1.42E-02	U	
AMD612	Q4AMD6124-17	16-Oct-17	Uranium-234	2.91	pCi/Sample	3.93E-04	3.93E-16	7.70E-15	5.10E-02		
AMD612	Q4AMD6124-17	16-Oct-17	Uranium-235	0.271	pCi/Sample	3.66E-05	3.66E-17	7.10E-15	5.15E-03	U	
AMD612	Q4AMD6124-17	16-Oct-17	Uranium-238	2.63	pCi/Sample	3.55E-04	3.55E-16	8.30E-15	4.28E-02		
								Sum of the Fractions of the Standard	7.50E-01		
	Quarter Air Flow	7428	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD746S	Q4AMD746S4-17	16-Oct-17	Americium-241	-6.74	pCi/Sample	-9.07E-04	-9.07E-16	1.90E-15	-4.78E-01	U	
AMD746S	Q4AMD746S4-17	16-Oct-17	Neptunium-237	0.619	pCi/Sample	8.33E-05	8.33E-17	1.20E-15	6.94E-02	U	
AMD746S	Q4AMD746S4-17	16-Oct-17	Plutonium-238	-0.0946	pCi/Sample	-1.27E-05	-1.27E-17	2.10E-15	-6.06E-03	U	
AMD746S	Q4AMD746S4-17	16-Oct-17	Plutonium-239/240	-0.0945	pCi/Sample	-1.27E-05	-1.27E-17	2.00E-15	-6.36E-03	U	
AMD746S	Q4AMD746S4-17	16-Oct-17	Technetium-99	-34.8	pCi/Sample	-4.69E-03	-4.69E-15	1.40E-13	-3.35E-02	U	
AMD746S	Q4AMD746S4-17	16-Oct-17	Thorium-234	8.58	pCi/Sample	1.16E-03	1.16E-15	2.20E-12	5.25E-04	U	
AMD746S	Q4AMD746S4-17	16-Oct-17	Uranium-234	2.63	pCi/Sample	3.54E-04	3.54E-16	7.70E-15	4.60E-02		
AMD746S	Q4AMD746S4-17	16-Oct-17	Uranium-235	0.259	pCi/Sample	3.49E-05	3.49E-17	7.10E-15	4.91E-03	U	
AMD746S	Q4AMD746S4-17	16-Oct-17	Uranium-238	3.07	pCi/Sample	4.13E-04	4.13E-16	8.30E-15	4.98E-02		
								Sum of the Fractions of the Standard	-3.53E-01		
	Quarter Air Flow	7384	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD746U	Q4AMD746U4-17	16-Oct-17	Americium-241	8.25	pCi/Sample	1.12E-03	1.12E-15	1.90E-15	5.88E-01	U	
AMD746U	Q4AMD746U4-17	16-Oct-17	Neptunium-237	0.99	pCi/Sample	1.34E-04	1.34E-16	1.20E-15	1.12E-01	U	
AMD746U	Q4AMD746U4-17	16-Oct-17	Plutonium-238	-0.0272	pCi/Sample	-3.68E-06	-3.68E-18	2.10E-15	-1.75E-03	U	
AMD746U	Q4AMD746U4-17	16-Oct-17	Plutonium-239/240	-0.068	pCi/Sample	-9.21E-06	-9.21E-18	2.00E-15	-4.60E-03	U	
AMD746U	Q4AMD746U4-17	16-Oct-17	Technetium-99	6.28	pCi/Sample	8.51E-04	8.51E-16	1.40E-13	6.08E-03	U	
AMD746U	Q4AMD746U4-17	16-Oct-17	Thorium-234	98.7	pCi/Sample	1.34E-02	1.34E-14	2.20E-12	6.08E-03	U	
AMD746U	Q4AMD746U4-17	16-Oct-17	Uranium-234	3.29	pCi/Sample	4.46E-04	4.46E-16	7.70E-15	5.79E-02		
AMD746U	Q4AMD746U4-17	16-Oct-17	Uranium-235	0.177	pCi/Sample	2.40E-05	2.40E-17	7.10E-15	3.38E-03	U	
AMD746U	Q4AMD746U4-17	16-Oct-17	Uranium-238	2.36	pCi/Sample	3.20E-04	3.20E-16	8.30E-15	3.85E-02		
								Sum of the Fractions of the Standard	8.05E-01		
	Quarter Air Flow	7367	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMDBCP	Q4AMDBCP4-17	16-Oct-17	Americium-241	0.997	pCi/Sample	1.35E-04	1.35E-16	1.90E-15	7.12E-02	U	
AMDBCP	Q4AMDBCP4-17	16-Oct-17	Neptunium-237	0.532	pCi/Sample	7.22E-05	7.22E-17	1.20E-15	6.02E-02	U	
AMDBCP	Q4AMDBCP4-17	16-Oct-17	Plutonium-238	-0.0652	pCi/Sample	-8.85E-06	-8.85E-18	2.10E-15	-4.21E-03	U	
AMDBCP	Q4AMDBCP4-17	16-Oct-17	Plutonium-239/240	0.0705	pCi/Sample	9.57E-06	9.57E-18	2.00E-15	4.79E-03	U	
AMDBCP	Q4AMDBCP4-17	16-Oct-17	Technetium-99	24.7	pCi/Sample	3.35E-03	3.35E-15	1.40E-13	2.39E-02	U	
AMDBCP	Q4AMDBCP4-17	16-Oct-17	Thorium-234	24.3	pCi/Sample	3.30E-03	3.30E-15	2.20E-12	1.50E-03	U	
AMDBCP	Q4AMDBCP4-17	16-Oct-17	Uranium-234	0.984	pCi/Sample	1.34E-04	1.34E-16	7.70E-15	1.73E-02		
AMDBCP	Q4AMDBCP4-17	16-Oct-17	Uranium-235	0.35	pCi/Sample	4.75E-05	4.75E-17	7.10E-15	6.69E-03	U	
AMDBCP	Q4AMDBCP4-17	16-Oct-17	Uranium-238	1.06	pCi/Sample	1.44E-04	1.44E-16	8.30E-15	1.73E-02		
								Sum of the Fractions of the Standard	1.99E-01		

Table A.1. Air Monitoring Calculations for 2017 (Continued)

Station	Client Sample ID	Date Collected	Analysis	Result	Units	Concentration	Concentration	Standard	Fraction of Standard	Qualifier	Assessment Code
	Quarter Air Flow	7384	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMDNE	Q4AMDNE4-17	16-Oct-17	Americium-241	-0.324	pCi/Sample	-4.39E-05	-4.39E-17	1.90E-15	-2.31E-02	U	
AMDNE	Q4AMDNE4-17	16-Oct-17	Neptunium-237	-2.34	pCi/Sample	-3.17E-04	-3.17E-16	1.20E-15	-2.64E-01	U	
AMDNE	Q4AMDNE4-17	16-Oct-17	Plutonium-238	0.048	pCi/Sample	6.50E-06	6.50E-18	2.10E-15	3.10E-03	U	
AMDNE	Q4AMDNE4-17	16-Oct-17	Plutonium-239/240	0.00252	pCi/Sample	3.41E-07	3.41E-19	2.00E-15	1.71E-04	U	
AMDNE	Q4AMDNE4-17	16-Oct-17	Technetium-99	10.8	pCi/Sample	1.46E-03	1.46E-15	1.40E-13	1.04E-02	U	
AMDNE	Q4AMDNE4-17	16-Oct-17	Thorium-234	-54.9	pCi/Sample	-7.43E-03	-7.43E-15	2.20E-12	-3.38E-03	U	
AMDNE	Q4AMDNE4-17	16-Oct-17	Uranium-234	1.95	pCi/Sample	2.64E-04	2.64E-16	7.70E-15	3.43E-02		
AMDNE	Q4AMDNE4-17	16-Oct-17	Uranium-235	0.366	pCi/Sample	4.96E-05	4.96E-17	7.10E-15	6.98E-03	U	
AMDNE	Q4AMDNE4-17	16-Oct-17	Uranium-238	1.98	pCi/Sample	2.68E-04	2.68E-16	8.30E-15	3.23E-02		
							Sum of the Fractions of the Standard		-2.03E-01		

Table A.1. Air Monitoring Calculations for 2017

Station	Client Sample ID	Date Collected	Analysis	Result	Units	Concentration	Concentration	Standard	Fraction of Standard	Qualifier	Assessment Code
4th Quarter October through December											
	Quarter Air Flow	7424	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD002	Q1AMD0021-18	11-Jan-18	Americium-241	-0.805	pCi/sample	-1.08E-04	-1.08E-16	1.90E-15	-5.71E-02	U	
AMD002	Q1AMD0021-18	11-Jan-18	Neptunium-237	-0.707	pCi/sample	-9.52E-05	-9.52E-17	1.20E-15	-7.94E-02	U	
AMD002	Q1AMD0021-18	11-Jan-18	Plutonium-238	0.444	pCi/sample	5.98E-05	5.98E-17	2.10E-15	2.85E-02	U	
AMD002	Q1AMD0021-18	11-Jan-18	Plutonium-239/240	-0.0622	pCi/sample	-8.38E-06	-8.38E-18	2.00E-15	-4.19E-03	U	
AMD002	Q1AMD0021-18	11-Jan-18	Technetium-99	-17.2	pCi/sample	-2.32E-03	-2.32E-15	1.40E-13	-1.65E-02	U	
AMD002	Q1AMD0021-18	11-Jan-18	Thorium-234	-151	pCi/sample	-2.03E-02	-2.03E-14	2.20E-12	-9.25E-03	U	
AMD002	Q1AMD0021-18	11-Jan-18	Uranium-234	2.47	pCi/sample	3.33E-04	3.33E-16	7.70E-15	4.32E-02		J
AMD002	Q1AMD0021-18	11-Jan-18	Uranium-235	0.774	pCi/sample	1.04E-04	1.04E-16	7.10E-15	1.47E-02		U,J
AMD002	Q1AMD0021-18	11-Jan-18	Uranium-238	1.54	pCi/sample	2.07E-04	2.07E-16	8.30E-15	2.50E-02		U,J
								Sum of the Fractions of the Standard	-5.50E-02		
	Quarter Air Flow	7405	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD012	Q1AMD0121-18	11-Jan-18	Americium-241	2.22	pCi/sample	3.00E-04	3.00E-16	1.90E-15	1.58E-01	U	
AMD012	Q1AMD0121-18	11-Jan-18	Neptunium-237	1.23	pCi/sample	1.66E-04	1.66E-16	1.20E-15	1.38E-01	U	
AMD012	Q1AMD0121-18	11-Jan-18	Plutonium-238	0.0305	pCi/sample	4.12E-06	4.12E-18	2.10E-15	1.96E-03	U	
AMD012	Q1AMD0121-18	11-Jan-18	Plutonium-239/240	-0.0703	pCi/sample	-9.49E-06	-9.49E-18	2.00E-15	-4.75E-03	U	
AMD012	Q1AMD0121-18	11-Jan-18	Technetium-99	5.7	pCi/sample	7.70E-04	7.70E-16	1.40E-13	5.50E-03	U	
AMD012	Q1AMD0121-18	11-Jan-18	Thorium-234	-95.8	pCi/sample	-1.29E-02	-1.29E-14	2.20E-12	-5.88E-03	U	
AMD012	Q1AMD0121-18	11-Jan-18	Uranium-234	1.39	pCi/sample	1.88E-04	1.88E-16	7.70E-15	2.44E-02		U,J
AMD012	Q1AMD0121-18	11-Jan-18	Uranium-235	0.246	pCi/sample	3.32E-05	3.32E-17	7.10E-15	4.68E-03	U	
AMD012	Q1AMD0121-18	11-Jan-18	Uranium-238	1.28	pCi/sample	1.73E-04	1.73E-16	8.30E-15	2.08E-02		U,J
								Sum of the Fractions of the Standard	3.43E-01		
	Quarter Air Flow	7404	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD015	Q1AMD0151-18	11-Jan-18	Americium-241	-4.28	pCi/sample	-5.78E-04	-5.78E-16	1.90E-15	-3.04E-01	U	
AMD015	Q1AMD0151-18	11-Jan-18	Neptunium-237	-0.717	pCi/sample	-9.68E-05	-9.68E-17	1.20E-15	-8.07E-02	U	
AMD015	Q1AMD0151-18	11-Jan-18	Plutonium-238	-0.0173	pCi/sample	-2.34E-06	-2.34E-18	2.10E-15	-1.11E-03	U	
AMD015	Q1AMD0151-18	11-Jan-18	Plutonium-239/240	0.00288	pCi/sample	3.89E-07	3.89E-19	2.00E-15	1.94E-04	U	
AMD015	Q1AMD0151-18	11-Jan-18	Technetium-99	-4.8	pCi/sample	-6.48E-04	-6.48E-16	1.40E-13	-4.63E-03	U	
AMD015	Q1AMD0151-18	11-Jan-18	Thorium-234	-44.1	pCi/sample	-5.96E-03	-5.96E-15	2.20E-12	-2.71E-03	U	
AMD015	Q1AMD0151-18	11-Jan-18	Uranium-234	1.8	pCi/sample	2.43E-04	2.43E-16	7.70E-15	3.16E-02		U,J
AMD015	Q1AMD0151-18	11-Jan-18	Uranium-235	0.736	pCi/sample	9.94E-05	9.94E-17	7.10E-15	1.40E-02		U,J
AMD015	Q1AMD0151-18	11-Jan-18	Uranium-238	2.18	pCi/sample	2.94E-04	2.94E-16	8.30E-15	3.55E-02		U,J
								Sum of the Fractions of the Standard	-3.12E-01		

Table A.1. Air Monitoring Calculations for 2017 (Continued)

Station	Client Sample ID	Date Collected	Analysis	Result	Units	Concentration	Concentration	Standard	Fraction of Standard	Qualifier	Assessment Code
	Quarter Air Flow	6797	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD57	Q1AMD571-18	11-Jan-18	Americium-241	0.851	pCi/sample	1.25E-04	1.25E-16	1.90E-15	6.59E-02	U	
AMD57	Q1AMD571-18	11-Jan-18	Neptunium-237	-0.592	pCi/sample	-8.71E-05	-8.71E-17	1.20E-15	-7.26E-02	U	
AMD57	Q1AMD571-18	11-Jan-18	Plutonium-238	-0.0149	pCi/sample	-2.19E-06	-2.19E-18	2.10E-15	-1.04E-03	U	
AMD57	Q1AMD571-18	11-Jan-18	Plutonium-239/240	-0.0149	pCi/sample	-2.19E-06	-2.19E-18	2.00E-15	-1.10E-03	U	
AMD57	Q1AMD571-18	11-Jan-18	Technetium-99	13.7	pCi/sample	2.02E-03	2.02E-15	1.40E-13	1.44E-02	U	
AMD57	Q1AMD571-18	11-Jan-18	Thorium-234	-71.7	pCi/sample	-1.05E-02	-1.05E-14	2.20E-12	-4.80E-03	U	
AMD57	Q1AMD571-18	11-Jan-18	Uranium-234	1.24	pCi/sample	1.82E-04	1.82E-16	7.70E-15	2.37E-02		U,J
AMD57	Q1AMD571-18	11-Jan-18	Uranium-235	0.5	pCi/sample	7.36E-05	7.36E-17	7.10E-15	1.04E-02	U	
AMD57	Q1AMD571-18	11-Jan-18	Uranium-238	1.28	pCi/sample	1.88E-04	1.88E-16	8.30E-15	2.27E-02		U,J
								Sum of the Fractions of the Standard	5.75E-02		
	Quarter Air Flow	7020	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD612	Q1AMD6121-18	11-Jan-18	Americium-241	-0.499	pCi/sample	-7.11E-05	-7.11E-17	1.90E-15	-3.74E-02	U	
AMD612	Q1AMD6121-18	11-Jan-18	Neptunium-237	-0.102	pCi/sample	-1.45E-05	-1.45E-17	1.20E-15	-1.21E-02	U	
AMD612	Q1AMD6121-18	11-Jan-18	Plutonium-238	-0.11	pCi/sample	-1.57E-05	-1.57E-17	2.10E-15	-7.46E-03	U	
AMD612	Q1AMD6121-18	11-Jan-18	Plutonium-239/240	0.0209	pCi/sample	2.98E-06	2.98E-18	2.00E-15	1.49E-03	U	
AMD612	Q1AMD6121-18	11-Jan-18	Technetium-99	5.06	pCi/sample	7.21E-04	7.21E-16	1.40E-13	5.15E-03	U	
AMD612	Q1AMD6121-18	11-Jan-18	Thorium-234	39.3	pCi/sample	5.60E-03	5.60E-15	2.20E-12	2.54E-03	U	
AMD612	Q1AMD6121-18	11-Jan-18	Uranium-234	2.06	pCi/sample	2.93E-04	2.93E-16	7.70E-15	3.81E-02		U,J
AMD612	Q1AMD6121-18	11-Jan-18	Uranium-235	0.318	pCi/sample	4.53E-05	4.53E-17	7.10E-15	6.38E-03	U	
AMD612	Q1AMD6121-18	11-Jan-18	Uranium-238	1.4	pCi/sample	1.99E-04	1.99E-16	8.30E-15	2.40E-02		U,J
								Sum of the Fractions of the Standard	2.07E-02		
	Quarter Air Flow	7405	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD746S	Q1AMD746S1-18	11-Jan-18	Americium-241	1.07	pCi/sample	1.44E-04	1.44E-16	1.90E-15	7.61E-02	U	
AMD746S	Q1AMD746S1-18	11-Jan-18	Neptunium-237	-2.6	pCi/sample	-3.51E-04	-3.51E-16	1.20E-15	-2.93E-01	U	
AMD746S	Q1AMD746S1-18	11-Jan-18	Plutonium-238	-0.0157	pCi/sample	-2.12E-06	-2.12E-18	2.10E-15	-1.01E-03	U	
AMD746S	Q1AMD746S1-18	11-Jan-18	Plutonium-239/240	-0.0443	pCi/sample	-5.98E-06	-5.98E-18	2.00E-15	-2.99E-03	U	
AMD746S	Q1AMD746S1-18	11-Jan-18	Technetium-99	-3.15	pCi/sample	-4.25E-04	-4.25E-16	1.40E-13	-3.04E-03	U	
AMD746S	Q1AMD746S1-18	11-Jan-18	Thorium-234	0	pCi/sample	0.00E+00	0.00E+00	2.20E-12	0.00E+00	UI	
AMD746S	Q1AMD746S1-18	11-Jan-18	Uranium-234	2.18	pCi/sample	2.94E-04	2.94E-16	7.70E-15	3.82E-02		U,J
AMD746S	Q1AMD746S1-18	11-Jan-18	Uranium-235	0.704	pCi/sample	9.51E-05	9.51E-17	7.10E-15	1.34E-02		U,J
AMD746S	Q1AMD746S1-18	11-Jan-18	Uranium-238	2.3	pCi/sample	3.11E-04	3.11E-16	8.30E-15	3.74E-02		U,J
								Sum of the Fractions of the Standard	-1.35E-01		

