

ATTACHMENT R

**NPDES PERMIT NO. NM0028355
FACT SHEET**

**FOR THE DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES**

APPLICANT

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AND

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DATE PREPARED

February 26, 2020 [w/ Correction]

PERMIT ACTION

Proposed reissuance of the expiring permit issued August 12, 2014, then modified March 27, 2015, with an expiration date of September 30, 2019.

RECEIVING WATER – BASIN

Rio Grande (see details below) – Segment No. 20.6.4.126/128 of the Rio Grande Basin

DOCUMENT ABBREVIATIONS

In the document that follows, various abbreviations are used. They are as follows:

4Q3	Lowest four-day average flow rate expected to occur once every three-years
BAT	Best available technology economically achievable
BCT	Best conventional pollutant control technology
BPT	Best practicable control technology currently available
BMP	Best management plan
BOD	Biochemical oxygen demand (five-day unless noted otherwise)
BPJ	Best professional judgment
CBOD	Carbonaceous biochemical oxygen demand (five-day unless noted otherwise)
CD	Critical dilution
CFR	Code of Federal Regulations
cfs	Cubic feet per second
COD	Chemical oxygen demand
COE	United States Corp of Engineers
CWA	Clean Water Act
DMR	Discharge monitoring report
ELG	Effluent limitation guidelines
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FCB	Fecal coliform bacteria
F&WS	United States Fish and Wildlife Service
mg/l	Milligrams per liter (one part per million)
ug/l	Micrograms per liter (one part per billion)
MGD	Million gallons per day
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NMIP	New Mexico NPDES Permit Implementation Procedures
NMWQS	New Mexico State Standards for Interstate and Intrastate Surface Waters
NPDES	National Pollutant Discharge Elimination System
MQL	Minimum quantification level
O&G	Oil and grease
POTW	Publically owned treatment works
RP	Reasonable potential
SIC	Standard industrial classification
s.u.	Standard units (for parameter pH)
SWQB	Surface Water Quality Bureau
TDS	Total dissolved solids
TMDL	Total maximum daily load
TRC	Total residual chlorine
TSS	Total suspended solids
UAA	Use attainability analysis
USFWS	United States Fish & Wildlife Service
USGS	United States Geological Service
WLA	Wasteload allocation
WET	Whole effluent toxicity
WQCC	New Mexico Water Quality Control Commission

WQMP Water Quality Management Plan
WWTP Wastewater treatment plant

STATE CERTIFICATION: The permit is in the process of certification by the State agency following regulations promulgated at 40 CFR124.53. A draft permit and draft public notice will be sent to the District Engineer, Corps of Engineers; to the Regional Director of the U.S. Fish and Wildlife Service; and to the National Marine Fisheries Service prior to the publication of that notice.

TRIBAL CONSULTATION: Several Pueblos are located in the vicinity of Los Alamos National Laboratory. They include the following: San Ildefonso, Santa Clara, and Cochiti. The Santa Clara Pueblo has approved water quality standards (WQS); however, it is not adjacent to any stream where discharges are proposed to be authorized. Santa Clara is therefore not believed to be affected by the discharges proposed to be authorized by this permit. Neither San Ildefonso nor Cochiti Pueblo has submitted WQS for approval at this time; therefore, the only 401 Certification is required from the State of New Mexico. However, pursuant to EPA's Tribal Consultation Policy, EPA offered San Ildefonso, Cochiti Pueblos, Pueblo of Santa Clara, and Pueblo of Jemez the opportunity to engage in government-to-government consultation because they are part of Los Alamos Pueblos Project.

FINAL DETERMINATION: The public notice describes the procedures for the formulation of final determinations.

I. CHANGES FROM THE PREVIOUS PERMIT

EPA proposes some significant changes from the permit previously issued with an expiration date of September 30, 2019. Water quality-based effluent limitations change are due to new effluent flow or quality information.

- A. All Outfalls: Deleting monitoring requirements and/or effluent limitations for pollutants which new effluent characteristics demonstrated no Reasonable Potential further described in Part V.C.4.
- B. Outfall 001: Adding WET limit for Ceriodaphnia dubia; and adding/retaining effluent limitations for copper, zinc and PCBs.
- C. Outfall 051: Adding effluent limitations for copper and monitoring only for adjustable gross alpha.
- D. Outfall 05A055: Adding/revising effluent limitations for aluminum, copper, lead, selenium and zinc.
- E. Outfall 03A027: Adding/retaining effluent limitations for copper, zinc and PCBs; and deleting WET testing. Adding monitoring only for total recoverable aluminum and temperature.
- F. Outfall 03A160: Adding/retaining effluent limitations for chromium (VI), mercury, selenium and cyanide.

G. Updating WET languages.

H. Outfall number 04A022 is changed to 03A022, the name change does not affect effluent limitations. Adding monitoring only for dissolved copper.

I. Adding monitoring only for total recoverable aluminum, total mercury and adjusted gross alpha at Outfall 03A113.

J. Adding monitoring only for total recoverable aluminum and temperature at Outfall 03A199.

k. [Correction] Add Chromium (VI) effluent limitations at Outfall 03A181.

II. APPLICANT LOCATION AND ACTIVITY

Under the Standard Industrial Classification (SIC) Codes 9922, 9711, 9661, and 9611, the applicant currently operates a large multi-disciplinary facility which conducts national defense research and development, scientific research, space research and technology development, and energy development.

The facility is located in Los Alamos County, New Mexico. The discharges are to receiving waters consisting of various tributaries in Waterbody Segment Code No. 20.6.4.126 and 20.6.4.128 of the Rio Grande Basin. Those discharges are:

Tech. Area	Outfall Number	Receiving Stream	Longitude/Latitude
TA-3	001	Sandia Canyon	106° 19' 09" W/ 35° 52' 26" N
TA-46	13S	Canada del Buey	106° 16' 33" W/ 35° 51' 08" N
TA-3	03A027	Sandia Canyon	106° 19' 09" W/ 35° 52' 26" N
TA-53	03A048	Los Alamos Canyon	106° 15' 45" W/ 35° 52' 11" N
TA-53	03A113	Sandia Canyon	106° 15' 43" W/ 35° 52' 03" N
TA-35	03A160	Ten Site Canyon	106° 17' 49" W/ 35° 51' 47" N
TA-55	03A181	Mortandad Canyon	106° 18' 05" W/ 35° 51' 51" N
TA-3	03A199	Tributary to Sandia Canyon	106° 18' 46" W/ 35° 52' 20" N
TA-3	04A022	Mortandad Canyon	106° 18' 58" W/ 35° 52' 17" N
TA-16	05A055	Canon de Valle	106° 19' 52" W/ 30° 50' 49" N
TA-50	051	Mortandad Canyon	106° 17' 54" W/ 35° 51' 54" N

Detailed descriptions of sources of discharges are provided in the application received March 28, 2019. Supplemental information with revised outfall fact sheets were received August 21, 2019.

Outfall 001: Outfall 001 is located at Technical Area (TA) 3 and discharges to a perennial reach of Sandia Canyon in Water Quality Segment 20.6.4.126 NMAC. The outfall discharges cooling water from the power plant, treated sanitary wastewater effluent from the Sanitary Wastewater System (SWWS) Facility, recycled sanitary effluent from the Sanitary Effluent Reclamation Facility (SERF), and treated cooling tower blowdown from the Strategic Computing Complex (SCC). Disinfected water pumped to the Reuse Tank is dechlorinated at the Power Plant Manhole A if it is discharged to Outfall 001. It is a continuous discharge and the monthly average flow rate is 0.154 MGD and the daily maximum flow rate is 0.333

MGD.

