

LES-19-130-NRC

AUG 27 2019



ATTN: Document Control Desk
Director
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Louisiana Energy Services, LLC
NRC Docket No. 70-3103

Subject: Semi-Annual Radiological Effluent Release Report for January 1, 2019
through June 30, 2019

Pursuant to 10 CFR 70.59, Louisiana Energy Services, LLC, also dba URENCO USA,
herewith submits the subject report. Enclosure 1 specifies the quantities released of
licensed principal radionuclides in liquid or gaseous form, to uncontrolled areas.

Should there be any questions concerning this submittal, please contact Rick Medina,
Acting Licensing and Performance Assessment Manager, at 575.394.5846.

Respectfully,

A handwritten signature in blue ink, appearing to read "Stephen Cowne", is written over a horizontal line.

Stephen Cowne
Chief Nuclear Officer and Compliance Manager

Enclosure:

1. Semi-Annual Radiological Effluent Release Report for January 1, 2019
through June 30, 2019

IE48
NM5520
NM55

LES-19-130-NRC

ENCLOSURE 1

**Semi-Annual Radiological Effluent Release Report for
January 1, 2019 through June 30, 2019**

URENCO USA: Report of Radioactivity in Effluents: Liquid & Air: January 2019 - June 2019

There were no releases to the public during the reporting period that exceeded regulatory requirements, and detected isotopic uranium activities were comparable to pre-operational activities. No dose assessment was performed because the maximum potential dose directly at the point of gaseous and liquid effluent discharge points were acceptable. The potential maximum doses directly at the discharge points for both liquid and gaseous effluent were shown to be less than 10% of the radionuclide concentration dose.

In liquid effluent, the concentrations of isotopic uranium were either below the Minimum Detectable Concentration (MDC) or less than 10% of values listed in 10 CFR 20, Appendix B, Table 3, "Releases to Sewers" (Table 1-1).

In gaseous effluent, the gross uranium activity was either below the Minimum Detectable Activity (MDA) or less than 10% of values listed in 10 CFR 20, Appendix B, Table 2, "Effluent Concentrations – Class D Air" for U234, U235, and U238.

The concentrations of isotopic uranium in gaseous effluent was either below the Minimum Detectable Concentration (MDC) or less than 10% of values listed in 10 CFR 20.1301, 10 CFR 20.1302, and 10 CFR 20.1101(d), as described in NRC Regulatory Guide 4.20 "Constraint on Releases of Airborne Radioactive Materials to the Environment for Licensees other than Power Reactors" dated December 1996.

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TABLE 1-1

Lift Station 1 Wastewater Effluent – Radionuclides, Quarters 1 & 2, 2019 URENCO USA Lea County, New Mexico

URENCO USA Lea County New Mexico

Lift Station 1 WasteWater Effluent- Radionuclides

Radionuclide	Sample Date (Date/Time)	Sample Period	Total Time (days)	Results ($\mu\text{Ci}/\text{ml}$)	Counting Uncertainty ($\mu\text{Ci}/\text{ml}$)	Total Flow* (gal/day)	Quantity Released (Ci)	% of Table 3 of Appendix B to 10 CFR 20 Values-Monthly Average Release to Sewers
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Lift Station 1 - January - June 2019

Uranium - 233/234	4/9/2019 9:50	01/01/19 - 06/30/19	180	2.20E-10	4.00E-11	13,000	1.95E-06	0.007%
Uranium - 235/236				0.00E+00	0.00E+00	13,000	Result Below LLD	Result Below LLD
Uranium - 238				7.00E-11	2.00E-11	13,000	6.20E-07	0.002%

Lift Station 1 Duplicate - January - June 2019

Uranium - 233/234	4/9/2019 9:50	01/01/19 - 06/30/19	180	1.60E-10	4.00E-11	13,000	1.42E-06	0.005%
Uranium - 235/236				0.00E+00	0.00E+00	13,000	Result Below LLD	Result Below LLD
Uranium - 238				4.00E-11	2.00E-11	13,000	3.54E-07	0.001%

Notes:

- * = Table 3.4-4 'Anticipated Normal Plant Water Consumption' from the Environmental Report, Rev. 19, lists "Total Personnel Water Use" as approximately 13,000 gallons per day.
- $\mu\text{Ci}/\text{mL}$ = microCuries per milliliter.
- Radionuclides analyzed using method EICHROM AC01 by Cardinal Laboratories of Hobbs, NM.
- Quantity released is calculated if the result equals or exceeds the LLD. Facility-required lower level of detection (LLD) is $3.09\text{E}-9 \mu\text{Ci}/\text{mL}$.