Table A.1. Air Monitoring Calculations for 2017 (Continued)

Station	Client Sample ID	Date Collected	Analysis	Result	Units	Concentration	Concentration	Standard	Fraction of Standard	Qualifier	Assessment Code
	Quarter Air Flow	7210	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMD746U	Q1AMD746U1-18	11-Jan-18	Americium-241	-0.00432	pCi/sample	-5.99E-07	-5.99E-19	1.90E-15	-3.15E-04	U	
AMD746U	Q1AMD746U1-18	11-Jan-18	Neptunium-237	0.264	pCi/sample	3.66E-05	3.66E-17	1.20E-15	3.05E-02	U	
AMD746U	Q1AMD746U1-18	11-Jan-18	Plutonium-238	-0.0164	pCi/sample	-2.27E-06	-2.27E-18	2.10E-15	-1.08E-03	U	
AMD746U	Q1AMD746U1-18	11-Jan-18	Plutonium-239/240	-0.0327	pCi/sample	-4.54E-06	-4.54E-18	2.00E-15	-2.27E-03	U	
AMD746U	Q1AMD746U1-18	11-Jan-18	Technetium-99	0.183	pCi/sample	2.54E-05	2.54E-17	1.40E-13	1.81E-04	U	
AMD746U	Q1AMD746U1-18	11-Jan-18	Thorium-234	0.8	pCi/sample	1.11E-04	1.11E-16	2.20E-12	5.04E-05	U	
AMD746U	Q1AMD746U1-18	11-Jan-18	Uranium-234	2.35	pCi/sample	3.26E-04	3.26E-16	7.70E-15	4.23E-02		J
AMD746U	Q1AMD746U1-18	11-Jan-18	Uranium-235	0.267	pCi/sample	3.70E-05	3.70E-17	7.10E-15	5.22E-03	U	
AMD746U	Q1AMD746U1-18	11-Jan-18	Uranium-238	2.06	pCi/sample	2.86E-04	2.86E-16	8.30E-15	3.44E-02		U,J
								Sum of the Fractions of the Standard	1.09E-01		
	Quarter Air Flow	7554	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMDBCP	Q1AMDBCP1-18	11-Jan-18	Americium-241	-1.59	pCi/sample	-2.10E-04	-2.10E-16	1.90E-15	-1.11E-01	U	
AMDBCP	Q1AMDBCP1-18	11-Jan-18	Neptunium-237	0.862	pCi/sample	1.14E-04	1.14E-16	1.20E-15	9.51E-02	U	
AMDBCP	Q1AMDBCP1-18	11-Jan-18	Plutonium-238	-0.1	pCi/sample	-1.32E-05	-1.32E-17	2.10E-15	-6.30E-03	U	
AMDBCP	Q1AMDBCP1-18	11-Jan-18	Plutonium-239/240	-0.0836	pCi/sample	-1.11E-05	-1.11E-17	2.00E-15	-5.53E-03	U	
AMDBCP	Q1AMDBCP1-18	11-Jan-18	Technetium-99	0.698	pCi/sample	9.24E-05	9.24E-17	1.40E-13	6.60E-04	U	
AMDBCP	Q1AMDBCP1-18	11-Jan-18	Thorium-234	0	pCi/sample	0.00E+00	0.00E+00	2.20E-12	0.00E+00	UI	
AMDBCP	Q1AMDBCP1-18	11-Jan-18	Uranium-234	1.64	pCi/sample	2.17E-04	2.17E-16	7.70E-15	2.82E-02		U,J
AMDBCP	Q1AMDBCP1-18	11-Jan-18	Uranium-235	0.314	pCi/sample	4.16E-05	4.16E-17	7.10E-15	5.85E-03	U	
AMDBCP	Q1AMDBCP1-18	11-Jan-18	Uranium-238	1.68	pCi/sample	2.22E-04	2.22E-16	8.30E-15	2.68E-02		U,J
								Sum of the Fractions of the Standard	3.40E-02		
	Quarter Air Flow	7405	m3			pCi/m3	Ci/m3	Ci/m3	fraction		
AMDNE	Q1AMDNE1-18	11-Jan-18	Americium-241	-0.326	pCi/sample	-4.40E-05	-4.40E-17	1.90E-15	-2.32E-02	U	
AMDNE	Q1AMDNE1-18	11-Jan-18	Neptunium-237	1.68	pCi/sample	2.27E-04	2.27E-16	1.20E-15	1.89E-01	U	
AMDNE	Q1AMDNE1-18	11-Jan-18	Plutonium-238	0.0368	pCi/sample	4.97E-06	4.97E-18	2.10E-15	2.37E-03	U	
AMDNE	Q1AMDNE1-18	11-Jan-18	Plutonium-239/240	-0.034	pCi/sample	-4.59E-06	-4.59E-18	2.00E-15	-2.30E-03	U	
AMDNE	Q1AMDNE1-18	11-Jan-18	Technetium-99	7.24	pCi/sample	9.78E-04	9.78E-16	1.40E-13	6.98E-03	U	
AMDNE	Q1AMDNE1-18	11-Jan-18	Thorium-234	-68.7	pCi/sample	-9.28E-03	-9.28E-15	2.20E-12	-4.22E-03	U	
AMDNE	Q1AMDNE1-18	11-Jan-18	Uranium-234	1.15	pCi/sample	1.55E-04	1.55E-16	7.70E-15	2.02E-02		U,J
AMDNE	Q1AMDNE1-18	11-Jan-18	Uranium-235	0.00382	pCi/sample	5.16E-07	5.16E-19	7.10E-15	7.27E-05	U	
AMDNE	Q1AMDNE1-18	11-Jan-18	Uranium-238	1.76	pCi/sample	2.38E-04	2.38E-16	8.30E-15	2.86E-02		U,J
								Sum of the Fractions of the Standard	2.18E-01		

Table A.2. Ambient Air Monitoring 2017 Individual Sample Isotopic Concentrations

STA_NAME	D_COLLECTED	CHEMICAL_NAME	ANA_METHOD	RESULTS	UNITS	RSLTQUAL	DETECT_LIMIT	RAD_ERR	TPU
AMD002	02-May-17	Americium-241	HASL 300, 4.5.2.3	1.87	pCi/sample	U	14.5	8.03	8.07
AMD002	02-May-17	Neptunium-237	HASL 300, 4.5.2.3	3.08	pCi/sample	U	5.61	3.08	3.38
AMD002	02-May-17	Plutonium-238	HASL 300, Pu-11-RC M	4.04	pCi/Sample		0.24	0.889	1.02
AMD002	02-May-17	Plutonium-239/240	HASL 300, Pu-11-RC M	0.126	pCi/Sample	U	0.277	0.2	0.201
AMD002	02-May-17	Protactinium-233	HASL 300, 4.5.2.3	3.08	pCi/sample	U	5.61	3.08	3.38
AMD002	02-May-17	Technetium-99	HASL 300, Tc-02-RC M	59.4	pCi/Sample	U	77.1	47	47.4
AMD002	02-May-17	Thorium-234	HASL 300, 4.5.2.3	-109	pCi/sample	U	140	114	127
AMD002	02-May-17	Uranium-234	HASL 300, U-02-RC M	2.18	pCi/Sample		0.426	0.68	0.737
AMD002	02-May-17	Uranium-235	HASL 300, U-02-RC M	0.229	pCi/Sample	U	0.611	0.367	0.368
AMD002	02-May-17	Uranium-238	HASL 300, 4.5.2.3	-109	pCi/sample	U	140	114	127
AMD002	02-May-17	Uranium-238	HASL 300, U-02-RC M	1.74	pCi/Sample		0.708	0.678	0.714
AMD002	19-Jul-17	Americium-241	HASL 300, 4.5.2.3	-5.83	pCi/sample	U	29.8	17.3	17.6
AMD002	19-Jul-17	Neptunium-237	HASL 300, 4.5.2.3	-2.9	pCi/sample	U	7.42	4.23	4.43
AMD002	19-Jul-17	Plutonium-238	HASL 300, Pu-11-RC M	0.183	pCi/Sample	U	1.3	0.693	0.694
AMD002	19-Jul-17	Plutonium-239/240	HASL 300, Pu-11-RC M	-0.0337	pCi/Sample	U	0.922	0.421	0.421
AMD002	19-Jul-17	Protactinium-233	HASL 300, 4.5.2.3	-2.9	pCi/sample	U	7.42	4.23	4.43
AMD002	19-Jul-17	Technetium-99	HASL 300, Tc-02-RC M	10.8	pCi/Sample	U	80.2	46.6	46.6
AMD002	19-Jul-17	Thorium-234	HASL 300, 4.5.2.3	-202	pCi/sample	U	247	194	220
AMD002	19-Jul-17	Uranium-234	HASL 300, U-02-RC M	2.68	pCi/Sample		0.332	0.859	0.942
AMD002	19-Jul-17	Uranium-235	HASL 300, U-02-RC M	0.257	pCi/Sample		0.257	0.338	0.34
AMD002	19-Jul-17	Uranium-238	HASL 300, 4.5.2.3	-202	pCi/sample	U	247	194	220
AMD002	19-Jul-17	Uranium-238	HASL 300, U-02-RC M	1.99	pCi/Sample		0.485	0.759	0.812
AMD002	16-Oct-17	Americium-241	HASL 300, 4.5.2.3	0.082	pCi/sample	U	3.07	1.76	1.76
AMD002	16-Oct-17	Neptunium-237	HASL 300, 4.5.2.3	-1.35	pCi/sample	U	4.96	3.03	3.09
AMD002	16-Oct-17	Plutonium-238	HASL 300, Pu-11-RC M	0.161	pCi/Sample	U	0.52	0.321	0.322
AMD002	16-Oct-17	Plutonium-239/240	HASL 300, Pu-11-RC M	-0.0726	pCi/Sample	U	0.637	0.245	0.246
AMD002	16-Oct-17	Protactinium-233	HASL 300, 4.5.2.3	-1.35	pCi/sample	U	4.96	3.03	3.09
AMD002	16-Oct-17	Technetium-99	HASL 300, Tc-02-RC M	-0.616	pCi/Sample	U	54.5	31.9	31.9
AMD002	16-Oct-17	Thorium-234	HASL 300, 4.5.2.3	27	pCi/sample	U	30.1	42.7	43.1
AMD002	16-Oct-17	Uranium-234	HASL 300, U-02-RC M	2.22	pCi/Sample		0.506	0.732	0.79
AMD002	16-Oct-17	Uranium-235	HASL 300, U-02-RC M	0.0894	pCi/Sample	U	0.427	0.246	0.246
AMD002	16-Oct-17	Uranium-238	HASL 300, U-02-RC M	1.9	pCi/Sample		0.49	0.68	0.725
AMD002	16-Oct-17	Uranium-238	HASL 300, 4.5.2.3	27	pCi/sample	U	30.1	42.7	43.1
AMD002	11-Jan-18	Americium-241	HASL 300, 4.5.2.3	-0.805	pCi/sample	U	14.1	8.54	8.54
AMD002	11-Jan-18	Neptunium-237	HASL 300, 4.5.2.3	-0.707	pCi/sample	U	4.89	2.79	2.81
AMD002	11-Jan-18	Plutonium-238	HASL 300, Pu-11-RC M	0.444	pCi/Sample	U	0.878	0.544	0.547
AMD002	11-Jan-18	Plutonium-239/240	HASL 300, Pu-11-RC M	-0.0622	pCi/Sample	U	0.546	0.21	0.21
AMD002	11-Jan-18	Protactinium-233	HASL 300, 4.5.2.3	-0.707	pCi/sample	U	4.89	2.79	2.81
AMD002	11-Jan-18	Technetium-99	HASL 300, Tc-02-RC M	-17.2	pCi/Sample	U	41.8	23.1	23.1
AMD002	11-Jan-18	Thorium-234	HASL 300, 4.5.2.3	-151	pCi/sample	U	143	122	144

Table A.2. Ambient Air Monitoring 2017 Individual Sample Isotopic Concentrations (Continued)

