

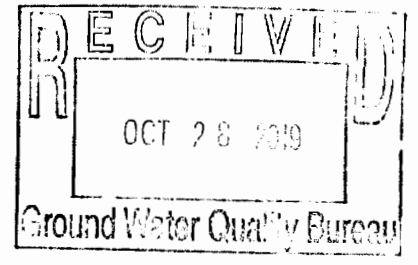
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*Symbol: EPC-DO: 19-360  
LA-UR: 19-29962  
Locates Action No.: U1801172  
Date: **OCT 28 2019***

Ms. Michelle Hunter, Chief  
Ground Water Quality Bureau  
New Mexico Environment Department  
Harold Runnels Building, Room N2261  
1190 St. Francis Drive  
P.O. Box 26110  
Santa Fe, NM 87502

**Subject: Monitoring Report, Radioactive Liquid Waste Treatment Facility, 3<sup>rd</sup> Quarter 2019**

Dear Ms. Hunter:

The U.S. Department of Energy and Triad National Security, LLC (DOE/Triad) voluntarily submit the attached monitoring report for Los Alamos National Laboratory's Radioactive Liquid Waste Treatment Facility (RLWTF) at Technical Area (TA)-50. The report covers the monitoring period July 1 to September 30, 2019, and provides information on the following:

- Facility Maintenance and Repair Activities
- Daily Low-Level and TRU Influent Volumes
- Daily Discharge Volumes to the MES, Outfall 051, and SET
- Effluent Monitoring: Outfall 051 and MES
- Ground Water Monitoring: MCOI-6, MCA-RLW-1, and MCA-RLW-2





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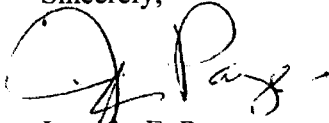
EPC-DO: 19-360  
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OCT 28 2019

Page 2

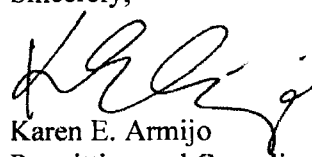
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Sincerely,



Jennifer E. Payne  
Acting Division Leader  
Environmental Protection & Compliance  
Triad National Security, LLC

Sincerely,



Karen E. Armijo  
Permitting and Compliance Program Manager  
National Nuclear Security Administration  
U.S. Department of Energy

JEP/KEA/MTS/WJF;jdm

Attachment(s): Attachment 1 RLWTF Quarterly Report – Third Quarter 2019  
Attachment 2 Summary of Maintenance and Repair Activities Conducted at the RLWTF  
Attachment 3 RLWTF Daily Influent and Effluent  
Attachment 4 MES Monthly Treated Effluent Results  
Attachment 5 MES Quarterly Treated Effluent Results  
Attachment 6 Quarterly Groundwater Monitoring Report – Third Quarter 2019  
Attachment 7 Monitoring Wells Location Map

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# **ATTACHMENT 1**

## **RLWTF Quarterly Report – Third Quarter 2019**

**EPC-DO: 19-360**

**LA-UR-19-29962**

**Date:**           **OCT 28 2019**

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### Facility Maintenance and Repair Activities

- ✓ **Attachment 2** provides a summary of the maintenance and repair activities conducted at the Radioactive Liquid Waste Treatment Facility (RLWTF) during the monitoring period.
- 

### Influent Volumes: Low-Level Radioactive Waste Water

- ✓ **Attachment 3** provides the total daily and monthly volumes of low-level radioactive waste water (RLW) received by the RLWTF during the monitoring period.
- 

### Influent Volumes: Transuranic Waste Water

- ✓ **Attachment 3** provides the total daily and monthly volumes of transuranic (TRU) influent waste water received by the RLWTF during the monitoring period.
- 

### Discharge Volumes: MES, Outfall 051, and SET

- ✓ **Attachment 3** provides the daily volume of treated effluent discharged to the Mechanical Evaporator System (MES) during the monitoring period.
  - ✓ No treated effluent was discharged to either Outfall 051 or the Solar Evaporative Tank System (SET) during the monitoring period.
- 

### Effluent Monitoring:

- ✓ **Outfall 051 Monthly.** No treated effluent was discharged through Outfall 051 during the reporting period. Therefore, no effluent sampling for Outfall 051 was completed during the reporting period.
- ✓ **MES Monthly.** Monthly sampling of treated effluent discharged to the MES was conducted on July 10, August 14, and September 11, 2019, for chloride (Cl), perchlorate (ClO<sub>4</sub>), fluoride (F), total Kjeldahl nitrogen (TKN), nitrate+nitrite as nitrogen (NO<sub>3</sub>+NO<sub>2</sub>-N), and total dissolved solids (TDS). Analytical results are provided in **Attachment 4, Table 1**. All results were less than MES Effluent Standards.
- ✓ **MES Quarterly.** Quarterly sampling of treated effluent discharged to the MES for evaporation was conducted on August 14, 2019, for water contaminants listed in 20.6.2.3103 NMAC and Toxic Pollutants as defined in 20.6.2.7.WW NMAC. Analytical results are provided in **Attachment 5, Tables 1, 2, and 3. Table 1** contains results for all

general inorganics, metals, radioactivity, and perchlorate. **Table 2** contains detected organic compounds. **Table 3** contains organic compounds not detected by the analytical laboratory. All results were less than MES Effluent Standards. In addition, all results were less than NMWQCC Regulation 3103 Ground Water Standards and NMED Risk Assessment Guidance Table A-1 Tap Water Limits, except bromodichloromethane.

This analyte was detected at a concentration of 3.23 µg/L. There is no NMWQCC Regulation 3103 Ground Water Standard for bromodichloromethane. The NMED Risk Assessment Guidance Table A-1 Tap Water Limit for bromodichloromethane is 1.34 µg/L. Bromodichloromethane are by-products from the treatment of drinking water with chlorinated compounds.

- ✓ **SET.** No treated effluent was discharged to the SET during the monitoring period.

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#### Ground Water Monitoring: MCOI-6, MCA-RLW-1, MCA-RLW-2

- ✓ During the reporting period installation of two new alluvial wells (MCA-RLW-1 and MCA-RLW-2) was completed in accordance with the Alluvial Monitoring Wells Workplan (EPC-DO-18-414), submitted to the New Mexico Environment Department (NMED) on November 19, 2018. NMED approved the workplan on January 30, 2019. Construction/lithologic logs were submitted to NMED on September 3, 2019 (EPC-DO: 19-315) and the well completion report was submitted to NMED on September 19, 2019 (EPC-DO: 19-324).
- ✓ **Attachment 6** provides the complete ground water monitoring report from the quarterly sampling of perched/intermediate ground water monitoring wells MCOI-6 on July 23, 2019 and MCA-RLW-2 on August 5, 2019. Quarterly sampling at MCA-RLW-1 was not completed during the reporting period due to the well being dry.