TABLE 1-2

Separations Building Module-1001 (SBM 1001): Pumped Extract Exhaust Gaseous Effluent Vent System, 1001-562-1MA1 & 1001-562-1MA2 Gross Alpha & Beta, and Radionuclides: Quarters 1 & 2, 2019 URENCO USA Lea County, New Mexico.

Sample ID	Sample Date	Sample Period	Analyte	Gross Result (μCi/mL)	MDA / MDC (μCi/mL)	Inst. Unc. (μCi/mL)	Total Flow (m3)	Quantity Released (Ci)	% of Table 2 Appendix B 10CFR 20	
1001-562-1MA1										
10015621MA1 010319	02/01/19	1/3/19 - 2/1/19	Gross Alpha	2.41E-17	1.63E-16	8.56E-08	4.69E+05	<MDA	<MDA	
10015621MA1 020119	03/01/19	2/1/19 - 3/1/19		1.22E-16	1.66E-16	8.56E-08	4.63E+05	<MDA	<MDA	
10015621MA1 030119	04/01/19	3/1/19 - 4/1/19		4.83E-17	1.48E-16	8.56E-08	4.98E+05	<MDA	<MDA	
10015621MA1 040119	05/01/19	4/1/19 - 5/1/19		1.33E-16	1.79E-16	9.91E-08	4.87E+05	<MDA	<MDA	
10015621MA1 050119	06/03/19	5/1/19 - 6/3/19		1.21E-16	1.62E-16	9.91E-08	5.33E+05	<MDA	<MDA	
10015621MA1 060319	07/01/19	6/3/19 - 7/1/19		7.00E-17	1.87E-16	7.21E-08	4.66E+05	<MDA	<MDA	
10015621MA1 010319	02/01/19	1/3/19 - 2/1/19	Gross Beta	4.18E-15	3.25E-15	1.73E-06	4.69E+05	1.96E-09	0.139%	
10015621MA1 020119	03/01/19	2/1/19 - 3/1/19		4.62E-15	3.32E-15	1.40E-06	4.63E+05	2.14E-09	0.154%	
10015621MA1 030119	04/01/19	3/1/19 - 4/1/19		5.87E-15	2.96E-15	1.70E-06	4.98E+05	2.92E-09	0.196%	
10015621MA1 040119	05/01/19	4/1/19 - 5/1/19		5.58E-15	4.05E-15	1.68E-06	4.87E+05	2.72E-09	0.186%	
10015621MA1 050119	06/03/19	5/1/19 - 6/3/19		4.40E-15	3.67E-15	1.62E-06	5.33E+05	2.35E-09	0.147%	
10015621MA1 060319	07/01/19	6/3/19 - 7/1/19		3.82E-15	4.24E-15	1.51E-06	4.66E+05	<MDA	<MDA	
1001-562-1MA2										
10015621MA2 010319	02/01/19	1/3/19 - 2/1/19	Gross Alpha	-2.99E-17	1.43E-16	1.11E-10	4.66E+05	<MDA	<MDA	
10015621MA2 020119	03/01/19	2/1/19 - 3/1/19		1.70E-16	1.52E-16	1.08E-07	4.69E+05	7.96E-11	0.006%	
10015621MA2 030119	04/01/19	3/1/19 - 4/1/19		9.53E-17	1.30E-16	8.56E-08	4.74E+05	<MDA	<MDA	
10015621MA2 040119	05/01/19	4/1/19 - 5/1/19		1.80E-16	1.64E-16	1.22E-07	4.93E+05	8.85E-11	0.006%	
10015621MA2 050119	06/03/19	5/1/19 - 6/3/19		1.14E-16	1.53E-16	9.91E-08	5.28E+05	<MDA	<MDA	
10015621MA2 060319	07/01/19	6/3/19 - 7/1/19		6.44E-17	1.72E-16	7.21E-08	4.61E+05	<MDA	<MDA	
10015621MA2 010319	02/01/19	1/3/19 - 2/1/19	Gross Beta	5.06E-15	2.86E-15	1.55E-06	4.66E+05	2.36E-09	0.169%	
10015621MA2 020119	03/01/19	2/1/19 - 3/1/19		3.81E-15	3.05E-15	1.36E-06	4.69E+05	1.78E-09	0.127%	
10015621MA2 030119	04/01/19	3/1/19 - 4/1/19		4.71E-15	2.59E-15	1.51E-06	4.74E+05	2.23E-09	0.157%	
10015621MA2 040119	05/01/19	4/1/19 - 5/1/19		6.67E-15	3.70E-15	1.82E-06	4.93E+05	3.29E-09	0.222%	
10015621MA2 050119	06/03/19	5/1/19 - 6/3/19		5.62E-15	3.47E-15	1.76E-06	5.28E+05	2.97E-09	0.187%	
10015621MA2 060319	07/01/19	6/3/19 - 7/1/19		4.21E-15	3.90E-15	1.57E-06	4.61E+05	1.94E-09	0.140%	
Radionuclide (Isotopic Uranium (U))	Sample Date	Sample Period	Result (μCi/mL)	2σ TPU (μCi/mL)	1σ TPU (μCi/mL)	MDC (μCi/mL)	Total Flow (m3)	Quantity Released (Ci)	% of Table 2 Appendix B 10CFR 20	
1001-562-1MA1										
U-233/234	1 Qtr.	4/1/2019	1/3/19-4/1/19	1.60E-16	7.64E-17	7.72E-17	4.94E-17	0.00	0.01%	
U- 235/236				2.16E-17	3.67E-17	3.67E-17	6.47E-17	1.43E+06	<MDC	<MDC
U-238				2.12E-16	8.77E-17	8.90E-17	4.92E-17	0.00	0.01%	
U-233/234	2 Qtr.	7/1/2019	4/1/19-7/1/19	2.46E-16	6.27E-17	6.51E-17	2.64E-17	0.00	0.01%	
U- 235/236				4.65E-17	3.07E-17	3.09E-17	3.15E-17	1.49E+06	0.00	0.00%
U-238				1.68E-16	5.08E-17	5.22E-17	2.26E-17	0.00	0.01%	
1001-562-1MA2										
U-233/234	1 Qtr.	4/1/2019	1/3/19-4/1/19	2.17E-16	1.02E-16	1.03E-16	7.58E-17	0.00	0.01%	
U- 235/236				1.54E-17	4.87E-17	4.87E-17	1.03E-16	1.41E+06	<MDC	<MDC
U-238				1.54E-16	8.87E-17	8.93E-17	8.58E-17	0.00	0.01%	
U-233/234	2 Qtr	7/1/2019	4/1/19-7/1/19	2.81E-16	6.68E-17	6.97E-17	2.32E-17	0.00	0.01%	
U- 235/236				3.54E-17	2.59E-17	2.61E-17	2.60E-17	1.48E+06	0.00	0.00%
U-238				2.64E-16	6.42E-17	6.69E-17	2.10E-17	0.00	0.01%	