The following future changes may impact the flow rate and composition of Consolidated Outfall 001 after the NPDES 2019 Permit Reapplication is submitted and/or the new permit is implemented. The proposed permit conditions which based on effluent data and new information available to EPA may reflect both current operations and future changes, if possible.

- The Strategic Computing Complex (SCC) is currently adding 5 more cooling towers to its cooling system.
- Future changes to Outfall 001 may include the routing of the TA-55 Cooling Tower blowdown, currently discharging through Outfall 03A181, to the Reuse Tank at TA-3. If implemented, the discharge will either be recycled to SERF or discharged to Outfall 001. See the fact sheet provided for Outfall 03A181 for a schematic of the change. This project has not been started and is not yet scheduled.

Outfall 13S: Outfall 13S is located at TA-46 and discharges to Canada del Buey, an ephemeral reach in Water Quality Segment 20.6.4.128 NMAC. The outfall is capable of discharging treated sanitary wastewater effluent from the Sanitary Wastewater System (SWWS) Facility. Disinfected water is discharged from the chlorine contact chamber to the Effluent Holding Pond for storage until it can be pumped to the Reuse Tank at the Power Plant or discharged to Outfall 13S. If discharges to Outfall 13S is necessary, disinfected water is de-chlorinated at SWWS then discharges to Outfall 13S. The average treated flow rate is 0.229 MGD and the daily maximum flow is 0.418 MGD. The average volume of SWWS effluent discharged to Outfall 001 is significantly less on average due to reuse at the SCC after being treated at SERF. Outfall 13S did not discharge between October 2014 and September 2018, analytical results were taken from operational flows.

Outfall 03A027: Outfall 03A027 is located at TA-3 and discharges to a perennial reach of Sandia Canyon in Water Quality Segment 20.6.4.126 NMAC. The outfall is capable of discharging treated cooling water that originates from the SCC at TA-3-2327. Blowdown from the SCC Cooling Towers may be routed to Outfall 03A027, Outfall 001, or the SWWS as needed to allow for water recycling, construction, and/or maintenance activities. The cooling tower blow-down is comprised of potable water and/or recycled Sanitary Wastewater System (SWWS) effluent from the Sanitary Effluent Reclamation Facility (SERF) that is treated by the cooling tower water treatment system. If discharges occur, the potential average flow rate is 0.051 MGD and the daily maximum flow is 0.105 MGD. Outfall 03A027 did not discharge from September 2016 to at least May 2019, so older monitoring data was submitted. The SCC is currently adding 5 additional cooling towers to its cooling system, a Notice of Change will be submitted for these future changes prior to their implementation and impact to the outfall.

Outfall 03A048: Outfall 03A048 is located at TA-53 and discharges to ephemeral tributary to Los Alamos Canyon in Water Quality Segment 20.6.4.128 NMAC. The outfall discharges treated cooling water that originates at TA-53-963, 964, 978, and 979. The cooling tower blow-down is comprised of potable water treated by the cooling tower water treatment system. The average flow rate is 0.088 MGD and the daily maximum flow is 0.169 MGD.

Outfall 03A113: Outfall 03A113 is located at TA-53 and discharges to an ephemeral reach of Sandia Canyon in Water Quality Segment 20.6.4.128 NMAC. The outfall discharges treated cooling water that originates at TA-3-952 cooling tower water treatment system. Stormwater also mixes and is discharged

from this outfall (the application stated stormwater discharges occurred 49 days between October 2017 and September 2018). The average flow rate is 0.001 MGD and the daily maximum flow is 0.137 MGD. The cooling towers identified as TA-53-293 are not currently in use but could return to service in the future, a Notice of Change will be submitted for these future changes prior to their implementation and impact to the outfall.

Outfall 03A160: Outfall 03A160 is located at TA-35 and discharges to Ten Site Canyon, a tributary to Mortandad Canyon, in Water Quality Segment 20.6.4.128 NMAC. The outfall discharges treated cooling water that originates from TA-35-124, 294 and 301 at the National High Magnetic Field Laboratory (NHMFL). The cooling tower blow-down is comprised of potable water that is treated by the cooling tower water treatment system. Blow down from the towers is routed to the Sanitary Wastewater System (SWWS) facility or may be discharged to Outfall 03A160. The average flow rate is 0.0026 MGD and the daily maximum flow is 0.0065 MGD. The discharge to Outfall 03A160 was routed to SWWS on May 5, 2018, so older monitoring data was submitted. It is the intent of the facility to no longer discharge to the outfall unless there is an operational upset that prevents cooling water from being discharged to the SWWS. The NHMFL is currently constructing a water treatment system for the cooling towers, a Notice of Change will be submitted for these future changes prior to their implementation and impact to the outfall.

Outfall 03A181: Outfall 03A181 is located at TA-55 and discharges to Effluent Canyon which is a tributary to Mortandad Canyon in Water Quality Segment 20.6.4.128 NMAC. The outfall discharges treated cooling water that originates at TA-55-006. The cooling tower blow-down is comprised of potable water that is treated by the cooling tower water treatment system. The average flow rate is 0.009 MGD and the daily maximum flow is 0.032 MGD. Future changes may include the routing of the TA-55 Cooling Tower blowdown to the Reuse Tank (TA-3-336) at TA-3 for reuse or discharged to Outfall 001. A Notice of Change will be submitted for these future changes prior to their implementation and impact to the outfall.

Outfall 03A199: Outfall 03A199 is located at TA-3 and discharges to an ephemeral tributary to Sandia Canyon in Water Quality Segment 20.6.4.126 NMAC. The outfall discharges treated cooling tower blowdown that originates from the Laboratory Data Communications Center (LDCC) at TA-3-1837. The cooling tower blow-down is comprised of potable water that is treated by a cooling tower water treatment system. The average flow rate is 0.036 MGD and the daily maximum flow is 0.074 MGD.

Outfall 03A022: Outfall 03A022 is located at TA-3 and discharges to Mortandad Canyon, Water Quality Segment 20.6.4.128 NMAC. Based upon dye testing, historical building drain information, process equipment observations, and best engineering judgement it has been determine that Outfall 03A022 discharges treated once through cooling water and storm water from TA-3-66. These types of discharges are not consistent with the former 04A category and the outfall category was revised to 03A. The cooling and storm water from TA-3-66 is de-chlorinated using de-chlorination tablets that are located at the outfall where it daylights and discharges to the environment. The average flow rate is 0.001 MGD and the daily maximum flow is 0.014 MGD.

Outfall 05A055: Outfall 05A055 is located at TA-16 and discharges to an ephemeral tributary of Canon De Valle in Water Quality Segment 20.6.4.128 NMAC. The outfall discharges treated wastewater that originates at TA-16-1508 at the High Explosives Wastewater Treatment Facility (HEWTF). The HEWTF

receives and treats high explosives (HE) contaminated process and/or storm water from various sumps, tanks, and facilities at TA-9 and TA-16. The average flow rate is 0.0003 MGD and the daily maximum flow is 0.0021 MGD. Effluent from the HEWTF is normally routed to the electric evaporator(s), the facility did not discharge to the outfall from October 2014 to September 2018. Operational samples were submitted for analytical testing.

