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MSGP Stormwater Pollution Prevention Plan
TA-60 Roads and Grounds Facility, Sigma Mesa Staging Areas,
and Asphalt Batch Plant
Triad National Security, LLC
Los Alamos National Laboratory

May 2021

Revision 3

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TA-60 Roads and Grounds Facility, Sigma Mesa Staging Areas, and Asphalt Batch Plant STORMWATER POLLUTION PREVENTION PLAN

PREFACE

This Stormwater Pollution Prevention Plan (SWPPP) was developed in accordance with the provisions of the Clean Water Act (33 U.S.C. §§1251 et seq., as amended), and the United States Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP) (U.S. EPA, January 2021) issued by EPA, and using the industry specific permit requirements for Sector P: Land Transportation and Warehousing and Sector D: Asphalt Paving and Roofing Material and Lubricant Manufacturing as a guides. The applicable stormwater discharge permit is EPA General Permit Tracing Number NMR050013 [Triad National Security, LLC (Triad)]. Click here to view contents of the [2021 Multi-Sector General Permit](#).

This SWPPP applies to discharges of stormwater from the operational areas of the TA-60 Roads and Grounds Facility, Sigma Mesa Staging Areas, and Asphalt Batch Plant at Los Alamos National Laboratory. Los Alamos National Laboratory (also referred to as LANL or the “Laboratory”) is owned by the Department of Energy (DOE), and is operated by Triad. Throughout this document, the term “facilities” refers to the TA-60 Roads and Grounds Facility, Sigma Mesa Staging Areas, and Asphalt Batch Plant. The current MSGP expires at midnight on February 28, 2026.

1.0 FACILITY DESCRIPTION

1.1 Facility Information

| | | |
|---|-----------|-----------------|
| Name of Facility: TA-60 Roads and Grounds | | |
| Street: | | |
| City: Los Alamos | State: NM | ZIP Code: 87545 |
| County: Los Alamos | | |
| NPDES ID (i.e., permit tracking number): NMR050013 MSGP 2021 | | |
| Primary Industrial Activity SIC code, and Sector and Subsector (2021 MSGP, Appendix D and Part 8): SIC Code 4231 , Sector P1 | | |
| Estimated area of industrial activity at site exposed to stormwater: 20.38 acres | | |

| |
|--|
| Discharge Information |
| Name(s) of surface water(s)/segment that receives stormwater from your facility: Sandia Canyon (Sigma Canyon to NPDES outfall 001) and Mortandad Canyon (within LANL). |
| Does this facility discharge industrial stormwater directly into any segment of an “impaired water” (see definition in 2021 MSGP, Appendix A)? <input checked="" type="checkbox"/> Yes No |
| Pollutants causing the impairment: Mortandad: Adjusted Gross Alpha, Dissolved Copper, PCB (Aroclors), and Mercury. Sandia: Total Recoverable Aluminum, Dissolved Copper and PCB (Aroclors). |
| Pollutants causing the impairment (see above) that may be present in industrial stormwater discharges from this Facility: |
| Are any of your stormwater discharges subject to effluent limitation guidelines (ELGs) (2021 MSGP Table 1-1)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, which guidelines apply? Not applicable. |

| | | |
|---|-----------|-----------------|
| Name of Facility: TA-60 Asphalt Batch Plant | | |
| Street: | | |
| City: Los Alamos | State: NM | ZIP Code: 87545 |
| County: Los Alamos | | |
| NPDES ID (i.e., permit tracking number): NMR050013 MSGP 2021 | | |
| Primary Industrial Activity SIC code, and Sector and Subsector (2015 MSGP, Appendix D and Part 8): SIC Code 2951, Sector D1 | | |
| Estimated area of industrial activity at site exposed to stormwater: 2.3 acres | | |
| Discharge Information | | |
| Name(s) of surface water(s)/segment that receives stormwater from your facility: Mortandad Canyon (within LANL) (Sigma Mesa to NPDES Outfall 043). | | |
| Does this facility discharge industrial stormwater directly into any segment of an “impaired water” (see definition in 2021 MSGP, Appendix A)? <input checked="" type="checkbox"/> Yes No | | |
| Pollutants causing the impairment: Adjusted Gross Alpha, Dissolved Copper, PCB (Aroclors), and Mercury | | |

Pollutants causing the impairment (see above) that may be present in industrial stormwater discharges from this Facility:

1.2 Stormwater Pollution Prevention Team (PPT)

The TA-60 Roads and Grounds Facility, Sigma Mesa Staging Areas, and Asphalt Batch Plant are part of the Utilities and Institutional (UI-DO) Facilities Facility Operations Director at Los Alamos National Laboratory with day to day management provided by Logistics Division-Heavy Equipment Roads & Grounds (LOG-HERG), which has established a PPT whose members are responsible for assisting the facility manager in developing and revising the facility's SWPPP as well as maintaining control measures and taking corrective actions when required. All PPT members will have access to either a hard copy or an electronic version of this SWPPP.

The specific duties of individual team members of the PPT are listed in the following table:

| Staff Names | Individual Responsibilities |
|--|--|
| Deployed Environmental Professional (DEP): Leonard Sandoval, EPC-CP | Responsible for the management of all environmental programs and issues for the yards, buildings and facilities listed within this Plan. The DEP is responsible for training, recordkeeping, and SWPPP revision. The DEP ensures documentation of inspections and other required MSGP records relative to the SWPPP are managed in accordance with the Permit and established document control procedures and that the SWPPP is kept current. The DEP provides technical and regulatory support to facility and operations personnel regarding implementation of the MSGP and this SWPPP. Lastly, the DEP conducts routine facility inspections and if necessary, visual assessments, in accordance with the Permit. Identified conditions requiring corrective actions from routine facility inspections are entered into the Environmental Protection and Compliance-Compliance Programs (EPC-CP) Corrective Action Report (CAR) database. The DEP is responsible for tracking and updating the status of corrective actions that cannot be implemented immediately. |
| Facility Operations Division (FOD) Manager: Lawrence Chavez, Operations Manager, IF-DO | Responsible for managing the maintenance and operation of all aspects of the yards, buildings and facilities listed within this Plan. The manager shall provide review and ensure coordination with core personnel and the PPT, as appropriate, when tenants within the FOD propose new processes, operations, features, or a new site that may be subject to the MSGP. |

| Staff Names | Individual Responsibilities |
|--|---|
| EPC Core: Holly Wheeler, MSGP Program Lead, EPC-CP | The MSGP Program Lead is responsible for managing and administering the MSGP Program for all industrial facilities operated by Triad within Los Alamos National Laboratory. The MSGP Program Lead advises and provides guidance to facility or operations personnel on NPDES MSGP regulations/requirements. The Program Lead also acts as the institutional point of contact for all interactions with the regulatory authority (EPA) and supervises personnel implementing stormwater monitoring requirements for the facility. |
| Operations Manager(s): David E. Trujillo, Logistics Superintendent Field Work Execution, LOG-SUP | Responsible for day-to-day operations at the facility. Assists the DEP and EPC with inspections; spill reporting; implementing, installing and maintaining storm water controls (also known as Best Management Practices) (BMPs); and providing documentation as requested by other team members. The Operations Manager is key to ensuring adequate communication and coordination of issues regarding implementation of the MSGP and this Plan. Operations Managers also assist the DEP/EPC with SWPPP training and/or briefings, as requested. |

1.3 Site Description

Roads & Grounds/Sigma Mesa

Activities at Roads & Grounds/Sigma Mesa fall under Industrial Sector P, Land Transportation and Warehousing, of the 2015 MSGP.

Roads & Grounds/Sigma Mesa includes two locations; the main facility, Roads & Grounds, where operations personnel, trucks, equipment and materials used for deicing and maintaining Laboratory roads and grounds are stored and the east location, Sigma Mesa, where trucks, equipment and construction materials (sand, gravel, rock and clean soil) are staged.

Sigma Mesa is 0.9 miles east of Roads & Grounds. Most of the staging area is located north of Eniwetok Road, with a smaller parking and storage area located south of Eniwetok. Miscellaneous equipment parts (loading buckets, blades, etc.) are stored on both sides of the staging area.

Activities include the following:

- Storage of equipment and supplies used to maintain Laboratory roads and grounds.

- Storage of trucks and heavy equipment used to transport/haul material or move debris.
- Storage of bulk potassium acetate and other liquids applied for deicing.
- Staging of clean soil prior to reuse.
- Potholing and culvert cleanout staging area.
- Staging of asphalt millings prior to reuse.
- Sediment catchment in the basin.
- Salt retention in the lined retention pond.
- Storage of sand, gravel, rock, landscaping materials, and herbicides related to grounds keeping and road maintenance.

Roads & Grounds covers approximately 8.4 acres, including 5.35 acres (about 65% of the total) of impervious surfaces such as roofs and paved areas. The area immediately surrounding the Roads & Grounds Building (TA-60-250) is paved with asphalt. The entire area within the fence of the pesticide storage shed is covered in asphalt and concrete. The areas immediately to the north and south of the salt shed are paved with asphalt. The entire heavy equipment storage yard is covered in asphalt. The remainder of the facility, with the exception of stormwater basins and drainage swales, is covered in gravel and/or recycled asphalt millings. These include the employee parking area, truck parking areas, storage sheds and transporters, sign storage area, and the access roadways.

Sigma Mesa consists of approximately 10.55 acres, with less than 1% covered by impervious asphalt (Eniwetok Road). The remainder consists of gravel, dirt surface, and undisturbed land.

Asphalt Millings Staging Area at TA-61 consists of approximately 0.58 acres with 100% impervious asphalt surface.

Asphalt Batch Plant

Industrial activities at the Asphalt Batch Plant fall under Sector D – Asphalt Paving and Roofing Material and Lubricant Manufacturing.

The facility, located at the eastern edge of Sigma Mesa, contains an office trailer for the facility operator and a BDM Model TM2000 Asphalt Plant with associated oil tanks. The primary function of the facility is to produce asphalt for the Laboratory as needed using the “batch” process. Asphalt batches are then trucked to project sites.

The following is an overview of the plant’s operational process:

- Aggregate material, used as feed stock for the asphalt production, is stockpiled on the west side of the property. There is at least one and sometimes more piles

of material stored on the ground. The volume of stockpiled aggregate material on site at any given time is approximately 3,000 cubic yards.

- Front-end loaders transfer the aggregate material from stockpiles to a hopper/feeder unit and the material is then mechanically fed to the asphalt processing plant. The processing plant (a BDM Model TM2000 Asphalt Plant) includes a Hopper/Feeder Bin attached to a conveyor belt (Structure 60-234) and a Batch Tower with drop and dryer unit (Structure 60-236).
- Asphalt emulsion oil and heated aggregate are mechanically mixed in the Batch Tower (Structure 236).
- Processed asphalt is transferred (dropped) from the Batch Tower into delivery trucks.
- Air emissions are controlled by the Bag House (Structure 60-235). Air emissions from the facility (including NO_x, SO_x, particulate matter) are regulated and currently in compliance with applicable air quality permits issued to LANL.