Notes: None



TABLE 1-3

Separations Building Module-1003 (SBM 1003): Pumped Extract Exhaust Gaseous Effluent Vent System, 1003-562-1MA1 & 1003-562-1MA2 Gross Alpha & Beta, and Radionuclides: Quarters 1 & 2, 2019 URENCO USA Lea County, New Mexico

Sample ID	Sample Date	Sample Period	Analyte	Gross Result (μCi/mL)	MDA / MDC (μCi/mL)	Inst. Unc. (μCi/mL)	Total Flow (m3)	Quantity Released (Ci)	% of Table 2 Appendix B 10CFR 20	
1003-562-1MA1										
10035621MA1 010319	06/03/19	1/3/19 - 6/3/19	Gross Alpha	0.00E+00	2.57E-17	0.00E+00	2.50E+06	<MDA	<MDA	
10035621MA1 060319	07/01/19	6/3/19 - 7/1/19		0.00E+00	1.35E-16	0.00E+00	4.31E+05	<MDA	<MDA	
10035621MA1 010319	06/03/19	1/3/19 - 6/3/19	Gross Beta	7.32E-16	5.15E-16	1.57E-06	2.50E+06	1.83E-09	0.024%	
10035621MA1 060319	07/01/19	6/3/19 - 7/1/19		4.69E-15	2.70E-15	1.66E-06	4.31E+05	2.02E-09	0.156%	
1003-562-1MA2										
10035621MA2 010319	06/03/19	1/3/19 - 6/3/19	Gross Alpha	-5.38E-17	1.24E-16	2.41E-10	1.36E+06	<MDA	<MDA	
10035621MA2 060319	07/01/19	6/3/19 - 7/1/19		2.49E-16	1.46E-16	1.44E-07	4.71E+05	1.17E-10	0.008%	
10035621MA2 010319	06/03/19	1/3/19 - 6/3/19	Gross Beta	3.18E-15	2.48E-15	1.69E-06	1.36E+06	4.33E-09	0.106%	
10035621MA2 060319	07/01/19	6/3/19 - 7/1/19		2.76E-15	2.91E-15	1.44E-06	4.71E+05	<MDA	<MDA	
Radionuclide (Isotopic Uranium (U))	Sample Date	Sample Period	Result (μCi/mL)	2σ TPU (μCi/mL)	1σ TPU (μCi/mL)	MDC (μCi/mL)	Total Flow (m3)	Quantity Released (Ci)	% of Table 2 Appendix B 10CFR 20	
1003-562-1MA1										
U-233/234	2 Qtr.	7/1/2019	1/3/19- 7/1/19	1.31E-16	4.20E-17	4.30E-17	2.93E+06	0.00	0.00%	
U- 235/236				2.42E-17	2.01E-17	2.02E-17		0.00	0.00%	
U-238				9.42E-17	3.47E-17	3.53E-17		1.62E-17	0.00	0.00%
1003-562-1MA2										
U-233/234	2 Qtr	7/1/2019	1/3/19- 7/1/19	3.95E-16	1.06E-16	1.10E-16	1.83E+06	0.00	0.01%	
U- 235/236				7.16E-17	4.98E-17	5.00E-17		4.77E-17	0.00	0.00%
U-238				3.46E-16	9.81E-17	1.01E-16		2.68E-17	0.00	0.01%