Outfall 051: Outfall 051 is located at TA-50 and discharges to Effluent Canyon which is a tributary to Mortandad Canyon in Water Quality Segment 20.6.4.128 NMAC. The outfall discharges treated radioactive liquid waste effluent from that originates at TA-50-1. The discharge is comprised of treated effluent from the Radioactive Liquid Waste Treatment Facility (RLWTF). The average flow rate is 0.020 MGD and the daily maximum flow is 0.040 MGD estimated at a frequency of discharge of four days a week. The facility has a mechanical evaporation system and Outfall 051 has not discharged since October 2014. (Note: an one-day discharge occurred on June 18, 2019) Future improvements to the treatment processes at the RLWTF includes the startup of a newly constructed main low-level waste treatment facility which is expected to complete startup testing in 2019 with an estimated operational start date in 2023. A Notice of Change will be submitted for this change prior to the start of operations and impact to the outfall.

III. EFFLUENT CHARACTERISTICS

A quantitative description of each discharge is presented in the EPA Permit Application Form 2C. The maximum monthly flow and pollutants which were detected and reported above EPA defined minimum quantification levels (MQLs) at each outfall are used for the reasonable potential (RP) analysis.

IV. REGULATORY AUTHORITY/PERMIT ACTION

In November 1972, Congress passed the Federal Water Pollution Control Act establishing the NPDES permit program to control water pollution. These amendments established technology-based or end-of-pipe control mechanisms and an interim goal to achieve “water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water,” more commonly known as the “swimmable, fishable” goal. Further amendments in 1977 of the CWA gave EPA the authority to implement pollution control programs such as setting wastewater standards for industry and established the basic structure for regulating pollutants discharges into the waters of the United States. In addition, it made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions. Regulations governing the EPA administered NPDES permit program are generally found at 40 CFR §122 (program requirements & permit conditions), §124 (procedures for decision making), §125 (technology-based standards) and §136 (analytical procedures). Other parts of 40 CFR provide guidance for specific activities and may be used in this document as required.

It is proposed that this permit be reissued for a 5-year term following regulations promulgated at 40 CFR §122.46(a). The Application Forms 1 and 2C for permit renewal were received by EPA on March 28, 2019 and determined “completeness.” In case the proposed permit is not reissued by the current expiration date, September 30, 2019, the current permit will be administratively continued until a new permit is issued and in effect.

V. DRAFT PERMIT RATIONALE AND PROPOSED PERMIT CONDITIONS

A. OVERVIEW OF TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Regulations contained in 40 CFR §122.44 requires that NPDES permit limits are developed that meet the more stringent of either technology-based effluent limitation guidelines, numerical and/or narrative water quality standard-based effluent limits, or the previous permit.

B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

Regulations promulgated at 40 CFR §122.44 (a) require technology-based effluent limitations to be placed in NPDES permits based on ELGs where applicable, on BPJ in the absence of guidelines, or on a combination of the two. In the absence of promulgating limitations based on the following technology-based controls: BPT, BCT, and BAT. These levels of treatment are:

BPT - The first level of technology-based standards generally based on the average of the best existing performance facilities within an industrial category or subcategory.

BCT - Technology-based standard for the discharge from existing industrial point sources of conventional pollutants which may include BOD, TSS, pH, and O&G.

BAT - The most appropriate means available on a national basis for controlling the direct discharge of toxic and non-conventional pollutants to navigable waters. BAT effluent limits represent the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.

Following are the summary of the BPJ-based limitations included in the administratively continued permit and EPA proposes to retain them in the permit:

Outfall 001 (Power Plant Effluent and re-used Treated Sanitary Wastewater) - Based on ELG for low volume waste discharge at electric steam power plants in 40 CFR 423.

	Monthly	Daily
	Average	Maximum
Total Suspended Solids	30 mg/l	100 mg/l

Outfall Type 03A (Treated Cooling Water) - Based on ELG for low volume waste discharge at electric steam power plants in 40 CFR 423.

	Monthly	Daily
	Average	Maximum
Total Suspended Solids	30 mg/l	100 mg/l
Total Phosphorus	20 mg/l	40 mg/l
pH	Range from 6.0 to 9.0 standard units	
(More stringent WQ-based pH applies to direct discharge outfalls if applicable)		

Outfall Type 04A (Once Through Cooling Water) - Based on ELG for once through cooling water discharge at electric steam power plants in 40 CFR 423.

	Monthly	Daily
	Average	Maximum
Free Available Chlorine	0.2 mg/l	0.5 mg/l
pH	Range from 6.0 to 9.0 standard units	

(WQ-based effluent limitations for total residual chlorine and pH are more stringent)

Outfall 05A055 (High Explosives Waste Water) – Total toxic organics (TTO) were based on ELG for metal finishing (40 CFR 433.11), TNT was based on permit limit established for the Pantex plant, and RDX was based on LANL effluent data. All these BPJ-based limitations were established in 2000 issued permit.

	Monthly	Daily
	Average	Maximum
Chemical Oxygen Demand	125 mg/l	125 mg/l
Total Suspended Solids	30 mg/l	45 mg/l
Oil & Grease	15 mg/l	15 mg/l
Total Toxic Organics	1.0 mg/l	1.0 mg/l
Trinitrotoluene	20 µg/l	Report
Total RDX	200 µg/l	660 µg/l
Perchlorate	Report	Report
pH	Range from 6.0 to 9.0 standard units	

Outfall 051 (Radioactive Liquid Waste Water) – TTO was based on 40 CFR 433.11.

	Monthly	Daily
	Average	Maximum
Chemical Oxygen Demand	125 mg/l	125 mg/l
Total Suspended Solids	30 mg/l	45 mg/l
Total Toxic Organics	1.0 mg/l	1.0 mg/l
Total Chromium	1.34 mg/l	2.68 mg/l
Total Lead	0.423 mg/l	0.524 mg/l
Perchlorate	Report	Report
pH	Range from 6.0 to 9.0 standard units	

Outfall 13S (Sanitary Waste Water) – Based on the ELG for secondary treatment in 40 CFR 133.

	Monthly	Daily
	Average	Maximum
Biochemical Oxygen Demand	30 mg/l	45 mg/l
Total Suspended Solids	30 mg/l	45 mg/l
pH	Range from 6.0 to 9.0 standard units	

Because treated water will be conveyed to Outfall 001 or a sanitary reclamation recycling facility (SERF) no discharge normally occurs at Outfall 13S. EPA determines that Sanitary Waste Water ELG monitoring and sampling are not applicable or required at SERF for wastewater to be further treated and reused for other process. When flows are discharged at Outfall 001, Sanitary Waste Water ELG apply to that discharge even though it is mixed with other reuse water. Monitoring at the sampling location Outfall 13S to the flow measuring device in Canada del Buey is only required in case discharge is made to Canada del Buey.

C. WATER QUALITY BASED LIMITATIONS

1. General Comments

Water quality based requirements are necessary where effluent limits more stringent than technology-based limits are necessary to maintain or achieve federal or state water quality limits. Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on federal or state WQS. Effluent limitations and/or conditions established in the draft permit are in compliance with applicable State WQS and applicable State water quality management plans to assure that surface WQS of the receiving waters are protected and maintained, or attained.