STA_NAME	D_COLLECTED	CHEMICAL_NAME	ANA_METHOD	RESULTS	UNITS	RSLTQUAL	DETECT_LIMIT	RAD_ERR	TPU
AMD002	11-Jan-18	Uranium-234	HASL 300, U-02-RC M	2.47	pCi/Sample		0.636	0.963	1.04
AMD002	11-Jan-18	Uranium-235	HASL 300, U-02-RC M	0.774	pCi/Sample		0.332	0.615	0.627
AMD002	11-Jan-18	Uranium-238	HASL 300, 4.5.2.3	-151	pCi/sample	U	143	122	144
AMD002	11-Jan-18	Uranium-238	HASL 300, U-02-RC M	1.54	pCi/Sample		0.546	0.768	0.806
AMD012	02-May-17	Americium-241	HASL 300, 4.5.2.3	3	pCi/sample	U	10.6	6.76	6.9
AMD012	02-May-17	Neptunium-237	HASL 300, 4.5.2.3	3.12	pCi/sample	U	5.88	3.27	3.56
AMD012	02-May-17	Plutonium-238	HASL 300, Pu-11-RC M	3.24	pCi/Sample		0.346	0.855	0.947
AMD012	02-May-17	Plutonium-239/240	HASL 300, Pu-11-RC M	0.0294	pCi/Sample	U	0.313	0.163	0.164
AMD012	02-May-17	Protactinium-233	HASL 300, 4.5.2.3	3.12	pCi/sample	U	5.88	3.27	3.56
AMD012	02-May-17	Technetium-99	HASL 300, Tc-02-RC M	28.7	pCi/Sample	U	76.5	44.8	44.9
AMD012	02-May-17	Thorium-234	HASL 300, 4.5.2.3	5.93	pCi/sample	U	106	109	109
AMD012	02-May-17	Uranium-234	HASL 300, U-02-RC M	1.26	pCi/Sample		0.459	0.574	0.599
AMD012	02-May-17	Uranium-235	HASL 300, U-02-RC M	0.202	pCi/Sample	U	0.351	0.291	0.292
AMD012	02-May-17	Uranium-238	HASL 300, 4.5.2.3	5.93	pCi/sample	U	106	109	109
AMD012	02-May-17	Uranium-238	HASL 300, U-02-RC M	2.15	pCi/Sample		0.362	0.717	0.774
AMD012	19-Jul-17	Americium-241	HASL 300, 4.5.2.3	-0.824	pCi/sample	U	3.04	1.69	1.73
AMD012	19-Jul-17	Neptunium-237	HASL 300, 4.5.2.3	-0.319	pCi/sample	U	4.81	2.89	2.89
AMD012	19-Jul-17	Plutonium-238	HASL 300, Pu-11-RC M	-0.00751	pCi/Sample	U	0.977	0.452	0.452
AMD012	19-Jul-17	Plutonium-239/240	HASL 300, Pu-11-RC M	-0.18	pCi/Sample	U	0.758	0.227	0.227
AMD012	19-Jul-17	Protactinium-233	HASL 300, 4.5.2.3	-0.319	pCi/sample	U	4.81	2.89	2.89
AMD012	19-Jul-17	Technetium-99	HASL 300, Tc-02-RC M	-15.5	pCi/Sample	U	86.1	49	49
AMD012	19-Jul-17	Thorium-234	HASL 300, 4.5.2.3	-28	pCi/sample	U	47.2	31.8	34.8
AMD012	19-Jul-17	Uranium-234	HASL 300, U-02-RC M	1.82	pCi/Sample		0.613	0.828	0.876
AMD012	19-Jul-17	Uranium-235	HASL 300, U-02-RC M	0.0822	pCi/Sample	U	0.518	0.308	0.309
AMD012	19-Jul-17	Uranium-238	HASL 300, 4.5.2.3	-28	pCi/sample	U	47.2	31.8	34.8
AMD012	19-Jul-17	Uranium-238	HASL 300, U-02-RC M	2.41	pCi/Sample		0.484	0.926	1
AMD012	16-Oct-17	Americium-241	HASL 300, 4.5.2.3	8.63	pCi/sample	U	19.9	11.5	12.2
AMD012	16-Oct-17	Neptunium-237	HASL 300, 4.5.2.3	1.03	pCi/sample	U	6.32	3.83	3.86
AMD012	16-Oct-17	Plutonium-238	HASL 300, Pu-11-RC M	0.0239	pCi/Sample	U	0.522	0.25	0.251
AMD012	16-Oct-17	Plutonium-239/240	HASL 300, Pu-11-RC M	0.109	pCi/Sample	U	0.522	0.301	0.302
AMD012	16-Oct-17	Protactinium-233	HASL 300, 4.5.2.3	1.03	pCi/sample	U	6.32	3.83	3.86
AMD012	16-Oct-17	Technetium-99	HASL 300, Tc-02-RC M	2.18	pCi/Sample	U	63.2	37.1	37.1
AMD012	16-Oct-17	Thorium-234	HASL 300, 4.5.2.3	-27.3	pCi/sample	U	201	144	145
AMD012	16-Oct-17	Uranium-234	HASL 300, U-02-RC M	1.83	pCi/Sample		0.445	0.696	0.742
AMD012	16-Oct-17	Uranium-235	HASL 300, U-02-RC M	0.119	pCi/Sample	U	0.434	0.274	0.274
AMD012	16-Oct-17	Uranium-238	HASL 300, U-02-RC M	2.32	pCi/Sample		0.351	0.768	0.835
AMD012	16-Oct-17	Uranium-238	HASL 300, 4.5.2.3	-27.3	pCi/sample	U	201	144	145
AMD012	11-Jan-18	Americium-241	HASL 300, 4.5.2.3	2.22	pCi/sample	U	21.1	12.1	12.2
AMD012	11-Jan-18	Neptunium-237	HASL 300, 4.5.2.3	1.23	pCi/sample	U	5.46	3.01	3.06
AMD012	11-Jan-18	Plutonium-238	HASL 300, Pu-11-RC M	0.0305	pCi/Sample	U	0.325	0.169	0.17

Table A.2. Ambient Air Monitoring 2017 Individual Sample Isotopic Concentrations (Continued)

STA_NAME	D_COLLECTED	CHEMICAL_NAME	ANA_METHOD	RESULTS	UNITS	RSLTQUAL	DETECT_LIMIT	RAD_ERR	TPU
AMD012	11-Jan-18	Plutonium-239/240	HASL 300, Pu-11-RC M	-0.0703	pCi/Sample	U	0.411	0.133	0.133
AMD012	11-Jan-18	Protactinium-233	HASL 300, 4.5.2.3	1.23	pCi/sample	U	5.46	3.01	3.06
AMD012	11-Jan-18	Technetium-99	HASL 300, Tc-02-RC M	5.7	pCi/Sample	U	51.5	29.7	29.7
AMD012	11-Jan-18	Thorium-234	HASL 300, 4.5.2.3	-95.8	pCi/sample	U	186	168	175
AMD012	11-Jan-18	Uranium-234	HASL 300, U-02-RC M	1.39	pCi/Sample		0.642	0.687	0.718
AMD012	11-Jan-18	Uranium-235	HASL 300, U-02-RC M	0.246	pCi/Sample	U	0.428	0.355	0.357
AMD012	11-Jan-18	Uranium-238	HASL 300, 4.5.2.3	-95.8	pCi/sample	U	186	168	175
AMD012	11-Jan-18	Uranium-238	HASL 300, U-02-RC M	1.28	pCi/Sample		0.346	0.619	0.647
AMD015	02-May-17	Americium-241	HASL 300, 4.5.2.3	1.12	pCi/sample	U	15.7	8.37	8.38
AMD015	02-May-17	Neptunium-237	HASL 300, 4.5.2.3	-1.83	pCi/sample	U	6.44	4.91	4.98
AMD015	02-May-17	Plutonium-238	HASL 300, Pu-11-RC M	4.1	pCi/Sample		0.482	1.1	1.24
AMD015	02-May-17	Plutonium-239/240	HASL 300, Pu-11-RC M	-0.0497	pCi/Sample	U	0.566	0.225	0.225
AMD015	02-May-17	Protactinium-233	HASL 300, 4.5.2.3	-1.83	pCi/sample	U	6.44	4.91	4.98
AMD015	02-May-17	Technetium-99	HASL 300, Tc-02-RC M	1.48	pCi/Sample	U	70.3	39.6	39.6
AMD015	02-May-17	Thorium-234	HASL 300, 4.5.2.3	-54.8	pCi/sample	U	159	127	130
AMD015	02-May-17	Uranium-234	HASL 300, U-02-RC M	1.92	pCi/Sample		0.332	0.65	0.698
AMD015	02-May-17	Uranium-235	HASL 300, U-02-RC M	0.339	pCi/Sample	U	0.443	0.356	0.358
AMD015	02-May-17	Uranium-238	HASL 300, 4.5.2.3	-54.8	pCi/sample	U	159	127	130
AMD015	02-May-17	Uranium-238	HASL 300, U-02-RC M	1.65	pCi/Sample		0.332	0.605	0.643
AMD015	19-Jul-17	Americium-241	HASL 300, 4.5.2.3	-1.71	pCi/sample	U	12.2	10.1	10.2
AMD015	19-Jul-17	Neptunium-237	HASL 300, 4.5.2.3	-5.32	pCi/sample	U	5.28	4.78	5.37
AMD015	19-Jul-17	Plutonium-238	HASL 300, Pu-11-RC M	0.0516	pCi/Sample	U	0.325	0.193	0.194
AMD015	19-Jul-17	Plutonium-239/240	HASL 300, Pu-11-RC M	-0.0976	pCi/Sample	U	0.501	0.157	0.158
AMD015	19-Jul-17	Protactinium-233	HASL 300, 4.5.2.3	-5.32	pCi/sample	U	5.28	4.78	5.37
AMD015	19-Jul-17	Technetium-99	HASL 300, Tc-02-RC M	-8.29	pCi/Sample	U	79.2	45.3	45.3
AMD015	19-Jul-17	Thorium-234	HASL 300, 4.5.2.3	-47.2	pCi/sample	U	121	81.8	85.1
AMD015	19-Jul-17	Uranium-234	HASL 300, U-02-RC M	2.06	pCi/Sample		0.466	0.844	0.902
AMD015	19-Jul-17	Uranium-235	HASL 300, U-02-RC M	0.183	pCi/Sample	U	0.499	0.36	0.361
AMD015	19-Jul-17	Uranium-238	HASL 300, U-02-RC M	2.02	pCi/Sample		0.253	81.8	0.882
AMD015	19-Jul-17	Uranium-238	HASL 300, 4.5.2.3	-47.2	pCi/sample	U	121	0.826	85.1
AMD015	16-Oct-17	Americium-241	HASL 300, 4.5.2.3	-5.44	pCi/sample	U	19.3	11.8	12.1
AMD015	16-Oct-17	Neptunium-237	HASL 300, 4.5.2.3	0.963	pCi/sample	U	7.26	4.01	4.03
AMD015	16-Oct-17	Plutonium-238	HASL 300, Pu-11-RC M	0.0607	pCi/Sample	U	0.383	0.228	0.228
AMD015	16-Oct-17	Plutonium-239/240	HASL 300, Pu-11-RC M	-0.0319	pCi/Sample	U	0.692	0.298	0.298
AMD015	16-Oct-17	Protactinium-233	HASL 300, 4.5.2.3	0.963	pCi/sample	U	7.26	4.01	4.03
AMD015	16-Oct-17	Technetium-99	HASL 300, Tc-02-RC M	41	pCi/Sample	U	72.1	43	43.2
AMD015	16-Oct-17	Thorium-234	HASL 300, 4.5.2.3	-80.3	pCi/sample	U	201	147	152
AMD015	16-Oct-17	Uranium-234	HASL 300, U-02-RC M	2.35	pCi/Sample		0.521	0.785	0.85
AMD015	16-Oct-17	Uranium-235	HASL 300, U-02-RC M	0.501	pCi/Sample		0.425	0.43	0.436
AMD015	16-Oct-17	Uranium-238	HASL 300, U-02-RC M	1.56	pCi/Sample		0.573	0.664	0.698

Table A.2. Ambient Air Monitoring 2017 Individual Sample Isotopic Concentrations (Continued)

STA_NAME	D_COLLECTED	CHEMICAL_NAME	ANA_METHOD	RESULTS	UNITS	RSLTQUAL	DETECT_LIMIT	RAD_ERR	TPU
AMD015	16-Oct-17	Uranium-238	HASL 300, 4.5.2.3	-80.3	pCi/sample	U	201	147	152
AMD015	11-Jan-18	Americium-241	HASL 300, 4.5.2.3	-4.28	pCi/sample	U	15.8	8.93	9.15
AMD015	11-Jan-18	Neptunium-237	HASL 300, 4.5.2.3	-0.717	pCi/sample	U	4.31	2.52	2.54
AMD015	11-Jan-18	Plutonium-238	HASL 300, Pu-11-RC M	-0.0173	pCi/Sample	U	0.346	0.149	0.15
AMD015	11-Jan-18	Plutonium-239/240	HASL 300, Pu-11-RC M	0.00288	pCi/Sample	U	0.475	0.214	0.214
AMD015	11-Jan-18	Protactinium-233	HASL 300, 4.5.2.3	-0.717	pCi/sample	U	4.31	2.52	2.54
AMD015	11-Jan-18	Technetium-99	HASL 300, Tc-02-RC M	-4.8	pCi/Sample	U	47.5	26.9	26.9
AMD015	11-Jan-18	Thorium-234	HASL 300, 4.5.2.3	-44.1	pCi/sample	U	153	148	149
AMD015	11-Jan-18	Uranium-234	HASL 300, U-02-RC M	1.8	pCi/Sample		0.608	0.873	0.924
AMD015	11-Jan-18	Uranium-235	HASL 300, U-02-RC M	0.736	pCi/Sample		0.368	0.639	0.65
AMD015	11-Jan-18	Uranium-238	HASL 300, U-02-RC M	2.18	pCi/Sample		0.298	0.935	1
AMD015	11-Jan-18	Uranium-238	HASL 300, 4.5.2.3	-44.1	pCi/sample	U	153	148	149
AMD57	02-May-17	Americium-241	HASL 300, 4.5.2.3	2.37	pCi/sample	U	13.7	7.36	7.44
AMD57	02-May-17	Neptunium-237	HASL 300, 4.5.2.3	-0.453	pCi/sample	U	5.2	2.86	2.87
AMD57	02-May-17	Plutonium-238	HASL 300, Pu-11-RC M	0.184	pCi/Sample	U	0.319	0.265	0.266
AMD57	02-May-17	Plutonium-239/240	HASL 300, Pu-11-RC M	-0.0558	pCi/Sample	U	0.676	0.291	0.291
AMD57	02-May-17	Protactinium-233	HASL 300, 4.5.2.3	-0.453	pCi/sample	U	5.2	2.86	2.87
AMD57	02-May-17	Technetium-99	HASL 300, Tc-02-RC M	54.7	pCi/Sample	U	62.9	38.7	39.1
AMD57	02-May-17	Thorium-234	HASL 300, 4.5.2.3	-30.8	pCi/sample	U	133	126	127
AMD57	02-May-17	Uranium-234	HASL 300, U-02-RC M	1.58	pCi/Sample		0.366	0.624	0.66
AMD57	02-May-17	Uranium-235	HASL 300, U-02-RC M	0.187	pCi/Sample	U	0.41	0.297	0.298
AMD57	02-May-17	Uranium-238	HASL 300, U-02-RC M	1.47	pCi/Sample		0.332	0.601	0.633
AMD57	02-May-17	Uranium-238	HASL 300, 4.5.2.3	-30.8	pCi/sample	U	133	126	127
AMD57	19-Jul-17	Americium-241	HASL 300, 4.5.2.3	4.32	pCi/sample	U	16.5	8.69	8.92
AMD57	19-Jul-17	Neptunium-237	HASL 300, 4.5.2.3	-0.927	pCi/sample	U	6.81	3.75	3.78
AMD57	19-Jul-17	Plutonium-238	HASL 300, Pu-11-RC M	-0.0772	pCi/Sample	U	0.53	0.179	0.179
AMD57	19-Jul-17	Plutonium-239/240	HASL 300, Pu-11-RC M	0.0225	pCi/Sample	U	0.491	0.235	0.235
AMD57	19-Jul-17	Protactinium-233	HASL 300, 4.5.2.3	-0.927	pCi/sample	U	6.81	3.75	3.78
AMD57	19-Jul-17	Technetium-99	HASL 300, Tc-02-RC M	-5.35	pCi/Sample	U	76.1	43.7	43.7
AMD57	19-Jul-17	Thorium-234	HASL 300, 4.5.2.3	-140	pCi/sample	U	165	141	157
AMD57	19-Jul-17	Uranium-234	HASL 300, U-02-RC M	2.7	pCi/Sample		0.604	1.05	1.14
AMD57	19-Jul-17	Uranium-235	HASL 300, U-02-RC M	0	pCi/Sample	U	0.367	0.247	0.247
AMD57	19-Jul-17	Uranium-238	HASL 300, U-02-RC M	2.2	pCi/Sample		0.604	0.955	1.02
AMD57	19-Jul-17	Uranium-238	HASL 300, 4.5.2.3	-140	pCi/sample	U	165	141	157
AMD57	16-Oct-17	Americium-241	HASL 300, 4.5.2.3	-12.1	pCi/sample	U	20	15	16
AMD57	16-Oct-17	Neptunium-237	HASL 300, 4.5.2.3	0.158	pCi/sample	U	5.99	3.34	3.34
AMD57	16-Oct-17	Plutonium-238	HASL 300, Pu-11-RC M	0.0493	pCi/Sample	U	0.311	0.185	0.185
AMD57	16-Oct-17	Plutonium-239/240	HASL 300, Pu-11-RC M	-0.013	pCi/Sample	U	0.455	0.195	0.195
AMD57	16-Oct-17	Protactinium-233	HASL 300, 4.5.2.3	0.158	pCi/sample	U	5.99	3.34	3.34
AMD57	16-Oct-17	Technetium-99	HASL 300, Tc-02-RC M	11.4	pCi/Sample	U	83	48.9	48.9

Table A.2. Ambient Air Monitoring 2017 Individual Sample Isotopic Concentrations (Continued)