Notes:

1. 10035621MA1 010319, filter was put on 01/03/19 and removed 06/03/19.
2. 10035621MA2 010319, filter was put on 01/03/19 and removed 06/03/19.
3. Redundant monitor out of operation 8/15/18 to 5/15/19 due to faulty pump.

TABLE 1-4

Separations Building Module-1005 (SBM 1005): Pumped Extract Exhaust Gaseous Effluent Vent System, 1005-562-1MA1 & 1005-562-1MA2 Gross Alpha & Beta, and Radionuclides: Quarters 1 & 2, 2019 URENCO USA Lea County, New Mexico

Sample ID	Sample Date	Sample Period	Analyte	Gross Result (μCi/mL)	MDA / MDC (μCi/mL)	Inst. Unc. (μCi/mL)	Total Flow (m3)	Quantity Released (Ci)	% of Table 2 Appendix B 10CFR 20	
1005-562-1MA1										
10055621MA1 010319	02/01/19	1/3/19 - 2/1/19	Gross Alpha	0.00E+00	1.66E-16	0.00E+00	8.60E+05	<MDA	<MDA	
10055621MA1 020119	03/01/19	2/1/19 - 3/1/19		2.63E-16	1.76E-16	1.22E-07	7.98E+05	2.10E-10	0.009%	
10055621MA1 030119	04/01/19	3/1/19 - 4/1/19		0.00E+00	1.63E-16	0.00E+00	8.87E+05	<MDA	<MDA	
10055621MA1 040119	05/01/19	4/1/19 - 5/1/19		7.37E-17	1.97E-16	7.21E-08	8.33E+05	<MDA	<MDA	
10055621MA1 050119	06/03/19	5/1/19 - 6/3/19		6.74E-17	1.80E-16	7.21E-08	9.13E+05	<MDA	<MDA	
10055621MA1 060319	07/01/19	6/3/19 - 7/1/19		7.84E-17	2.10E-16	7.21E-08	7.79E+05	<MDA	<MDA	
10055621MA1 010319	02/01/19	1/3/19 - 2/1/19	Gross Beta	4.47E-15	3.32E-15	1.31E-06	8.60E+05	3.84E-09	0.149%	
10055621MA1 020119	03/01/19	2/1/19 - 3/1/19		4.99E-15	3.52E-15	1.33E-06	7.98E+05	3.98E-09	0.166%	
10055621MA1 030119	04/01/19	3/1/19 - 4/1/19		6.00E-15	3.25E-15	1.45E-06	8.87E+05	5.32E-09	0.200%	
10055621MA1 040119	05/01/19	4/1/19 - 5/1/19		5.09E-15	4.47E-15	1.59E-06	8.33E+05	4.24E-09	0.170%	
10055621MA1 050119	06/03/19	5/1/19 - 6/3/19		3.19E-15	4.08E-15	1.46E-06	9.13E+05	<MDA	<MDA	
10055621MA1 060319	07/01/19	6/3/19 - 7/1/19		4.57E-15	4.75E-15	1.53E-06	7.79E+05	<MDA	<MDA	
1005-562-1MA2										
10055621MA2 010319	02/01/19	1/3/19 - 2/1/19	Gross Alpha	1.30E-16	1.77E-16	8.56E-08	8.60E+05	<MDA	<MDA	
10055621MA2 020119	03/01/19	2/1/19 - 3/1/19		1.34E-16	1.82E-16	8.56E-08	7.98E+05	<MDA	<MDA	