Quarterly results for TKN, NO<sub>3</sub>+NO<sub>2</sub>-N, TDS, Cl, F, and ClO<sub>4</sub> at MCOI-6 are provided in **Table 1** and MCA-RLW-2 in **Table 2**. All results from sampling at MCA-RLW-2 were below NMWQCC Regulation 3103 Ground Water Standards (20.6.2.3103 NMAC) and the NMED Risk Assessment Guidance Table A-1 Tap Water Limit for perchlorate. All results from sampling at MCOI-6 were below NMWQCC Regulation 3103 Ground Water Standards (20.6.2.3103 NMAC) with the exception of the following:

- NO<sub>3</sub>+NO<sub>2</sub>-N was detected at a concentration of 12.4 mg/L; the NMWQCC Regulation 3103 Ground Water Standard is 10 mg/L. The average NO<sub>3</sub>+NO<sub>2</sub>-N concentration at MCOI-6 during the 5-yr period from 2014 through 2018 was 9.0 mg/L with multiple exceedances of the 10 mg/L standard. Detections of NO<sub>3</sub>+NO<sub>2</sub>-N at MCOI-6 at concentrations greater than the ground water standard were previously identified and reported to NMED. Monitoring well MCOI-6 will continue to be routinely sampled for NO<sub>3</sub>+NO<sub>2</sub>-N in support of RLWTF and pursuant to the

Compliance Order on Consent (Consent Order, June 2016), the Chromium Investigation Monitoring Group.

- ClO<sub>4</sub> was detected at a concentration of 86.1 µg/L; the NMED Risk Assessment Guidance Table A-1 Tap Water Limit is 13.8 µg/L. The average ClO<sub>4</sub> concentration at MCOI-6 during the 5-yr period from 2014 through 2018 was 72.9 µg/L. Detections of ClO<sub>4</sub> at MCOI-6 at concentrations greater than the Table A-1 Tap Water Limit were previously identified and reported to NMED. Monitoring well MCOI-6 will continue to be routinely sampled for ClO<sub>4</sub> in support of RLWTF and pursuant to the Consent Order, the Chromium Investigation Monitoring Group.

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A map showing the location of ground water monitoring wells MCA-RLW-1, MCA-RLW-2, MCOI-6, R-1, R-14, R-46 and R-60 is provided as **Attachment 7**.

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In addition to the items noted above, during the reporting period the following actions were completed in accordance with approved stabilization plans and/or work plans:

- ✓ Installation of moisture monitoring boreholes at the SET was completed and monitoring to determine baseline moisture conditions was initiated. These boreholes were installed as part of the Soil Moisture Monitoring System Workplan (EPC-DO-18-366) submitted to NMED on October 31, 2018. NMED approved the workplan on January 30, 2019.
  - ✓ The 75K Tank was operationally emptied. This was completed as part of the Radioactive Liquid Waste Treatment Facility Stabilization Plan for the 75K Tank submitted to NMED on January 25, 2019 (EPC-DO: 19-007). NMED approved the plan on April 25, 2019.
-

## **ATTACHMENT 2**

### **Summary of Maintenance and Repair Activities Conducted at the RLWTF**

**EPC-DO: 19-360**

**LA-UR-19-29962**

**Date:**           **OCT 28 2019**



ATTACHMENT 2

Structures	Description	Built	Task Type					Total
			PM	CO	MD	SR	UP	
Building 1	Original treatment bldg.	1963	38	0	3	1	2	44
Building 2	Original influent storage bldg.	1963	3	0	0	0	0	3
Building 66	TRU influent storage	1982	0	1	0	0	0	1
Building 201	Valve station for caustic and acid radioactive liquid waste lines	1994	0	0	1	0	0	1
Building 248	Low-level bottoms storage	1996	3	0	0	0	0	3
Building 250	Low-level influent storage	2009	17	0	1	0	1	19
Building 257	Mechanical Evaporator System	2010	1	2	0	0	0	3
TA52	Solar Evaporation Tank	2011	10	0	0	0	0	10
<b>Totals</b>			72	3	5	1	3	84

Task Types: PM - preventive maintenance MD - modification UP= Unplanned  
 CO - corrective maintenance SR - service request

ATTACHMENT 2

**TA-50-0001 Work Completion Report (07-01-2019 to 09-30-2019)**

Unit	Work Order	WO	WO Type	Task Title
500001	00634615	02	MD	500001 REMOVE CHEMICAL DISSOLUTION TANKS
500001	00635234	01	MD	500001 RESTORE IW/NPW FOR FLUSHING CLARIFIER #1 SLUDGE PUMP
500001	00627628	01	MD	500001 INSTALL LEAK DETECTORS WITH TEST FUNCTION AT LOW POIN
500001	00640686	01	PM	500001 EW 1YR PM, EYEWASH STATIONS
500001	00631902	01	PM	50-66/50-01 FAH 1YR PM, HEPA FILTERS (PLENUM) TESTING
500001	00639103	01	PM	500001 ASE 3MO PM, EXHAUST STACK PUMP (3 EA)
500001	00639096	01	PM	50-1 PH ANALYZER 6MO CALIBRATION 13 EA
500001	00634049	01	PM	500001 RM 24 (6M) SRO, AIT VERIFY ENSURE ACCURACY PM (2 EA)
500001	00640687	01	PM	500001 EH-001 1YR PM, ELEVATOR MECH/ELECT
500001	00639112	01	PM	500001 LTE 1MO PM
500001	00639126	01	PM	500001 PERFORM WEEKLY EYEWASH/ SAFETY SHOWER TESTING
500001	00616714	01	PM	50-1 RM 34B (1YR) FIT CALIBRATION 3 EA
500001	00639095	01	PM	500001 LUBE 6MO PM, HEATING & VENTILATION (MECHANICAL) 5 EA
500001	00639067	01	PM	50-1 RM24 ANNUAL SRO/HWE CONTROL CABINET CLEANING
500001	00639105	01	PM	500001 MICROFILTER 3 MONTH PUMP MAINTENANCE
500001	00639158	01	PM	500001 FEXT 1MO PM
500001	00639172	01	PM	500001 LTET 1MO PM
500001	00641517	01	PM	500001 RM24 (ANNUAL) TK-25 LIT-1004 VERIFY & ENSURE ACCURACY
500001	00641519	01	PM	500001 CA-4 (3 MONTH) AIR COMPRESSOR PM (1 UNIT)
500001	00636512	01	PM	500001 (A) NATURAL GAS SEISMIC SHUTOFF VALVE INSPECT PM 3 EA
500001	00641523	01	PM	50-1-116B CM-003/HE-005: 1-YR PM MECH/ELECT
500001	00641524	01	PM	50-1-116B CM-003/HE-005: 1-YR ANSI INSPECTION PM
500001	00641510	01	PM	500001 CM-011 (1YR) PM, MECHANICAL
500001	00641515	01	PM	500001 CM-11 (1YR) PM, ANSI INSPECTION
500001	00641522	01	PM	50-1-60 CM-010/HE-008: 1-YR PM (INSPECTION)
500001	00641525	01	PM	500001 CM-010/HE-008 (1YR) PM, MECH/ELECT MAINT
500001	00641572	01	PM	500001 FEXT 1MO PM
500001	00641629	01	PM	500001 LTE 1MO PM
500001	00621753	01	PM	TA-50 FCP 6MO PM, FIRE ALARM SYSTEMS INSPECTION & TESTING
500001	00641509	01	PM	500001 LADR 2YR OSHA STD INSPECTION
500001	00641588	01	PM	500001 PERFORM WEEKLY EYEWASH/ SAFETY SHOWER TESTING
500001	00641631	01	PM	500001 LTET 1MO PM
500001	00643331	01	PM	500001 BHW 1YR PM, INSPECTION & MAINTENANC
500001	00639068	01	PM	500001 EH (1YR) PM, ELEVATOR 3RD PARTY INSP
500001	00643810	01	PM	500001 PV-007 3 MO PM, (MECHANICAL)