STA_NAME	D_COLLECTED	CHEMICAL_NAME	ANA_METHOD	RESULTS	UNITS	RSLTQUAL	DETECT_LIMIT	RAD_ERR	TPU
AMD57	16-Oct-17	Thorium-234	HASL 300, 4.5.2.3	-30.3	pCi/sample	U	213	142	143
AMD57	16-Oct-17	Uranium-234	HASL 300, U-02-RC M	2.16	pCi/Sample		0.331	0.662	0.719
AMD57	16-Oct-17	Uranium-235	HASL 300, U-02-RC M	-0.0149	pCi/Sample	U	0.297	0.128	0.129
AMD57	16-Oct-17	Uranium-238	HASL 300, U-02-RC M	2.04	pCi/Sample		0.435	0.657	0.708
AMD57	16-Oct-17	Uranium-238	HASL 300, 4.5.2.3	-30.3	pCi/sample	U	213	142	143
AMD57	11-Jan-18	Americium-241	HASL 300, 4.5.2.3	0.851	pCi/sample	U	8.77	4.98	5
AMD57	11-Jan-18	Neptunium-237	HASL 300, 4.5.2.3	-0.592	pCi/sample	U	3.83	2.15	2.17
AMD57	11-Jan-18	Plutonium-238	HASL 300, Pu-11-RC M	-0.0149	pCi/Sample	U	0.297	0.128	0.129
AMD57	11-Jan-18	Plutonium-239/240	HASL 300, Pu-11-RC M	-0.0149	pCi/Sample	U	0.297	0.128	0.128
AMD57	11-Jan-18	Protactinium-233	HASL 300, 4.5.2.3	-0.592	pCi/sample	U	3.83	2.15	2.17
AMD57	11-Jan-18	Technetium-99	HASL 300, Tc-02-RC M	13.7	pCi/Sample	U	41.9	24.5	24.6
AMD57	11-Jan-18	Thorium-234	HASL 300, 4.5.2.3	-71.7	pCi/sample	U	86.3	80.2	88
AMD57	11-Jan-18	Uranium-234	HASL 300, U-02-RC M	1.24	pCi/Sample		0.608	0.692	0.72
AMD57	11-Jan-18	Uranium-235	HASL 300, U-02-RC M	0.5	pCi/Sample	U	0.504	0.51	0.515
AMD57	11-Jan-18	Uranium-238	HASL 300, 4.5.2.3	-71.7	pCi/sample	U	86.3	80.2	88
AMD57	11-Jan-18	Uranium-238	HASL 300, U-02-RC M	1.28	pCi/Sample		0.255	0.668	0.696
AMD612	02-May-17	Americium-241	HASL 300, 4.5.2.3	2.37	pCi/sample	U	14.1	8.06	8.14
AMD612	02-May-17	Neptunium-237	HASL 300, 4.5.2.3	-1.46	pCi/sample	U	4.75	2.7	2.78
AMD612	02-May-17	Plutonium-238	HASL 300, Pu-11-RC M	0	pCi/Sample	U	0.242	0.163	0.163
AMD612	02-May-17	Plutonium-239/240	HASL 300, Pu-11-RC M	0.00322	pCi/Sample	U	0.53	0.239	0.239
AMD612	02-May-17	Protactinium-233	HASL 300, 4.5.2.3	-1.46	pCi/sample	U	4.75	2.7	2.78
AMD612	02-May-17	Technetium-99	HASL 300, Tc-02-RC M	26.5	pCi/Sample	U	70.8	41.5	41.5
AMD612	02-May-17	Thorium-234	HASL 300, 4.5.2.3	-45.3	pCi/sample	U	155	143	145
AMD612	02-May-17	Uranium-234	HASL 300, U-02-RC M	1.94	pCi/Sample		0.555	0.829	0.881
AMD612	02-May-17	Uranium-235	HASL 300, U-02-RC M	0.391	pCi/Sample	U	0.499	0.461	0.465
AMD612	02-May-17	Uranium-238	HASL 300, U-02-RC M	1.75	pCi/Sample		0.59	0.797	0.841
AMD612	02-May-17	Uranium-238	HASL 300, 4.5.2.3	-45.3	pCi/sample	U	155	143	145
AMD612	19-Jul-17	Americium-241	HASL 300, 4.5.2.3	-1.66	pCi/sample	U	10.8	6.17	6.22
AMD612	19-Jul-17	Neptunium-237	HASL 300, 4.5.2.3	-2.36	pCi/sample	U	9.23	5.17	5.28
AMD612	19-Jul-17	Plutonium-238	HASL 300, Pu-11-RC M	0	pCi/Sample	U	0.227	0.153	0.153
AMD612	19-Jul-17	Plutonium-239/240	HASL 300, Pu-11-RC M	-0.0726	pCi/Sample	U	0.499	0.168	0.169
AMD612	19-Jul-17	Protactinium-233	HASL 300, 4.5.2.3	-2.36	pCi/sample	U	9.23	5.17	5.28
AMD612	19-Jul-17	Technetium-99	HASL 300, Tc-02-RC M	22.4	pCi/Sample	U	77	45.2	45.2
AMD612	19-Jul-17	Thorium-234	HASL 300, 4.5.2.3	77.1	pCi/sample	U	96.1	119	120
AMD612	19-Jul-17	Uranium-234	HASL 300, U-02-RC M	1.76	pCi/Sample		0.459	0.695	0.739
AMD612	19-Jul-17	Uranium-235	HASL 300, U-02-RC M	0.285	pCi/Sample	U	0.448	0.361	0.363
AMD612	19-Jul-17	Uranium-238	HASL 300, 4.5.2.3	77.1	pCi/sample	U	96.1	119	120
AMD612	19-Jul-17	Uranium-238	HASL 300, U-02-RC M	1.93	pCi/Sample		0.363	0.717	0.767
AMD612	16-Oct-17	Americium-241	HASL 300, 4.5.2.3	8.36	pCi/sample	U	31	18.7	19.1
AMD612	16-Oct-17	Neptunium-237	HASL 300, 4.5.2.3	0.433	pCi/sample	U	8.34	4.59	4.59

Table A.2. Ambient Air Monitoring 2017 Individual Sample Isotopic Concentrations (Continued)

STA_NAME	D_COLLECTED	CHEMICAL_NAME	ANA_METHOD	RESULTS	UNITS	RSLTQUAL	DETECT_LIMIT	RAD_ERR	TPU
AMD612	16-Oct-17	Plutonium-238	HASL 300, Pu-11-RC M	-0.0201	pCi/Sample	U	0.401	0.173	0.174
AMD612	16-Oct-17	Plutonium-239/240	HASL 300, Pu-11-RC M	0.107	pCi/Sample	U	0.511	0.295	0.295
AMD612	16-Oct-17	Protactinium-233	HASL 300, 4.5.2.3	0.433	pCi/sample	U	8.34	4.59	4.59
AMD612	16-Oct-17	Technetium-99	HASL 300, Tc-02-RC M	-12.3	pCi/Sample	U	70.1	40.9	40.9
AMD612	16-Oct-17	Thorium-234	HASL 300, 4.5.2.3	232	pCi/sample	U	253	281	305
AMD612	16-Oct-17	Uranium-234	HASL 300, U-02-RC M	2.91	pCi/Sample		0.522	0.867	0.957
AMD612	16-Oct-17	Uranium-235	HASL 300, U-02-RC M	0.271	pCi/Sample	U	0.426	0.343	0.345
AMD612	16-Oct-17	Uranium-238	HASL 300, U-02-RC M	2.63	pCi/Sample		0.482	0.822	0.899
AMD612	16-Oct-17	Uranium-238	HASL 300, 4.5.2.3	232	pCi/sample	U	253	281	305
AMD612	11-Jan-18	Americium-241	HASL 300, 4.5.2.3	-0.499	pCi/sample	U	9.2	5.67	5.68
AMD612	11-Jan-18	Neptunium-237	HASL 300, 4.5.2.3	-0.102	pCi/sample	U	4.17	2.34	2.34
AMD612	11-Jan-18	Plutonium-238	HASL 300, Pu-11-RC M	-0.11	pCi/Sample	U	0.505	0.154	0.155
AMD612	11-Jan-18	Plutonium-239/240	HASL 300, Pu-11-RC M	0.0209	pCi/Sample	U	0.505	0.238	0.238
AMD612	11-Jan-18	Protactinium-233	HASL 300, 4.5.2.3	-0.102	pCi/sample	U	4.17	2.34	2.34
AMD612	11-Jan-18	Technetium-99	HASL 300, Tc-02-RC M	5.06	pCi/Sample	U	41	23.6	23.6
AMD612	11-Jan-18	Thorium-234	HASL 300, 4.5.2.3	39.3	pCi/sample	U	73.6	106	106
AMD612	11-Jan-18	Uranium-234	HASL 300, U-02-RC M	2.06	pCi/Sample		1.03	0.933	0.986
AMD612	11-Jan-18	Uranium-235	HASL 300, U-02-RC M	0.318	pCi/Sample	U	0.593	0.435	0.438
AMD612	11-Jan-18	Uranium-238	HASL 300, U-02-RC M	1.4	pCi/Sample		0.658	0.715	0.745
AMD612	11-Jan-18	Uranium-238	HASL 300, 4.5.2.3	39.3	pCi/sample	U	73.6	106	106
AMD746S	02-May-17	Americium-241	HASL 300, 4.5.2.3	-5.89	pCi/sample	U	14.9	8.61	9.02
AMD746S	02-May-17	Neptunium-237	HASL 300, 4.5.2.3	-0.569	pCi/sample	U	4.94	2.76	2.77
AMD746S	02-May-17	Plutonium-238	HASL 300, Pu-11-RC M	-0.0341	pCi/Sample	U	0.394	0.151	0.151
AMD746S	02-May-17	Plutonium-239/240	HASL 300, Pu-11-RC M	-0.0312	pCi/Sample	U	0.525	0.216	0.216
AMD746S	02-May-17	Protactinium-233	HASL 300, 4.5.2.3	-0.569	pCi/sample	U	4.94	2.76	2.77
AMD746S	02-May-17	Technetium-99	HASL 300, Tc-02-RC M	21.6	pCi/Sample	U	71	41.3	41.4
AMD746S	02-May-17	Thorium-234	HASL 300, 4.5.2.3	81.4	pCi/sample	U	149	153	158
AMD746S	02-May-17	Uranium-234	HASL 300, U-02-RC M	1.45	pCi/Sample		0.455	0.653	0.685
AMD746S	02-May-17	Uranium-235	HASL 300, U-02-RC M	0.0853	pCi/Sample	U	0.256	0.24	0.24
AMD746S	02-May-17	Uranium-238	HASL 300, 4.5.2.3	81.4	pCi/sample	U	149	153	158
AMD746S	02-May-17	Uranium-238	HASL 300, U-02-RC M	2.61	pCi/Sample		0.331	0.846	0.925
AMD746S	19-Jul-17	Americium-241	HASL 300, 4.5.2.3	0.321	pCi/sample	U	7.38	4.52	4.52
AMD746S	19-Jul-17	Neptunium-237	HASL 300, 4.5.2.3	0.974	pCi/sample	U	6.1	3.37	3.4
AMD746S	19-Jul-17	Plutonium-238	HASL 300, Pu-11-RC M	-0.113	pCi/Sample	U	0.661	0.214	0.215
AMD746S	19-Jul-17	Plutonium-239/240	HASL 300, Pu-11-RC M	-0.113	pCi/Sample	U	0.661	0.214	0.215
AMD746S	19-Jul-17	Protactinium-233	HASL 300, 4.5.2.3	0.974	pCi/sample	U	6.1	3.37	3.4
AMD746S	19-Jul-17	Technetium-99	HASL 300, Tc-02-RC M	-6.1	pCi/Sample	U	83.2	47.7	47.7
AMD746S	19-Jul-17	Thorium-234	HASL 300, 4.5.2.3	70	pCi/sample	U	100	94.7	101
AMD746S	19-Jul-17	Uranium-234	HASL 300, U-02-RC M	3.38	pCi/Sample		0.428	0.972	1.09
AMD746S	19-Jul-17	Uranium-235	HASL 300, U-02-RC M	0.606	pCi/Sample		0.26	0.481	0.489

Table A.2. Ambient Air Monitoring 2017 Individual Sample Isotopic Concentrations (Continued)

STA_NAME	D_COLLECTED	CHEMICAL_NAME	ANA_METHOD	RESULTS	UNITS	RSLTQUAL	DETECT_LIMIT	RAD_ERR	TPU
AMD746S	19-Jul-17	Uranium-238	HASL 300, U-02-RC M	2.4	pCi/Sample		0.428	0.826	0.894
AMD746S	19-Jul-17	Uranium-238	HASL 300, 4.5.2.3	70	pCi/sample	U	100	94.7	101
AMD746S	16-Oct-17	Americium-241	HASL 300, 4.5.2.3	-6.74	pCi/sample	U	19.9	11.8	12.2
AMD746S	16-Oct-17	Neptunium-237	HASL 300, 4.5.2.3	0.619	pCi/sample	U	7.79	4.35	4.36
AMD746S	16-Oct-17	Plutonium-238	HASL 300, Pu-11-RC M	-0.0946	pCi/Sample	U	0.553	0.179	0.18
AMD746S	16-Oct-17	Plutonium-239/240	HASL 300, Pu-11-RC M	-0.0945	pCi/Sample	U	0.552	0.179	0.179
AMD746S	16-Oct-17	Protactinium-233	HASL 300, 4.5.2.3	0.619	pCi/sample	U	7.79	4.35	4.36
AMD746S	16-Oct-17	Technetium-99	HASL 300, Tc-02-RC M	-34.8	pCi/Sample	U	59.7	34.4	34.4
AMD746S	16-Oct-17	Thorium-234	HASL 300, 4.5.2.3	8.58	pCi/sample	U	213	169	169
AMD746S	16-Oct-17	Uranium-234	HASL 300, U-02-RC M	2.63	pCi/Sample		0.482	0.806	0.88
AMD746S	16-Oct-17	Uranium-235	HASL 300, U-02-RC M	0.259	pCi/Sample	U	0.408	0.329	0.33
AMD746S	16-Oct-17	Uranium-238	HASL 300, 4.5.2.3	8.58	pCi/sample	U	213	169	169
AMD746S	16-Oct-17	Uranium-238	HASL 300, U-02-RC M	3.07	pCi/Sample		0.33	0.852	0.947
AMD746S	11-Jan-18	Americium-241	HASL 300, 4.5.2.3	1.07	pCi/sample	U	4.31	2.8	2.84
AMD746S	11-Jan-18	Neptunium-237	HASL 300, 4.5.2.3	-2.6	pCi/sample	U	5.51	3.3	3.52
AMD746S	11-Jan-18	Plutonium-238	HASL 300, Pu-11-RC M	-0.0157	pCi/Sample	U	0.313	0.135	0.135
AMD746S	11-Jan-18	Plutonium-239/240	HASL 300, Pu-11-RC M	-0.0443	pCi/Sample	U	0.505	0.2	0.201
AMD746S	11-Jan-18	Protactinium-233	HASL 300, 4.5.2.3	-2.6	pCi/sample	U	5.51	3.3	3.52
AMD746S	11-Jan-18	Technetium-99	HASL 300, Tc-02-RC M	-3.15	pCi/Sample	U	51	29	29
AMD746S	11-Jan-18	Thorium-234	HASL 300, 4.5.2.3	0	pCi/sample	UI	42.4	69.1	70.1
AMD746S	11-Jan-18	Uranium-234	HASL 300, U-02-RC M	2.18	pCi/Sample		0.669	0.879	0.942
AMD746S	11-Jan-18	Uranium-235	HASL 300, U-02-RC M	0.704	pCi/Sample		0.302	0.559	0.569
AMD746S	11-Jan-18	Uranium-238	HASL 300, U-02-RC M	2.3	pCi/Sample		0.497	0.877	0.943
AMD746S	11-Jan-18	Uranium-238	HASL 300, 4.5.2.3	0	pCi/sample	UI	42.4	69.1	70.1
AMD746U	02-May-17	Americium-241	HASL 300, 4.5.2.3	2.27	pCi/sample	U	11.2	7.65	7.72
AMD746U	02-May-17	Neptunium-237	HASL 300, 4.5.2.3	4.01	pCi/sample	U	4.81	3.45	3.91
AMD746U	02-May-17	Plutonium-238	HASL 300, Pu-11-RC M	0.00286	pCi/Sample	U	0.471	0.212	0.212
AMD746U	02-May-17	Plutonium-239/240	HASL 300, Pu-11-RC M	0.00285	pCi/Sample	U	0.47	0.212	0.212
AMD746U	02-May-17	Protactinium-233	HASL 300, 4.5.2.3	4.01	pCi/sample	U	4.81	3.45	3.91
AMD746U	02-May-17	Technetium-99	HASL 300, Tc-02-RC M	40.5	pCi/Sample	U	79.8	47.4	47.6
AMD746U	02-May-17	Thorium-234	HASL 300, 4.5.2.3	3.31	pCi/sample	U	87.2	105	105
AMD746U	02-May-17	Uranium-234	HASL 300, U-02-RC M	2.05	pCi/Sample		0.444	0.783	0.837
AMD746U	02-May-17	Uranium-235	HASL 300, U-02-RC M	-0.0431	pCi/Sample	U	0.497	0.191	0.191
AMD746U	02-May-17	Uranium-238	HASL 300, 4.5.2.3	3.31	pCi/sample	U	87.2	105	105
AMD746U	02-May-17	Uranium-238	HASL 300, U-02-RC M	2.82	pCi/Sample		0.348	0.902	0.989
AMD746U	19-Jul-17	Americium-241	HASL 300, 4.5.2.3	1.33	pCi/sample	U	12.8	7.15	7.18
AMD746U	19-Jul-17	Neptunium-237	HASL 300, 4.5.2.3	-0.337	pCi/sample	U	5.28	2.91	2.92
AMD746U	19-Jul-17	Plutonium-238	HASL 300, Pu-11-RC M	-0.0587	pCi/Sample	U	0.498	0.177	0.178
AMD746U	19-Jul-17	Plutonium-239/240	HASL 300, Pu-11-RC M	-0.0163	pCi/Sample	U	0.572	0.245	0.245
AMD746U	19-Jul-17	Protactinium-233	HASL 300, 4.5.2.3	-0.337	pCi/sample	U	5.28	2.91	2.92