Outfalls

Outfall locations are shown on the site map provided in Figures B-1, B-2 and B-4.

Roads & Grounds

Outfall 031: Stormwater flows south of building TA-60-250, the employee parking area, and from the south truck parking area to a sedimentation basin/detention pond, which drains west towards this outfall. Stormwater from the area south of the salt shed flows into the drainage channel south of the lined retention pond and then east towards automated sampling station MSGP03101. It then travels through a culvert that runs south under Sigma Mesa Road before discharging into Mortandad Canyon.

Outfall 030: Small amounts of stormwater from the Heavy equipment storage yard driveway drain to the southeast corner of the yard, where they first enter an asphalt drainage swale along Sigma Mesa Road, then travel through a culvert under the road and discharge into Mortandad Canyon.

Outfall 032: Stormwater flows from the area north of the Salt Shed through the north heavy equipment storage and parking area to a riprap-lined channel that discharges to automated sampling station MSGP03201 (which is also known as Monitored Outfall 032) and then to the north towards Sandia Canyon.

Outfall 033: Stormwater flows north from the west side of the small equipment storage area and through the north parking lot where it discharges at a point north of the facility and then drains towards Sandia Canyon.

Outfall 034: Stormwater flows north from the east side of the small equipment storage area, west side of Bldg. 250 (main Roads & Grounds Facility building) and north vehicle

parking area located northwest of Bldg. 250 where it discharges at a point north of the facility and then drains towards Sandia Canyon.

Outfall 035: Stormwater flows north from the east side of Bldg. 250, the north parking area behind the building, and from several transportainers on the northern site boundary. Stormwater discharges at a point on the northwest side of the transportainers and then flows north towards Sandia Canyon.

Sigma Mesa

Outfall 042: Stormwater flows northeast from the north equipment staging and stockpile area to a pond. Water in the pond discharges at automated sampling station MSGP04201 to a riprap lined channel that flows northeast towards Sandia Canyon.

Outfalls 037 and 039: These outfalls are identical riprap lined weirs, which serve as discharge points for stormwater runoff that would accumulate along the berm that extends along the north end of the soil staging area. Stormwater, if discharged, would flow to the north, be collected in a swale located along the base of the berm and, if accumulated to an appropriate depth, would discharge through one of the weirs to Sandia Canyon at automated sampling station MSGP03701 for Outfall 037 and automated sampling station MSGP03901 for Outfall 039.

Substantially Identical Discharge Points

The following outfalls at Roads & Grounds and Sigma Mesa have been identified as substantially identical discharge points based on common potential pollutant sources, drainage areas, activities within the drainage areas, and general site topography and characteristics. Information supporting this outfall determination for monitoring includes outfall locations, facility activities and associated potential pollutants, runoff coefficients and control measures.

Outfalls 031 and 030: Both of these areas receive stormwater runoff to the south of the main facility, discharge stormwater that may come in contact with heavy equipment or trucks, and both have the potential to discharge stormwater runoff to Mortandad Canyon.

Outfalls 032, 033, 034, and 035: All of these outfalls receive stormwater runoff from the central portion of the main facility, discharge to Sandia Canyon, and discharge stormwater that may come in contact with vehicle or heavy equipment parking or storage. All outfalls at the facility are inclusive of monitoring performed at automated sampling station **MSGP03201** Outfall 032. This outfall receives runoff from all central areas of the main facility and is the outfall with the highest runoff coefficient. Therefore, monitoring at this outfall is representative of the remaining outfalls at the main facility discharging to Sandia Canyon.

Outfall 042: This outfall receives stormwater runoff from truck parking and equipment storage area and from construction material staging piles.

Outfall 039: This outfall may receive stormwater runoff from the east clean soil staging area. This outfall has a weir situated towards the top of an earthen berm with riprap to prevent erosion at the discharge point. All soil staged within the area is clean, with the potential pollutants being sediment, hydraulic fluids, or diesel fuel should the heavy equipment leak during loading and unloading operations. All stormwater from these outfalls eventually discharges to Sandia Canyon.

Outfalls 037: This outfall may receive stormwater runoff from the west clean soil staging area. This outfalls has a weir situated towards the top of an earthen berm with riprap to prevent erosion at the discharge point. All soil staged within the area is clean, with the potential pollutants being sediment, hydraulic fluids, or diesel fuel should the heavy equipment leak during loading and unloading operations. This yard is separated by a compacted earthen berm from the east Potholing and Culvert Clean-out staging areas. All stormwater from these outfalls would discharge to Sandia Canyon.

Asphalt Batch Plant

Outfall 043: Stormwater on the site primarily flows southeast or, from the east drainage ditch, due south. Outfall 043 is a pond overflow outlet (with Parshall Flume) at the east end of a stormwater retention pond on the southeast boundary of the site. Overflow first flows east and then southeast toward Mortandad Canyon at automated sampling station **MSGP04301**. No stormwater is discharged to Tier 2, 2.5, or 3 waters.

1.4 General Location Maps

Roads & Grounds/Sigma Mesa

General facility site maps for Roads & Grounds and Sigma Mesa may be found in Figures B-1 to B-2. The nearby receiving waters maps (Figures B-5 to B-7) show the locations of all receiving waters associated with stormwater discharges from the facility. About 40% of the main site flows to Sandia Canyon. Runoff from Sigma Mesa goes primarily to Sandia Canyon, with a small percentage flowing south to Mortandad Canyon. Sandia Canyon is a perennial stream that eventually flows into the Rio Grande approximately 10 miles southeast of the site.

Asphalt Batch Plant

A general facility site map for the Asphalt Batch Plant may be found in Figures B-4. The nearby receiving waters map (Figures B-8) shows the locations of all receiving waters associated with stormwater discharges from the facility.

1.5 Site Maps

Roads & Grounds/Sigma Mesa

Site boundaries and acreage

- Roads & Grounds covers 8.4 acres. Sigma Mesa covers 10.55 acres.

Significant structures and impervious surfaces

- Roads & Grounds is 65% impervious. Sigma Mesa is less than 1% impervious.

Direction of stormwater flow and site drainage

- Direction of flow is shown by arrows in the site map in Figures B-1 and B-2.

Locations of structural stormwater control measures

- See site map in Figures B-1 and B-2.

Locations of all receiving waters in the immediate vicinity of the facility

- See site map in Figures B-5 and B-6; none are impaired.

Locations of all stormwater conveyances (including all ditches, pipes, and swales

- See site map in Figures B-1 and B-2.

Locations of potential pollutant sources

- See site map in Figures B-1 and B-2.

Locations of significant spills or leaks

- See Section 2.2

Locations of all stormwater monitoring points

- See site map in Figures B-1 and B-2.

Locations of stormwater inlets and outfalls

- See site map in Figures B-1 and B-2. The facility is not associated with a municipal separate storm sewer system.

Areas of designated critical habitat for endangered or threatened species

- None in immediate vicinity of the site. See Figure B-9 for Map of Threatened and Endangered Species on LANL Property.

Non-stormwater discharges

- None. See certification in Attachment 3.

Locations of activities exposed to precipitation

- Vehicle and equipment maintenance and/or cleaning areas.
- Loading/unloading areas.
- Locations used for the treatment, storage, or disposal of wastes.

- Liquid storage tanks.
- Processing and storage areas.
- Immediate access roads and used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility.
- Transfer areas for substances in bulk.
- Machinery locations.

Locations and sources of run-on

- Sigma Mesa Road is paved. Run-on is judged possible, but with low erosion potential and little potential impact on receiving waters.

Asphalt Batch Plant

Site boundaries and acreage

- Approximately 2.3 acres.

Impervious surfaces:

- Roofs, paved areas, base-course structures, and other surfaces and structures – less than 0.1 acre.

Significant structures:

- One office trailer (60-233) and two portable storage trailers.
- Hopper/feeder attached to conveyor belt (60-234).
- BDM Model TM2000 Asphalt Plant including Asphalt Batch Tower (with Drop) and Dryer Unit (60-236).
- Above-ground oil storage tanks – 15,000 gallon and 115 gallon (60-237).
- Bag House (60-235).
- ZEP truck-spraying structure.

Directions of stormwater flow and site drainage

- Direction of flow is shown by arrows in the site map in Figure B-4.
- The site has a gentle downward grade toward the south-southeast. Drainage and stormwater flow are in that direction.
- Stormwater flow across the site is directed towards the stormwater retention pond at the southeast corner.

Locations of structural stormwater controls and conveyances

- An engineered stormwater retention pond is located in the southeast corner of the site. Parshall Flume on the east side of the pond helps monitor Outfall 60-043 and serves as the only outlet structure.

- In 2015 a fabric liner previously installed in the bottom of the pond and a layer of 3/4 inch river rock added in 2011 were removed. At the same time, to increase pond holding capacity and stormwater retention time, pond depth was increased by 2 ft.
- A one-foot high berm made of base-course and earthen materials and located along the east, west and south boundaries of the site serves to redirect stormwater flow toward the retention pond.
- On 6/23/2020 an angular rock berm was placed across the middle of the sediment retention pond to help with the sediment retention.
- A stormwater ditch along a portion of the east boundary conveys drainage to the retention pond.
- On 6/23/2020 a culvert was installed from the earthen berm along the east boundary at a SW angle to help re-direct storm water run-off back toward the retention pond.
- Concrete containment pads with 3-in curbs surround the oil storage tanks (Structure 60-237), providing containment for potential oil leaks.

Locations of receiving waters

- Receiving waters in the immediate vicinity of the facility are shown in Figures B-8. Impaired waters information is provided on the map and also in the paragraph below this section in the SWPPP.

Locations of potential pollutant sources and locations of activities that are exposed to precipitation and potential sources of pollutants

- Processed asphalt is loaded/ transferred from the Batch Tower (Structure 60-236) into delivery trucks.
- Liquid (asphalt emulsion oil and heating oil) is stored in two above ground storage tanks (Structure 60-237).
- Oil loading/fueling operations take place at the oil storage tanks (60-237).
- Bare soil and dirt roads on the site are potential sources of sediment and erosion.

Location of significant spills or leaks

- See Section 2.2

Location of all stormwater monitoring points

- Stormwater is monitored at Outfall 043.

Locations of stormwater inlets and outfalls

- Outfall 043 is associated with this facility. See site map in Figure B-4.

Location of discharge/outfalls to municipal storm sewer systems

- The facility has no connections or outfalls to a sewer system or an MS4.

Non-stormwater discharges

- No non-stormwater discharges have been identified for the facility. See Non-Stormwater Discharge Certification Attachment 3.

Locations of the following activities where such activities are exposed to precipitation

- Fueling stations – none at the facility. Asphalt emulsion oil, heating coil oil, and propane are delivered by truck.
- Vehicle and equipment maintenance and/or cleaning areas – none at the facility.
- Loading/Unloading areas. Asphalt is dropped from the Batch Tower (Structure 60-236) into trucks parked directly below the tower. Aggregate is loaded into the hopper/feeder unit (Structure 60-234) by a front-end loader.
- Liquid storage tanks. 2 liquid storage tanks: 15,000 gal and 115 gal tanks for asphalt emulsion oil. A 16,000 gal propane tank formerly on the site is no longer present.