ATTACHMENT 2

**TA-50-0001 Work Completion Report (07-01-2019 to 09-30-2019)**

Unit	Work Order	WO	WO Type	Task Title
500001	00643813	01	PM	50-1 PH ANALYZER 2MO VERIFICATION 2 EA
500001	00623957	01	PM	500001 HUE 1YR PM
500001	00639408	01	PM	500001 FAR 3MO PM (9 EA)
500001	00643887	01	PM	500001 LTE 1MO PM
500001	00643889	01	PM	500001 LTET 1MO PM
500001	00643777	01	PM	500001 SPW/SPH 1 YR FIRE SUPPRESSION SYSTEMS PM
500001	00640551	01	SR	500084 MOVE TRANSPORTAINERS 50-263 & 50-295 TO RLW
500001	00648527	01	UP	500001 HANG LOCKBOX IN ROOM 104
500001	00648558	01	UP	500001 REMOVE NAME PLATE HOLDERS AND INSTALL WHITE BOARD

ATTACHMENT 2

**TA-50-0250 Work Completion Report (07-01-2019 to 09-30-2019)**

Unit	Work Order	WO	WO Type	Task Title
500250	00637651	01	MD	500250 WMRM UPGRADE MOTORS ON INFLUENT METERING TANK PUMPS
500250	00639104	01	PM	500250 SHS 3MO PM, SAFETY SHOWER
500250	00639111	01	PM	500250 FEXT 1MO PM
500250	00639169	01	PM	500250 LTNT 1MO PM
500250	00639171	01	PM	500250 LTET 1MO PM
500250	00639139	01	PM	500250 LTE 1MO PM
500250	00639093	01	PM	500250 GFCI (6M) SERVICE INSPECTIONS
500250	00641513	01	PM	50-250 CM-1-HE-1 (1YR) MECH-ELECT MAINTENANCE PM
500250	00641511	01	PM	50-250 CM-1/HE-1 (1YR) ANSI INSPECTION PM
500250	00641577	01	PM	500250 FEXT 1MO PM
500250	00641526	01	PM	500250 LTNT 1YR PM
500250	00641553	01	PM	500250 LTET 1MO PM
500250	00641555	01	PM	500250 LTE 1MO PM
500250	00643827	01	PM	500250 LTNT 1MO PM
500250	00643834	01	PM	500250 FEXT 1MO PM
500250	00643892	01	PM	500250 LTET 1MO PM
500250	00643894	01	PM	500250 LTE 1MO PM
500250	00643325	01	PM	50-250 5YR SPW SYSTEM PM
500250	00650941	01	UP	500250 INSTALL SIGNAGE ON EXTERIOR OF BUILDING

ATTACHMENT 2

**TA-52-0181 Work Completion Report (07-01-2019 to 09-30-2019)**

Unit	Work Order	WO	WO Type	Task Title
				*** NO DATA TO REPORT FOR LISTED PERIOD.

**TA-52-0182 Work Completion Report (07-01-2019 to 09-30-2019)**

Unit	Work Order	WO	WO Type	Task Title
520182	00640510	01	PM	TA52-182 ANNUAL EMERGENCY LIGHTS PM
520182	00638120	01	PM	TA52-182 FEXT ANNUAL PM
520182	00638119	01	PM	TA52-182 ANNUAL NON TRITIUM LIGHTS PM
520182	00641615	01	PM	TA52-182 FEXT 1MO PM
520182	00641586	01	PM	TA52-182 MONTHLY EMERGENCY LIGHTS PM
520182	00641616	01	PM	TA52-182 MONTHLY NON TRITIUM LIGHTS PM
520182	00641545	01	PM	52-0182 (3M) FENCE LINE VERIFICATION
520182	00641546	01	PM	52-0182 (3M) SIGNAGE VERIFICATION FOR FENCE LINE
520182	00643872	01	PM	TA52-182 MONTHLY NON TRITIUM LIGHTS PM
520182	00643873	01	PM	TA52-182 FEXT 1MO PM

**TA-52-0183 Work Completion Report (07-01-2019 to 09-30-2019)**

Unit	Work Order	WO	WO Type	Task Title
				*** NO DATA TO REPORT FOR LISTED PERIOD.

ATTACHMENT 2

**TA-50-0002 Work Completion Report (07-01-2019 to 09-30-2019)**

Unit	Work Order	WO	WO Type	Task Title
500002	00641537	01	PM	500002 TCA 6MO PM, AUTO DUMP
500002	00641540	01	PM	500002 CA'S 6MO PM, (MECHANICAL)
500002	00643779	01	PM	500002 HUE 1YR PM

**TA-50-0066 Work Completion Report (07-01-2019 to 09-30-2019)**

Unit	Work Order	WO	WO Type	Task Title
500066	00463521	01	CO	500066 LP-1 TRACE AND LABEL SPARE BREAKERS

**TA-50-0201 Work Completion Report (07-01-2019 to 09-30-2019)**

Unit	Work Order	WO	WO Type	Task Title
500201	00646871	01	MD	500201 UPGRADE WM-201 DRIP PAN ALARM WITH WIRELESS FOR ALARM

**TA-50-0248 Work Completion Report (07-01-2019 to 09-30-2019)**

Unit	Work Order	WO	WO Type	Task Title
500248	00639089	01	PM	500248 LUBE 6MO PM, MIXER LUBRICATION
500248	00643326	01	PM	500248 TK 3YR PM, ULTRASONIC TANK INSPECTION (TK-3 & TK-17)
500248	00643783	01	PM	500248 HUE 1YR PM

**TA-50-0257 Work Completion Report (07-01-2019 to 09-30-2019)**

Unit	Work Order	WO	WO Type	Task Title
500257	00635458	01	CO	500257 REPLACE SUMP PUMPS
500257	00570309	01	CO	500257 REPLACE THE FLOW SERVE FEED VALVE
500257	00643801	01	PM	50-257 3MO EVAP BOILER PM

Acronyms used by LANL Maintenance:

- |     |                      |      |                            |
|-----|----------------------|------|----------------------------|
| ASE | air sampler, exhaust | LPT  | lightning protection       |
| BHW | boiler, hot water    | LTE  | lights, emergency          |
| CA  | compressed air       | LTET | lights, emergency, tritium |
| DAD | dessicant air dryer  | LTNT | lights, non-tritium        |
| EB  | exhaust bank         | PRV  | pressure reducing valve    |

## ATTACHMENT 2

EH	exhaust heater	PV	pump, vacuum
FAR	filter, air replaceable	RCA	radiological control area
FE	fan, exhaust	SHS	shower, safety
FEXT	fire extinguisher	SPH	sprinkler pipe, dry
HEPA	high-efficiency particulate air	SPW	sprinkler pipe, wet
HUE	heater unit, electric	TCA	tank, compressed air

# **ATTACHMENT 3**

## **RLWTF Daily Influent and Effluent**

**EPC-DO: 19-360**

**LA-UR-19-29962**

**Date:**           **OCT 28 2019**



ATTACHMENT 3

**RLWTF Daily Influent and Effluent**

Date	Low-level Influent	Effluent MES	Effluent Outfall	Effluent SET	Transuranic Influent
Totals, 2019-Q3	581,924	661,527	0	0	223
Sub-total, July	256,377	275,272	0	0	0
Sub-total, August	151,779	263,659	0	0	0
Sub-total, Sept.	173,769	122,596	0	0	223

All flows are in Liters.