Table A.2. Ambient Air Monitoring 2017 Individual Sample Isotopic Concentrations (Continued)

STA_NAME	D_COLLECTED	CHEMICAL_NAME	ANA_METHOD	RESULTS	UNITS	RSLTQUAL	DETECT_LIMIT	RAD_ERR	TPU
AMD746U	19-Jul-17	Technetium-99	HASL 300, Tc-02-RC M	-8.81	pCi/Sample	U	80.3	45.9	45.9
AMD746U	19-Jul-17	Thorium-234	HASL 300, 4.5.2.3	-14.4	pCi/sample	U	139	94.7	95
AMD746U	19-Jul-17	Uranium-234	HASL 300, U-02-RC M	2.14	pCi/Sample		0.455	0.78	0.84
AMD746U	19-Jul-17	Uranium-235	HASL 300, U-02-RC M	0.386	pCi/Sample	U	0.472	0.415	0.419
AMD746U	19-Jul-17	Uranium-238	HASL 300, 4.5.2.3	-14.4	pCi/sample	U	139	94.7	95
AMD746U	19-Jul-17	Uranium-238	HASL 300, U-02-RC M	2.42	pCi/Sample		0.455	0.826	0.897
AMD746U	16-Oct-17	Americium-241	HASL 300, 4.5.2.3	8.25	pCi/sample	U	11.6	11.2	11.2
AMD746U	16-Oct-17	Neptunium-237	HASL 300, 4.5.2.3	0.99	pCi/sample	U	5.57	2.99	3.03
AMD746U	16-Oct-17	Plutonium-238	HASL 300, Pu-11-RC M	-0.0272	pCi/Sample	U	0.314	0.12	0.121
AMD746U	16-Oct-17	Plutonium-239/240	HASL 300, Pu-11-RC M	-0.068	pCi/Sample	U	0.398	0.129	0.129
AMD746U	16-Oct-17	Protactinium-233	HASL 300, 4.5.2.3	0.99	pCi/sample	U	5.57	2.99	3.03
AMD746U	16-Oct-17	Technetium-99	HASL 300, Tc-02-RC M	6.28	pCi/Sample	U	60.5	35.6	35.6
AMD746U	16-Oct-17	Thorium-234	HASL 300, 4.5.2.3	98.7	pCi/sample	U	129	113	124
AMD746U	16-Oct-17	Uranium-234	HASL 300, U-02-RC M	3.29	pCi/Sample		0.529	0.874	0.978
AMD746U	16-Oct-17	Uranium-235	HASL 300, U-02-RC M	0.177	pCi/Sample	U	0.511	0.315	0.315
AMD746U	16-Oct-17	Uranium-238	HASL 300, 4.5.2.3	98.7	pCi/sample	U	129	113	124
AMD746U	16-Oct-17	Uranium-238	HASL 300, U-02-RC M	2.36	pCi/Sample		0.341	0.728	0.793
AMD746U	11-Jan-18	Americium-241	HASL 300, 4.5.2.3	-0.00432	pCi/sample	U	5.98	3.93	3.93
AMD746U	11-Jan-18	Neptunium-237	HASL 300, 4.5.2.3	0.264	pCi/sample	U	3.75	2.13	2.13
AMD746U	11-Jan-18	Plutonium-238	HASL 300, Pu-11-RC M	-0.0164	pCi/Sample	U	0.327	0.141	0.142
AMD746U	11-Jan-18	Plutonium-239/240	HASL 300, Pu-11-RC M	-0.0327	pCi/Sample	U	0.378	0.145	0.145
AMD746U	11-Jan-18	Protactinium-233	HASL 300, 4.5.2.3	0.264	pCi/sample	U	3.75	2.13	2.13
AMD746U	11-Jan-18	Technetium-99	HASL 300, Tc-02-RC M	0.183	pCi/Sample	U	50	28.6	28.6
AMD746U	11-Jan-18	Thorium-234	HASL 300, 4.5.2.3	0.8	pCi/sample	U	51.8	60.4	60.4
AMD746U	11-Jan-18	Uranium-234	HASL 300, U-02-RC M	2.35	pCi/Sample		0.62	0.885	0.956
AMD746U	11-Jan-18	Uranium-235	HASL 300, U-02-RC M	0.267	pCi/Sample	U	0.463	0.384	0.386
AMD746U	11-Jan-18	Uranium-238	HASL 300, 4.5.2.3	0.8	pCi/sample	U	51.8	60.4	60.4
AMD746U	11-Jan-18	Uranium-238	HASL 300, U-02-RC M	2.06	pCi/Sample		0.478	0.814	0.871
AMDBCP	02-May-17	Americium-241	HASL 300, 4.5.2.3	-3.08	pCi/sample	U	17.1	11	11.1
AMDBCP	02-May-17	Neptunium-237	HASL 300, 4.5.2.3	0.672	pCi/sample	U	6.3	3.57	3.58
AMDBCP	02-May-17	Plutonium-238	HASL 300, Pu-11-RC M	0.0355	pCi/Sample	U	0.378	0.197	0.197
AMDBCP	02-May-17	Plutonium-239/240	HASL 300, Pu-11-RC M	0.104	pCi/Sample	U	0.377	0.238	0.238
AMDBCP	02-May-17	Protactinium-233	HASL 300, 4.5.2.3	0.672	pCi/sample	U	6.3	3.57	3.58
AMDBCP	02-May-17	Technetium-99	HASL 300, Tc-02-RC M	4.5	pCi/Sample	U	64.6	36.6	36.6
AMDBCP	02-May-17	Thorium-234	HASL 300, 4.5.2.3	4.7	pCi/sample	U	137	209	209
AMDBCP	02-May-17	Uranium-234	HASL 300, U-02-RC M	1.27	pCi/Sample		0.42	0.547	0.572
AMDBCP	02-May-17	Uranium-235	HASL 300, U-02-RC M	0.118	pCi/Sample	U	0.322	0.232	0.233
AMDBCP	02-May-17	Uranium-238	HASL 300, 4.5.2.3	4.7	pCi/sample	U	137	209	209
AMDBCP	02-May-17	Uranium-238	HASL 300, U-02-RC M	1.64	pCi/Sample		0.331	0.604	0.641
AMDBCP	19-Jul-17	Americium-241	HASL 300, 4.5.2.3	2.86	pCi/sample	U	21.8	12.7	12.8

Table A.2. Ambient Air Monitoring 2017 Individual Sample Isotopic Concentrations (Continued)

STA_NAME	D_COLLECTED	CHEMICAL_NAME	ANA_METHOD	RESULTS	UNITS	RSLTQUAL	DETECT_LIMIT	RAD_ERR	TPU
AMDBCP	19-Jul-17	Neptunium-237	HASL 300, 4.5.2.3	1.39	pCi/sample	U	6.89	3.8	3.85
AMDBCP	19-Jul-17	Plutonium-238	HASL 300, Pu-11-RC M	0.0555	pCi/Sample	U	0.35	0.208	0.208
AMDBCP	19-Jul-17	Plutonium-239/240	HASL 300, Pu-11-RC M	-0.193	pCi/Sample	U	0.653	0.186	0.186
AMDBCP	19-Jul-17	Protactinium-233	HASL 300, 4.5.2.3	1.39	pCi/sample	U	6.89	3.8	3.85
AMDBCP	19-Jul-17	Technetium-99	HASL 300, Tc-02-RC M	-14.2	pCi/Sample	U	74.7	42.5	42.5
AMDBCP	19-Jul-17	Thorium-234	HASL 300, 4.5.2.3	-70.1	pCi/sample	U	192	171	174
AMDBCP	19-Jul-17	Uranium-234	HASL 300, U-02-RC M	2.27	pCi/Sample		0.672	0.855	0.917
AMDBCP	19-Jul-17	Uranium-235	HASL 300, U-02-RC M	0.61	pCi/Sample		0.432	0.503	0.511
AMDBCP	19-Jul-17	Uranium-238	HASL 300, U-02-RC M	1.98	pCi/Sample		0.589	0.79	0.841
AMDBCP	19-Jul-17	Uranium-238	HASL 300, 4.5.2.3	-70.1	pCi/sample	U	192	171	174
AMDBCP	16-Oct-17	Americium-241	HASL 300, 4.5.2.3	0.997	pCi/sample	U	5.81	3.73	3.76
AMDBCP	16-Oct-17	Neptunium-237	HASL 300, 4.5.2.3	0.532	pCi/sample	U	8.46	4.86	4.86
AMDBCP	16-Oct-17	Plutonium-238	HASL 300, Pu-11-RC M	-0.0652	pCi/Sample	U	0.447	0.151	0.151
AMDBCP	16-Oct-17	Plutonium-239/240	HASL 300, Pu-11-RC M	0.0705	pCi/Sample	U	0.447	0.241	0.241
AMDBCP	16-Oct-17	Protactinium-233	HASL 300, 4.5.2.3	0.532	pCi/sample	U	8.46	4.86	4.86
AMDBCP	16-Oct-17	Technetium-99	HASL 300, Tc-02-RC M	24.7	pCi/Sample	U	68.8	40.8	40.8
AMDBCP	16-Oct-17	Thorium-234	HASL 300, 4.5.2.3	24.3	pCi/sample	U	78.1	86	86.9
AMDBCP	16-Oct-17	Uranium-234	HASL 300, U-02-RC M	0.984	pCi/Sample		0.439	0.513	0.53
AMDBCP	16-Oct-17	Uranium-235	HASL 300, U-02-RC M	0.35	pCi/Sample	U	0.352	0.356	0.359
AMDBCP	16-Oct-17	Uranium-238	HASL 300, U-02-RC M	1.06	pCi/Sample		0.417	0.525	0.545
AMDBCP	16-Oct-17	Uranium-238	HASL 300, 4.5.2.3	24.3	pCi/sample	U	78.1	86	86.9
AMDBCP	11-Jan-18	Americium-241	HASL 300, 4.5.2.3	-1.59	pCi/sample	U	9.13	5.72	5.76
AMDBCP	11-Jan-18	Neptunium-237	HASL 300, 4.5.2.3	0.862	pCi/sample	U	4.06	2.23	2.26
AMDBCP	11-Jan-18	Plutonium-238	HASL 300, Pu-11-RC M	-0.1	pCi/Sample	U	0.515	0.162	0.162
AMDBCP	11-Jan-18	Plutonium-239/240	HASL 300, Pu-11-RC M	-0.0836	pCi/Sample	U	0.488	0.158	0.159
AMDBCP	11-Jan-18	Protactinium-233	HASL 300, 4.5.2.3	0.862	pCi/sample	U	4.06	2.23	2.26
AMDBCP	11-Jan-18	Technetium-99	HASL 300, Tc-02-RC M	0.698	pCi/Sample	U	45.3	25.9	25.9
AMDBCP	11-Jan-18	Thorium-234	HASL 300, 4.5.2.3	0	pCi/sample	UI	78.6	104	105
AMDBCP	11-Jan-18	Uranium-234	HASL 300, U-02-RC M	1.64	pCi/Sample		0.614	0.809	0.853
AMDBCP	11-Jan-18	Uranium-235	HASL 300, U-02-RC M	0.314	pCi/Sample	U	0.545	0.452	0.455
AMDBCP	11-Jan-18	Uranium-238	HASL 300, 4.5.2.3	0	pCi/sample	UI	78.6	104	105
AMDBCP	11-Jan-18	Uranium-238	HASL 300, U-02-RC M	1.68	pCi/Sample		0.562	0.811	0.853
AMDNE	02-May-17	Americium-241	HASL 300, 4.5.2.3	1.16	pCi/sample	U	16.7	10.5	10.5
AMDNE	02-May-17	Neptunium-237	HASL 300, 4.5.2.3	-0.71	pCi/sample	U	4.95	2.83	2.84
AMDNE	02-May-17	Plutonium-238	HASL 300, Pu-11-RC M	0.537	pCi/Sample		0.201	0.396	0.403
AMDNE	02-May-17	Plutonium-239/240	HASL 300, Pu-11-RC M	0.0188	pCi/Sample	U	0.409	0.196	0.196
AMDNE	02-May-17	Protactinium-233	HASL 300, 4.5.2.3	-0.71	pCi/sample	U	4.95	2.83	2.84
AMDNE	02-May-17	Technetium-99	HASL 300, Tc-02-RC M	54	pCi/Sample	U	69.4	42.3	42.7
AMDNE	02-May-17	Thorium-234	HASL 300, 4.5.2.3	35.5	pCi/sample	U	133	177	177
AMDNE	02-May-17	Uranium-234	HASL 300, U-02-RC M	2.31	pCi/Sample		0.21	0.799	0.866

Table A.2. Ambient Air Monitoring 2017 Individual Sample Isotopic Concentrations (Continued)