2. Implementation

The NPDES permits contain technology-based effluent limitations reflecting the best controls available. Where these technology-based permit limits do not protect water quality or the designated uses, additional water quality-based effluent limitations and/or conditions are included in the NPDES permits. State narrative and numerical water quality standards are used in conjunction with EPA criteria and other available toxicity information to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

3. State Water Quality Standards

The general and specific stream standards are provided in NMWQS (20.6.4 NMAC amended through August 11, 2017). The facility discharges into varied canyons in Segment No. 20.6.4.126 or 20.6.4.128 of the Rio Grande Basin. The designated uses of the receiving water are described below:

20.6.4.126 Rio Grande Basin - Perennial portion of ... Sandia canyon from Sigma canyon upstream to LANL NPDES outfall 001,

(A) Designated Uses: coldwater aquatic life, livestock watering, wildlife habitat and secondary contact.

20.6.4.128 Rio Grande Basin - Ephemeral and intermittent portions of watercourses within lands managed by U.S. department of energy (DOE) within LANL, including but not limited to:

Mortandad canyon, Canada del Buey, Ancho canyon, Chaquehui canyon, Indio canyon, Fence canyon, Potrillo canyon and portions of Canon de Valle, Los Alamos canyon, Sandia canyon, Pajarito canyon and Water canyon not specifically identified in 20.6.4.126 NMAC.

(A) Designated Uses: livestock watering, wildlife habitat, limited aquatic life and secondary contact.

Water quality standards of chronic aquatic life and non-persistent human health do not apply to segment number 20.6.4.128.

As described earlier in this Fact Sheet, Los Alamos National Laboratory discharges to Sandia Canyon, Los Alamos Canyon, Mortandad Canyon, Canon de Valle, and Ten Site Canyon. The facility’s discharges, most of which are intermittent in nature, are located from 6.9 to 10.4 miles from the Rio Grande. All these receiving streams are ephemeral or intermittent in nature and do not generally reach the Rio Grande, except as the result of precipitation events. The State standards for livestock watering, wildlife habitat, acute aquatic life and general WQS apply to the proposed discharges. Chronic aquatic life criteria could be applied at Outfall 001 because the effluent creates a perennial portion within Sandia Canyon which is designated also for cold aquatic life use. Discharges from Outfalls 03A027 and 03A199 which are located at downstream from Outfall 001 will reach the perennial portion of Sandia Canyon, so chronic aquatic life standards also apply. For discharges into receiving streams in segment number 20.6.4.128 which are designated as intermittent in nature, no in-stream dilution is used to calculate either the in-stream waste concentrations (IWCs) or the proposed limits. All WQ-based limits in the segment number 20.6.4.128 were calculated based on 100% effluent. For discharges at Outfalls 03A027 and 03A199, the long-term average effluent flow at Outfall 001 was used to calculate critical dilution for discharges from Outfalls 03A027 and 03A199 against chronic criteria because Outfall 001 effluent is the upstream flow of these two outfalls. However, because the discharge at Outfall 03A199 is to a stormwater drain prior to reaching Sandia Canyon, an additional RP was conducted against WQS for 20.6.4.128 waterbody. A statistical multiplier of 2.13, pursuant to NM Implementation Guidance, was applied to effluent data and the data were screened against water quality standards to determine whether the discharge has a reasonable potential (RP) to exceed the applicable water quality standards. Each effluent hardness value (except for Outfalls 03A027 and 03A199 at Sandia Canyon) was used to calculate the hardness-dependent standards. The hardness and TSS values of Outfall 001 effluent were used to calculate the RP for discharges at Outfalls 03A027 and 03A199. The Table below lists outfall long-term flows, hardness and TSS values which were used for RP analysis.

Outfall Number	Avg Effluent Flow (MGD)	Hardness (mg/l)	TSS (mg/l)	4Q3 Low Flow (cfs)
001	0.154	37.5	1.986	0.0
13S	0.229	73.6	5.08	0.0
03A027	0.051	37.5*	1.986*	0.154*
03A048	0.088	126	1.96	0.0
03A113	0.0016	96.0	1.80	0.0

03A160	0.0026	118	1.1	0.0
03A181	0.0094	103.6	0.7	0.0
03A199 at the point of discharge	0.036	79.1	1.51	0.0
03A199 at the point reaches Sandia Canyon	0.036	37.5*	1.986*	0.154*
04A022	0.001	44.5	3.63	0.0
05A055	0.0003	2.9	0.57	0.0
051	0.020	17.3	0.57	0.0

Note: * Effluent characteristics are used as receiving stream water quality for RP purposes.

4. Effluent Limitations

Effluent data from each outfall reported in Form 2C were screened against the current EPA approved NM WQS. Some detection levels used for effluent characteristics reported in Form 2C were higher than the EPA approved MQL levels. If a value was reported as “<” a value which is greater than the MQL for a specific constituent, EPA used the detection levels for initial RP screening. Revised monitoring data provided with supplemental information later were used for screening purposes if necessary. Spread sheets used to calculate the reasonable potential can be found at <https://www.epa.gov/publicnotices>. The initial screening results show that the following discharges have RP to exceed the WQS for the designated uses in 20.6.4.128:

Outfall No.	Parameters
001	Copper, Thallium (*1), Zinc and PCBs (*2)
13S (*5)	Thallium (*1) and PCBs (*2)
03A027	Copper and Zinc
03A160	Chromium (VI), Mercury (*3), Selenium, and Cyanide
03A199	Thallium (*1)
05A055	Aluminum, Copper, Lead, Selenium, and Zinc
051 (*5)	Copper and Thallium (*4)
03A181 [Correction]	Chromium (VI) (*6)

Note: (*1) Thallium data was reported below MQL and less than the HH-OO standard but showed RP.

(*2) Method detect level used for PCB analysis was greater than the HH-OO standard.

(*3) Method detect level used for mercury analysis was greater than the MQL, but less than the applicable aquatic life standard and believed absent box was checked.

(*4) Method detect level used for thallium was greater MQL and showed RP.

(*5) Outfall 13S has no discharge and Outfall 051 has a one-time discharge in June 2019.

(*6) Total chromium data was used for RP screening purposes.

Supplemental information received on August 21 and 28, 2019, respectively, have included dissolved copper for Outfalls 001, 03A027 and 03A199; and new mercury and thallium data for Outfalls 001, 03A048, 03A113, 03A181, 03A199 and 04A022. Because a discharge at Outfall 051 occurred in June 2019, effluent data from the discharge were used for RP screening purposes.

Total Residual Chlorine (TRC) - Effluent limitations and monitoring requirements for TRC at the current permit are retained because discharges would have potentials to exceed water quality standards for TRC when chlorine products are used for disinfection or algae control. However, because the effluent limitations and monitoring requirements for TRC are based on the permit writer's discretionary rather than RP, EPA determines to retain the existing monitoring frequency of 1/week when discharges occur, rather than the monitoring frequency recommended in the NMIP, at all applicable outfalls. In accordance with the NMIP, the permit writer may establish a case-by-case monitoring frequency based on the following factors: (1) the type of treatment process, including retention time; (2) environmental significance and nature of the pollutant or pollutant parameter; (3) cost of monitoring relative to the discharger's capabilities and benefit obtained; (4) Compliance history; (5) number of monthly samples used in developing the permit limit; and (6) effluent variability.