1-Jul	6,472	0	0	0	0
2-Jul	6,964	0	0	0	0
3-Jul	7,835	10,159	0	0	0
4-Jul	5,110	14,205	0	0	0
5-Jul	5,678	7,131	0	0	0
6-Jul	12,641	0	0	0	0
7-Jul	15,197	0	0	0	0
8-Jul	14,156	1,192	0	0	0
9-Jul	7,305	7,827	0	0	0
10-Jul	6,889	13,649	0	0	0
11-Jul	7,040	14,368	0	0	0
12-Jul	6,927	14,523	0	0	0
13-Jul	6,170	3,717	0	0	0
14-Jul	5,223	0	0	0	0
15-Jul	6,397	4,709	0	0	0
16-Jul	6,397	13,986	0	0	0
17-Jul	6,624	14,141	0	0	0
18-Jul	6,548	9,656	0	0	0
19-Jul	7,911	10,746	0	0	0
20-Jul	13,740	11,408	0	0	0
21-Jul	9,160	14,194	0	0	0
22-Jul	10,749	14,076	0	0	0
23-Jul	12,566	14,046	0	0	0
24-Jul	11,696	13,471	0	0	0
25-Jul	12,074	4,058	0	0	0
26-Jul	14,837	3,751	0	0	0
27-Jul	4,504	13,607	0	0	0
28-Jul	2,914	13,168	0	0	0
29-Jul	3,823	10,064	0	0	0
30-Jul	6,397	9,599	0	0	0
31-Jul	6,435	13,823	0	0	0

ATTACHMENT 3

RLWTF Daily Influent and Effluent

Date	Low-level Influent	Effluent MES	Effluent Outfall	Effluent SET	Transuranic Influent
1-Aug	3,028	14,103	0	0	0
2-Aug	2,763	13,925	0	0	0
3-Aug	2,687	7,506	0	0	0
4-Aug	3,407	0	0	0	0
5-Aug	8,516	5,276	0	0	0
6-Aug	4,883	13,300	0	0	0
7-Aug	5,072	13,675	0	0	0
8-Aug	6,699	13,675	0	0	0
9-Aug	3,861	9,410	0	0	0
10-Aug	8,819	3,414	0	0	0
11-Aug	5,185	0	0	0	0
12-Aug	4,921	4,924	0	0	0
13-Aug	2,914	13,899	0	0	0
14-Aug	2,990	13,861	0	0	0
15-Aug	3,217	13,830	0	0	0
16-Aug	2,650	13,562	0	0	0
17-Aug	1,022	13,762	0	0	0
18-Aug	833	13,872	0	0	0
19-Aug	5,413	13,872	0	0	0
20-Aug	3,407	9,247	0	0	0
21-Aug	34,822	0	0	0	0
22-Aug	7,949	0	0	0	0
23-Aug	3,520	4,837	0	0	0
24-Aug	1,514	13,664	0	0	0
25-Aug	946	13,660	0	0	0
26-Aug	2,460	13,664	0	0	0
27-Aug	5,148	6,166	0	0	0
28-Aug	6,435	6,556	0	0	0
29-Aug	3,293	0	0	0	0
30-Aug	1,930	0	0	0	0
31-Aug	1,476	0	0	0	0
1-Sep	1,930	0	0	0	0
2-Sep	1,022	0	0	0	0
3-Sep	2,725	8,982	0	0	0
4-Sep	3,747	14,046	0	0	0
5-Sep	3,709	13,902	0	0	223
6-Sep	4,731	13,872	0	0	0
7-Sep	1,628	7,676	0	0	0
8-Sep	2,195	0	0	0	0
9-Sep	7,154	0	0	0	0
10-Sep	4,201	5,753	0	0	0
11-Sep	4,542	9,504	0	0	0

ATTACHMENT 3

**RLWTF Daily Influent and Effluent**

<b>Date</b>	<b>Low-level Influent</b>	<b>Effluent MES</b>	<b>Effluent Outfall</b>	<b>Effluent SET</b>	<b>Transuranic Influent</b>
12-Sep	3,899	0	0	0	0
13-Sep	3,596	0	0	0	0
14-Sep	2,422	0	0	0	0
15-Sep	2,044	0	0	0	0
16-Sep	8,176	132	0	0	0
17-Sep	5,867	594	0	0	0
18-Sep	3,179	0	0	0	0
19-Sep	3,634	0	0	0	0
20-Sep	5,640	0	0	0	0
21-Sep	1,287	0	0	0	0
22-Sep	871	0	0	0	0
23-Sep	2,650	0	0	0	0
24-Sep	45,023	0	0	0	0
25-Sep	3,747	0	0	0	0
26-Sep	37,982	0	0	0	0
27-Sep	1,855	4,572	0	0	0
28-Sep	984	15,496	0	0	0
29-Sep	1,211	14,334	0	0	0
30-Sep	2,120	13,732	0	0	0

# **ATTACHMENT 4**

## **MES Monthly Treated Effluent Results**

**EPC-DO: 19-360**

**LA-UR-19-29962**

**Date:**           **OCT 28 2019**

ATTACHMENT 4

Table 1. Analytical Results from Monthly Sampling of RLWTF Treated Effluent Discharged to the MES.

Field Sample ID	Location ID	Sample Date	Parameter Code	Parameter Name	Report Result	Report Units <sup>1,2</sup>	Validation Qualifier <sup>3,4,5,6</sup>	Detected <sup>7,8</sup>	Filtered <sup>9,10</sup>	Lab Method	Method Detection Limit	Groundwater Limit <sup>11</sup>
RLWTF-19-174663	RLWTF_MES 01	07-10-2019	Cl(-1)	Chloride	1.97	mg/L	NQ	Y	N	EPA:300.0	0.067	250
RLWTF-19-174663	RLWTF_MES 01	07-10-2019	ClO4	Perchlorate	0.050	ug/L	U	N	N	SW-846:6850	0.050	13.8
RLWTF-19-174663	RLWTF_MES 01	07-10-2019	F(-1)	Fluoride	0.157	mg/L	NQ	Y	N	EPA:300.0	0.033	1.6
RLWTF-19-174663	RLWTF_MES 01	07-10-2019	NO3+NO2-N	Nitrate-Nitrite as Nitrogen	2.73	mg/L	NQ	Y	N	EPA:353.2	0.085	10
RLWTF-19-174663	RLWTF_MES 01	07-10-2019	TDS	Total Dissolved Solids	10.0	mg/L	U	N	N	EPA:160.1	3.40	1000
RLWTF-19-174663	RLWTF_MES 01	07-10-2019	TKN	Total Kjeldahl Nitrogen	1.93	mg/L	J+	Y	N	EPA:351.2	0.033	
RLWTF-19-174664	RLWTF_MES 01	08-14-2019	Cl(-1)	Chloride	1.58	mg/L	NQ	Y	N	EPA:300.0	0.067	250
RLWTF-19-174664	RLWTF_MES 01	08-14-2019	ClO4	Perchlorate	0.050	ug/L	U	N	N	SW-846:6850	0.050	13.8
RLWTF-19-174664	RLWTF_MES 01	08-14-2019	F(-1)	Fluoride	0.0899	mg/L	NQ	Y	N	EPA:300.0	0.033	1.6
RLWTF-19-174664	RLWTF_MES 01	08-14-2019	NO3+NO2-N	Nitrate-Nitrite as Nitrogen	1.83	mg/L	NQ	Y	N	EPA:353.2	0.085	10
RLWTF-19-174664	RLWTF_MES 01	08-14-2019	TDS	Total Dissolved Solids	5.71	mg/L	U	N	N	EPA:160.1	3.40	1000
RLWTF-19-174664	RLWTF_MES 01	08-14-2019	TKN	Total Kjeldahl Nitrogen	1.14	mg/L	J+	Y	N	EPA:351.2	0.033	
RLWTF-19-174665	RLWTF_MES 01	09-11-2019	Cl(-1)	Chloride	2.86	mg/L	NQ	Y	Y	EPA:300.0	0.067	250
RLWTF-19-174665	RLWTF_MES 01	09-11-2019	ClO4	Perchlorate	0.050	ug/L	U	N	Y	SW-846:6850	0.050	13.8
RLWTF-19-174665	RLWTF_MES 01	09-11-2019	F(-1)	Fluoride	0.0456	mg/L	J	Y	Y	EPA:300.0	0.033	1.6
RLWTF-19-174665	RLWTF_MES 01	09-11-2019	NO3+NO2-N	Nitrate-Nitrite as Nitrogen	3.03	mg/L	NQ	Y	Y	EPA:353.2	0.170	10
RLWTF-19-174665	RLWTF_MES 01	09-11-2019	TDS	Total Dissolved Solids	50.0	mg/L	NQ	Y	Y	EPA:160.1	3.40	1000
RLWTF-19-186406	RLWTF_MES 01	09-11-2019	TKN	Total Kjeldahl Nitrogen	1.45	mg/L	NQ	Y	N	EPA:351.2	0.033	