Processing and storage areas

- Asphalt processing takes place inside the Asphalt Batch Plant. Two transportainers on the east side of the site are used for storage. Aggregate is stored outdoors in multiple piles.

Immediate access roads

- Sigma Mesa Road (an extension of Eniwetok Road) is used by trucks and other vehicles accessing the site. Asphalt is picked up at the site by trucks and then transported to off-site locations.

Transfer areas for substances in bulk

- See processing and storage areas above.

Machinery

- BDM Model TM2000 Asphalt Plant.

Locations and sources of run-on

- Sigma Mesa Road is paved. Run-on is judged possible, but with low erosion potential and little potential impact on receiving waters.

Areas of designated critical habitat for endangered or threatened species

- None in immediate vicinity of the site. See Figure B-9 for Map of Threatened and Endangered Species on LANL Property.

Asphalt Millings Staging Area at TA-61

Site boundaries and acreage

- Asphalt Millings Staging Area covers 0.58 acres.

Significant structures and impervious surfaces

- Asphalt Millings Staging Area is 100% impervious.

Direction of stormwater flow and site drainage

- Direction of flow is shown by arrows in the site map in Figure B-3.

Locations of structural stormwater control measures

- See site map in Figure B-4.

Areas of designated critical habitat for endangered or threatened species

- None in immediate vicinity of the site. See Figure B-9 for Map of Threatened and Endangered Species on LANL Property.

2.0 POTENTIAL POLLUTANT SOURCES

Industrial activities that could potentially result in releases to the environment are summarized in 2.1 below. Site maps for the facility are provided in Figures B-1 and B-2.

2.1 Potential Pollutants Associated with Industrial Activity

Roads & Grounds/Sigma Mesa

Storage of equipment and supplies used to maintain Roads & Grounds at LANL

The main Roads & Grounds facility has a yard to store four-wheelers, lawn tractors, lawn mowers, snow blowers, and miscellaneous small-engine equipment. There are approximately 100 pieces of equipment stored in the area although the inventory will vary depending upon how much equipment is deployed and/or in the shop for repairs or maintenance. Potential pollutants from this activity are fuel and oil from leaking equipment.

Storage of trucks and heavy equipment, used to transport/haul material or move debris.

Large trucks are parked at three locations in the parking lots around the main facility. Dump trucks, van trucks, and flatbed trucks are parked outside the south and/or east corner of TA-60-0029 and to the north of the small equipment storage area. Road salt spreading trucks are parked to the north of the Salt Shed. Heavy equipment is stored in the heavy equipment yard identified on the map and as of December 2017 also includes the fenced area that is paved to the north. This yard is west of the lined retention pond. Maintenance is performed off site at the Heavy Equipment shop. In addition, passenger cars are parked in the gravel lot north of the sediment pond. Potential pollutants for this activity include spills of salt from the salt spreading trucks, and leaks or spills of fuel, oil, fluids (transmission and hydraulic), and anti-freeze.

Storage of bulk potassium acetate, GeoMelt™ and other liquids and road salt applied for deicing.

Two 5000 gallon storage tanks with salt brine (potassium acetate) are located north of Bldg. TA-60-0178. Four 10,000 gallon storage tanks are located south of Bldg. TA-60-0178. They contain potassium acetate, calcium chloride, protein, super mix (anti-icing/pre-wetting solution), and CRYOTECH CF7- Potassium Acetate and Corrosion Inhibitors. The salt shed provides indoor storage for road salt and Ice Slicer™. The potential pollutant sources are leaks or spills during refilling or transfer of liquid or solid product including sodium chloride and Ice Slicer (which is naturally occurring complex chlorides including magnesium, calcium, sodium, and potassium).

Staging of clean soil prior to reuse

Soil pre-screened as meeting NMED residential Soil Screening Levels and Soil Background Levels for Rad from areas throughout LANL is transported by dump truck, or end-dumps to the east soil staging area located at the SMSA. One potential pollutant source would be sediment if it was transported with stormwater runoff from the site. The compacted earthen berm, weir, and riprap prevent sediment migration from this location. A gravel surface is no longer effective at preventing sediment transport off site from the south central portion of the SMSA and therefore at the end of the day when loading and unloading operations cease the area affected by sediment transport is sweep with a vacuum truck. Other potential pollutants include leaks or spills of fuel, oil, fluids (transmission and hydraulic), and anti-freeze from heavy equipment performing work in the area.

Asphalt Millings Staging Areas on Sigma Mesa and at TA-61

Asphalt millings pre-screened as originating from uncontaminated areas throughout LANL is transported by dump truck, or end-dumps to the staging area located at the SMSA. Potential pollutants include leaks or spills of fuel, oil, fluids (transmission and hydraulic), and anti-freeze from heavy equipment performing work in the area.

Potholing and Culvert Cleanout Staging Areas

Soil and mixture of water pre-screened as originating from uncontaminated areas throughout LANL is transported in a potholing machine to the far west staging area located at SMSA. One potential pollutant source would be sediment if it was transported with stormwater runoff from the site. A compacted earth berm and a vegetated buffer strip where water is allowed to evaporate from the mixture preventing sediment migration from this location. Other potential pollutants include leaks or spills of fuel, oil, fluids (transmission and hydraulic), and anti-freeze from heavy equipment performing work in the area.

Heavy Equipment Operator Training Area

Located east of the potholing and culvert cleanout staging areas and used to assess the skill level of newly hired operators on various pieces of heavy equipment. Activities include blading, trenching, and locating mock utilities that have been buried. One potential pollutant source would be sediment if it was transported with stormwater runoff

from the site. A compacted earth berm and a vegetated buffer strip where water is allowed to evaporate from the mixture preventing sediment migration from this location. Other potential pollutants include leaks or spills of fuel, oil, fluids (transmission and hydraulic), and anti-freeze from heavy equipment performing work in the area.

Sediment catchment in the detention basin

Soil/sediment from the main facility could travel with stormwater runoff to the detention basin located south of the facility. However, it is unlikely that sediment would discharge from the pond.

Storage of sand, gravel, rock, and other landscaping materials

Other potential pollutant sources

Pesticide Storage Shed (TA-60-29) Outfall 033

Other Sector P Specific Concerns

- On-site waste storage or disposal.
- Parking areas for vehicle awaiting maintenance. None-Solid Waste Management Units (SWMUs)

The following two areas—which are either within the boundaries of Roads & Grounds or could potentially be affected by stormwater runoff from it—have been designated as Solid Waste Management Units (SWMU's) in LANL Operable Unit 1148, RCRA Facility Investigation (RFI) Work Plan for Environmental Restoration (May 1992):

- 60-001(d) – Bermed storage area next to the Pesticide Storage Shed. Approved for No Further Action (NFA) status in 1994.
- 60-002 – This SWMU comprises several piles of asphalt, concrete, and debris located throughout Sigma Mesa. One of the piles is located within the current boundaries of Roads & Grounds. This pile was removed and disposed of before construction of the Roads & Grounds Facility and confirmation samples were collected from beneath the pile.

Data will be included in the report for the final disposition of the entire SWMU once all piles comprising the SWMU have been remediated and/or sampled. In the interim, there is no exposure of this SWMU to stormwater from Roads & Grounds since the portion included within Roads & Grounds Facility has been removed.

Asphalt Batch Plant

The following activities at the Asphalt Batch Plant are potential pollutant sources to stormwater discharges:

- Material loading and unloading operations.
- Outdoor storage of material.
- Waste handling and storage activities.
- Earth/soil moving.

Material loading/unloading operations

Material loading and unloading routinely occurs at the oil storage tanks (Structure 60-237), the hopper/feeder unit (Structure 60-233), the ZEP tank, and the Batch Tower (Structure 60-236).

- Asphalt emulsion oil and heating oil are delivered to the two oil storage tanks (15,000 gallon and 115 gallon) by tanker trucks and the oil product is pumped directly into the tanks. Oil in the 15,000 gallon tank is consumed during asphalt batch processing and the tank is refilled as needed throughout the year.
- The heating oil in the 115 gallon tank is non-destructively used. Potential sources of exposure from this operation include spills from the tanker truck, leaks from hose or valve connections, overfilling/overflow of product, and draining of hose lines after refilling; the potential pollutants of concern are asphalt emulsion oil and heating coil oil.
- Front-end loaders are used to load and unload aggregate material from stockpiles to the batch plant's Hopper/Feeder Unit (Structure 60-234). The pollutant of concern from this operation is the generation of dust during the unloading activities at the hopper/feeder bin. Overflow or spillage of the aggregate material is not considered a pollutant source since the material is generally picked up and re-fed into the process; the gravel material is not a significant source of sediment or pollutants. Other potential pollutants of concern from this equipment are leaked hydraulic fluids or diesel fuel.
- Loading of asphalt takes place at the Batch Tower drop location (Structure 60-236) where processed asphalt is dropped into trucks for delivery to a job site. Potential sources of pollutants from this operation include overflow or spillage of processed asphalt, including waste aggregate, tar slag, and asphalt chunks; the material is semi-solid in form and after cooling becomes solid with no tendency to percolate. These wastes are scooped up and placed into a New Mexico Special Waste area offsite by Waste Management Coordinators. P409 and an MSDS for ZEP Asphalt Release Agent R-6690 can be found in the Referenced Documents.

Outdoor storage of material

Outdoor storage of other materials includes two oil storage tanks, asphalt oil in the 15,000 gallon tank (Structure 60-237) and heating oil in the attached 115 gallon tank. The two tanks are co-located in a concrete spill containment basin that provides secondary containment.

Potential sources of exposure from this location include spills and leaks from the tanks and associated piping that might leak into or overflow the containment basin and contaminate stormwater runoff in the area. Pollutants of concern include asphalt emulsion oil and heating coil oil.

Waste handling

Small amounts of waste generated from truck-loading operations at the Batch Tower—including solid or semi-solid aggregate, tar slag, and asphalt chunks—are scooped up and placed into an offsite New Mexico Special Waste area under the direction of Waste Management Coordinators. A potential source of exposure from this operation would be the breach of drums and consequent release of solid or semi-solid waste material into the containment basin. Potential pollutants include waste aggregate, tar slag, and asphalt chunks. These materials are properly characterized and disposed of offsite per P409, Waste Management.

Asphalt oil and heating oil

Asphalt emulsion oil is stored in a 15,000-gallon aboveground storage tank (Structure 60-237). The asphalt oil is heated and used in the production of the asphalt.

A second oil storage tank, which is a 115 gallon tank (also Structure 60-237), is attached to the emulsion oil tank and stores heating oil that is used non-destructively for heating.

The two oil storage tanks are co-located in a concrete spill containment basin, with an estimated surface area of 350 square feet. A 3-inch curb provides secondary containment. A 2-inch drainpipe with a locked valve provides controlled drainage of the contents.

Asphalt oil and heating oil are delivered to the facility by an off- site contractor via tanker trucks and pumped directly into the storage tanks.