E. coli - Monitoring requirements and effluent limitations apply at Outfalls 001 and 13S where final treated sanitary wastewaters discharge to receiving streams. The monitoring frequency is 2/month based on the frequency recommended in the NMIP for a municipal facility with activated sludge technology and a design flow of $0.1 \leq 0.5$ MGD. Effluent limitations and monitoring requirements for E. coli may also apply if treated sanitary wastewater discharged at Outfall 03A027 or any other outfalls.

Thallium – Thallium is a persistent HH-OO pollutant and has a very low HH-OO standard. The permittee originally reported Thallium concentration as “ $< 0.6 \mu\text{g/l}$,” but the MQL for Thallium is $0.5 \mu\text{g/l}$. If $0.6 \mu\text{g/l}$ is used for RP screening, all discharges would have RP. New thallium data for certain outfalls with more sensitive method detect level were provided on August 28, 2019. EPA determines not to require effluent limitation for thallium at Outfalls 001 and 03A199 because effluent data were reported below $0.5 \mu\text{g/l}$ MQL. Thallium reported in Outfalls 13S and 051 were not updated. If LANL cannot provide new data to demonstrate that either Thallium is absent or below $0.5 \mu\text{g/l}$ at Outfall 051, EPA will establish effluent limitation and monitoring requirement for Thallium at Outfall 051 in the final permit.

Outfall 001 - EPA approved new standards for hardness-dependent total aluminum on April 30, 2012, and the discharge has demonstrated no RP to exceed new standards. However, in the letter dated September 19, 2013, NMED required effluent limitation and monitoring requirement for aluminum to be established in the current permit because the stream 20.6.4.126 was listed as impaired. The total aluminum concentration reported in the Form 2C was less than 0.0196 mg/l which is much less than the effluent limitation of 0.9889 mg/l . Since the stream 20.6.4.126 is still listed as impaired by aluminum, EPA will retain only the monitoring requirements for

aluminum from Outfall 001.

Outfalls 03A027 and 03A199 are located downstream of Outfall 001 and discharges from these two outfalls will reach the Outfall 001 effluent. If Outfall 001 discharge has RP to exceed WQS, then discharges from Outfalls 03A027 and 03A199 must not contribute additional loads of pollutants of concern to Outfall 001 effluent. EPA proposes to establish WQS for copper, zinc and PCBs at the Outfalls 03A027 and 03A199 if discharges occur at these two outfalls. Currently Outfall 03A027 has no discharge and the effluent is discharged through Outfall 001.

Outfall 03A048 – The current permit has effluent limitations for total recoverable aluminum, total arsenic, dissolved copper, total mercury, and dissolved mercury. Because effluent characteristics provided in Form 2C demonstrated no RP, EPA proposes to delete those limitations and monitoring requirements from the final permit. The current permit also has monitoring requirements for gross alpha and chromium (VI). Because the data reported in Form 2C demonstrated no RP, EPA also proposes to remove such monitoring requirements.

Outfall 03A160 – The effluent characteristics show RP for chromium (VI), mercury, selenium, and cyanide. Mercury had RP because a less sensitive analytical method was used for analysis. The permittee may retest it using a more sensitive method to demonstrate no RP. The current permit has effluent limitations and/or monitoring requirements for arsenic, copper and gross alpha, but effluent characteristics demonstrated no RP for arsenic, copper or gross alpha. Therefore, EPA proposes to include chromium (VI), mercury, selenium and cyanide in the permit, but remove arsenic, copper and gross alpha from the permit. Because discharges at this outfall have been ceased since May 2018 and discharges are conveyed to SWWS for treatment, monitoring of discharges is required only when a discharge is made at outfall to Ten Site Canyon.

Outfall 03A199 - Because the discharge at Outfall 03A199 has RP to cause or contribute to a violation for selenium and cyanide, site-specific effluent limitations are established at this outfall. Limitations for selenium and cyanide are based on wildlife habitat standard, and discharges may affect wildlife around the outfall whenever discharges occur. EPA proposes 3/week monitoring frequency for selenium and cyanide when discharge occurs.

Outfalls 03A113 and 03A181 - Discharges at these two outfalls demonstrated no RP, additional WQ-based effluent limitations are not proposed and WQ-based effluent limitations and monitoring requirements (total recoverable aluminum, dissolved copper and gross alpha, except for TRC as described above) in the current permit are proposed to be removed from these outfalls. [Correction: Total chromium of 12.5 µg/l was used for RP screening and shown RP for chromium (VI) at Outfall 03A181. The permittees noted “Believed Present” in the Application Form 2C. Therefore, EPA revises the proposed permit to include effluent limitations for Cr-VI at Outfall 03A181. If the permittees provide two dissolved Cr (VI) data by the end of the extended public comment period to EPA, EPA will re-run the RP and make the final permit decision on Cr (VI) at Outfall 03A181.]

Outfall 04A022 - Outfall 04A022 discharges treated once through cooling water and storm water from TA-3-66. LANL determined that these types of discharges are not consistent with the 04A

category and recommended that the outfall category be revised to 03A. The outfall number 04A022 is changed to 03A022. The name change does not affect effluent limitations. Discharges at the outfall demonstrated no RP, additional WQ-based effluent limitations are not proposed and WQ-based effluent limitations and monitoring requirements (total recoverable aluminum, dissolved copper and gross alpha, except for TRC as described above) in the current permit are proposed to be removed from these outfalls.

Outfalls 051 - The effluent is evaporated through a mechanical evaporator and has no discharge since November 2010. On June 18, 2019, the Radioactive Liquid Waste Treatment Facility (RLWTF) discharged effluent to Outfall 051 for the first time since November 18, 2010. The discharge included effluent sampling for all permit and Form 2C analytes during the discharge, as required by the current NPDES permit. The analytical data from these samples is a better representation of the effluent characteristics (hardness adjusted to <50 mg/L) associated with this outfall than the operational sampling data (hardness was not adjusted) provided on the Form 2C in the 2019 NPDES Permit Re-Application submitted on March 26, 2019. Sample analytical results from the June 2019 discharge were used for RP screening purposes.

Outfall 05A055 – There has been no discharge from the High Explosive Wastewater Treatment Facility (HEWTF) at Outfall 05A055 since November 2007. Normal operations since November 2007 have utilized the electric evaporator and eliminated the discharge. The applicant intends to continue to operate the HEWTF using the evaporator except under abnormal conditions (i.e., malfunction of the evaporator). The permittee plans to resume discharge in fall 2019. There have RP for Aluminum, Copper, Lead, Selenium, and Zinc, so WQ-based effluent limitations are established in the proposed permit.

PCBs – The current permit has PCB effluent limitations and monitoring requirements at Outfall 001 and at Outfall 13S (if a direct discharge occurred at Outfall 13S); and monitoring and reporting only requirements at Outfall 051.

EPA proposed Method 1668C when EPA proposed changes to analysis and sampling test procedures in wastewater regulations (i.e., 40 CFR 136), under the title “Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act; Analysis and Sampling Procedures”, in the Federal Register Vol. 75, No. 184, September 23, 2010. Method 1668 determines individual chlorinated biphenyl congeners in environmental samples by isotope dilution and internal standard high resolution gas chromatography/high resolution mass spectrometry (HRGC/HRMS). After consideration of all comments received by EPA, EPA in the final rule making decided to defer the final approval of Method 1668C to a later date. In accordance with the provision of 40 CFR part 144.22(i)(1)(iv), to assure compliance with permit limitations, the permit shall have requirements to monitor effluents according to test procedures approved under 40 CFR part 136 for the analyses of pollutants having approved methods under that part, and according to a test procedure specified in the permit for pollutants with no approved methods. Because EPA deferred the final approval for Method 1668C, Method 1668C or previous versions (PCB congener method) is currently not an EPA approved 40 CFR part 136 method. Rather, Method 608 or 625 (PCB Aroclor method) is the current EPA approved method which can determine PCB quantities by Aroclors (e.g., PCB-1016, PCB-1221, ... PCB-1260).