Notes:

<sup>1</sup> mg/L - milligrams per liter.

<sup>2</sup> ug/L - microgram per liter.

<sup>3</sup> NQ - in the validation qualifier column means analyte is classified as detected.

<sup>4</sup> U - in the validation qualifier column means analyte is classified as not detected.

<sup>5</sup> J+ - in the validation qualifier column means the analyte is classified as detected but the reported concentration value is expected to be more uncertain than usual with a potential positive bias.

<sup>6</sup> J - in the validation qualifier column means the analyte is classified as detected but the reported concentration value is expected to be more uncertain than usual.

<sup>7</sup> Y - in the detect flag column means the analyte was detected.

<sup>8</sup> N - in the detect flag column means the analyte was undetected.

<sup>9</sup> N - in the filtered column means the sample was unfiltered.

<sup>10</sup> Y - in the filtered column means the sample was filtered.

<sup>11</sup> Groundwater Limit represents standards for groundwater as identified NMAC 20.6.2.3103 except perchlorate which represents NMED Risk Assessment Guidance, Table A-1, Tap Water Limit.

# **ATTACHMENT 5**

## **MES Quarterly Treated Effluent Results**

**EPC-DO: 19-360**

**LA-UR-19-29962**

**Date:**           **OCT 28 2019**

Table 1. General Inorganics, Metals, and Radioactivity Results from Quarterly Sampling of RLWTF Treated Effluent Discharged to the MES.

Field Sample ID	Location ID	Sample Date	Parameter Code	Parameter Name	Report Result	Report Units <sup>1,2,3,4</sup>	Validation Qualifier <sup>5,6,7</sup>	Detected <sup>8,9</sup>	Filtered <sup>10,11</sup>	Lab Method	Method Detection Limit	Groundwater Limit <sup>12,13</sup>
RLWTF-19-174663	RLWTF_MES 01	07-10-2019	SO4(-2)	Sulfate	1.11	mg/L	NQ	Y	N	EPA:300.0	0.133	600
RLWTF-19-174664	RLWTF_MES 01	08-14-2019	SO4(-2)	Sulfate	1.03	mg/L	NQ	Y	N	EPA:300.0	0.133	600
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	Ag	Silver	0.300	ug/L	U	N	N	EPA:200.8	0.300	50
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	Al	Aluminum	19.3	ug/L	U	N	N	EPA:200.8	19.3	5000
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	As	Arsenic	2.00	ug/L	U	N	N	EPA:200.8	2.00	100
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	B	Boron	80.7	ug/L	NQ	Y	N	EPA:200.7	15.0	750
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	Ba	Barium	0.670	ug/L	U	N	N	EPA:200.8	0.670	2000
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	Be	Beryllium	0.200	ug/L	U	N	N	EPA:200.8	0.200	4
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	Cd	Cadmium	0.300	ug/L	U	N	N	EPA:200.8	0.300	10
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	CN(TOTAL)	Cyanide (Total)	0.00167	mg/L	U	N	N	EPA:335.4	1.67	0.2
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	Co	Cobalt	0.300	ug/L	U	N	N	EPA:200.8	0.300	50
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	Cr	Chromium	3.00	ug/L	U	N	N	EPA:200.8	3.00	50
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	Cu	Copper	1.74	ug/L	J	Y	N	EPA:200.8	0.300	1000
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	Fe	Iron	30.0	ug/L	U	N	N	EPA:200.7	30.0	1000
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	Hg	Mercury	0.067	ug/L	U	N	N	EPA:245.2	0.067	2
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	Mn	Manganese	2.00	ug/L	U	N	N	EPA:200.7	2.00	200
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	Mo	Molybdenum	0.338	ug/L	U	N	N	EPA:200.8	0.200	1000
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	Ni	Nickel	0.600	ug/L	U	N	N	EPA:200.8	0.600	200
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	Pb	Lead	0.500	ug/L	U	N	N	EPA:200.8	0.500	50
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	Ra-226	Radium-226	0.304	pCi/L	U	N	N	EPA:903.1		30
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	Ra-228	Radium-228	0.628	pCi/L	U	N	N	EPA:904		30
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	Sb	Antimony	1.00	ug/L	U	N	N	EPA:200.8	1.00	6
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	Se	Selenium	2.00	ug/L	U	N	N	EPA:200.8	2.00	50
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	Tl	Thallium	0.600	ug/L	U	N	N	EPA:200.8	0.600	2
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	U	Uranium	0.067	ug/L	U	N	N	EPA:200.8	0.067	30
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	Zn	Zinc	4.35	ug/L	J	Y	N	EPA:200.7	3.30	10000
RLWTF-19-174665	RLWTF_MES 01	09-11-2019	SO4(-2)	Sulfate	1.12	mg/L	NQ	Y	Y	EPA:300.0	0.133	600
RLWTF-19-186410	RLWTF_MES 01	09-11-2019	NO2	Nitrite	0.033	mg/L	U	N	Y	SW-846:9056	0.033	1
Field Test	RLWTF_MES 01	08-14-2019	pH	pH	6.7	su						6 to 9

Notes:

- <sup>1</sup> mg/L - milligrams per liter.
- <sup>2</sup> ug/L - microgram per liter.
- <sup>3</sup> pCi/L - picocurie per liter.
- <sup>4</sup> su - standard units.
- <sup>5</sup> NQ - in the validation qualifier column means analyte is classified as detected.
- <sup>6</sup> U - in the validation qualifier column means analyte is classified as not detected.
- <sup>7</sup> J - in the validation qualifier column means the analyte is classified as detected but the reported concentration value is expected to be more uncertain than usual.
- <sup>8</sup> Y - in the detect flag column means the analyte was detected.
- <sup>9</sup> N - in the detect flag column means the analyte was undetected.
- <sup>10</sup> N - in the filtered column means the sample was unfiltered.
- <sup>11</sup> Y - in the filtered column means the sample was filtered.
- <sup>12</sup> Groundwater Limit represents standards for groundwater as identified NMAC 20.6.2.3103.
- <sup>13</sup> Groundwater Limit for combined Radium-226 and Radium-228 is 30 pCi/L.

ATTACHMENT 5

Table 2. Organics Compounds Detected During Quarterly Sampling of RLWTF Treated Effluent Discharged to the MES.