Waste clean-up

The process of dropping or transferring material into delivery trucks could result in overflow or spillage of tar slag and asphalt chunks. These waste materials (slag) are scooped up and placed into a New Mexico Special Waste area offsite by Waste Management Coordinators.

Truck beds sprayed with ZEP

Before loading asphalt, truck beds are coated with ZEP, a non-hazardous, bio-degradable product designed to minimize the sticking of asphalt to truck beds. ZEP is applied by a hand-held spraying device to minimize release to the environment.

Other operations on site include a trailer used as the Control Center/Office (Structure 60-233) and two portable trailers for storage. There are no buried tanks, piping, or transfer stations at the facility.

Earth/soil moving.

Solid Waste Management Unit (SWMU)

One SWMU is located within the Asphalt Batch Plant boundary: 60-002. This is an area used at one time to store up to 50 piles of broken cured-asphalt chunks prior to recycling. Since the materials have been removed and the site upgraded for Asphalt Batch Plant operations, there is little potential for pollutants to be released into surface water runoff. Inorganic constituents including aluminum, arsenic, barium, cadmium, calcium, chromium, cobalt, iron, magnesium, nickel, selenium, vanadium, magnesium, lead, iron, copper, and beryllium are present in the subsurface at depths ranging from 1.5 ft to 15 ft. Organic constituents including acetone, diesel range organics, fluoranthene, fluorene, pyrene, and hexanone[2-] are present in the subsurface at depths ranging from 1.5 ft to 17 ft.

2.2 Spills and Leaks

Roads & Grounds/Sigma Mesa

Past Spills and Leaks

Table 1A presents a list of Roads & Grounds/Sigma Mesa areas where spills and leaks could occur.

Spills and leaks at Roads & Grounds/Sigma Mesa that occurred after March 1, 2021, the issuance date of the 2021 MSGP, are summarized in in Attachment 24. Spills and leaks that occurred prior to March 1, 2021 are documented in previous SWPPP revisions.

Table 1A: Roads & Grounds/Sigma Mesa – Areas Where Spills/Leaks Could Occur

| Location | Outfalls |
|------------------------------|--------------------|
| Heavy equipment Storage Yard | 032 |
| Heavy equipment Storage Yard | 032, 033 |
| Small equipment Storage Yard | 032, 033, 034 |
| Craft storage Buildings | 032, 033, 034, 035 |

| | |
|-------------------------------|-----|
| Vehicle storage at Sigma Mesa | 042 |
|-------------------------------|-----|

In the event of future spills or leaks, Attachment 24 will be revised to include them along with the nature of the spill or leak. The revision will be performed immediately upon completion and documentation of the spill response and cleanup.

The probability of spills or releases at the facility is minimized by the application of good housekeeping procedures and appropriate operational methods. As this facility regularly repairs heavy equipment and vehicles, spill protection is readily available on site. Appropriate response measures for a spill or release of hazardous materials are applied when addressing spills. The specific spill response and cleanup procedures will depend on the nature of the spilled material. Specific spill response and reporting procedures for LANL are listed in Section 3.1.4.

Asphalt Batch Plant

Table 1B presents a list of Asphalt Batch Plant areas where spills and leaks could occur.

Table 1B: Asphalt Batch Plant – Areas Where Spills/Leaks Could Occur

| Location | Outfall |
|--|---------|
| 15,000 gallon & 115 gallon oil storage tanks (60-237) | 043 |
| Drum of tack oil (located east of 60-237) | 043 |

Past Spills/Leaks

Spills and leaks at the Asphalt Batch Plant that occurred after March 1, 2021, the issuance date of the 2021 MSGP, are summarized in in Attachment 24. Spills and leaks that occurred prior to March 1, 2021 are documented in previous SWPPP revisions

Records of spills are also entered into the EPC-CP MSGP CAR database. Information recorded includes type of material spilled, quantity of spilled material, corrective actions taken, and the location and date of the spill event. This information is maintained for a period of three years from the date the permit expires or the date the permittee's authorization is terminated.

2.3 Unauthorized Non-Stormwater Discharges

Non-storm water discharges were evaluated and none were present. The Certification of No Unauthorized Stormwater Discharge is located in Attachment 3. This certification form certifies that all storm water outfalls have been evaluated for the presence of non-

storm water discharges. This form will be updated whenever a change in possible non storm water discharges is determined.

2.4 Salt Storage

Roads & Grounds/Sigma Mesa

Salt Shed 60-178, Super Mix Blending Station, and Associated Storage Tanks.

- Salt storage: The Salt Shed provides indoor storage for road salt and Ice Slicer. Bags of Ice Melt on wood pallets are also stored in a closed Transportainer (60-287) SE of TA-60 building 250. Potential Pollutants: Road salt is primarily sodium chloride and Ice Slicer is naturally occurring complex chlorides including magnesium, calcium, sodium, and potassium.
- Salt and brine loading area.

Asphalt Batch Plant/TA-61 Asphalt Millings Staging Area

No salt storage or piles that contain salt are present at the facility.

2.5 Historical Data Summary

Permitted Facility: TA-60 Roads and Grounds

All Triad sampling data collected at this facility during the previous permit term is contained in the prior SWPPP revision.

Permitted Facility: TA-60 Asphalt Batch Plant

All Triad sampling data collected at this facility during the previous permit term is contained in the prior SWPPP revision.

3.0 STORMWATER CONTROL MEASURES

Control measures at the facility are designed to minimize the potential release of pollutants that could adversely affect water quality

3.1 Non-Numeric Technology-Based Effluent Limits

3.1.1 Minimize Exposure

Roads & Grounds/Sigma Mesa

The Salt Shed provides indoor storage for road salt and Ice Slicer that is protected from coming in contact with stormwater by keeping three roll-up doors closed. At the end of every day after the movement of salt in and out of the salt shed a street sweeper is used to cleanup and push any residual salt on the asphalt outside the roll-up doors into the salt shed.

Small containers of fuel and oils are stored in a flammable cabinet located just inside the entrance to the small equipment storage area. Pesticides are stored inside a building.

Asphalt Batch Plant

Standard operating procedures and maintenance procedures at the facility are designed to stabilize exposed areas and contain runoff using structural and/or nonstructural control measures to minimize onsite erosion, sedimentation, and the resulting discharge of pollutants.

Material loading/unloading activities

Loading and unloading operations at the oil storage tanks (Structure 60-237), the hopper/feeder unit (Structure 60-234), and the Batch Tower (Structure 60-236) are the most likely areas where potential pollutants may be released and exposed to runoff. BMPs used at these locations include the following:

- Spills from heavy equipment resulting in diesel or hydraulic fluid leaks are addressed in accordance with the Spill Prevention Control and Countermeasures Plan for the Asphalt Batch Plant. The plan specifies that the Principal Operator at the Facility is the designated person responsible for spill prevention, reporting and maintenance of the spill control equipment at the Facility. All spills require response and several facility operations personnel are trained annually to the plan. Any spills that have the potential to enter a water course require immediate response and must be reported immediately to the Security and Emergency Operations (SEO), Emergency Response Group (SEO-1). In addition, appropriate cleanup procedures will be followed and the appropriate individuals

or organizations responsible for the completion of appropriated spill reports will be notified.

- Bulk delivery of oil is supervised by the Facility Site Superintendent or other designated personnel.
- Prior to a fuel transfer, supervising personnel verify that the correct product is being delivered to the correct tank and that the volume of material to be transferred does not exceed the available space in the receiving container.
- Lines, hoses, and valve settings are inspected for leaks before and during transfers; dry disconnects or leak pans are used on hoses and connections when practical;
- Any spills or releases during oil loading/unloading operations are immediately responded to in accordance with the SPCC Plan and ENV-DO-QP 101, Environmental Reporting Requirements for Releases or Events.
- Containment structures are in-place for the above ground oil storage tanks.
- Spill control equipment is available in the Control Room trailer (60-233).
- Overflow of asphalt material (tar slag and asphalt chunks) during loading of delivery trucks is minimized by careful supervision during loading operations. Overflow material is cleaned up as it occurs on site and is scooped up and placed into a New Mexico Special Waste area offsite by Waste Management Coordinators. P409 for this process is located in the Referenced Documents.
- Loading and unloading areas are kept clean and maintained to minimize collection of dust, debris, and potential pollutants.
- Fluids from unused heavy equipment, vehicles, and other equipment stored onsite for longer than 6 months will be drained.

Outdoor storage of materials

BMPs used to control pollutants from these sources include the following:

- The two oil storage tanks (Structure 60-237) are co-located in a concrete secondary containment unit. The concrete containment unit has a 3-inch curb that has a sufficient volume to contain the 115 gallon tank's contents with ample freeboard for storm flow. The full volume of the 15,000 gallon tank cannot be contained by the basin; however, it was not deemed necessary to provide full containment for this tank since the product will solidify on the surface with little to no soil penetration.
- Secondary containment will be provided for any materials containing liquids and stored on site
- Material or products that are stored in bags, boxes, or other perishable containers will be stored inside or under cover to prevent exposure.

- Whenever practical, materials and activities at the facility are protected to prevent exposure to rain, snow, snowmelt, or runoff.

Waste handling activities

BMPs used to control pollutants from these sources include the following.

- P409, Waste Management, specifies methods for handling waste containers to minimize leaks and exposure to stormwater. Inspections are conducted to ensure that procedures are properly followed and that no potential contaminants are present in exposed areas
- Small amounts of waste generated from the truck-loading operations at the Batch Tower, which includes solid or semi-solid aggregate, tar slag and asphalt chunks, is scooped up and placed into a New Mexico Special Waste area offsite by Waste Management Coordinators.

Earth/soil-moving activities

Construction or other activities at the site that disturb more than 1-acre of land will be separately addressed in accordance with the NPDES Construction General Permit (CGP).

3.1.2 Good Housekeeping

Roads & Grounds/Sigma Mesa

Good housekeeping practices specifically applicable to the prevention of stormwater contamination include the following measures:

- Individual mixing operations take place in closed vessels, so that the potential for exposure of stormwater to materials is limited to loading and unloading activities. When possible, the road salt is stored inside the Salt Shed to prevent exposure to stormwater. The use of a brine solution for deicing operations is also being transitioned in to reduce the use of road salt.
- All storage areas are kept clean and neat. Vehicles and other equipment are stored and maintained in specified areas and heavy equipment repair and maintenance is never performed at this site.
- Garbage and floatables are routinely picked up by facility personnel. All garbage containers are covered to prevent windblown debris.

All site areas exposed to precipitation are walked down during daily operations and monthly routine facility inspections to ensure that the grounds are kept in an orderly condition. The outdoor metal storage areas are inspected to ensure all piping and metal raw material is off the ground on storage racks and covered with tarps, or stored inside buildings, sheds or transportable containers. Vehicle and forklift parking areas are inspected for leaks or spills as well as storage areas containing oil-filled equipment. The

entire site, including loading areas and outfalls, are inspected for floatable debris, garbage, waste and all other potential pollutants. All dumpsters and roll-off bins are inspected to ensure they are closed.