STA_NAME	D_COLLECTED	CHEMICAL_NAME	ANA_METHOD	RESULTS	UNITS	RSLTQUAL	DETECT_LIMIT	RAD_ERR	TPU
AMDNE	02-May-17	Uranium-235	HASL 300, U-02-RC M	0.0656	pCi/Sample	U	0.414	0.246	0.247
AMDNE	02-May-17	Uranium-238	HASL 300, U-02-RC M	1.71	pCi/Sample		0.387	0.701	0.743
AMDNE	02-May-17	Uranium-238	HASL 300, 4.5.2.3	35.5	pCi/sample	U	133	177	177
AMDNE	19-Jul-17	Americium-241	HASL 300, 4.5.2.3	1.55	pCi/sample	U	20.5	12.3	12.3
AMDNE	19-Jul-17	Neptunium-237	HASL 300, 4.5.2.3	-2.57	pCi/sample	U	6.08	3.46	3.66
AMDNE	19-Jul-17	Plutonium-238	HASL 300, Pu-11-RC M	0.167	pCi/Sample	U	0.366	0.265	0.266
AMDNE	19-Jul-17	Plutonium-239/240	HASL 300, Pu-11-RC M	-0.0106	pCi/Sample	U	0.554	0.245	0.245
AMDNE	19-Jul-17	Protactinium-233	HASL 300, 4.5.2.3	-2.57	pCi/sample	U	6.08	3.46	3.66
AMDNE	19-Jul-17	Technetium-99	HASL 300, Tc-02-RC M	0.11	pCi/Sample	U	75.5	43.5	43.5
AMDNE	19-Jul-17	Thorium-234	HASL 300, 4.5.2.3	43.1	pCi/sample	U	162	172	172
AMDNE	19-Jul-17	Uranium-234	HASL 300, U-02-RC M	2.4	pCi/Sample		0.652	0.896	0.966
AMDNE	19-Jul-17	Uranium-235	HASL 300, U-02-RC M	0.338	pCi/Sample	U	0.532	0.428	0.431
AMDNE	19-Jul-17	Uranium-238	HASL 300, 4.5.2.3	43.1	pCi/sample	U	162	172	172
AMDNE	19-Jul-17	Uranium-238	HASL 300, U-02-RC M	1.91	pCi/Sample		0.575	0.798	0.848
AMDNE	16-Oct-17	Americium-241	HASL 300, 4.5.2.3	-0.324	pCi/sample	U	10.2	5.74	5.74
AMDNE	16-Oct-17	Neptunium-237	HASL 300, 4.5.2.3	-2.34	pCi/sample	U	5.84	3.32	3.49
AMDNE	16-Oct-17	Plutonium-238	HASL 300, Pu-11-RC M	0.048	pCi/Sample	U	0.303	0.18	0.18
AMDNE	16-Oct-17	Plutonium-239/240	HASL 300, Pu-11-RC M	0.00252	pCi/Sample	U	0.416	0.187	0.187
AMDNE	16-Oct-17	Protactinium-233	HASL 300, 4.5.2.3	-2.34	pCi/sample	U	5.84	3.32	3.49
AMDNE	16-Oct-17	Technetium-99	HASL 300, Tc-02-RC M	10.8	pCi/Sample	U	72.2	42.5	42.5
AMDNE	16-Oct-17	Thorium-234	HASL 300, 4.5.2.3	-54.9	pCi/sample	U	117	88.6	92.9
AMDNE	16-Oct-17	Uranium-234	HASL 300, U-02-RC M	1.95	pCi/Sample		0.38	0.704	0.752
AMDNE	16-Oct-17	Uranium-235	HASL 300, U-02-RC M	0.366	pCi/Sample	U	0.369	0.373	0.376
AMDNE	16-Oct-17	Uranium-238	HASL 300, U-02-RC M	1.98	pCi/Sample		0.299	0.702	0.752
AMDNE	16-Oct-17	Uranium-238	HASL 300, 4.5.2.3	-54.9	pCi/sample	U	117	88.6	92.9
AMDNE	11-Jan-18	Americium-241	HASL 300, 4.5.2.3	-0.326	pCi/sample	U	8.85	5.15	5.15
AMDNE	11-Jan-18	Neptunium-237	HASL 300, 4.5.2.3	1.68	pCi/sample	U	4.38	2.37	2.5
AMDNE	11-Jan-18	Plutonium-238	HASL 300, Pu-11-RC M	0.0368	pCi/Sample	U	0.392	0.205	0.205
AMDNE	11-Jan-18	Plutonium-239/240	HASL 300, Pu-11-RC M	-0.034	pCi/Sample	U	0.392	0.15	0.151
AMDNE	11-Jan-18	Protactinium-233	HASL 300, 4.5.2.3	1.68	pCi/sample	U	4.38	2.37	2.5
AMDNE	11-Jan-18	Technetium-99	HASL 300, Tc-02-RC M	7.24	pCi/Sample	U	49.5	28.6	28.6
AMDNE	11-Jan-18	Thorium-234	HASL 300, 4.5.2.3	-68.7	pCi/sample	U	98.5	90.9	97.2
AMDNE	11-Jan-18	Uranium-234	HASL 300, U-02-RC M	1.15	pCi/Sample		0.621	0.648	0.671
AMDNE	11-Jan-18	Uranium-235	HASL 300, U-02-RC M	0.00382	pCi/Sample	U	0.629	0.283	0.283
AMDNE	11-Jan-18	Uranium-238	HASL 300, 4.5.2.3	-68.7	pCi/sample	U	98.5	90.9	97.2
AMDNE	11-Jan-18	Uranium-238	HASL 300, U-02-RC M	1.76	pCi/Sample		0.542	0.762	0.803

Table A.3. Air Monitoring Flows for 2017

QUARTER	Results	Chemical Name	Station	Units	Date Collected	Project Sample ID
1	20277	Flow-total	AMD002	ft3	05-Jan-17	W01AMD0022-17
1	20284	Flow-total	AMD002	ft3	12-Jan-17	W02AMD0022-17
1	19774	Flow-total	AMD002	ft3	19-Jan-17	W03AMD0022-17
1	20152	Flow-total	AMD002	ft3	26-Jan-17	W04AMD0022-17
1	20139	Flow-total	AMD002	ft3	02-Feb-17	W05AMD0022-17
1	19749	Flow-total	AMD002	ft3	09-Feb-17	W06AMD0022-17
1	19781	Flow-total	AMD002	ft3	16-Feb-17	W07AMD0022-17
1	20195	Flow-total	AMD002	ft3	23-Feb-17	W08AMD0022-17
1	20079	Flow-total	AMD002	ft3	02-Mar-17	W09AMD0022-17
1	20111	Flow-total	AMD002	ft3	09-Mar-17	W10AMD0022-17
1	20018	Flow-total	AMD002	ft3	16-Mar-17	W11AMD0022-17
1	20200	Flow-total	AMD002	ft3	23-Mar-17	W12AMD0022-17
1	20222	Flow-total	AMD002	ft3	30-Mar-17	W13AMD0022-17
1	21206	Flow-total	AMD012	ft3	05-Jan-17	W01AMD0122-17
1	21275	Flow-total	AMD012	ft3	12-Jan-17	W02AMD0122-17
1	20754	Flow-total	AMD012	ft3	19-Jan-17	W03AMD0122-17
1	21174	Flow-total	AMD012	ft3	26-Jan-17	W04AMD0122-17
1	21112	Flow-total	AMD012	ft3	02-Feb-17	W05AMD0122-17
1	21424	Flow-total	AMD012	ft3	09-Feb-17	W06AMD0122-17
1	20748	Flow-total	AMD012	ft3	16-Feb-17	W07AMD0122-17
1	21183	Flow-total	AMD012	ft3	23-Feb-17	W08AMD0122-17
1	21068	Flow-total	AMD012	ft3	02-Mar-17	W09AMD0122-17
1	21079	Flow-total	AMD012	ft3	09-Mar-17	W10AMD0122-17
1	21021	Flow-total	AMD012	ft3	16-Mar-17	W11AMD0122-17
1	21191	Flow-total	AMD012	ft3	23-Mar-17	W12AMD0122-17
1	21209	Flow-total	AMD012	ft3	30-Mar-17	W13AMD0122-17
1	20145	Flow-total	AMD015	ft3	05-Jan-17	W01AMD0152-17
1	20324	Flow-total	AMD015	ft3	12-Jan-17	W02AMD0152-17
1	19778	Flow-total	AMD015	ft3	19-Jan-17	W03AMD0152-17
1	20164	Flow-total	AMD015	ft3	26-Jan-17	W04AMD0152-17
1	20108	Flow-total	AMD015	ft3	02-Feb-17	W05AMD0152-17
1	20119	Flow-total	AMD015	ft3	09-Feb-17	W06AMD0152-17
1	19800	Flow-total	AMD015	ft3	16-Feb-17	W07AMD0152-17
1	20089	Flow-total	AMD015	ft3	23-Feb-17	W08AMD0152-17
1	20129	Flow-total	AMD015	ft3	02-Mar-17	W09AMD0152-17
1	20049	Flow-total	AMD015	ft3	09-Mar-17	W10AMD0152-17
1	19969	Flow-total	AMD015	ft3	16-Mar-17	W11AMD0152-17
1	20254	Flow-total	AMD015	ft3	23-Mar-17	W12AMD0152-17
1	20112	Flow-total	AMD015	ft3	30-Mar-17	W13AMD0152-17
1	20149	Flow-total	AMD57	ft3	05-Jan-17	W01AMD572-17
1	20334	Flow-total	AMD57	ft3	12-Jan-17	W02AMD572-17
1	19770	Flow-total	AMD57	ft3	19-Jan-17	W03AMD572-17
1	20165	Flow-total	AMD57	ft3	26-Jan-17	W04AMD572-17
1	20109	Flow-total	AMD57	ft3	02-Feb-17	W05AMD572-17
1	20403	Flow-total	AMD57	ft3	09-Feb-17	W06AMD572-17
1	19804	Flow-total	AMD57	ft3	16-Feb-17	W07AMD572-17
1	20110	Flow-total	AMD57	ft3	23-Feb-17	W08AMD572-17
1	20140	Flow-total	AMD57	ft3	02-Mar-17	W09AMD572-17
1	20040	Flow-total	AMD57	ft3	09-Mar-17	W10AMD572-17
1	19959	Flow-total	AMD57	ft3	16-Mar-17	W11AMD572-17
1	20248	Flow-total	AMD57	ft3	23-Mar-17	W12AMD572-17
1	20114	Flow-total	AMD57	ft3	30-Mar-17	W13AMD572-17
1	20200	Flow-total	AMD612	ft3	05-Jan-17	W01AMD6122-17
1	20369	Flow-total	AMD612	ft3	12-Jan-17	W02AMD6122-17

Table A.3. Air Monitoring Flows for 2017 (Continued)

QUARTER	Results	Chemical Name	Station	Units	Date Collected	Project Sample ID
1	19842	Flow-total	AMD612	ft3	19-Jan-17	W03AMD6122-17
1	20233	Flow-total	AMD612	ft3	26-Jan-17	W04AMD6122-17
1	20164	Flow-total	AMD612	ft3	02-Feb-17	W05AMD6122-17
1	20463	Flow-total	AMD612	ft3	09-Feb-17	W06AMD6122-17
1	13855	Flow-total	AMD612	ft3	16-Feb-17	W07AMD6122-17
1	20135	Flow-total	AMD612	ft3	23-Feb-17	W08AMD6122-17
1	20166	Flow-total	AMD612	ft3	02-Mar-17	W09AMD6122-17
1	20167	Flow-total	AMD612	ft3	09-Mar-17	W10AMD6122-17
1	20025	Flow-total	AMD612	ft3	16-Mar-17	W11AMD6122-17
1	20312	Flow-total	AMD612	ft3	23-Mar-17	W12AMD6122-17
1	20166	Flow-total	AMD612	ft3	30-Mar-17	W13AMD6122-17
1	22241	Flow-total	AMD746S	ft3	05-Jan-17	W01AMD746S2-17
1	22368	Flow-total	AMD746S	ft3	12-Jan-17	W02AMD746S2-17
1	21734	Flow-total	AMD746S	ft3	19-Jan-17	W03AMD746S2-17
1	22176	Flow-total	AMD746S	ft3	26-Jan-17	W04AMD746S2-17
1	22126	Flow-total	AMD746S	ft3	02-Feb-17	W05AMD746S2-17
1	22435	Flow-total	AMD746S	ft3	09-Feb-17	W06AMD746S2-17
1	21746	Flow-total	AMD746S	ft3	16-Feb-17	W07AMD746S2-17
1	22191	Flow-total	AMD746S	ft3	23-Feb-17	W08AMD746S2-17
1	22065	Flow-total	AMD746S	ft3	02-Mar-17	W09AMD746S2-17
1	22106	Flow-total	AMD746S	ft3	09-Mar-17	W10AMD746S2-17
1	22002	Flow-total	AMD746S	ft3	16-Mar-17	W11AMD746S2-17
1	22188	Flow-total	AMD746S	ft3	23-Mar-17	W12AMD746S2-17
1	22218	Flow-total	AMD746S	ft3	30-Mar-17	W13AMD746S2-17
1	18636	Flow-total	AMD746U	ft3	05-Jan-17	W01AMD746U2-17
1	19607	Flow-total	AMD746U	ft3	12-Jan-17	W02AMD746U2-17
1	17546	Flow-total	AMD746U	ft3	19-Jan-17	W03AMD746U2-17
1	20158	Flow-total	AMD746U	ft3	26-Jan-17	W04AMD746U2-17
1	20116	Flow-total	AMD746U	ft3	02-Feb-17	W05AMD746U2-17
1	20393	Flow-total	AMD746U	ft3	09-Feb-17	W06AMD746U2-17
1	19734	Flow-total	AMD746U	ft3	16-Feb-17	W07AMD746U2-17
1	20169	Flow-total	AMD746U	ft3	23-Feb-17	W08AMD746U2-17
1	20054	Flow-total	AMD746U	ft3	02-Mar-17	W09AMD746U2-17
1	20090	Flow-total	AMD746U	ft3	09-Mar-17	W10AMD746U2-17
1	19994	Flow-total	AMD746U	ft3	16-Mar-17	W11AMD746U2-17
1	20172	Flow-total	AMD746U	ft3	23-Mar-17	W12AMD746U2-17
1	20192	Flow-total	AMD746U	ft3	30-Mar-17	W13AMD746U2-17
1	20080	Flow-total	AMDBCP	ft3	05-Jan-17	W01AMDBCP2-17
1	20331	Flow-total	AMDBCP	ft3	12-Jan-17	W02AMDBCP2-17
1	19770	Flow-total	AMDBCP	ft3	19-Jan-17	W03AMDBCP2-17
1	20173	Flow-total	AMDBCP	ft3	26-Jan-17	W04AMDBCP2-17
1	20106	Flow-total	AMDBCP	ft3	02-Feb-17	W05AMDBCP2-17
1	20405	Flow-total	AMDBCP	ft3	09-Feb-17	W06AMDBCP2-17
1	19544	Flow-total	AMDBCP	ft3	16-Feb-17	W07AMDBCP2-17
1	19976	Flow-total	AMDBCP	ft3	23-Feb-17	W08AMDBCP2-17
1	18299	Flow-total	AMDBCP	ft3	02-Mar-17	W09AMDBCP2-17
1	20154	Flow-total	AMDBCP	ft3	09-Mar-17	W10AMDBCP2-17
1	19805	Flow-total	AMDBCP	ft3	16-Mar-17	W11AMDBCP2-17
1	20126	Flow-total	AMDBCP	ft3	23-Mar-17	W12AMDBCP2-17
1	20266	Flow-total	AMDBCP	ft3	30-Mar-17	W13AMDBCP2-17
1	20169	Flow-total	AMDNE	ft3	05-Jan-17	W01AMDNE2-17
1	20387	Flow-total	AMDNE	ft3	12-Jan-17	W02AMDNE2-17
1	19753	Flow-total	AMDNE	ft3	19-Jan-17	W03AMDNE2-17
1	20152	Flow-total	AMDNE	ft3	26-Jan-17	W04AMDNE2-17

Table A.3. Air Monitoring Flows for 2017 (Continued)