Field Sample ID	Location ID	Sample Date	Parameter Code	Parameter Name	Report Result	Report Units <sup>1</sup>	Validation Qualifier <sup>2</sup>	Detected <sup>3</sup>	Filtered <sup>4</sup>	Lab Method	Method Detection Limit	Groundwater Limit <sup>5</sup>
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	67-66-3	Chloroform	30.8	ug/L	NQ	Y	N	SW-846:8260B	0.300	100
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	75-27-4	Bromodichloromethane	3.23	ug/L	NQ	Y	N	SW-846:8260B	0.300	1.34

Notes:

<sup>1</sup> ug/L - microgram per liter.

<sup>2</sup> NQ - in the validation qualifier column means analyte is classified as detected.

<sup>3</sup> Y - in the detect flag column means the analyte was detected.

<sup>4</sup> N - in the filtered column means the sample was unfiltered.

<sup>5</sup> Groundwater Limit represents standards for groundwater as identified NMAC 20.6.2.3103 for chloroform and NMED Risk Assessment Guidance, Table A-1, Tap Water Limit for bromodichloromethane.



ATTACHMENT 5

Table 3. Organic Compounds Not Detected During Quarterly Sampling of RLWTF Treated Effluent Discharged to the MES.

Field Sample ID	Location ID	Sample Date	Parameter Code	Parameter Name	Report Result	Report Units <sup>1</sup>	Validation Qualifier <sup>2</sup>	Detected <sup>3</sup>	Filtered <sup>4</sup>	Lab Method	Method Detection Limit	Groundwater Limit <sup>5,6,7</sup>
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	100-41-4	Ethylbenzene	0.300	ug/L	U	N	N	SW-846:8260B	0.300	750
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	106-46-7	Dichlorobenzene[1,4-]	0.300	ug/L	U	N	N	SW-846:8260B	0.300	75
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	106-93-4	Dibromoethane[1,2-]	0.300	ug/L	U	N	N	SW-846:8260B	0.300	0.1
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	107-06-2	Dichloroethane[1,2-]	0.300	ug/L	U	N	N	SW-846:8260B	0.300	10
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	108-60-1	Oxybis[1-chloropropane][2,2'-]	3.00	ug/L	U	N	N	SW-846:8270D	3.00	98.7
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	108-88-3	Toluene	0.300	ug/L	U	N	N	SW-846:8260B	0.300	98.7
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	108-90-7	Chlorobenzene	0.300	ug/L	U	N	N	SW-846:8260B	0.300	77.6
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	108-95-2	Phenol	3.00	ug/L	U	N	N	SW-846:8270D	3.00	5
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	11096-82-5	Aroclor-1260	0.037	ug/L	U	N	N	SW-846:8082	0.037	0.0786
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	11097-69-1	Aroclor-1254	0.037	ug/L	U	N	N	SW-846:8082	0.037	0.0786
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	111-44-4	Bis(2-chloroethyl)ether	3.00	ug/L	U	N	N	SW-846:8270D	3.00	0.137
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	11104-28-2	Aroclor-1221	0.037	ug/L	U	N	N	SW-846:8082	0.037	0.0561
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	11141-16-5	Aroclor-1232	0.037	ug/L	U	N	N	SW-846:8082	0.037	0.0561
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	117-81-7	Bis(2-ethylhexyl)phthalate	0.300	ug/L	U	N	N	SW-846:8270D	0.300	55.6
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	118-74-1	Hexachlorobenzene	3.00	ug/L	U	N	N	SW-846:8270D	3.00	0.0976
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	118-96-7	Trinitrotoluene[2,4,6-]	0.0828	ug/L	U	N	N	SW-846:8330B	0.0828	9.8
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	120-12-7	Anthracene	0.300	ug/L	U	N	N	SW-846:8270D	0.300	1720
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	120-83-2	Dichlorophenol[2,4-]	3.00	ug/L	U	N	N	SW-846:8270D	3.00	45.3
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	121-14-2	Dinitrotoluene[2,4-]	3.00	ug/L	U	N	N	SW-846:8270D	3.00	2.37
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	121-82-4	RDX	0.0828	ug/L	U	N	N	SW-846:8330B	0.0828	9.66
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	122-39-4	Diphenylamine	3.00	ug/L	U	N	N	SW-846:8270D	3.00	122
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	12672-29-6	Aroclor-1248	0.037	ug/L	U	N	N	SW-846:8082	0.037	0.0786
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	12674-11-2	Aroclor-1016	0.037	ug/L	U	N	N	SW-846:8082	0.037	1.4
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	127-18-4	Tetrachloroethene	0.300	ug/L	U	N	N	SW-846:8260B	0.300	20
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	129-00-0	Pyrene	0.300	ug/L	U	N	N	SW-846:8270D	0.300	117
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	131-11-3	Dimethyl Phthalate	0.300	ug/L	U	N	N	SW-846:8270D	0.300	612
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	1330-20-7	Xylene (Total)	0.300	ug/L	U	N	N	SW-846:8260B	0.300	620
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	156-59-2	Dichloroethene[cis-1,2-]	0.300	ug/L	U	N	N	SW-846:8260B	0.300	70
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	156-60-5	Dichloroethene[trans-1,2-]	0.300	ug/L	U	N	N	SW-846:8260B	0.300	100
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	1634-04-4	Methyl tert-Butyl Ether	0.300	ug/L	U	N	N	SW-846:8260B	0.300	100
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	205-99-2	Benzo(b)fluoranthene	0.300	ug/L	U	N	N	SW-846:8270D	0.300	0.343
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	206-44-0	Fluoranthene	0.300	ug/L	U	N	N	SW-846:8270D	0.300	802
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	207-08-9	Benzo(k)fluoranthene	0.300	ug/L	U	N	N	SW-846:8270D	0.300	3.43
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	2691-41-0	HMX	0.0828	ug/L	U	N	N	SW-846:8330B	0.0828	1000
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	309-00-2	Aldrin	0.00665	ug/L	U	N	N	SW-846:8081B	0.00665	0.00198
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	319-84-6	BHC[alpha-]	0.00665	ug/L	U	N	N	SW-846:8081B	0.00665	0.0693
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	319-85-7	BHC[beta-]	0.00665	ug/L	U	N	N	SW-846:8081B	0.00665	0.243
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	33213-65-9	Endosulfan II	0.010	ug/L	U	N	N	SW-846:8081B	0.010	98.7
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	50-29-3	DDT[4,4'-]	0.010	ug/L	U	N	N	SW-846:8081B	0.010	2.29
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	50-32-8	Benzo(a)pyrene	0.300	ug/L	U	N	N	SW-846:8270D	0.300	0.7
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	51-28-5	Dinitrophenol[2,4-]	5.00	ug/L	U	N	N	SW-846:8270D	5.00	38.7
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	534-52-1	Dinitro-2-methylphenol[4,6-]	3.00	ug/L	U	N	N	SW-846:8270D	3.00	1.52
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	53469-21-9	Aroclor-1242	0.037	ug/L	U	N	N	SW-846:8082	0.037	0.0786
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	542-75-6	Dichloropropene[cis/trans-1,3-]	0.300	ug/L	U	N	N	SW-846:8260B	0.300	4.71
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	55-18-5	Nitrosodiethylamine[N-]	3.00	ug/L	U	N	N	SW-846:8270D	3.00	0.00167
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	56-23-5	Carbon Tetrachloride	0.300	ug/L	U	N	N	SW-846:8260B	0.300	10
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	57-74-9	Chlordane(alpha/gamma)	0.0765	ug/L	U	N	N	SW-846:8081B	0.0765	0.448
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	58-89-9	BHC[gamma-]	0.00665	ug/L	U	N	N	SW-846:8081B	0.00665	0.415
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	60-57-1	Dieldrin	0.010	ug/L	U	N	N	SW-846:8081B	0.010	0.0175
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	606-20-2	Dinitrotoluene[2,6-]	3.00	ug/L	U	N	N	SW-846:8270D	3.00	0.485
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	608-93-5	Pentachlorobenzene	3.00	ug/L	U	N	N	SW-846:8270D	3.00	3.07

ATTACHMENT 5

Table 3. Organic Compounds Not Detected During Quarterly Sampling of RLWTF Treated Effluent Discharged to the MES.