Asphalt Batch Plant

Routine operations at the facility are geared toward keeping the site clean, avoiding spills, and immediately attending to any spilled material according to LANL response guidelines.

Good housekeeping practices used at the facility to prevent stormwater contamination include the following.

- Routine inspections are performed for leaks and to check the condition of the tanks.
- Operational areas are maintained in a clean and orderly state.
- Containers holding raw material or product are kept closed when not in use and containers are not stored in areas that are exposed to precipitation or run-on.
- Containers and materials are properly labeled.
- Stormwater containment structures are kept clean of debris and trash; the drainage ditch and berm around the site are kept clear of debris and trash.
- Access to the facility is controlled by a gate, which is located less than a quarter mile west of the Asphalt Batch Plant on Sigma Mesa Road. The facility is locked when unattended. A sign-in/out procedure is not required at the facility. However, visitors must notify the Facility Operator (upon arrival to the plant) that they are on site to perform specified work or inspections.
- Spills or leaks are cleaned as soon as possible.
- Activities that damage or destroy existing vegetation are kept to a minimum.
- Employees are trained about these and other good housekeeping practices and their impact on stormwater discharge.
- Non-hazardous waste (e.g. trash) generated at the site is collected in a dumpster, which is picked up for disposal when it becomes full.
- No vehicle maintenance or vehicle washing is performed on site.

3.1.3 Maintenance

Control measures at the facility are kept in effective operating condition by the implementation of scheduled preventive maintenance, standard operating procedures (SOPs), engineering guidance, and manufacturer's specifications as applicable. If control measures need to be replaced or repaired to maintain compliance with the 2021 MSGP, necessary modifications will be made according to the timelines specified in the *Corrective Action and Deadlines* requirements of Section 6.0 of this SWPPP.

Deficient items identified during routine facility inspections, walk-downs, or by any other means of identification, are documented on the routine facility inspection forms and entered into the MSGP CAR database. All reasonable steps are taken immediately to address any identified condition requiring corrective action. The condition requiring corrective action remain open until proper maintenance or corrective action has been completed. CAR information, along with documentation of maintenance/repair of control measures, is in Attachment 9 of the SWPPP.

Note: "All reasonable steps" means that the permittee has responded to condition(s) triggering the action, such as, cleaning up any exposed material that may be discharged in a storm event (e.g., through sweeping, vacuuming) or making arrangement (i.e., scheduling) for a new stormwater control measure (SCM) to be installed at a later date. If a control measure was never installed, was installed incorrectly or not in accordance with Part 2 and/or 8 of the 2015 MSGP, or is not being properly operated or maintained site personnel will conduct corrective action as specified in Part 4 of the 2015 MSGP.

The sediment retention ponds at Outfalls 042 and 043 are cleaned out every March or when the depth of sediment or debris reaches two-thirds (2/3) of the depth of the pond and when debris is at least six inches from the top. According to the manufacturing specifications the functional longevity for the Enviro-Soxx with Metal-Loxx wattles is 6 months to a year. At the monitored outfalls 031, 032, 039, and 042 and at substantially identical discharge points 033, 034, and 035 every 3 months the Metal-Loxx wattles are replaced. At monitored outfall 043 the Core Log at the concrete flume is replaced annually or as needed.

3.1.4 Spill Prevention and Response

Spills, leaks, or other releases are minimized and prevented by the application of good housekeeping procedures and regular visual inspections minimize the probability of a spill or release.

LANL institutional procedures P409 Waste Management and P101-14 Chemical Management require labeling of wastes, used oils, and chemicals stored on-site to facilitate the proper handling and response if spills or leaks occur.

In general, the approach to spill cleanup is to secure the spill area and contact the Operations and Maintenance Coordinator (OMC) and/or the Emergency Management Division Emergency Response (EMD-ER) Team (if necessary). For incidental releases, Micro-Blaze or dry absorbents are used and contaminated absorbents from spill clean-up are disposed of properly.

All spills or releases are reported to EPC-CP by using the spills pager (505) 664-7722. Although incidental spills may be cleaned up by facility personnel, all emergency spills or releases are reported to (EMD-ER) and/or the Facility Duty Officer by calling 667-2400. If fire or explosion is present, or if the potential for such exists, the situation must be reported by dialing 911 from a non-cellular phone or by activating a fire pull box. In the event of a spill, EMD-ER will coordinate appropriate cleanup procedures and EPC-CP will notify the individuals or organizations responsible for completing spill reports and providing information needed to fulfill regulatory reporting requirements. ³¹

Unauthorized releases or discharges within industrial facility boundaries are entered into the MSGP Corrective Action Reporting database in accordance with EPC-CP-QP-022, *MSGP Corrective Actions*. In addition, the completion of an Unplanned Release Report is required in the event of a spill. The report is submitted to EPC-CP personnel and handled according to internal spill record keeping procedures. Spills may be “reportable” (requiring external agency notification) depending on the nature of the spilled material and the location of the release. External agency notification may consist of verbal and/or written notification to the National Response Center, Environmental Protection Agency (Region VI), or the New Mexico Environment Department (NMED). EMD-ER, the FOD and EPC-CP, in accordance with Laboratory and DOE policies and federal and state regulatory reporting requirements, will make the determination for the type of reporting required. EPC-DO-QP-101, *Environmental Reporting Requirements for Releases or Events* is used for this purpose (see Attachment 21).

Copies of internal spill reports are maintained by the responsible organization and in the EPC-CP database. The EPC-CP procedure for spill reporting and response, EPC-CP-QP-1007, *Spill Investigations*, can be found in Attachment 22 of this SWPPP.

Additional EPC-CP procedures for spill reporting and response (see Attachments 21 and 22) include:

- ENV-CP-QP-1007, Spill Investigations
- EPC-DO-QP-101, Environmental Reporting Requirements for Releases or Events

3.1.5 Erosion and Sediment Control

Roads & Grounds/Sigma Mesa

Erosion and sediment are controlled at Roads & Grounds by preventing erosion through the use of pavement, compacted millings, and stabilized ditches and by trapping sediment. Velocity dissipation devices are installed at each discharge point.

General structural controls include the following:

- Runoff from the north side of the facility is collected in a drainage swale/base course berm and released to the canyon through rock check dams.
- Sediment traps/check dams: A sediment traps/check dams is located at the northeast corner of SMSA to trap sediment from the stone stockpile area.

Sigma Mesa

Several control measures are used at Sigma Mesa, including compacted earthen berms on the north, east, and west sides of the east and west soil staging areas. The northern berm of each staging area has riprap lined weirs, which serve as discharge points for stormwater runoff that would otherwise accumulate along the berm. There is a berm along the east central portion of Sigma Mesa and on the north side in the same general

area. The gravel surface is no longer effective at preventing off-site sediment transport from the south central portion of Sigma Mesa and therefore, at the end of the day, when loading and unloading operations end, the area affected by sediment transport is swept with a vacuum truck.

To retain stormwater runoff and to minimize the potential for off-site transport of material within the potholing and culvert clean-out staging areas, two primary control measures are implemented: a compacted earth berm and a vegetated buffer strip. The earth berm is approximately 430 ft long, extending across the entire length of the north side of the area, 2 ft or higher, with side slopes of approximately 2:1, and 2 ft wide across the top. It was sized to hold stormwater runoff from a 25-yr 2-hr storm event. The vegetated buffer strip, comprising existing perennial vegetation and woodchips obtained from on-site material and located immediately upslope from the compacted earth berm, is 50-ft wide. See the Sigma Mesa map in Figures B-1 and B-2).

North of Eniwetok Rd. at the portion of Sigma Mesa farthest east, stormwater flows into a retention pond with riprap-lined discharge point located adjacent to the automated sampling station MSGP04201 at Outfall 042. Sediment is cleaned out of the retention pond when two-thirds full.

The south-central portion of Sigma Mesa (south of Eniwetok Rd.) contains a riprap-lined area leading to Outfall 041 has been removed. The existing berm was extended to control stormwater runoff and allow water to collect and evaporate. The staging area is 0.9 miles east of the main facility, with most of it north of Eniwetok Rd. while a smaller parking and storage area is south of Eniwetok Rd. The area is primarily used for Teamster vehicle parking and materials (sand and gravel) storage.

Miscellaneous equipment parts (loading buckets, blades, etc.) are stored on both sides of the staging area, along with gravel and sand piles, soil for use as clean fill and potholing staging, vehicles, and miscellaneous equipment pieces. Leaks are prevented or contained through the use of drip pans, inspections, and routine maintenance.

Asphalt Batch Plant

Structural controls shown on the Asphalt Batch Plant site map in Figure B-3 includes the following:

Stormwater retention pond: A stormwater retention pond at the southeast corner of the site collects and manages stormwater run-off and provides an opportunity for sediments to settle out in the basin and not be transported off-site. Runoff from across the facility is directed toward the pond, and the water is held in the pond until it is released through the controlled outlet structure, evaporates, or infiltrates into the surrounding soil. In 2015 a fabric liner at the bottom of the pond and a layer of ¾-inch river rock added in 2011 were removed. To help increase the holding capacity and retention time of stormwater, the depth of the pond was increased by 2 ft.

Parshall Flume is located at the east side of the retention pond, which is part of stormwater monitored Outfall 043 and serves as the pond's outlet structure. This structure is used for sampling runoff and controlling runoff releases from the pond to provide better erosion control at the discharge. Riprap located at the flume discharge further slows down and disperses stormwater overflow from the pond. There is also a Terra tube across the flume to help filter stormwater for suspended solids.

Riprap: Riprap at the east and west entrances of the stormwater retention pond reduces erosion in these areas and minimizes sediment transport into the pond.

Site grading: The facility grounds have been graded to produce a gentle downward grade toward the south-southeast so that site drainage and stormwater flow is directed towards the stormwater retention pond. Most of the facility is stabilized with gravel.

Berms: The site is bounded by base-course and earthen berms on the west, south, and east boundaries. The berms serve to redirect storm flow and site drainage toward the retention pond, minimizing sediment transport and runoff. The berms also prevent run-on to the site from adjacent lots not part of the facility.

Check dams: Two check dams made of angular rock that were installed in 2014 at the west end of the retention pond to reduce the sediment load in stormwater collected in the pond have been removed and the angular rock used to build up the rip rap at the west end of the retention pond.

Angular Rock Berm: Installed across the middle of the retention pond to help with sediment retention.

Culvert: Installed from the earthen berm along the east boundary at a SW angle to help re-direct storm water run-off back toward the retention pond.

Stormwater conveyance ditch: An earthen ditch is located along a portion of the site's east boundary to convey storm flow and site drainage to the retention pond. This ditch works in combination with the base-course berm (also along the eastern boundary) to prevent run-on from the adjacent lot.