10055621MA2 030119	04/01/19	3/1/19 - 4/1/19		6.82E-17	1.79E-16	6.31E-08	8.95E+05	<MDA	<MDA	
10055621MA2 040119	05/01/19	4/1/19 - 5/1/19		8.06E-17	2.16E-16	7.21E-08	8.44E+05	<MDA	<MDA	
10055621MA2 050119	06/03/19	5/1/19 - 6/3/19		7.39E-17	1.98E-16	7.21E-08	9.19E+05	<MDA	<MDA	
10055621MA2 060319	07/01/19	6/3/19 - 7/1/19		2.58E-16	2.35E-16	1.22E-07	7.77E+05	2.00E-10	0.009%	
10055621MA2 010319	02/01/19	1/3/19 - 2/1/19	Gross Beta	7.53E-15	3.54E-15	1.53E-06	1.36E+06	1.02E-08	0.251%	
10055621MA2 020119	03/01/19	2/1/19 - 3/1/19		4.63E-15	3.64E-15	1.29E-06	4.71E+05	2.18E-09	0.154%	
10055621MA2 030119	04/01/19	3/1/19 - 4/1/19		6.11E-15	3.59E-15	1.41E-06	0.00E+00	0.00E+00	0.204%	
10055621MA2 040119	05/01/19	4/1/19 - 5/1/19		6.74E-15	4.89E-15	1.68E-06	0.00E+00	0.00E+00	0.225%	
10055621MA2 050119	06/03/19	5/1/19 - 6/3/19		4.03E-15	4.48E-15	1.51E-06	0.00E+00	<MDA	<MDA	
10055621MA2 060319	07/01/19	6/3/19 - 7/1/19		7.65E-15	5.32E-15	1.70E-06	0.00E+00	0.00E+00	0.255%	
Radionuclide (Isotopic Uranium (U))	Sample Date	Sample Period	Result (μCi/mL)	2σ TPU (μCi/mL)	1σ TPU (μCi/mL)	MDC (μCi/mL)	Total Flow (m3)	Quantity Released (Ci)	% of Table 2 Appendix B 10CFR 20	
1005-562-1MA1										
U-233/234	1 Qtr.	4/1/2019	1/3/19 - 4/1/19	1.67E-16	7.78E-17	7.87E-17	4.27E-17	2.54E+06	0.00	0.01%
U- 235/236				2.02E-17	3.08E-17	3.08E-17	4.60E-17		<MDC	<MDC
U-238				1.45E-16	7.56E-17	7.63E-17	6.53E-17		0.00	0.00%
U-233/234	2 Qtr.	7/1/2019	4/1/19 - 7/1/19	2.65E-16	7.61E-17	7.84E-17	2.65E-17	2.53E+06	6.69E-10	0.009%
U- 235/236				3.63E-17	3.01E-17	3.03E-17	2.60E-17		0.00	0.00%
U-238				2.67E-16	7.65E-17	7.89E-17	3.01E-17		0.00E+00	0.009%
1005-562-1MA2										
U-233/234	1 Qtr.	4/1/2019	1/3/19 - 4/1/19	2.52E-16	9.19E-17	9.36E-17	5.22E-17	2.55E+06	0.00	0.01%
U- 235/236				5.86E-17	5.09E-17	5.11E-17	5.86E-17		0.00	0.00%
U-238				1.72E-16	7.40E-17	7.50E-17	3.29E-17		0.00	0.01%
U-233/234	2 Qtr	7/1/2019	4/1/19 - 7/1/19	2.01E-16	6.64E-17	6.80E-17	3.08E-17	2.54E+06	5.12E-10	0.007%
U- 235/236				4.54E-17	3.57E-17	3.59E-17	3.80E-17		0.00	0.00%
U-238				2.04E-16	6.61E-17	6.77E-17	2.14E-17		0.00E+00	0.007%