Field Sample ID	Location ID	Sample Date	Parameter Code	Parameter Name	Report Result	Report Units <sup>1</sup>	Validation Qualifier <sup>2</sup>	Detected <sup>3</sup>	Filtered <sup>4</sup>	Lab Method	Method Detection Limit	Groundwater Limit <sup>5,6,7</sup>
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	62-75-9	Nitrosodimethylamine[N-]	3.00	ug/L	U	N	N	SW-846:8270D	3.00	0.00491
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	67-72-1	Hexachloroethane	3.00	ug/L	U	N	N	SW-846:8270D	3.00	3.28
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	71-43-2	Benzene	0.300	ug/L	U	N	N	SW-846:8260B	0.300	10
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	71-55-6	Trichloroethane[1,1,1-]	0.300	ug/L	U	N	N	SW-846:8260B	0.300	200
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	72-20-8	Endrin	0.010	ug/L	U	N	N	SW-846:8081B	0.010	2.23
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	74-83-9	Bromomethane	0.300	ug/L	U	N	N	SW-846:8260B	0.300	7.54
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	74-87-3	Chloromethane	0.300	ug/L	U	N	N	SW-846:8260B	0.300	20.3
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	75-01-4	Vinyl Chloride	0.300	ug/L	U	N	N	SW-846:8260B	0.300	2
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	75-09-2	Methylene Chloride	1.00	ug/L	U	N	N	SW-846:8260B	1.00	100
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	75-25-2	Bromoform	0.300	ug/L	U	N	N	SW-846:8260B	0.300	32.9
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	75-34-3	Dichloroethane[1,1-]	0.300	ug/L	U	N	N	SW-846:8260B	0.300	25
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	75-35-4	Dichloroethene[1,1-]	0.300	ug/L	U	N	N	SW-846:8260B	0.300	7
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	75-69-4	Trichlorofluoromethane	0.300	ug/L	U	N	N	SW-846:8260B	0.300	1140
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	75-71-8	Dichlorodifluoromethane	0.300	ug/L	U	N	N	SW-846:8260B	0.300	197
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	76-44-8	Heptachlor	0.00665	ug/L	U	N	N	SW-846:8081B	0.00665	0.0221
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	77-47-4	Hexachlorocyclopentadiene	3.00	ug/L	U	N	N	SW-846:8270D	3.00	0.411
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	78-59-1	Isophorone	3.50	ug/L	U	N	N	SW-846:8270D	3.50	781
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	79-00-5	Trichloroethane[1,1,2-]	0.300	ug/L	U	N	N	SW-846:8260B	0.300	10
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	79-01-6	Trichloroethene	0.300	ug/L	U	N	N	SW-846:8260B	0.300	100
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	79-34-5	Tetrachloroethane[1,1,2,2-]	0.300	ug/L	U	N	N	SW-846:8260B	0.300	10
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	8001-35-2	Toxaphene (Technical Grade)	0.150	ug/L	U	N	N	SW-846:8081B	0.150	0.158
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	84-66-2	Diethylphthalate	0.300	ug/L	U	N	N	SW-846:8270D	0.300	14800
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	84-74-2	Di-n-butylphthalate	0.300	ug/L	U	N	N	SW-846:8270D	0.300	885
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	85-01-8	Phenanthrene	0.300	ug/L	U	N	N	SW-846:8270D	0.300	170
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	86-73-7	Fluorene	0.300	ug/L	U	N	N	SW-846:8270D	0.300	288
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	87-68-3	Hexachlorobutadiene	3.00	ug/L	U	N	N	SW-846:8270D	3.00	1.39
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	87-86-5	Pentachlorophenol	3.00	ug/L	U	N	N	SW-846:8270D	3.00	1
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	88-06-2	Trichlorophenol[2,4,6-]	3.00	ug/L	U	N	N	SW-846:8270D	3.00	11.9
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	90-12-0	Methylnaphthalene[1-]	0.300	ug/L	U	N	N	SW-846:8270D	0.300	11.4
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	91-20-3	Naphthalene	0.300	ug/L	U	N	N	SW-846:8270D	0.300	30
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	91-57-6	Methylnaphthalene[2-]	0.300	ug/L	U	N	N	SW-846:8270D	0.300	35.1
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	91-94-1	Dichlorobenzidine[3,3'-]	3.00	ug/L	U	N	N	SW-846:8270D	3.00	1.25
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	92-87-5	Benzidine	3.90	ug/L	U	N	N	SW-846:8270D	3.90	0.00109
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	924-16-3	Nitroso-di-n-butylamine[N-]	3.00	ug/L	U	N	N	SW-846:8270D	3.00	0.0273
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	930-55-2	Nitrosopyrrolidine[N-]	3.00	ug/L	U	N	N	SW-846:8270D	3.00	0.37
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	95-47-6	Xylene[1,2-]	0.300	ug/L	U	N	N	SW-846:8260B	0.300	193
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	95-94-3	Tetrachlorobenzene[1,2,4,5]	3.00	ug/L	U	N	N	SW-846:8270D	3.00	1.66
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	95-95-4	Trichlorophenol[2,4,5-]	3.00	ug/L	U	N	N	SW-846:8270D	3.00	1170
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	959-98-8	Endosulfan I	0.00665	ug/L	U	N	N	SW-846:8081B	0.00665	98.7
RLWTF-19-184626	RLWTF_MES 01	08-14-2019	98-95-3	Nitrobenzene	3.00	ug/L	U	N	N	SW-846:8270D	3.00	1.4

Notes:

<sup>1</sup> ug/L - microgram per liter.

<sup>2</sup> U - in the validation qualifier column means analyte is classified as not detected.

<sup>3</sup> N - in the detect flag column means the analyte was undetected.

<sup>4</sup> N - in the filtered column means the sample was unfiltered.

<sup>5</sup> Groundwater Limit represents standards for groundwater as identified NMAR 20.6.2.3103 where available, otherwise the value represents NMED Risk Assessment Guidance, Table A-1, Tap Water Limit.

<sup>6</sup> Groundwater Limit for N-nitrosodiphenylamine reported as diphenylamine, which represents NMED Risk Assessment Guidance, Table A-1, Tap Water Limit.

<sup>7</sup> Groundwater Limit for combined Endosulfan I and Endosulfan II is 98.7 ug/L, which represents NMED Risk Assessment Guidance, Table A-1, Tap Water Limit.