EPA determined in 2014 final permit that EPA published congener Method 1668 Revision and detection levels should be used for reporting purposes only. Prior to the promulgation of Method 1668, the 0.2 µg/l minimum quantification level (MQL) listed in Appendix to Part II should be used for compliance purposes. EPA has developed MQLs to monitor compliance for permit limits below analytical values and uses those MQLs to establish defensible permits, so it is common for a MQL greater than the NMWQS. Since EPA has not coded Method 1668 neither developed MQLs for the method, both Method 1668 and its MQLs are not defensible by EPA for compliance purposes. If NMED requires Method 1668 to be used for compliance purposes and/or requires more stringent MQL for compliance purposes, NMED must specify those conditions in the State's Condition of Certification.

The human health-based limitation of 0.00064 µg/l was included in the current permit because that limitation was also based on the condition of State certification. The NMWQS, section 20.6.4.900.J (f) states "the criteria listed under human health-organism only (HH-OO) are intended to protect human health when aquatic organisms are consumed from waters containing pollutants. These criteria do not protect the aquatic life itself; rather, they protect the health of humans who ingest fish or other aquatic organisms." EPA understands that the HH-OO standards apply to the receiving stream, but has difficulty evaluating the human health impact of the discharge when ingestion of fish or other aquatic organism is unlikely to occur. EPA proposes to retain the monitoring frequency of 1/year for PCBs based on the case-by-case discretionary after considering the following facts: 1) an adverse impact to human health caused by the discharges could not be determined; 2) PCBs have been prohibited for decades and LANL is not using PCBs in any process; 3) PCBs were likely deposited in the sewer system and the sewage flow rate is quite constant; 4) LANL has demonstrated its efforts to remove PCBs from discharges; and 5) the cost of Method 1668 is relatively high to the benefit obtained. Because HH-OO standards are established at the receiving water, EPA used the default non-zero harmonic mean flow of 0.001 MGD per the NMIP to determine the RP for human health-based pollutants and the calculated PCB limitation is 0.000642 µg/l. LANL may provide data to support a different "modified harmonic mean flow" as defined in the provision of 20.6.4.11 of the NMWQS during the public comment period, so EPA may conduct a new RP screening and/or establish a new effluent limitation based on new flow information.

Minimum Quantification Level (MQL)- EPA-approved test procedures (methods) for the analysis and quantification of pollutants or pollutant parameters, including for the purposes of compliance monitoring/DMR reporting, permit renewal applications, or any other reporting that may be required as a condition of this permit, shall be sufficiently sensitive. A method is "sufficiently sensitive" when (1) the method minimum level (ML) of quantification is at or below the level of the applicable effluent limit for the measured pollutant or pollutant parameter; or (2) if there is no EPA-approved analytical method with a published ML at or below the effluent limit (see table below), then the method has the lowest published ML (is the most sensitive) of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR Chapter I, Subchapters N or O, for the measured pollutant or pollutant parameter; or (3) the method is specified in this permit or has been otherwise approved in writing by the permitting authority (EPA Region 6) for the measured pollutant or pollutant parameter. The Permittee has the option of developing and submitting a report to justify the use of matrix or sample-specific MLs rather

than the published levels. Upon written approval by EPA Region 6 the matrix or sample-specific MLs may be utilized by the Permittee for all future Discharge Monitoring Report (DMR) reporting requirements.

Current EPA Region 6 minimum quantification levels (MQLs) for reporting and compliance are provided in Appendix A of Part II of this permit. The following pollutants may not have EPA approved methods with a published ML at or below the effluent limit, if specified:

POLLUTANT	CAS Number	STORET Code
Total Residual Chlorine	7782-50-5	50060
Cadmium	7440-43-9	01027
Silver	7440-22-4	01077
Thallium	7440-28-0	01059
Cyanide	57-12-5	78248
Dioxin (2,3,7,8-TCDD)	1764-01-6	34675
4, 6-Dinitro-0-Cresol	534-52-1	34657
Pentachlorophenol	87-86-5	39032
Benzidine	92-87-5	39120
Chrysene	218-01-9	34320
Hexachlorobenzene	118-74-1	39700
N-Nitrosodimethylamine	62-75-9	34438
Aldrin	309-00-2	39330
Chlordane	57-74-9	39350
Dieldrin	60-57-1	39380
Heptachlor	76-44-8	39410
Heptachlor epoxide	1024-57-3	39420
Toxaphene	8001-35-2	39400

Unless otherwise indicated in this permit, if the EPA Region 6 MQL for a pollutant or pollutant parameter is sufficiently sensitive (as defined above) and the analytical test result is less than the MQL, then a value of zero (0) may be used for reporting purposes on DMRs. Furthermore, if the EPA Region 6 MQL for a pollutant or parameter is not sufficiently sensitive, but the analytical test result is less than the published ML from a sufficiently sensitive method, then a value of zero (0) may be used for reporting purposes on DMRs.

Revised MQL condition and MQL Table are incorporated into Part II of the proposed permit.

5. Whole Effluent Toxicity (WET)

Procedures for implementing WET terms and conditions in NPDES permits are contained in the NMIP, March 15, 2012. Table 11 of Section V of the NMIP outlines the type of WET testing for different types of discharges.

OUTFALL 001

The permit established WET biomonitoring with CD = 100%. DMR reports indicate there were eight sublethal failures for *Ceriodaphnia dubia* in this last permit cycle. There were no failures for *Pimephales promelas*. The EPA Reasonable Potential Analyzer (can be found at <https://www.epa.gov/publicnotices>.) indicates that RP for *Pimephales promelas* exists solely due to the limited number of test results used for RP analysis, however RP exists for *Ceriodaphnia dubia*, and a WET limit is needed. A WET limit for *Ceriodaphnia dubia* is established in the proposed permit. No limit for *Pimephales promelas* is being proposed.

The critical dilution, CD, for this discharge will remain at 100% because the discharge is to an ephemeral/intermittent water body, but creates a perennial stream, Segment 20.6.4.126. Based on the nature of the discharge, industrial power plant/Sanitary Effluent Reclamation Facility (SERF), and the nature of the receiving water; perennial stream, the Table 11 of the NMIP directs the WET test to be a 7-day chronic test using *Pimephales promelas* at a once every year frequency. The frequency for *Ceriodaphnia dubia* is once every six months. The proposed permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests based on a 0.75 dilution series. These additional effluent concentrations shall be 32%, 42%, 56%, 75%, and 100%.

OUTFALL 13S

The receiving water, Cañada del Buey for outfall 13S, is classified as a Rio Grande Basin segment 20.6.4.128 waterbody that is ephemeral or intermittent. Because it is designated for limited aquatic life use, EPA applies guidelines for ephemeral stream to determine the type and frequency of WET requirements. Facilities with discharges that qualify as minor (sanitary waste discharge with flow over 0.1 MGD but less than 1.0 MGD) such as outfall 13S will have WET requirements for the *Daphnia pulex* test species at a once per two years frequency.