Secondary containment basin: The above-ground oil storage tanks (Structure 60-237) rest in a concrete basin with a 3-inch curb, thus providing containment for potential oil leaks. The basin is equipped with a 2-in drainpipe and valve to permit drainage of the basin. The valve is kept locked to prevent accidental or unauthorized drainage. While run-on and site drainage into the basin is thus minimized, precipitation and snowmelt may still accumulate in it. Stormwater accumulations are usually small and can be left to evaporate. But on occasion it may be necessary to drain the basin to ensure sufficient storage capacity to handle a tank leak or spill. Draining requires visual inspection of the accumulated material and notification, approvals, and testing by EPC-CP. These structural controls have been selected, designed, and installed to work together to

reduce the potential for sediment transport, to manage stormwater runoff and run-on, and thus reduce the potential for pollutants in stormwater discharges.

Inspections

UI-PROC-41-20-001, Asphalt Plant Operation, includes regular inspection and maintenance of the facility's equipment, operational systems, and grounds. A copy is included in Referenced Documents. Facility personnel at the Asphalt Batch Plant conduct informal walk-around inspections daily to check the facility equipment and facility grounds. During these informal inspections, facility personnel take note of maintenance needs and initiate appropriate corrective actions. These routine activities help minimize the chance of failures, shutdowns, and other abnormal conditions that could result in leaks, spills, or other releases.

Items checked during inspections:

- Facility grounds in orderly condition
- Stormwater structures free of debris, floating material, and other obstructions
- Maintenance needs for equipment or stormwater BMPs
- Signs of new erosion
- Signs of leaks, spills, or other releases

If a problem cannot be immediately remedied, the inspection and response are documented per standard facility procedures.

All facility equipment, tanks, transfer piping and associated valves are located above ground and easily available during the monthly inspections. Integrity tests and in-service inspections are not required for the Asphalt Batch Plant oil tanks because as flow-through process tanks, they are exempt per NMED Petroleum Storage Tank (PST) Regulations (Section 20.5.1.7, Definitions), but the tanks and berms are checked for evidence of leaks or failure during SPCC and SWPPP inspections.

3.1.6 Management of Runoff

Roads & Grounds/Sigma Mesa

Runoff flows and is collected at the sediment retention pond at the far east end of Sigma Mesa at automated sampling station **MSGP04201** Outfall 042.

Asphalt Batch Plant

The site has a gentle downward grade toward the south-southeast, and site drainage and stormwater flow is in that direction. Stormwater flow across the facility is directed towards the stormwater retention pond at the southeast corner of the site boundary at automated sampling station **MSGP04301** Outfall 043.

Asphalt Millings Staging Area at TA-61

The site has an asphalt berm that runs from east to west at the southwest corner of the staging area that serves as an access point for heavy equipment. Another asphalt berms runs along the east perimeter of the staging area.

3.1.7 Salt Storage Piles or Piles Containing Salt

Roads & Grounds/Sigma Mesa

See Section 2.4.

Asphalt Batch Plant

No salt storage or piles containing salt are present at the facility.

3.1.8 Dust Generation and Vehicle Tracking of Industrial Materials

Roads & Grounds/Sigma Mesa

Dust is controlled throughout the site through the use of pavement, compacted millings, gravel, speed limits, and (as needed) sweeping with a street sweeper or dust suppression with potable water.

Asphalt Batch Plant

The area at and surrounding the facility is covered by asphalt and/or gravel. Care is taken to replenish the gravel layer when it gets thin from heavy equipment traffic. Dust suppression with potable water is performed as needed.

3.2 Numeric Effluent Limitations Based on Effluent Limitations Guidelines

Roads & Grounds/Sigma Mesa

Part 8 of the 2021 MSGP identifies sector-specific requirements for Sector P – Land Transportation and Warehousing, in addition to the numeric limits outlined in this Section. The facility must comply with requirements associated with the primary industrial activities described in Section 1.3 and any co-located industrial activities as defined in Appendix A of the 2021 MSGP. Sector-specific requirements apply only to areas where sector-specific activities occur.

The following Sector-Specific Non-Numeric Effluent Limits are addressed at this facility:

Pesticide Storage Shed (TA-60-0029)

- Product mixing area: Mixing is performed outside the building in a containment area located north of the shed.

- Pesticide application equipment storage and maintenance: Spill prevention, containment and control and drip pans and good housekeeping.
- Stormwater trapped in the secondary containment is usually allowed to evaporate. In order to release stormwater from the secondary containment it must have a PH between 6.5 and 7, no odor or visible oily sheen, and the release must be documented on a liquid discharge form and submitted to EPC-CP.

Heavy Equipment Storage Yard

- The equipment storage yard is located west of the Salt Shed and also includes the fenced area that is paved to the north.
- Storage of heavy equipment: Leaks are contained by drip pans and routine maintenance. Maintenance is performed off-site at the Heavy Equipment shop.

Small Equipment Storage Yard

- Small containers of fuel and oils are stored in a flammable cabinet located just inside the entrance to the small equipment storage area.

Vehicle Parking Lots

- Large trucks are parked at three locations in the parking lots around the facility. Dump trucks, van trucks and flatbed trucks are parked outside the southeast corner of TA-60-29 and to the north of the small equipment storage area. Road salt spreading trucks are parked to the north of the Salt Shed. Leaks are contained by drip pans and routine maintenance.
- Passenger cars are parked on asphalt north of the sediment pond. Leaks are contained by drip pans and routine maintenance.

Clean Fill Yards

- 2.8 acres clean fill yard is located in between the Potholing and Culvert Cleanout and Asphalt Millings staging areas. Equipment hauls fill into and out of these areas. There is also equipment involved in working the fill and soil.

Asphalt Millings Staging Areas on Sigma Mesa and at TA-61

- The 0.3-acre asphalt millings staging yard is located east and adjacent to the clean fill yard. The asphalt millings staging area at TA-61 is south of East Jemez road and 0.58 acres. Equipment is used to haul millings into and out of the area and to load the asphalt millings.

Potholing and Culvert Cleanout Staging Yard

- The 2.6 acre potholing and culvert cleanout staging yard is located west and adjacent to the clean fill yard. The staging area consists of three open pits: the first 27 ft wide by 25 ft long, the second 14 ft wide by 45 ft long, and the third 15 ft wide by 35 ft long. They are 4–8 ft deep. Equipment is used to haul potholing material into the area and to move it out when dry.

Operator Training Area

- The 2.6 acre heavy equipment operator training area is located east of the potholing and culvert cleanout staging areas and used to assess the skill level of newly hired operators on heavy equipment. Activities include blading, trenching, and locating buried mock utilities.

Fueling Areas

- There are no fueling stations at Roads & Grounds.

Material Storage Areas:

- Except as described under Small Equipment and Salt Storage, there are no material storage areas.

Vehicle and Equipment Maintenance Areas

- No vehicle or equipment maintenance is performed at this facility.

Employee Training

- See Section 4.5.

Asphalt Batch Plant

The following Sector-Specific Non-Numeric Effluent Limits are addressed at this facility:

Production of Asphalt Using the Batch Process

- See Sections 3.1.1 - 3.1.8 for specific controls.

Employee Training

- See Section 4.5.

3.3 Water Quality-Based Effluent Limitations and Water Quality Standards

Impaired Receiving Waters/TMDLs

Impaired waters monitoring is performed annually at the facilities as listed in Section 4.7. The pollutants sampled can change yearly based on the requirements of the MSGP. The table in Section 4.7.1 lists the current year's sampling requirements and parameters.

Stormwater from the TA-60 Roads & Grounds Facility discharges to Sandia Canyon. Certain stream reaches within Sandia Canyon have been identified as impaired waters by the NMED Surface Water Quality Bureau (SWQB). According to the 2020-2022 State of NM Clean Water Act 303d/305b Integrated Report and Final List of Assessed Surface Waters, pollutants causing the impairment are listed as: *Adjusted Gross Alpha, Total Recoverable Aluminum, PCB (Aroclors), Mercury, and Dissolved Copper*. Primary potential pollutant sources have been

identified as post development erosion/sedimentation and urban runoff (NMED 2020). EPA has not yet approved or established TMDLs for Mortandad Canyon.

Refer to Section 4.7 for specific actions that will be taken when a water quality standard is exceeded.

4.0 SCHEDULES AND PROCEDURES

Preventative maintenance of control measures used to comply with the Permit effluent limits can avoid situations that result in discharges to the environment. Part 6.2.5 of the 2021 MSGP specifies control measures will have a schedule or frequency for maintenance and procedures specifying how maintenance is conducted. Part 6.5 requires documentation of maintenance and repairs including the date(s) of regular maintenance. See Attachment 10 for the Scheduled Maintenance Log.

4.1 Good Housekeeping

See Section 3.1.2 of this SWPPP.

4.2 Maintenance

See Section 3.1.3 of this SWPPP.

4.3 Spill Prevention and Response

See Section 3.1.4 of this SWPPP. All relevant referenced procedures are provided in Attachments 21 and 22 of this SWPPP.

4.4 Erosion and Sediment Control

See Section 3.1.5 of this SWPPP.

4.5 Employee Training

Employee training is essential for effective implementation of the SWPPP and MSGP requirements. The goals for the training program are to ensure that employees: (1) are aware of what happens when pollutants come in contact with stormwater; (2) are familiar with and will implement the requirements of this SWPPP; (3) are capable of preventing spills; (4) respond safely and effectively to an accident when one occurs; (5) recognize when there is an issue with a control measure; (6) recognize when additional control measure are necessary; and (7) identify situations that could lead to stormwater contamination.

Per Part 2.1.2.8 of the 2021 MSGP, training relevant to the SWPPP and MSGP is required for all workers at the facility that work in areas where industrial materials or activities are exposed to stormwater (MSGP sites); workers, managers, and supervisors who are responsible for implementing activities necessary to meet the conditions of this permit (e.g., inspectors, maintenance personnel); and all members of the PPT. Training

is designed to ensure these personnel understand the MSGP and SWPPP requirements, as well as their specific responsibilities regarding these requirements.

Training provided and assigned to these personnel cover both the specific control measures used at the facility; along with monitoring, inspection, planning, reporting, and documentation requirements described in this SWPPP. Training will be conducted at least annually. The DEP and Pollution Prevention Team members are responsible for ensuring all appropriate personnel receive this training.

Training activities are documented in accordance with LANL's Training Standards. In cases where training is formalized enough to require specific curricula and reoccurrence, the training activity is recorded in LANL's official U-TRAIN database. Informal briefings, such as those included in-group safety meetings are not typically recorded in U-TRAIN. Sign-in sheets are used to document attendance and are considered official use only (OUO). All training records will be managed in accordance with P204-1, Controlled Unclassified Information.

Topics in this SWPPP that are covered in the latest version of the facility-specific annual MSGP training (see Attachment 11) include the following:

- Overview of the SWPPP contents;
- Spill response and cleanup procedures, good housekeeping, maintenance requirements, and material management practices to prevent stormwater pollution;
- The location of all controls on the site required by this permit and how they are maintained;
- The proper procedures to follow with respect to the permit's pollution prevention requirements; and
- When and how to conduct inspections, record applicable findings, and take corrective actions.