# **ATTACHMENT 6**

## **Quarterly Groundwater Monitoring Report – Third Quarter 2019**

**EPC-DO: 19-360**

**LA-UR-19-29962**

**Date:**           **OCT 28 2019**

**MCA-RLW-2, August 5, 2019.**

a	Sample Date	08/05/2019
b	Sample Time	1505
c	Individuals collecting sample.	TPMC Staff
d	Monitoring well identification.	MCA-RLW-2
e	Physical description of monitoring well location.	See Location Map, Attachment 7
f	Ground-water surface elevation. (ft above mean sea level (msl))	6812.63
g	Total depth of the well (ft below ground surface (bgs))	40.60
h	Total volume of water in the monitoring well prior to sample collection. (gal)	8.90
i	Total volume of water purged prior to sample collection (gal).	89 <sup>a</sup>
j	Physical parameters including temperature, conductivity, pH, oxidation/reduction potential.	DO (mg/L): 6.53 Oxidation/Reduction Potential (MV): 224.3 Temp (deg C): 13.1 pH (SU): 6.71 Turbidity (NTU): 6.53 Specific Conductance (µS/cm): 551
k	Description of sample methods	Attached Chain-of-Custody, Attachment 6 Page 2
l	Chain-of custody.	2019-2629, Attachment 6 Page 2
m	Location Map	Attachment 7
	Analytical Results	Attachment 6 Page 3, Table 1

Notes:

- a. Volume of water purged includes well development water volume generated immediately prior to sampling event.



Table 1. Analytical Results from Quarterly Groundwater Sampling at Alluvial Monitoring Well MCA-RLW-2.

Field Sample ID	Location ID	Sample Date	Parameter Code	Parameter Name	Report Result	Report Units <sup>1,2</sup>	Validation Qualifier <sup>3,4</sup>	Detected <sup>5</sup>	Filtered <sup>6,7</sup>	Lab Method	Method Detection Limit	Groundwater Limit <sup>8</sup>
CAMO-19-184575	MCA-RLW-2	08-05-2019	TKN	Total Kjeldahl Nitrogen	0.297	mg/L	J+	Y	N	EPA:351.2	0.033	
CAMO-19-184579	MCA-RLW-2	08-05-2019	Cl(-1)	Chloride	97.0	mg/L	NQ	Y	Y	EPA:300.0	1.68	250
CAMO-19-184579	MCA-RLW-2	08-05-2019	ClO4	Perchlorate	6.62	ug/L	NQ	Y	Y	SW-846:6850	0.250	13.8
CAMO-19-184579	MCA-RLW-2	08-05-2019	F(-1)	Fluoride	0.995	mg/L	NQ	Y	Y	EPA:300.0	0.033	1.6
CAMO-19-184579	MCA-RLW-2	08-05-2019	NO3+NO2-N	Nitrate-Nitrite as Nitrogen	0.0703	mg/L	NQ	Y	Y	EPA:353.2	0.017	10
CAMO-19-184579	MCA-RLW-2	08-05-2019	TDS	Total Dissolved Solids	347	mg/L	NQ	Y	Y	EPA:160.1	3.40	1000

Notes:

<sup>1</sup> mg/L - milligrams per liter.

<sup>2</sup> ug/L - microgram per liter.

<sup>3</sup> J+ - in the validation qualifier column means the analyte is classified as detected but the reported concentration value is expected to be more uncertain than usual with a potential positive bias.

<sup>4</sup> NQ - in the validation qualifier column means analyte is classified as detected.

<sup>5</sup> Y - in the detect flag column means the analyte was detected.

<sup>6</sup> N - in the filtered column means the sample was unfiltered.

<sup>7</sup> Y - in the filtered column means the sample was filtered.

<sup>8</sup> Regulatory Limit represents standards for groundwater as identified NMAC 20.6.2.3103 except perchlorate which represents NMED Risk Assessment Guidance, Table A-1, Tap Water Limit.

**MCOI-6, July 23, 2019.**

a	Sample Date	07/23/2019
b	Sample Time	1310
c	Individuals collecting sample.	TPMC Staff
d	Monitoring well identification.	MCOI-6
e	Physical description of monitoring well location.	See Location Map, Attachment 7
f	Ground-water surface elevation. (ft above mean sea level (msl))	6142.45
g	Total depth of the well (ft below ground surface (bgs))	712.6
h	Total volume of water in the monitoring well prior to sample collection. (gal)	36.30
i	Total volume of water purged prior to sample collection (gal).	110.4
j	Physical parameters including temperature, conductivity, pH, oxidation/reduction potential.	DO (mg/L): 7.40 Oxidation/Reduction Potential (MV): 255.3 Temp (deg C): 16.3 pH (SU): 7.18 Turbidity (NTU): 0.84 Specific Conductance (µS/cm): 544
k	Description of sample methods	Attached Chain-of-Custody, Attachment 6 Page 4
l	Chain-of custody.	N3B-2019-2631, Attachment 6 Page 4
m	Location Map	Attachment 7
	Analytical Results	Attachment 6 Page 5, Table 2





Quarterly Groundwater Monitoring Report –  
Third Quarter 2019

ATTACHMENT 6

Table 2. Analytical Results from Quarterly Groundwater Sampling at Perched/Intermediate Monitoring Well MCOI-6.

Field Sample ID	Location ID	Sample Date	Parameter Code	Parameter Name	Report Result	Report Units <sup>1,2</sup>	Validation Qualifier <sup>3,4</sup>	Detected <sup>5,6</sup>	Filtered <sup>7,8</sup>	Lab Method	Method Detection Limit	COC#	Groundwater Limit <sup>9</sup>
CAMO-19-181824	MCOI-6	07-23-2019	Cl(-1)	Chloride	49.9	mg/L	NQ	Y	Y	EPA:300.0	0.670	N3B-2019-2631	250
CAMO-19-181824	MCOI-6	07-23-2019	ClO4	Perchlorate	86.1	ug/L	NQ	Y	Y	SW-846:6850	5.00	N3B-2019-2631	13.8
CAMO-19-181824	MCOI-6	07-23-2019	F(-1)	Fluoride	0.668	mg/L	NQ	Y	Y	EPA:300.0	0.033	N3B-2019-2631	1.6
CAMO-19-181824	MCOI-6	07-23-2019	NO3+NO2-N	Nitrate-Nitrite as Nitrogen	12.4	mg/L	NQ	Y	Y	EPA:353.2	0.170	N3B-2019-2631	10
CAMO-19-181824	MCOI-6	07-23-2019	TDS	Total Dissolved Solids	374	mg/L	NQ	Y	Y	EPA:160.1	3.40	N3B-2019-2631	1000
CAMO-19-181825	MCOI-6	07-23-2019	TKN	Total Kjeldahl Nitrogen	0.033	mg/L	U	N	N	EPA:351.2	0.033	N3B-2019-2631	

Notes:

<sup>1</sup> mg/L - milligrams per liter.

<sup>2</sup> ug/L - microgram per liter.

<sup>3</sup> NQ - in the validation qualifier column means analyte is classified as not detected.

<sup>4</sup> U - in the validation qualifier column means analyte is classified as not detected.

<sup>5</sup> Y - in the detect flag column means the analyte was detected.

<sup>6</sup> N - in the detect flag column means the analyte was undetected.

<sup>7</sup> Y - in the filtered column means the sample was filtered.

<sup>8</sup> N - in the filtered column means the sample was unfiltered.

<sup>9</sup> Regulatory Limit represents standards for groundwater as identified NMAC 20.6 2.3103 except perchlorate which represents NMED Risk Assessment Guidance, Table A-1, Tap Water Limit.

# **ATTACHMENT 7**

## **Monitoring Wells Location Map**

**EPC-DO: 19-360**

**LA-UR-19-29962**

**Date:**           **OCT 28 2019**

ATTACHMENT 7