OUTFALL 051

Based on historical data and the June 18, 2019 discharge WET testing result, EPA concludes that this effluent still has the reasonable potential to cause or contribute to an exceedance of the State water quality standards. Therefore, WET limits will be retained in the proposed permit. EPA proposes to establish WET requirements for Outfall 051 based on requirements for a major discharge because of the nature of discharge, industrial and radioactive wastewater. Facilities that qualify as majors and discharge to ephemeral waterbodies will have WET requirements that consist of a 100% critical dilution and a 48-hour acute test using *Daphnia pulex* at a once per three (3) months frequency when a WET limit is established. Since the flow from this outfall is intermittent, a 3-hour composite rather than a 24-hour composite sample is established because the discharge is intermittent. The term "3-hour composite sample" means a sample consisting of a minimum of one (1) aliquot of effluent collected at a one-hour interval over a period of up to 3-hour discharge.

The proposed permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests based on a 0.75 dilution series. These additional effluent concentrations shall be 32%, 42%, 56%, 75%, and 100%. The low-flow effluent concentration (critical low-flow dilution) is defined as 100% effluent. Monitoring and reporting requirements begin on the

effective date of this permit.

Because an extremely low hardness effluent may cause WET test failure, the current permit has a hardness limit at Outfall 051.

OUTFALL 05A055

The receiving water, Cañon de Valle for outfall 05A055 is classified as a Rio Grande Basin segment 20.6.4.128 waterbody as well. This outfall qualifies as a minor industrial (excluding some operations such as aquifer remediation and drinking water treatment facilities) and discharge to ephemeral waterbodies will have WET requirements of an effluent characterization single WET sample event by 48-hour acute test using *Daphnia pulex*. The critical dilution (CD) will be 100% since discharges at those outfalls referenced in this section are to ephemeral streams.

The tests should all occur in winter or springtime when most sensitive juvenile life forms are likely to be present in receiving water and colder ambient temperatures might adversely affect treatment processes. This time will generally be defined as between November 1st and April 30th.

OUTFALL 03A027

The discharge at Outfall 03A027 was to the Rio Grande Basin segment 20.6.4.126 that encompasses the perennial receiving water created by the discharge of Outfall 001.

The current permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests based on a 0.75 dilution series. These additional effluent concentrations shall be 10%, 13%, 17%, 23%, and 31%. The low-flow effluent concentration (critical low-flow dilution) is defined as 23% effluent. In accordance with the NMIP, facilities with discharges that qualify as minor (e.g. treated cooling water blow down that is characteristic of other industry) such as outfall 03A027 would have a one-time effluent characterization WET requirement that consists of chronic WET testing for the *Ceriodaphnia dubia* and *Pimephales promelas* test species. For outfall 03A027, table 11 of the NMIP directs the WET test to be a 7-day chronic test using at a once per five (5) years frequency.

The discharge at Outfall 03A027 passed the one-time characterization WET test during the permit term, EPA is considering a waiver of the WET test in the future permit term at this outfall because no significant change of the nature of discharge is expected and the effluent has been conveyed to Outfall 001 and discharges via Outfall 001. This waiver is consistent with the NMIP.

OUTFALLS 03A048, 03A113, 03A160, 03A181, and Outfall 03A199

Outfalls that qualify as a minor industrial (excluding some operations such as aquifer remediation and drinking water treatment facilities) and discharge to ephemeral waterbodies are required to take an one-time effluent characterization single WET sample event by 48-hour acute

test using *Daphnia pulex*. The critical dilution (CD) will be 100% since discharges at those outfalls referenced in this section are to ephemeral streams. Because the WET testing result for Outfalls 03A048, 03A113, 03A160 and 03A181 already demonstrated “pass” of 100% acute WET test when EPA reissued the permit in 2014, WET requirements were not established for these outfalls. EPA proposes to retain no WET requirements for these outfalls.

7. Sewage Sludge Management

The land application of compost (biosolids) at LANL is subject to 40 CFR Part 503 Subpart B and Part IV of LANL’s NPDES Industrial Outfall Permit NM0028355 – Sewage Sludge Requirements. Biosolids applied to land must meet risk-based pollutant limits specified in Part 503. Operational standards to control disease-causing organisms (pathogens) and reduce the attraction of vectors (e.g., flies and mosquitoes) to biosolids must also be met. The SWWS Compost Facility is registered pursuant to the requirements in 20.9.3.27 NMAC under Certificate No. 0215151C.

VI. CWA 303(d) IMPAIRED WATER

As discussed in the fact sheet dated June 26, 2013, most of the streams within LANL property are impaired waterbodies and industrial point sources have been identified as one of several probable sources of impairment for Mortandad Canyon (where Outfalls 03A022, 03A181 and 051 discharge to) and Canada del Buey (where Outfall 13S discharges to). Because EPA has conducted RP for discharge at each outfall and established effluent limitations if RP was demonstrated; and also because EPA realizes that most of those streams have been contaminated by pollutants carried by historical storm water runoff from Areas of Concern (AOCs) and Solid Waste Management Units (SWMUs) and EPA has issued an individual stormwater permit (NM0030759) to address storm runoffs from those AOCs and SWMUs. NMED has requested that EPA requires monitoring of pollutants which caused impairment at outfalls where those were detected in the effluent. EPA proposes monitoring only requirement of 1/Year (except for temperature, 1/quarter) for those pollutants because effluent data have demonstrated no RP. This additional monitoring requirement includes total recoverable aluminum and temperature at Outfall 03A027; total recoverable aluminum, total mercury and adjusted gross alpha at Outfall 03A113; total recoverable aluminum and temperature at Outfall 03A199; dissolved copper at Outfall 03A022; and adjusted gross alpha at Outfall 051. If TMDLs for these impaired waterbodies are approved in the future, EPA will establish effluent limitations accordingly.

VII. ANTIDegradation

The NMAC, Section 20.6.4.8 “Antidegradation Policy and Implementation Plan” sets forth the requirements to protect designated uses through implementation of the State water quality standards. The limitations and monitoring requirements set forth in the proposed permit are developed from the State water quality standards and are protective of those designated uses. Furthermore, the policy sets forth the intent to protect the existing quality of those waters, whose quality exceeds their designated use. The permit requirements and the limits are protective of the assimilative capacity of the receiving waters, which is protective of the designated uses of that water, NMAC Section 20.6.4.8.A.2.

VIII. ANTIBACKSLIDING

The proposed permit is consistent with the requirements to meet antibacksliding provisions of the Clean Water Act, Section 402(o) and 40 CFR §122.44(l), which state in part that effluent limitations must be as stringent as those in the previous permit. If new effluent data demonstrates no RP for WQ-based limitations, those limitations are removed based on 40 CFR §122.44 (l)(B), new information that was not available at the time the previous permit was issued and was discussed in Part V above. WQ-based effluent limitations may be changed due to new discharge flow rate, new stream flow rate, or new criteria.

IX. HISTORICAL and ARCHEOLOGICAL PRESERVATION CONSIDERATIONS

The reissuance of the permit should have no impact on historical and/or archeological sites since no construction activities are planned in the reissuance.