QUARTER	Results	Chemical Name	Station	Units	Date Collected	Project Sample ID
1	20112	Flow-total	AMDNE	ft3	02-Feb-17	W05AMDNE2-17
1	20389	Flow-total	AMDNE	ft3	09-Feb-17	W06AMDNE2-17
1	19768	Flow-total	AMDNE	ft3	16-Feb-17	W07AMDNE2-17
1	20171	Flow-total	AMDNE	ft3	23-Feb-17	W08AMDNE2-17
1	20032	Flow-total	AMDNE	ft3	02-Mar-17	W09AMDNE2-17
1	20093	Flow-total	AMDNE	ft3	09-Mar-17	W10AMDNE2-17
1	20001	Flow-total	AMDNE	ft3	16-Mar-17	W11AMDNE2-17
1	20165	Flow-total	AMDNE	ft3	23-Mar-17	W12AMDNE2-17
1	20200	Flow-total	AMDNE	ft3	30-Mar-17	W13AMDNE2-17
2	19928	Flow-total	AMD002	ft3	06-Apr-17	W01AMD0023-17
2	20135	Flow-total	AMD002	ft3	13-Apr-17	W02AMD0023-17
2	20231	Flow-total	AMD002	ft3	20-Apr-17	W03AMD0023-17
2	20546	Flow-total	AMD002	ft3	27-Apr-17	W04AMD0023-17
2	19749	Flow-total	AMD002	ft3	04-May-17	W05AMD0023-17
2	20110	Flow-total	AMD002	ft3	11-May-17	W06AMD0023-17
2	19964	Flow-total	AMD002	ft3	18-May-17	W07AMD0023-17
2	20344	Flow-total	AMD002	ft3	25-May-17	W08AMD0023-17
2	5060	Flow-total	AMD002	ft3	01-Jun-17	W09AMD0023-17
2	20131	Flow-total	AMD002	ft3	08-Jun-17	W10AMD0023-17
2	20645	Flow-total	AMD002	ft3	15-Jun-17	W11AMD0023-17
2	19870	Flow-total	AMD002	ft3	22-Jun-17	W12AMD0023-17
2	20466	Flow-total	AMD002	ft3	29-Jun-17	W13AMD0023-17
2	20901	Flow-total	AMD012	ft3	06-Apr-17	W01AMD0123-17
2	21145	Flow-total	AMD012	ft3	13-Apr-17	W02AMD0123-17
2	21205	Flow-total	AMD012	ft3	20-Apr-17	W03AMD0123-17
2	21510	Flow-total	AMD012	ft3	27-Apr-17	W04AMD0123-17
2	20776	Flow-total	AMD012	ft3	04-May-17	W05AMD0123-17
2	21085	Flow-total	AMD012	ft3	11-May-17	W06AMD0123-17
2	20945	Flow-total	AMD012	ft3	18-May-17	W07AMD0123-17
2	21189	Flow-total	AMD012	ft3	25-May-17	W08AMD0123-17
2	20694	Flow-total	AMD012	ft3	01-Jun-17	W09AMD0123-17
2	23096	Flow-total	AMD012	ft3	08-Jun-17	W10AMD0123-17
2	23673	Flow-total	AMD012	ft3	15-Jun-17	W11AMD0123-17
2	22786	Flow-total	AMD012	ft3	22-Jun-17	W12AMD0123-17
2	23474	Flow-total	AMD012	ft3	29-Jun-17	W13AMD0123-17
2	19921	Flow-total	AMD015	ft3	06-Apr-17	W01AMD0153-17
2	20336	Flow-total	AMD015	ft3	13-Apr-17	W02AMD0153-17
2	19988	Flow-total	AMD015	ft3	20-Apr-17	W03AMD0153-17
2	20494	Flow-total	AMD015	ft3	27-Apr-17	W04AMD0153-17
2	19912	Flow-total	AMD015	ft3	04-May-17	W05AMD0153-17
2	20001	Flow-total	AMD015	ft3	11-May-17	W06AMD0153-17
2	19961	Flow-total	AMD015	ft3	18-May-17	W07AMD0153-17
2	20096	Flow-total	AMD015	ft3	25-May-17	W08AMD0153-17
2	20059	Flow-total	AMD015	ft3	01-Jun-17	W09AMD0153-17
2	20081	Flow-total	AMD015	ft3	08-Jun-17	W10AMD0153-17
2	20613	Flow-total	AMD015	ft3	15-Jun-17	W11AMD0153-17
2	19871	Flow-total	AMD015	ft3	22-Jun-17	W12AMD0153-17
2	20339	Flow-total	AMD015	ft3	29-Jun-17	W13AMD0153-17
2	19928	Flow-total	AMD57	ft3	06-Apr-17	W01AMD573-17
2	20215	Flow-total	AMD57	ft3	13-Apr-17	W02AMD573-17
2	20107	Flow-total	AMD57	ft3	20-Apr-17	W03AMD573-17
2	20465	Flow-total	AMD57	ft3	27-Apr-17	W04AMD573-17
2	19964	Flow-total	AMD57	ft3	04-May-17	W05AMD573-17
2	19954	Flow-total	AMD57	ft3	11-May-17	W06AMD573-17

Table A.3. Air Monitoring Flows for 2017 (Continued)

QUARTER	Results	Chemical Name	Station	Units	Date Collected	Project Sample ID
2	19446	Flow-total	AMD57	ft3	18-May-17	W07AMD573-17
2	20108	Flow-total	AMD57	ft3	25-May-17	W08AMD573-17
2	20079	Flow-total	AMD57	ft3	01-Jun-17	W09AMD573-17
2	20059	Flow-total	AMD57	ft3	08-Jun-17	W10AMD573-17
2	20592	Flow-total	AMD57	ft3	15-Jun-17	W11AMD573-17
2	19870	Flow-total	AMD57	ft3	22-Jun-17	W12AMD573-17
2	20343	Flow-total	AMD57	ft3	29-Jun-17	W13AMD573-17
2	19978	Flow-total	AMD612	ft3	06-Apr-17	W01AMD6123-17
2	20396	Flow-total	AMD612	ft3	13-Apr-17	W02AMD6123-17
2	20042	Flow-total	AMD612	ft3	20-Apr-17	W03AMD6123-17
2	20550	Flow-total	AMD612	ft3	27-Apr-17	W04AMD6123-17
2	19971	Flow-total	AMD612	ft3	04-May-17	W05AMD6123-17
2	20048	Flow-total	AMD612	ft3	11-May-17	W06AMD6123-17
2	20027	Flow-total	AMD612	ft3	18-May-17	W07AMD6123-17
2	20152	Flow-total	AMD612	ft3	25-May-17	W08AMD6123-17
2	20111	Flow-total	AMD612	ft3	01-Jun-17	W09AMD6123-17
2	20131	Flow-total	AMD612	ft3	08-Jun-17	W10AMD6123-17
2	20677	Flow-total	AMD612	ft3	15-Jun-17	W11AMD6123-17
2	19930	Flow-total	AMD612	ft3	22-Jun-17	W12AMD6123-17
2	20396	Flow-total	AMD612	ft3	29-Jun-17	W13AMD6123-17
2	21902	Flow-total	AMD746S	ft3	06-Apr-17	W01AMD746S3-17
2	22036	Flow-total	AMD746S	ft3	13-Apr-17	W02AMD746S3-17
2	22319	Flow-total	AMD746S	ft3	20-Apr-17	W03AMD746S3-17
2	22522	Flow-total	AMD746S	ft3	27-Apr-17	W04AMD746S3-17
2	21680	Flow-total	AMD746S	ft3	04-May-17	W05AMD746S3-17
2	22175	Flow-total	AMD746S	ft3	11-May-17	W06AMD746S3-17
2	22004	Flow-total	AMD746S	ft3	18-May-17	W07AMD746S3-17
2	22120	Flow-total	AMD746S	ft3	25-May-17	W08AMD746S3-17
2	22098	Flow-total	AMD746S	ft3	01-Jun-17	W09AMD746S3-17
2	22073	Flow-total	AMD746S	ft3	08-Jun-17	W10AMD746S3-17
2	22635	Flow-total	AMD746S	ft3	15-Jun-17	W11AMD746S3-17
2	21789	Flow-total	AMD746S	ft3	22-Jun-17	W12AMD746S3-17
2	22446	Flow-total	AMD746S	ft3	29-Jun-17	W13AMD746S3-17
2	19905	Flow-total	AMD746U	ft3	06-Apr-17	W01AMD746U3-17
2	20059	Flow-total	AMD746U	ft3	13-Apr-17	W02AMD746U3-17
2	20254	Flow-total	AMD746U	ft3	20-Apr-17	W03AMD746U3-17
2	20472	Flow-total	AMD746U	ft3	27-Apr-17	W04AMD746U3-17
2	19704	Flow-total	AMD746U	ft3	04-May-17	W05AMD746U3-17
2	20159	Flow-total	AMD746U	ft3	11-May-17	W06AMD746U3-17
2	20023	Flow-total	AMD746U	ft3	18-May-17	W07AMD746U3-17
2	20082	Flow-total	AMD746U	ft3	25-May-17	W08AMD746U3-17
2	20083	Flow-total	AMD746U	ft3	01-Jun-17	W09AMD746U3-17
2	20071	Flow-total	AMD746U	ft3	08-Jun-17	W10AMD746U3-17
2	20579	Flow-total	AMD746U	ft3	15-Jun-17	W11AMD746U3-17
2	19814	Flow-total	AMD746U	ft3	22-Jun-17	W12AMD746U3-17
2	20404	Flow-total	AMD746U	ft3	29-Jun-17	W13AMD746U3-17
2	19914	Flow-total	AMDBCP	ft3	06-Apr-17	W01AMDBCP3-17
2	20231	Flow-total	AMDBCP	ft3	13-Apr-17	W02AMDBCP3-17
2	20103	Flow-total	AMDBCP	ft3	20-Apr-17	W03AMDBCP3-17
2	20492	Flow-total	AMDBCP	ft3	27-Apr-17	W04AMDBCP3-17
2	19906	Flow-total	AMDBCP	ft3	04-May-17	W05AMDBCP3-17
2	20101	Flow-total	AMDBCP	ft3	11-May-17	W06AMDBCP3-17
2	20007	Flow-total	AMDBCP	ft3	18-May-17	W07AMDBCP3-17
2	19980	Flow-total	AMDBCP	ft3	25-May-17	W08AMDBCP3-17

Table A.3. Air Monitoring Flows for 2017 (Continued)

QUARTER	Results	Chemical Name	Station	Units	Date Collected	Project Sample ID
2	20076	Flow-total	AMDBCP	ft3	01-Jun-17	W09AMDBCP3-17
2	20068	Flow-total	AMDBCP	ft3	08-Jun-17	W10AMDBCP3-17
2	20592	Flow-total	AMDBCP	ft3	15-Jun-17	W11AMDBCP3-17
2	19963	Flow-total	AMDBCP	ft3	22-Jun-17	W12AMDBCP3-17
2	20255	Flow-total	AMDBCP	ft3	29-Jun-17	W13AMDBCP3-17
2	19906	Flow-total	AMDNE	ft3	06-Apr-17	W01AMDNE3-17
2	20054	Flow-total	AMDNE	ft3	13-Apr-17	W02AMDNE3-17
2	20280	Flow-total	AMDNE	ft3	20-Apr-17	W03AMDNE3-17
2	20462	Flow-total	AMDNE	ft3	27-Apr-17	W04AMDNE3-17
2	19694	Flow-total	AMDNE	ft3	04-May-17	W05AMDNE3-17
2	20165	Flow-total	AMDNE	ft3	11-May-17	W06AMDNE3-17
2	20002	Flow-total	AMDNE	ft3	18-May-17	W07AMDNE3-17
2	20100	Flow-total	AMDNE	ft3	25-May-17	W08AMDNE3-17
2	20092	Flow-total	AMDNE	ft3	01-Jun-17	W09AMDNE3-17
2	20066	Flow-total	AMDNE	ft3	08-Jun-17	W10AMDNE3-17
2	20580	Flow-total	AMDNE	ft3	15-Jun-17	W11AMDNE3-17
2	19810	Flow-total	AMDNE	ft3	22-Jun-17	W12AMDNE3-17
2	20403	Flow-total	AMDNE	ft3	29-Jun-17	W13AMDNE3-17
3	19613	Flow-total	AMD002	ft3	06-Jul-17	W01AMD0024-17
3	20367	Flow-total	AMD002	ft3	13-Jul-17	W02AMD0024-17
3	20100	Flow-total	AMD002	ft3	20-Jul-17	W03AMD0024-17
3	19953	Flow-total	AMD002	ft3	27-Jul-17	W04AMD0024-17
3	20378	Flow-total	AMD002	ft3	03-Aug-17	W05AMD0024-17
3	20595	Flow-total	AMD002	ft3	10-Aug-17	W06AMD0024-17
3	19569	Flow-total	AMD002	ft3	17-Aug-17	W07AMD0024-17
3	20711	Flow-total	AMD002	ft3	24-Aug-17	W08AMD0024-17
3	19461	Flow-total	AMD002	ft3	31-Aug-17	W09AMD0024-17
3	20227	Flow-total	AMD002	ft3	07-Sep-17	W10AMD0024-17
3	20114	Flow-total	AMD002	ft3	19-Sep-17	W11AMD0024-17
3	20280	Flow-total	AMD002	ft3	21-Sep-17	W12AMD0024-17
3	20047	Flow-total	AMD002	ft3	28-Sep-17	W13AMD0024-17
3	22491	Flow-total	AMD012	ft3	06-Jul-17	W01AMD0124-17
3	23364	Flow-total	AMD012	ft3	13-Jul-17	W02AMD0124-17
3	21051	Flow-total	AMD012	ft3	20-Jul-17	W03AMD0124-17
3	22878	Flow-total	AMD012	ft3	27-Jul-17	W04AMD0124-17
3	21123	Flow-total	AMD012	ft3	03-Aug-17	W05AMD0124-17
3	21640	Flow-total	AMD012	ft3	10-Aug-17	W06AMD0124-17
3	20428	Flow-total	AMD012	ft3	17-Aug-17	W07AMD0124-17
3	22641	Flow-total	AMD012	ft3	24-Aug-17	W08AMD0124-17
3	21847	Flow-total	AMD012	ft3	31-Aug-17	W09AMD0124-17
3	20219	Flow-total	AMD012	ft3	07-Sep-17	W10AMD0124-17
3	20094	Flow-total	AMD012	ft3	14-Sep-17	W11AMD0124-17
3	28357	Flow-total	AMD012	ft3	21-Sep-17	W12AMD0124-17
3	16643	Flow-total	AMD012	ft3	28-Sep-17	W13AMD0124-17
3	19618	Flow-total	AMD015	ft3	06-Jul-17	W01AMD0154-17
3	20256	Flow-total	AMD015	ft3	13-Jul-17	W02AMD0154-17
3	19921	Flow-total	AMD015	ft3	20-Jul-17	W03AMD0154-17
3	20062	Flow-total	AMD015	ft3	27-Jul-17	W04AMD0154-17
3	20182	Flow-total	AMD015	ft3	03-Aug-17	W05AMD0154-17
3	20787	Flow-total	AMD015	ft3	10-Aug-17	W06AMD0154-17
3	19349	Flow-total	AMD015	ft3	17-Aug-17	W07AMD0154-17
3	20797	Flow-total	AMD015	ft3	24-Aug-17	W08AMD0154-17
3	19387	Flow-total	AMD015	ft3	31-Aug-17	W09AMD0154-17
3	20175	Flow-total	AMD015	ft3	07-Sep-17	W10AMD0154-17

Table A.3. Air Monitoring Flows for 2017 (Continued)

QUARTER	Results	Chemical Name	Station	Units	Date Collected	Project Sample ID
3	20042	Flow-total	AMD015	ft3	14-Sep-17	W11AMD0154-17
3	20125	Flow-total	AMD015	ft3	21-Sep-17	W12AMD0154-17
3	20083	Flow-total	AMD015	ft3	28-Sep-17	W13AMD0154-17
3	19613	Flow-total	AMD57	ft3	06-Jul-17	W01AMD574-17
3	20250	Flow-total	AMD57	ft3	13-Jul-17	W02AMD574-17
3	19971	Flow-total	AMD57	ft3	20-Jul-17	W03AMD574-17
3	20015	Flow-total	AMD57	ft3	27-Jul-17	W04AMD574-17
3	20195	Flow-total	AMD57	ft3	03-Aug-17	W05AMD574-17
3	20762	Flow-total	AMD57	ft3	10-Aug-17	W06AMD574-17
3	19347	Flow-total	AMD57	ft3	17-Aug-17	W07AMD574-17
3	20565	Flow-total	AMD57	ft3	24-Aug-17	W08AMD574-17
3	19624	Flow-total	AMD57	ft3	31-Aug-17	W09AMD574-17
3	20174	Flow-total	AMD57	ft3	07-Sep-17	W10AMD574-17
3	20047	Flow-total	AMD57	ft3	14-Sep-17	W11AMD574-17
3	20124	Flow-total	AMD57	ft3	21-Sep-17	W12AMD574-17
3	20078	Flow-total	AMD57	ft3	28-Sep-17	W13AMD574-17
3	19672	Flow-total	AMD612	ft3	06-Jul-17	W01AMD6124-17
3	20312	Flow-total	AMD612	ft3	13-Jul-17	W02AMD6124-17
3	19978	Flow-total	AMD612	ft3	20-Jul-17	W03AMD6124-17
3	20103	Flow-total	AMD612	ft3	27-Jul-17	W04AMD6124-17
3	20237	Flow-total	AMD612	ft3	03-Aug-17	W05AMD6124-17
3	20859	Flow-total	AMD612	ft3	10-Aug-17	W06AMD6124-17
3	19401	Flow-total	AMD612	ft3	17-Aug-17	W07AMD6124-17
3	20860	Flow-total	AMD612	ft3	24-Aug-17	W08AMD6124-17
3	19424	Flow-total	AMD612	ft3	31-Aug-17	W09AMD6124-17
3	20243	Flow-total	AMD612	ft3	07-Sep-17	W10AMD6124-17
3	20086	Flow-total	AMD612	ft3	14-Sep-17	W11AMD6124-17
3	20192	Flow-total	AMD612	ft3	21-Sep-17	W12AMD6124-17
3	20139	Flow-total	AMD612	ft3	28-Sep-17	W13AMD6124-17
3	21512	Flow-total	AMD746S	ft3	06-Jul-17	W01AMD746S4-17
3	19441	Flow-total	AMD746S	ft3	13-Jul-17	W02AMD746S4-17
3	20498	Flow-total	AMD746S	ft3	20-Jul-17	W03AMD746S4-17
3	19888	Flow-total	AMD746S	ft3	27-Jul-17	W04AMD746S4-17
3	20317	Flow-total	AMD746S	ft3	03-Aug-17	W05AMD746S4-17
3	20487	Flow-total	AMD746S	ft3	10-Aug-17	W06AMD746S4-17
3	19559	Flow-total	AMD746S	ft3	17-Aug-17	W07AMD746S4-17
3	20751	Flow-total	AMD746S	ft3	24-Aug-17	W08AMD746S4-17
3	19388	Flow-total	AMD746S	ft3	31-Aug-17	W09AMD746S4-17
3	20192	Flow-total	AMD746S	ft3	07-Sep-17	W10AMD746S4-17
3	20199	Flow-total	AMD746S	ft3	14-Sep-17	W11AMD746S4-17
3	20049	Flow-total	AMD746S	ft3	21-Sep-17	W12AMD746S4-17
3	19992	Flow-total	AMD746S	ft3	28-Sep-17	W13AMD746S4-17
3	19560	Flow-total	AMD746U	ft3	06-Jul-17	W01AMD746U4-17
3	20305	Flow-total	AMD746U	ft3	13-Jul-17	W02AMD746U4-17
3	20047	Flow-total	AMD746U	ft3	20-Jul-17	W03AMD746U4-17
3	19885	Flow-total	AMD746U	ft3	27-Jul-17	W04AMD746U4-17
3	20317	Flow-total	AMD746U	ft3	03-Aug-17	W05AMD746U4-17
3	20484	Flow-total	AMD746U	ft3	10-Aug-17	W06AMD746U4-17
3	19564	Flow-total	AMD746U	ft3	17-Aug-17	W07AMD746U4-17
3	20752	Flow-total	AMD746U	ft3	24-Aug-17	W08AMD746U4-17
3	19424	Flow-total	AMD746U	ft3	31-Aug-17	W09AMD746U4-17
3	20157	Flow-total	AMD746U	ft3	07-Sep-17	W10AMD746U4-17
3	20194	Flow-total	AMD746U	ft3	14-Sep-17	W11AMD746U4-17
3	20044	Flow-total	AMD746U	ft3	21-Sep-17	W12AMD746U4-17