Notes: None



TABLE 1-5

Container Receipt and Dispatch Building-1100 (SBM 1100): Local Extract Exhaust Gaseous Effluent Vent System, 1100-562-1MA1 & 1100-562-1MA2, Gross Alpha & Beta, and Radionuclides: Quarters 1 & 2, 2019 URENCO USA Lea County, New Mexico

Sample ID	Sample Date	Sample Period	Analyte	Gross Result (μCi/mL)	MDA / MDC (μCi/mL)	Inst. Unc. (μCi/mL)	Total Flow (m3)	Quantity Released (Ci)	% of Table 2 Appendix B 10CFR 20	
1100-562-1MA1										
11005621MA1 010319	02/01/19	1/3/19 - 2/1/19	Gross Alpha	0.00E+00	1.68E-16	0.00E+00	4.58E+05	<MDA	<MDA	
11005621MA1 020119	03/01/19	2/1/19 - 3/1/19		7.37E-17	1.94E-16	6.31E-08	4.34E+05	<MDA	<MDA	
11005621MA1 030119	04/01/19	3/1/19 - 4/1/19		0.00E+00	1.61E-16	0.00E+00	6.43E+05	<MDA	<MDA	
11005621MA1 040119	05/01/19	4/1/19 - 5/1/19		2.20E-16	2.00E-16	1.22E-07	6.37E+05	1.40E-10	0.007%	
11005621MA1 050119	06/03/19	5/1/19 - 6/3/19		2.65E-16	1.80E-16	1.44E-07	7.04E+05	1.87E-10	0.009%	
11005621MA1 060319	07/01/19	6/3/19 - 7/1/19		7.00E-16	1.87E-15	7.21E-08	5.79E+05	<MDA	<MDA	
11005621MA1 010319	02/01/19	1/3/19 - 2/1/19	Gross Beta	6.89E-15	3.35E-15	1.51E-06	4.58E+05	3.16E-09	0.230%	
11005621MA1 020119	03/01/19	2/1/19 - 3/1/19		7.15E-15	3.88E-15	1.45E-06	4.34E+05	3.10E-09	0.238%	
11005621MA1 030119	04/01/19	3/1/19 - 4/1/19		8.22E-15	3.22E-15	1.63E-06	6.43E+05	5.29E-09	0.274%	
11005621MA1 040119	05/01/19	4/1/19 - 5/1/19		4.63E-15	4.54E-15	1.55E-06	6.37E+05	2.95E-09	0.154%	
11005621MA1 050119	06/03/19	5/1/19 - 6/3/19		1.96E-15	4.08E-15	1.34E-06	7.04E+05	<MDA	<MDA	
11005621MA1 060319	07/01/19	6/3/19 - 7/1/19		5.09E-14	4.24E-14	1.62E-06	5.79E+05	2.94E-08	1.696%	
1100-562-1MA2										
11005621MA2 010319	02/01/19	1/3/19 - 2/1/19	Gross Alpha	2.79E-16	1.87E-16	1.22E-07	2.62E+05	7.29E-11	0.009%	
11005621MA2 020119	03/01/19	2/1/19 - 3/1/19		7.08E-17	1.86E-16	6.31E-08	2.97E+05	<MDA	<MDA	
11005621MA2 030119	04/01/19	3/1/19 - 4/1/19		5.68E-17	1.50E-16	6.31E-08	6.35E+05	<MDA	<MDA	
11005621MA2 040119	05/01/19	4/1/19 - 5/1/19		0.00E+00	1.84E-16	0.00E+00	5.95E+05	<MDA	<MDA	
11005621MA2 050119	06/03/19	5/1/19 - 6/3/19		2.25E-16	2.05E-16	1.22E-07	2.41E+05	5.43E-11	0.008%	
11005621MA2 060319	07/01/19	6/3/19 - 7/1/19		3.84E-16	2.61E-16	1.44E-07	0.00E+00	0.00E+00	0.013%	
11005621MA2 010319	02/01/19	1/3/19 - 2/1/19	Gross Beta	6.88E-15	3.73E-15	1.45E-06	2.62E+05	1.80E-09	0.229%	
11005621MA2 020119	03/01/19	2/1/19 - 3/1/19		4.23E-15	3.73E-15	1.24E-06	2.97E+05	1.26E-09	0.141%	
11005621MA2 030119	04/01/19	3/1/19 - 4/1/19		5.30E-15	2.99E-15	1.43E-06	6.35E+05	3.36E-09	0.177%	
11005621MA2 040119	05/01/19	4/1/19 - 5/1/19		3.90E-15	4.16E-15	1.60E-06	5.95E+05	<MDA	<MDA	
11005621MA2 050119	06/03/19	5/1/19 - 6/3/19		6.13E-15	4.64E-15	1.66E-06	2.41E+05	1.48E-09	0.204%	
11005621MA2 060319	07/01/19	6/3/19 - 7/1/19		5.20E-15	5.91E-15	1.58E-06	0.00E+00	<MDA	<MDA	
Radionuclide (Isotopic Uranium (U))	Sample Date	Sample Period	Result (μCi/mL)	2σ TPU (μCi/mL)	1σ TPU (μCi/mL)	MDC (μCi/mL)	Total Flow (m3)	Quantity Released (Ci)	% of Table 2 Appendix B 10CFR 20	
1100-562-1MA1										
U-233/234	1 Qtr.	4/1/2019	1/3/19 - 4/1/19	1.91E-16	8.65E-17	8.76E-17	7.36E-17	0.00	0.01%	
U- 235/236				4.58E-17	4.71E-17	4.72E-17	5.97E-17	1.53E+06	<MDC	<MDC
U-238				2.34E-16	9.11E-17	9.26E-17	4.82E-17	0.00	0.01%	
U-233/234	2 Qtr.	7/1/2019	4/1/19 - 7/1/19	3.46E-16	9.09E-17	9.42E-17	2.64E-17	0.00	0.01%	
U- 235/236				3.86E-17	3.31E-17	3.32E-17	3.26E-17	1.92E+06	0.00	0.00%
U-238				2.50E-16	7.63E-17	7.83E-17	2.89E-17	0.00	0.01%	
1100-562-1MA2										
U-233/234	1 Qtr.	4/1/2019	1/3/19 - 4/1/19	8.60E-17	1.47E-16	1.47E-16	2.61E-16	<MDC	<MDC	
U- 235/236				0.00E+00	1.00E-16	1.00E-16	2.16E-16	1.19E+06	<MDC	<MDC
U-238				1.41E-16	1.30E-16	1.30E-16	1.22E-16	0.00	0.00%	
U-233/234	2 Qtr	7/1/2019	4/1/19 - 7/1/19	3.07E-16	9.62E-17	9.87E-17	2.92E-17	0.00	0.01%	
U- 235/236				4.17E-17	3.82E-17	3.83E-17	3.60E-17	8.36E+05	0.00	0.00%
U-238				2.02E-16	7.76E-17	7.89E-17	4.18E-17	0.00	0.01%	