X. ENDANGERED SPECIES ACT

In accordance with requirements under section 7(a)(2) of the Endangered Species Act, the EPA has reviewed this permit for its effect on listed threatened and endangered species and designated critical habitat. According to the most recent county listing of species, shown on the U.S. Fish and Wildlife Service's Information, Planning, and Conservation System, the following species with critical habitats may be present in the county where the proposed NPDES discharge occurs: Mexican spotted owl (*Strix occidentalis lucida*) and Jemez Mountains salamander (*Plethodon neomexicanus*). The following species may be present in the county where the proposed NPDES discharge occurs without critical habitats: New Mexico meadow jumping mouse (*Zapus hudsonius luteus*), southwestern willow flycatcher (*Empidonax traillii extimus*), and yellow-billed cuckoo (*Coccyzus americanus*).

During the reissuance of this permit in 2000, the EPA conducted an informal consultation with the USFWS; Cons. #2-22-01-I-018). That consultation was concluded on December 7, 2000 with the USFWS concurring by letter with EPA's determination that the reissuance of the NPDES permit for LANL would have "no effect" on Mexican spotted owl and "may affect, not likely to adversely affect" on the bald eagle (*Haliaeetus leucocephalus*) and southwestern willow flycatcher.

The USFWS concluded in the 2000 consultation letter: "Based on information in the BE (Biological Evaluation), the USFWS believes that the reissued permit should slightly improve effluent water quality at LANL over the 5-year permit. In addition, re-issuance of the NPDES permit will not measurably alter stream morphology, flow patterns, temperatures, water chemistry, or slit loads in any of the affected intermittent tributaries or the Rio Grande. Therefore, the USFWS concurs with the EPA determination that the re-issuance of the NPDES permit for LANL will have "no effect" on the Mexican spotted owl, and "may affect, not likely to adversely affect" the bald eagle and southwestern willow flycatcher." On August 9, 2007, the bald eagle was removed from the federal list of threatened and endangered species and it will not be analyzed further in this document.

New species listed since the 2000 consultation were analyzed using the LANL Habitat Management Plan (HMP; Los Alamos National Laboratory (LANL), 2017. Threatened and Endangered Species Habitat Management Plan for Los Alamos National Laboratory. Los Alamos National Laboratory report LA-UR-17-29454). The purpose of the HMP is to provide a management strategy for Endangered Species Act compliance through the protection of threatened and endangered species and their habitats on LANL property. The HMP consists of site plans for federally listed threatened or endangered species with a moderate or high probability of occurring at LANL. The HMP received concurrence from the USFWS in 1999 (Consultation numbers 2-22-98-I-336 and 2-22-95-I-108) and it is updated as needed with new consultations. Provided that an activity at LANL falls within the requirements of the HMP, then the activity does not need further review from the USFWS and is considered to have the same determination as the HMP which is “may affect, not likely to adversely affect”. Activities that cannot follow the HMP requirements must go through an individual section-7 consultation. The EPA determines that the reissuance of this permit has “no effect” upon the baseline of the HMP.

Mexican spotted owl. The Mexican spotted owl prefers forested mountains and canyons with mature trees that create high, closed canopies, which are good for nesting. They also nest in stick nests built by other birds, in tree cavities and caves and on cliff ledges. The main threats to the Mexican spotted owl are starvation, fire, and loss of habitat due to logging, which also causes a greater risk of predation by great horned owls as a result of increased open space. There have been no major changes with regards to the Mexican spotted owl since the 2000 consultation. Therefore, reissuance of this permit will not contribute threats to the Mexican spotted owls and the EPA maintains the “no effect” determination.

Southwestern willow flycatcher. The southwestern willow flycatcher is one of four subspecies of the willow flycatcher. The historic range of the southwestern willow flycatcher included Arizona, California, Colorado, New Mexico, Texas, Utah, and Mexico. Currently, this flycatcher breeds in riparian habitats from southern California to Arizona and New Mexico, plus southern Colorado, Utah and Nevada. There have been no major changes with regards to the southwestern willow flycatcher since the 2000 consultation. Therefore, the reissuance of this permit will not contribute any new threats to the southwestern willow flycatcher and the EPA maintains the “may affect, not likely to adversely affect” determination.

Yellow-billed cuckoo. Yellow-billed Cuckoos use wooded habitat with dense cover and water nearby, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes. In the Southwest, yellow-billed cuckoos breed in riparian woodlands of willows, cottonwoods and dense stands of mesquite to breed. This species was not analyzed in the 2000 consultation. The LANL HMP does not have any requirements for this species since it does not contain any breeding habitat on-site. Therefore, the reissuance of this permit has “no effect” on this species.

Jemez Mountains salamander. The Jemez Mountains salamander is endemic to the Jemez Mountains of north-central New Mexico and is found in Los Alamos, Rio Arriba, and Sandoval counties. It is one of two endemic plethodontid salamanders that occur in New Mexico. It occurs predominantly at elevations between 6,988 to 11,254 ft in mixed conifer forests with

greater than 50 percent canopy cover. Plethodontid salamanders, which lack both lungs and gills, breathe through the mucous membranes in their mouth and throat and through their moist skin. The Jemez Mountains salamander is completely terrestrial and does not use standing surface water for any life stage. Present in its habitat year-round, the Jemez Mountains salamander spends most of its life underground but can be found on the surface when conditions are warm and wet, approximately July through October. This species was not analyzed in the 2000 consultation. The reissuance of this permit is within the scope of the HMP requirements. Therefore, it has been determined that its reissuance “may affect, not likely to adversely affect” the Jemez Mountains salamander.

New Mexico meadow jumping mouse. The New Mexico meadow jumping mouse is endemic to New Mexico, Arizona, and a small area of southern Colorado. The jumping mouse is grayish-brown on the back, yellowish-brown on the sides, and white underneath. The jumping mouse is a habitat specialist and it nests in dry soils, but uses moist, streamside, dense riparian/wetland vegetation up to an elevation of about 8,000 ft. This species was not analyzed in the 2000 consultation. The LANL HMP does not have any requirements for this species since it does not contain any breeding habitat on-site. Therefore, the reissuance of this permit has “no effect” on this species.

XI. PERMIT REOPENER

Pursuant to the provision of 40 CFR 122.62, this permit may be reopened for modification.

XII. VARIANCE REQUESTS

No variance requests have been received.

XIII. CERTIFICATION

The permit is in the process of certification by the State Agency following regulations promulgated at 40 CFR 124.53. A draft permit and draft public notice will be sent to the District Engineer, Corps of Engineers; to the Regional Director of the U.S. Fish and Wildlife Service and to the National Marine Fisheries Service prior to the publication of that notice.

XIV. FINAL DETERMINATION

The public notice describes the procedures for the formulation of final determinations.

XV. ADMINISTRATIVE RECORD

The following information was used to develop the proposed permit:

A. APPLICATION(s)

EPA Application Forms 1 and 2C package received March 28, 2019. Supplemental information with revised outfall fact sheets and new effluent data were received August 21 and 28, 2019,

respectively.

B. STATE OF NEW MEXICO REFERENCES

New Mexico State Standards for Interstate and Intrastate Surface Water, 20.6.4 NMAC, as amended through August 11, 2017.

Procedures for Implementing National Pollutant Discharge Elimination System Permits in New Mexico, March 15, 2012.

State of New Mexico 303(d)/305(b) Integrated Report, 2016 - 2018.