Table A.3. Air Monitoring Flows for 2017 (Continued)

QUARTER	Results	Chemical Name	Station	Units	Date Collected	Project Sample ID
3	19990	Flow-total	AMD746U	ft3	28-Sep-17	W13AMD746U4-17
3	19711	Flow-total	AMDBCP	ft3	06-Jul-17	W01AMDBCP4-17
3	20167	Flow-total	AMDBCP	ft3	13-Jul-17	W02AMDBCP4-17
3	20040	Flow-total	AMDBCP	ft3	20-Jul-17	W03AMDBCP4-17
3	20044	Flow-total	AMDBCP	ft3	27-Jul-17	W04AMDBCP4-17
3	20170	Flow-total	AMDBCP	ft3	03-Aug-17	W05AMDBCP4-17
3	20697	Flow-total	AMDBCP	ft3	10-Aug-17	W06AMDBCP4-17
3	19356	Flow-total	AMDBCP	ft3	17-Aug-17	W07AMDBCP4-17
3	20873	Flow-total	AMDBCP	ft3	24-Aug-17	W08AMDBCP4-17
3	19444	Flow-total	AMDBCP	ft3	31-Aug-17	W09AMDBCP4-17
3	20207	Flow-total	AMDBCP	ft3	07-Sep-17	W10AMDBCP4-17
3	19127	Flow-total	AMDBCP	ft3	14-Sep-17	W11AMDBCP4-17
3	20105	Flow-total	AMDBCP	ft3	21-Sep-17	W12AMDBCP4-17
3	20178	Flow-total	AMDBCP	ft3	28-Sep-17	W13AMDBCP4-17
3	19564	Flow-total	AMDNE	ft3	06-Jul-17	W01AMDNE4-17
3	20299	Flow-total	AMDNE	ft3	13-Jul-17	W02AMDNE4-17
3	20048	Flow-total	AMDNE	ft3	20-Jul-17	W03AMDNE4-17
3	19886	Flow-total	AMDNE	ft3	27-Jul-17	W04AMDNE4-17
3	20314	Flow-total	AMDNE	ft3	05-Aug-17	W05AMDNE4-17
3	20442	Flow-total	AMDNE	ft3	10-Aug-17	W06AMDNE4-17
3	19603	Flow-total	AMDNE	ft3	17-Aug-17	W07AMDNE4-17
3	20707	Flow-total	AMDNE	ft3	24-Aug-17	W08AMDNE4-17
3	19464	Flow-total	AMDNE	ft3	31-Aug-17	W09AMDNE4-17
3	20111	Flow-total	AMDNE	ft3	07-Sep-17	W10AMDNE4-17
3	20246	Flow-total	AMDNE	ft3	14-Sep-17	W11AMDNE4-17
3	20049	Flow-total	AMDNE	ft3	21-Sep-17	W12AMDNE4-17
3	19997	Flow-total	AMDNE	ft3	28-Sep-17	W13AMDNE4-17
4	20356	Flow-total	AMD002	ft3	05-Oct-17	W01AMD0021-18
4	20154	Flow-total	AMD002	ft3	12-Oct-17	W02AMD0021-18
4	19992	Flow-total	AMD002	ft3	19-Oct-17	W03AMD0021-18
4	20076	Flow-total	AMD002	ft3	26-Oct-17	W04AMD0021-18
4	20123	Flow-total	AMD002	ft3	02-Nov-17	W05AMD0021-18
4	20317	Flow-total	AMD002	ft3	09-Nov-17	W06AMD0021-18
4	20127	Flow-total	AMD002	ft3	16-Nov-17	W07AMD0021-18
4	14263	Flow-total	AMD002	ft3	21-Nov-17	W08AMD0021-18
4	26004	Flow-total	AMD002	ft3	30-Nov-17	W09AMD0021-18
4	20210	Flow-total	AMD002	ft3	07-Dec-17	W10AMD0021-18
4	20221	Flow-total	AMD002	ft3	14-Dec-17	W11AMD0021-18
4	20047	Flow-total	AMD002	ft3	21-Dec-17	W12AMD0021-18
4	20256	Flow-total	AMD002	ft3	28-Dec-17	W13AMD0021-18
4	20293	Flow-total	AMD012	ft3	05-Oct-17	W01AMD0121-18
4	20093	Flow-total	AMD012	ft3	12-Oct-17	W02AMD0121-18
4	19934	Flow-total	AMD012	ft3	19-Oct-17	W03AMD0121-18
4	20017	Flow-total	AMD012	ft3	26-Oct-17	W04AMD0121-18
4	20250	Flow-total	AMD012	ft3	02-Nov-17	W05AMD0121-18
4	20192	Flow-total	AMD012	ft3	09-Nov-17	W06AMD0121-18
4	20039	Flow-total	AMD012	ft3	16-Nov-17	W07AMD0121-18
4	14233	Flow-total	AMD012	ft3	21-Nov-17	W08AMD0121-18
4	25926	Flow-total	AMD012	ft3	30-Nov-17	W09AMD0121-18
4	20145	Flow-total	AMD012	ft3	07-Dec-17	W10AMD0121-18
4	20172	Flow-total	AMD012	ft3	14-Dec-17	W11AMD0121-18
4	19993	Flow-total	AMD012	ft3	21-Dec-17	W12AMD0121-18
4	20198	Flow-total	AMD012	ft3	28-Dec-17	W13AMD0121-18
4	20225	Flow-total	AMD015	ft3	05-Oct-17	W01AMD0151-18

Table A.3. Air Monitoring Flows for 2017 (Continued)

QUARTER	Results	Chemical Name	Station	Units	Date Collected	Project Sample ID
4	20108	Flow-total	AMD015	ft3	12-Oct-17	W02AMD0151-18
4	19990	Flow-total	AMD015	ft3	19-Oct-17	W03AMD0151-18
4	20027	Flow-total	AMD015	ft3	26-Oct-17	W04AMD0151-18
4	20249	Flow-total	AMD015	ft3	02-Nov-17	W05AMD0151-18
4	20056	Flow-total	AMD015	ft3	09-Nov-17	W06AMD0151-18
4	20163	Flow-total	AMD015	ft3	16-Nov-17	W07AMD0151-18
4	14245	Flow-total	AMD015	ft3	21-Nov-17	W08AMD0151-18
4	25922	Flow-total	AMD015	ft3	30-Nov-17	W09AMD0151-18
4	20118	Flow-total	AMD015	ft3	07-Dec-17	W10AMD0151-18
4	20127	Flow-total	AMD015	ft3	14-Dec-17	W11AMD0151-18
4	20061	Flow-total	AMD015	ft3	21-Dec-17	W12AMD0151-18
4	20150	Flow-total	AMD015	ft3	28-Dec-17	W13AMD0151-18
4	20226	Flow-total	AMD57	ft3	05-Oct-17	W01AMD571-18
4	20101	Flow-total	AMD57	ft3	12-Oct-17	W02AMD571-18
4	19995	Flow-total	AMD57	ft3	19-Oct-17	W03AMD571-18
4	20019	Flow-total	AMD57	ft3	26-Oct-17	W04AMD571-18
4	20247	Flow-total	AMD57	ft3	02-Nov-17	W05AMD571-18
4	20057	Flow-total	AMD57	ft3	09-Nov-17	W06AMD571-18
4	20167	Flow-total	AMD57	ft3	16-Nov-17	W07AMD571-18
4	14239	Flow-total	AMD57	ft3	21-Nov-17	W08AMD571-18
4	4487	Flow-total	AMD57	ft3	30-Nov-17	W09AMD571-18
4	19958	Flow-total	AMD57	ft3	07-Dec-17	W10AMD571-18
4	20176	Flow-total	AMD57	ft3	14-Dec-17	W11AMD571-18
4	20118	Flow-total	AMD57	ft3	21-Dec-17	W12AMD571-18
4	20197	Flow-total	AMD57	ft3	28-Dec-17	W13AMD571-18
4	20288	Flow-total	AMD612	ft3	05-Oct-17	W01AMD6121-18
4	20168	Flow-total	AMD612	ft3	12-Oct-17	W02AMD6121-18
4	20043	Flow-total	AMD612	ft3	19-Oct-17	W03AMD6121-18
4	20083	Flow-total	AMD612	ft3	26-Oct-17	W04AMD6121-18
4	20304	Flow-total	AMD612	ft3	02-Nov-17	W05AMD6121-18
4	20122	Flow-total	AMD612	ft3	09-Nov-17	W06AMD6121-18
4	20203	Flow-total	AMD612	ft3	16-Nov-17	W07AMD6121-18
4	25944	Flow-total	AMD612	ft3	30-Nov-17	W09AMD6121-18
4	20132	Flow-total	AMD612	ft3	07-Dec-17	W10AMD6121-18
4	20448	Flow-total	AMD612	ft3	14-Dec-17	W11AMD6121-18
4	20030	Flow-total	AMD612	ft3	21-Dec-17	W12AMD6121-18
4	20122	Flow-total	AMD612	ft3	28-Dec-17	W13AMD6121-18
4	20344	Flow-total	AMD746S	ft3	05-Oct-17	W01AMD746S1-18
4	20025	Flow-total	AMD746S	ft3	12-Oct-17	W02AMD746S1-18
4	19956	Flow-total	AMD746S	ft3	19-Oct-17	W03AMD746S1-18
4	19998	Flow-total	AMD746S	ft3	26-Oct-17	W04AMD746S1-18
4	20263	Flow-total	AMD746S	ft3	02-Nov-17	W05AMD746S1-18
4	20123	Flow-total	AMD746S	ft3	09-Nov-17	W06AMD746S1-18
4	20086	Flow-total	AMD746S	ft3	16-Nov-17	W07AMD746S1-18
4	14235	Flow-total	AMD746S	ft3	21-Nov-17	W08AMD746S1-18
4	25948	Flow-total	AMD746S	ft3	30-Nov-17	W09AMD746S1-18
4	20141	Flow-total	AMD746S	ft3	07-Dec-17	W10AMD746S1-18
4	20169	Flow-total	AMD746S	ft3	14-Dec-17	W11AMD746S1-18
4	20056	Flow-total	AMD746S	ft3	21-Dec-17	W12AMD746S1-18
4	20129	Flow-total	AMD746S	ft3	28-Dec-17	W13AMD746S1-18
4	20303	Flow-total	AMD746U	ft3	05-Oct-17	W01AMD746U1-18
4	20087	Flow-total	AMD746U	ft3	12-Oct-17	W02AMD746U1-18
4	19939	Flow-total	AMD746U	ft3	19-Oct-17	W03AMD746U1-18
4	20016	Flow-total	AMD746U	ft3	26-Oct-17	W04AMD746U1-18

Table A.3. Air Monitoring Flows for 2017 (Continued)

QUARTER	Results	Chemical Name	Station	Units	Date Collected	Project Sample ID
4	20260	Flow-total	AMD746U	ft3	02-Nov-17	W05AMD746U1-18
4	18049	Flow-total	AMD746U	ft3	09-Nov-17	W06AMD746U1-18
4	19796	Flow-total	AMD746U	ft3	16-Nov-17	W07AMD746U1-18
4	14203	Flow-total	AMD746U	ft3	21-Nov-17	W08AMD746U1-18
4	25951	Flow-total	AMD746U	ft3	30-Nov-17	W09AMD746U1-18
4	20136	Flow-total	AMD746U	ft3	07-Dec-17	W10AMD746U1-18
4	20160	Flow-total	AMD746U	ft3	14-Dec-17	W11AMD746U1-18
4	19187	Flow-total	AMD746U	ft3	21-Dec-17	W12AMD746U1-18
4	16506	Flow-total	AMD746U	ft3	28-Dec-17	W13AMD746U1-18
4	20137	Flow-total	AMDBCP	ft3	05-Oct-17	W01AMDBCP1-18
4	20100	Flow-total	AMDBCP	ft3	12-Oct-17	W02AMDBCP1-18
4	20103	Flow-total	AMDBCP	ft3	19-Oct-17	W03AMDBCP1-18
4	19993	Flow-total	AMDBCP	ft3	26-Oct-17	W04AMDBCP1-18
4	20055	Flow-total	AMDBCP	ft3	02-Nov-17	W05AMDBCP1-18
4	20331	Flow-total	AMDBCP	ft3	09-Nov-17	W06AMDBCP1-18
4	20135	Flow-total	AMDBCP	ft3	16-Nov-17	W07AMDBCP1-18
4	14231	Flow-total	AMDBCP	ft3	21-Nov-17	W08AMDBCP1-18
4	27287	Flow-total	AMDBCP	ft3	30-Nov-17	W09AMDBCP1-18
4	21121	Flow-total	AMDBCP	ft3	07-Dec-17	W10AMDBCP1-18
4	21027	Flow-total	AMDBCP	ft3	14-Dec-17	W11AMDBCP1-18
4	21196	Flow-total	AMDBCP	ft3	21-Dec-17	W12AMDBCP1-18
4	21008	Flow-total	AMDBCP	ft3	28-Dec-17	W13AMDBCP1-18
4	20340	Flow-total	AMDNE	ft3	05-Oct-17	W01AMDNE1-18
4	20024	Flow-total	AMDNE	ft3	12-Oct-17	W02AMDNE1-18
4	19961	Flow-total	AMDNE	ft3	19-Oct-17	W03AMDNE1-18
4	19996	Flow-total	AMDNE	ft3	26-Oct-17	W04AMDNE1-18
4	20260	Flow-total	AMDNE	ft3	02-Nov-17	W05AMDNE1-18
4	20067	Flow-total	AMDNE	ft3	09-Nov-17	W06AMDNE1-18
4	20161	Flow-total	AMDNE	ft3	16-Nov-17	W07AMDNE1-18
4	14208	Flow-total	AMDNE	ft3	21-Nov-17	W08AMDNE1-18
4	25902	Flow-total	AMDNE	ft3	30-Nov-17	W09AMDNE1-18
4	20186	Flow-total	AMDNE	ft3	07-Dec-17	W10AMDNE1-18
4	20169	Flow-total	AMDNE	ft3	14-Dec-17	W11AMDNE1-18
4	20008	Flow-total	AMDNE	ft3	21-Dec-17	W12AMDNE1-18
4	20175	Flow-total	AMDNE	ft3	28-Dec-17	W13AMDNE1-18
4	14276	Flow-total	AMD612	ft3	21-Nov-17	W08AMD6121-18