4.6 Routine Facility Inspections and Quarterly Visual Assessments

Routine inspections at this facility are conducted and documented monthly in accordance with EPC-CP-QP-2108, *MSGP Routine Facility Inspections* (Attachment 16). Visual assessments are conducted in accordance with EPC-CP-QP-2105, *MSGP Stormwater Visual Assessments* (Attachment 18).

4.6.1 Routine Facility Inspections

At least once each calendar year, the routine facility inspection is conducted during a period when a stormwater discharge is occurring. A qualified member of the PPT (typically the DEP, a representative from the EPC-CP Storm Water Permitting/Compliance Team or EPC-CP Program Lead) performs the inspection. EPC-CP will perform at least one routine inspection per year in order to evaluate corrective action status for the Annual Report requirements.

Routine inspections evaluate the following areas, at a minimum:

- Areas where industrial materials or activities are exposed to stormwater;

- Areas identified in the SWPPP and those that are potential pollutant sources;
- Areas where spills and leaks have occurred in the last three years;
- Discharge points(outfalls/Substantially Identical Discharge Points (SIDPs); and
- Control measures used to comply with the effluent limits contained in this permit.
- Specific areas of the facility to be inspected are described in Section 2.1.

During routine inspections, the following must be examined and looked for:

- Industrial materials, residue or trash that may have or could come into contact with stormwater;
- Leaks or spills from industrial equipment, drums, tanks and other containers;
- Offsite tracking of industrial or waste materials, or sediment where vehicles enter or exit the site;
- Tracking or blowing of raw, final or waste materials from areas of no exposure to exposed areas; and
- Control measures needing maintenance, repairs or replacement.

Inspections performed by the PPT member are documented by completing the routine facility inspection form, which identifies all conditions requiring corrective action and other potential stormwater pollution issues that were encountered. All conditions requiring corrective actions identified during the inspection are addressed in accordance with Section 6.0 *Corrective Actions and Deadlines* of this plan. Facility personnel or the DEP may also perform daily, weekly, or other periodic facility surveys (walk downs) between monthly routine inspections to ensure compliance with the SWPPP and MSGP. Completed routine facility inspection forms are provided in Attachment 7 of this SWPPP and meet the requirements listed in the 2021 MSGP (Part 3.1.2.).

4.6.2 Quarterly Visual Assessments

Once each quarter, (January-March, April-June, July-September, October-December) a stormwater sample is obtained and visual assessment performed at each outfall, if a measureable storm event occurred. A qualified member of the PPT (DEP, EPC-CP Storm Water Permitting/Compliance team member or MSGP Program Lead) conducts the visual assessment. The visual assessment will be:

- Of a sample in a clean, clear colorless glass or plastic container and examined in a well-lit area;
- On samples collected within the first 30 minutes of an actual discharge from a storm event or as soon as practicable thereafter. Alternatively, document why it was not possible to collect the sample within the first 30 minutes (i.e. adverse conditions, not enough flow, etc.); and
- Conducted at least 72 hours since the last storm event; or document that the 72-hour period is representative of local storm events during the sampling period.

Note: Snowmelt samples need only be collected during a period of measurable discharge.

The visual assessment will inspect for the following water quality characteristics: color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of stormwater pollution.

If a visual assessments is not conducted:

- Document rationale if a visual assessment is unable to be collected in a quarter (no precipitation event or adverse conditions, etc.);
- Perform an additional assessment during the next qualifying storm event if unable to perform in a particular quarter; and
- Perform one quarterly assessment during snowmelt discharge (taken during a measurable discharge from the site).

For facilities with SIDP, quarterly visual assessments may be performed at only one of the outfalls, provided that you perform visual inspections on a rotating basis at each SIDP.

The PPT member performing the visual assessment documents potential stormwater pollution problems that were observed during the assessment on the quarterly visual assessment form. Any condition requiring corrective actions identified during the assessment are addressed in accordance with Section 6.0 *Corrective Actions and Deadlines* of this plan. Completed quarterly visual assessments are provided in Attachment 8 of this SWPPP and meet the requirements listed in the 2021 MSGP (Part 3.2.2).

4.7 Monitoring

Analytical monitoring comprises Impaired Waters monitoring for industrial activities identified on Tables 1-1 and 4-1 of the 2021 MSGP is performed annually on stormwater discharges from the site. Pre- and polyfluoroalkyl substance (PFAS) monitoring will occur annually unless it is not detected or is detected below the PFAS screening level for New Mexico. If either of these scenarios occur, PFAS monitoring will cease. Benchmark constituents are monitored quarterly. Monitoring occurs when storm events result in an actual discharge from the site and follow the preceding measurable storm event by at least 72 hours (3 days), unless documented that the storm event is representative of local storm events during the sampling period. For runoff from snowmelt, the monitoring is performed at a time when a measurable discharge from the site occurs.

Monitoring is conducted according to test procedures approved under 40 CFR Part 136. Runoff samples are collected by taking a minimum of one grab sample from a discharge, collected within the first 30 minutes of a measurable storm event. If it is not possible to collect the sample within the first 30 minutes of a measurable storm event, the sample is collected as soon as practicable after the first 30 minutes and documentation is kept with the SWPPP explaining why it was not possible.

LANL is located in a high elevation, semi-arid climate where the majority of rainfall occurs during a period between July and September. Freezing conditions that would prevent runoff from occurring for extended periods may also occur during the winter

months. If adverse weather conditions prevent the collection of a sample according to the relevant monitoring schedule, a sample will be collected during the next qualifying storm event or as soon as practicable.

Monitoring occurs at automated sampling stations **MSGP03201** and **MSGP03901** TA-60 Roads and Grounds West as identified in Section 1.5. Discharge from the facility are to the east into Sandia Canyon (impaired waters) and west into Mortandad Canyon (impaired waters) which are tributaries of the Rio Grande located approximately 10 miles east of the facility.

Monitoring occurs at automated sampling stations **MSGP03701**, **MSGP03901** and **MSGP04201** TA-60 Roads and Grounds East as identified in Section 1.5. Discharge from the facility is to the east into Sandia Canyon (impaired waters) which is a tributary of the Rio Grande located approximately 10 miles east of the facility.

Monitoring occurs at automated sampling station **MSGP04301** TA-60 Asphalt Batch Plant as identified in Section 1.5. Discharge from the facility is to the west into Mortandad Canyon (impaired waters) which is a tributary of the Rio Grande located approximately 10 miles east of the facility.

For impaired waters pollutants monitoring is required annually in the first and fourth year of permit coverage. If any pollutant associated with the impairment is detected annual monitoring will continue.

If the impaired water or benchmark constituent value exceeds the New Mexico Water Quality criterion the Pollution Prevention Team will:

- Review the selection, design, installation, and implementation of control measures to determine if modifications are necessary to meet the effluent limits;
- Implement the necessary modifications within the timeframe specified for corrective action; and
- Continue benchmark or annual monitoring of the constituent (as required by Part 6.2 of the 2021 MSGP);

For each monitoring event, except snowmelt monitoring, the following information will be recorded and maintained through work orders, LANL database systems, and Discharge Monitoring Records:

- The date, exact place, and time of sampling or measurements;
- The date and duration (in hours) of the rainfall event
- Rainfall total (in inches) for that rainfall event
- The individual(s) who performed the sampling or measurements;
- The date(s) analyses were performed
- The individual(s) who performed the analyses;
- The analytical techniques or methods used; and
- The results of such analyses.

All records of monitoring information, including all calibration and maintenance records are maintained for a minimum period of at least three years from the date the permit expires.

LANL's applicable stormwater monitoring procedures can be found in the following attachments:

- EPC-CP-TP-2103, *Inspecting ISCO Stormwater Runoff Samplers and Retrieving Samples* (Attachment 19).
- EPC-CP-QP-2106, *Processing MSGP Stormwater Samples* (Attachment 20).

Section 4.7.1 Required Monitoring for 2021

TA-60 Roads and Grounds Facility

| Outfall | Monitoring Requirement | Industrial Sector | Assessment Unit | Analyte | Filtered/Unfiltered | Regulatory Standard | Units | Regulatory Standard Type | Regulatory Standard Reference |
|---------|--------------------------------|-------------------|----------------------------------|----------------------|---------------------|---------------------|-------|--------------------------|--------------------------------------|
| 031 | Impaired Waters | - | NM-9000.A_042 | Cu | F ¹ | RO | ug/L | - | - |
| | Impaired Waters | - | NM-9000.A_042 | Hg | UF | RO | ug/L | - | - |
| | Impaired Waters | - | NM-9000.A_042 | Adjusted Gross Alpha | UF | RO | pCi/L | | |
| | Impaired Water | - | NM-9000.A_042 | Total Aroclors | UF | RO | ug/L | - | - |
| | Indicator Parameters/Quarterly | P | COD, TSS and pH | | | | | | |
| | Quarterly Benchmark | P | No Benchmark Monitoring Required | | | | | | |
| 032 | Impaired Waters | - | NM-9000.A_047 | Al | F10u ² | RO | ug/L | - | - |
| | Impaired Waters | - | NM-9000.A_047 | Cu | F ² | RO | ug/L | - | - |
| | Impaired Waters | - | NM-9000.A_047 | Total Aroclors | UF | RO | ug/L | - | - |
| | Annual | - | - | PFOA+PFO S | UF | 0.07 | ug/L | - | NMR050013 MSGP 2021 Section 9.6.2.1- |
| | Indicator Parameters/Quarterly | P | COD, TSS and pH | | | | | | |
| | Quarterly Benchmark | P | No Benchmark Monitoring Required | | | | | | |

| Outfall | Monitoring Requirement | Industrial Sector | Assessment Unit | Analyte | Filtered/Unfiltered | Regulatory Standard | Units | Regulatory Standard Type | Regulatory Standard Reference |
|---------|--------------------------------|-------------------|----------------------------------|----------------|---------------------|---------------------|-------|--------------------------|-------------------------------|
| 037 | Impaired Waters | - | NM-9000.A_047 | Al | F10u | RO | ug/L | - | - |
| | Impaired Waters | - | NM-9000.A_047 | Cu | F ² | RO | ug/L | - | - |
| | Impaired Waters | - | NM-9000.A_047 | Total Aroclors | UF | RO | ug/L | - | - |
| | Indicator Parameters/Quarterly | P | COD, TSS and pH | | | | | | |
| | Quarterly Benchmark | P | No Benchmark Monitoring Required | | | | | | |
| 039 | Impaired Waters | - | NM-9000.A_047 | Total Aroclor | UF | 0.2 | ug/L | - | - |
| | Impaired Waters | - | NM-9000.A_047 | Al | F10u | 1010 | ug/L | - | - |
| | Impaired Waters | - | NM-9000.A_047 | Cu | F ² | 7 | ug/L | - | - |
| | Indicator Parameters/Quarterly | P | COD, TSS and pH | | | | | | |
| | Quarterly Benchmark | P | No Benchmark Monitoring Required | | | | | | |
| 042 | Impaired Waters | - | NM-9000.A_047 | Al | F10u | 1010 | ug/L | - | - |
| | Impaired Waters | - | NM-9000.A_047 | Cu | F | 7 | ug/L | - | - |
| | Impaired Waters | - | NM-9000.A_047 | Total Aroclor | UF | - | ug/L | - | - |
| | Indicator Parameters/Quarterly | P | COD, TSS and pH | | | | | | |
| | Quarterly Benchmark | P | No Benchmark Monitoring Required | | | | | | |