Notes: None

TABLE 1-6

Container Receipt and Dispatch Building-1100 (SBM 1100): Local Extract Exhaust Gaseous Effluent Vent System, 1100-562-2MA1 & 1100-562-2MA2, Gross Alpha & Beta, and Radionuclides: Quarters 1 & 2, 2019 URENCO USA Lea County, New Mexico

Sample ID	Sample Date	Sample Period	Analyte	Gross Result (μCi/mL)	MDA / MDC (μCi/mL)	Inst. Unc. (μCi/mL)	Total Flow (m3)	Quantity Released (Ci)	% of Table 2 Appendix B 10CFR 20	
1100-562-2MA1										
11005622MA1 010319	04/01/19	1/3/19 - 4/1/19	Gross Alpha	9.76E-16	5.08E-17	4.41E-07	7.93E+07	7.73E-08	0.033%	
11005622MA1 040119	05/01/19	4/1/19 - 5/1/19		3.12E-16	1.69E-16	1.58E-07	3.03E+07	9.45E-09	0.010%	
11005622MA1 050119	06/03/19	5/1/19 - 6/3/19		2.85E-16	1.54E-16	1.58E-07	3.29E+07	9.38E-09	0.009%	
11005622MA1 060319	07/01/19	6/3/19 - 7/1/19		2.04E-16	1.86E-16	1.22E-07	2.84E+07	5.79E-09	0.007%	
11005622MA1 010319	04/01/19	1/3/19 - 4/1/19	Gross Beta	3.94E-15	1.02E-15	1.93E-06	7.93E+07	3.13E-07	0.131%	
11005622MA1 040119	05/01/19	4/1/19 - 5/1/19		7.82E-15	1.69E-16	1.89E-06	3.03E+07	2.37E-07	0.261%	
11005622MA1 050119	06/03/19	5/1/19 - 6/3/19		5.03E-15	1.54E-16	1.70E-06	3.29E+07	1.66E-07	0.168%	
11005622MA1 060319	07/01/19	6/3/19 - 7/1/19		4.54E-15	1.86E-16	1.57E-06	2.84E+07	1.29E-07	0.151%	
1100-562-2MA2										
11005622MA2 010319	04/01/19	1/3/19 - 4/1/19	Gross Alpha	5.17E-16	7.03E-16	8.56E-08	6.88E+07	<MDA	<MDA	
11005622MA2 040119	05/01/19	4/1/19 - 5/1/19		2.79E-16	1.53E-16	1.76E-07	3.13E+07	8.73E-09	0.009%	
11005622MA2 050119	06/03/19	5/1/19 - 6/3/19		1.67E-16	1.52E-16	1.22E-07	3.43E+07	5.72E-09	0.006%	
11005622MA2 060319	07/01/19	6/3/19 - 7/1/19		7.00E-17	1.87E-16	7.21E-08	2.95E+07	<MDA	<MDA	
11005622MA2 010319	04/01/19	1/3/19 - 4/1/19	Gross Beta	2.59E-14	1.41E-14	1.45E-06	6.88E+07	1.79E-06	0.864%	
11005622MA2 040119	05/01/19	4/1/19 - 5/1/19		5.17E-15	3.47E-15	1.92E-06	3.13E+07	1.62E-07	0.172%	
11005622MA2 050119	06/03/19	5/1/19 - 6/3/19		6.61E-15	3.44E-15	1.86E-06	3.43E+07	2.27E-07	0.220%	
11005622MA2 060319	07/01/19	6/3/19 - 7/1/19		6.36E-15	4.24E-15	1.72E-06	2.95E+07	1.87E-07	0.212%	
Radionuclide (Isotopic Uranium (U))	Sample Date	Sample Period	Result (μCi/mL)	2σ TPU (μCi/mL)	1σ TPU (μCi/mL)	MDC (μCi/mL)	Total Flow (m3)	Quantity Released (Ci)	% of Table 2 Appendix B 10CFR 20	
1100-562-2MA1										
U-233/234	1 Qtr.	4/1/2019	1/3/19 - 4/1/19	1.06E-15	1.95E-16	2.09E-16	3.08E-17	7.93E+07	8.37E-08	0.035%
U- 235/236				4.85E-17	4.44E-17	4.45E-17	5.14E-17		<MDC	<MDC
U-238				4.71E-16	1.23E-16	1.28E-16	4.63E-17		0.00E+00	0.016%
U-233/234	2 Qtr.	7/1/2019	4/1/19 - 7/1/19	2.77E-16	7.32E-17	7.58E-17	2.85E-17	9.16E+07	0.00	0.009%
U- 235/236				2.49E-17	2.37E-17	2.37E-17	2.56E-17		<MDC	<MDC
U-238				2.94E-16	7.53E-17	7.82E-17	2.58E-17		0.00	0.010%
1100-562-2MA2										
U-233/234	1 Qtr.	4/1/2019	1/3/19 - 4/1/19	2.54E-15	1.08E-15	1.10E-15	6.62E-16	6.88E+07	1.75E-07	0.085%
U- 235/236				4.09E-16	5.35E-16	5.36E-16	8.17E-16		<MDC	<MDC
U-238				1.56E-15	8.49E-16	8.57E-16	6.58E-16		0.00E+00	0.052%
U-233/234	2 Qtr	7/1/2019	4/1/19 - 7/1/19	2.44E-16	6.56E-17	6.78E-17	3.06E-17	9.51E+07	0.00	0.008%
U- 235/236				1.69E-17	1.93E-17	1.93E-17	2.54E-17		<MDC	<MDC
U-238				2.71E-16	6.87E-17	7.14E-17	2.21E-17		0.00	0.009%

Notes:

1. 11005622MA1 010319, filter was put on 01/03/19 and removed 04/01/19.
2. 11005622MA2 010319, filter was put on 01/03/19 and removed 04/01/19.
3. Redundant monitor out of operation 12/6/18 to 3/28/19 due to faulty pump.

TABLE 1-7

Centrifuge Test and Post Mortem Facilities-1300 (CTPMF): Local Extract Exhaust Gaseous Effluent Vent System, 1300-562-1MA1, Gross Alpha & Beta, and Radionuclides: Quarters 1, 2019 URENCO USA Lea County, New Mexico

Sample ID	Sample Date	Sample Period	Analyte	Gross Result ($\mu\text{Ci/mL}$)	MDA / MDC ($\mu\text{Ci/mL}$)	Inst. Unc. ($\mu\text{Ci/mL}$)	Total Flow (m^3)	Quantity Released (Ci)	% of Table 2 Appendix B 10CFR 20
1300-562-1MA1									
13005621MA1 010319	01/30/19	1/3/19- 1/30/19	Gross Alpha	0.00E+00	1.61E-16	0.00E+00	1.14E+07	<MDA	<MDA
13005621MA1 010319	01/30/19	1/3/19- 1/30/19	Gross Beta	6.40E-15	3.22E-15	1.49E-06	1.14E+07	7.32E-08	0.213%
Radionuclide (Isotopic Uranium (U))	Sample Date	Sample Period	Result ($\mu\text{Ci/mL}$)	2 σ TPU ($\mu\text{Ci/mL}$)	1 σ TPU ($\mu\text{Ci/mL}$)	MDC ($\mu\text{Ci/mL}$)	Total Flow (m^3)	Quantity Released (Ci)	% of Table 2 Appendix B 10CFR 20
1300-562-1MA1									
U-233/234	1 Qtr.	1/30/19	1/3/19- 1/30/19	3.55E-16	2.22E-16	2.23E-16	2.39E-16	0.00	0.01%
U- 235/236				-2.39E-17	7.28E-17	7.28E-17	1.98E-16	<MDC	<MDC
U-238				5.34E-16	2.47E-16	2.50E-16	1.18E-16	0.00	0.02%

Notes:

1. 1300-562-1MA1 monitor permanently shut down on 01/30/2019. Building no longer in operation.
2. Ci = Curies
3. $\mu\text{Ci/mL}$ = micro-Curies per milliliter.
4. m^3 = cubic meters.
5. MDA = minimum detectable activity.
6. MDC= minimum detectable concentration.
7. Quantity released is calculated if the result Equals or Exceeds MDA or MDC.
8. Radionuclides analyzed using Procedure EPA 908.0 Modified by Eberline Analytical Corp of Oak Ridge, TN.
9. Gross alpha and beta analyzed by URENCO USA per procedure EN-3-3030-01.