¹F - 0.45 µm filter; ²F10u – 10 µm filter; NM=New Mexico; Al=Aluminum; Cu=Copper; Hg=Mercury; COD=Chemical Oxygen Demand; TSS=Total Suspended Solids; RO=Report Only; ug/L=micrograms per Liter; mg/L=milligrams per Liter; PFOA=Perfluorooctanoic Acid; PFOS=Perfluorooctane Sulfonate; and pCi/L=Picocuries per Liter

TA-60 Asphalt Batch Plant

| Monitored Outfall | Monitoring Requirement | Industrial Sector | Assessment Unit | Analyte | Filtered/Unfiltered | Regulatory Standard | Units | Regulatory Standard Type | Regulatory Standard Reference |
|-------------------|---------------------------------|-------------------|-----------------|----------------------|---------------------|---------------------|-------|-----------------------------|-----------------------------------|
| 043 | Impaired Waters | - | NM-9000.A_042 | Cu | F ¹ | RO | ug/L | - | - |
| | Impaired Waters | - | NM-9000.A_042 | Hg | UF | RO | ug/L | - | - |
| | Impaired Water | - | NM-9000.A_042 | Total Aroclors | UF | RO | ug/L | - | - |
| | Impaired Waters | - | NM-9000.A_042 | Adjusted Gross Alpha | UF | RO | pCi/L | | |
| | Annual | - | - | PFOA+PFOS | UF | 0.07 | ug/L | - | |
| | Indicator Parameter/Quarterly | D | - | PAH | UF | RO | mg/L | - | |
| | Quarterly Benchmark | D | - | TSS | UF | 100 | mg/L | MSGP QBM 2021 | NMR050013 MSGP 2021 Sect. 9.6.2.2 |
| | Effluent Limitations Guidelines | D | - | TSS | UF | 23 | mg/L | MSGP ELG 2021 - Daily Max. | NMR050013 MSGP 2021 Sect. 8.D.5 |
| | Effluent Limitations Guidelines | D | - | TSS | UF | 15 | mg/L | MSGP ELG 2021 - 30-Day Avg. | NMR050013 MSGP 2021 Sect. 8.D.5 |
| | Effluent Limitations Guidelines | D | - | Oil and Grease | UF | 15 | mg/L | MSGP ELG 2021 - Daily Max. | NMR050013 MSGP 2021 Sect. 8.D.5 |
| | Effluent Limitations Guidelines | D | - | Oil and Grease | UF | 10 | mg/L | MSGP ELG 2021 - 30-Day Avg. | NMR050013 MSGP 2021 Sect. 8.D.5 |
| | Effluent Limitations Guidelines | D | - | pH | UF | 6-9 | SU | MSGP ELG 2021 | NMR050013 MSGP 2021 Sect. 8.D.5 |

¹F - 0.45 µm filter

NM=New Mexico

Cu=Copper

Hg=Mercury

RO=Report Only

ug/L=micrograms per Liter

mg/L=milligrams per Liter

PFOA=Perfluorooctanoic Acid

PFOS=Perfluorooctane Sulfonate; PAH=Polycyclic Aromatic Hydrocarbons and pCi/L=Picocuries per Liter

5.0 DOCUMENTATION FOR ELIGIBILITY CONSIDERATIONS UNDER OTHER FEDERAL LAWS

5.1 Endangered Species

The Final Site-Wide Environmental Impact Statement (EIS) for the Operation of Los Alamos National Laboratory (DOE/EIS-0380) was issued in May 2008, and a Record of Decision in September 2008. Stormwater issues and associated pollution prevention requirements and activities at LANL are analyzed in Chapters 4 and 5 of the 2008 Site-Wide EIS. These activities are integrated into environmental reviews on a project-specific level through LANL's Integrated Review Tool (IRT), which incorporates both the Excavation Permit (EX-ID) and Permit Requirements Identification (PR-ID) process. Stormwater issues are identified and pollution prevention activities are implemented during the design and construction phases of all LANL projects, and as part of facility operations, including routine maintenance. LANL staff monitors stormwater pollution prevention compliance at MSGP sites in accordance with Section 4.7 *Monitoring* of this plan. Corrective actions are taken as necessary as described in Section 6.0 *Corrective Actions and Deadlines* of this plan.

Part 2.3 of the 2021 MSGP requires areas of designated critical habitat for endangered or threatened species, as applicable, be included in the SWPPP. The *Threatened and Endangered Species Habitat Management Plan for Los Alamos National Laboratory* (LA-UR-17-29454) was last updated in October 2017 (see Attachment 13). This document provides a management strategy for the protection of threatened and endangered species and their habitats on LANL property. The MSGP IPaC Trust Resource Report (see Attachment 14) is also attached for informational purposes.

5.2 Historic Properties

In April 2021, August 2015, and December 2008, the Cultural Resources Team (using GPS spatial data as well as conducting visual inspections), reviewed the Laboratory industrial sites (see list below) and their associated outfalls and monitoring stations subject to the 2021 Multi-Sector General Permit (Permit #NMR050013) for effects on historic properties. All of these sites were found to be undertakings of no effect and in compliance with Section 106 of the National Historic Preservation Act (i.e., Criterion B).

- TA-3-38 Metals Fabrication Shop
- TA-09-0214 Metals Fabrication Shop
- TA-16 Stockpile Area
- TA-60 Asphalt Batch Plant
- TA-60-1 Heavy Equipment Yard
- TA-60 Material Recycle Facility
- TA-60 Roads and Grounds
- TA-60-2 Warehouse

6.0 CORRECTIVE ACTIONS AND DEADLINES

When any of the following conditions occur or are detected during an inspection, Level 1, 2, or 3 additional implementation measures (AIM) monitoring, or any other means, this SWPPP (e.g., sources of pollution; spill and leak procedures; non-stormwater discharges; the selection, design, installation and implementation of control measures) is reviewed and revised (as appropriate).

- An unauthorized release or discharge (e.g., spill, leak, or discharge of non-stormwater not authorized by this or another NPDES permit to a water of the U.S.) occurs at the facility;
- A discharge violates a numeric effluent limit;
- Stormwater control measures are not stringent enough for stormwater discharge to be controlled as necessary such that the receiving water of the United States will meet applicable water quality standards or to meet the non-numeric effluent limits in the permit;
- An inspection identifies that a required control measure was never installed, was installed incorrectly or is not being properly operated or maintained; and
- Whenever a visual assessment shows evidence of stormwater pollution.

The purpose is to ensure effluent limits of the 2021 MSGP permit are met and pollutant discharges are minimized.

When any of the following conditions occur, a review of the selection, design, installation, and implementation of control measures is performed to determine if modifications are necessary to meet the effluent limits in this permit:

- Construction or a change in design, operation, or maintenance at the facility significantly changes the nature of pollutants discharged in stormwater from the facility, or significantly increases the quantity of pollutants discharged; or
- The average of 4 quarterly sampling results exceeds an applicable benchmark. If less than 4 benchmark samples have been taken, but the results are such that an exceedance of the 4 quarter average is mathematically certain (i.e., if the sum of quarterly sample results to date is more than 4 times the benchmark level) this is considered a benchmark exceedance, triggering this review (see Section 4.7); or
- If an impaired water constituent exceeds the NM Water Quality criterion (see Section 4.7).

If any of the AIM triggering events (i.e., an annual average exceeds an applicable benchmark threshold) in Parts 5.2.3, 5.2.4, or 5.2.5 occur, PPT members must follow the response procedures described in those parts. An annual average exceedance for a benchmark parameter can occur if:

- 1) The four-quarter annual average for a parameter exceeds the benchmark threshold; or

2) Fewer than four quarterly samples are collected, but a single sample or the sum of any sample results within the sampling year exceeds the benchmark threshold by more than four times for a parameter.

There are three AIM levels: AIM Level 1, Level 2, and Level 3. PPT members must respond, as required, to different AIM levels which prescribe sequential and increasingly robust responses when a benchmark exceedance occurs. The corresponding AIM level responses and deadlines described in Parts 5.2.3.1, 5.2.3.2, 5.2.4.1, 5.2.4.2, 5.2.5.1 and 5.2.5.2 must be followed unless the facility qualifies for an exception under Part 5.2.6.

When the review identifies the need to modify the SWPPP, it will be revised within 14 calendar days of completion of the associated condition requiring corrective action.

6.1 Immediate Actions

When a condition requiring corrective action is identified, all reasonable steps necessary to minimize or prevent the discharge of pollutants are immediately taken (i.e. spill clean-up, scheduling repairs) until a permanent solution (if needed) can be implemented. Immediate action means all reasonable steps are taken the same workday or no later than the following workday (when it is too late in the day to take corrective action).

6.2 Subsequent Actions

When additional corrective actions are required (e.g. installing or making operational a new or modified control, completing repairs, ordering BMPs) they will be completed by the next storm event, if possible, or within 14 calendar days (from initial discovery). When it is determined that it is infeasible to complete corrective actions within 14 days, documentation of infeasibility and a schedule for completion of the work is documented in the CAR database, which will be completed no later than 45 days (from initial discovery). When it is determined that corrective actions will exceed 45 days, EPA is notified and provided justification of why actions will exceed the timeframe; and a minimal amount of additional time to complete the work may be approved.

6.3 AIM baseline Status and Triggering Events

Once the facility is authorized to discharge under the MSGP, it is considered to be in a baseline status for all applicable benchmark parameters required by that facility to be monitored. If an AIM triggering event occurs, the facility may return directly to baseline status once the corresponding AIM-level response and conditions are met.

6.3.1 AIM Level 1

When an annual average exceeds an applicable benchmark threshold, the PPT must immediately review the MSGP SWPPP and the selection, design, installation, and implementation of stormwater control measures to ensure the effectiveness of existing

measures and determine if modifications are necessary to meet the benchmark threshold for the parameter that exceeded.

Note: An AIM triggering event is outfall and parameter specific. After reviewing the SWPPP, additional measures, considering good engineering practices, will be implemented, that will reasonably be expected to bring the exceedance below the parameter's benchmark threshold.

Note: If it is determined that nothing further is required to bring the exceedance below the parameter's benchmark threshold for the next 12-month period, document this in the MSGP CAR database.

All modifications and additional control measures required in response to AIM Level 1 will be implemented within 14 days of identification of an AIM Level 1 exceedance. If doing so within 14 days is infeasible, documentation is entered into the MSGP CAR database as to why it is infeasible. Completion of the response must occur within 45 days.

Note: There is no provision in the 2021 MSGP for exceeding the 45-day time frame for response to AIM Level 1."

An additional four quarters of Benchmark monitoring will occur at the outfall where the parameter exceeded the benchmark threshold for AIM Level 1. This monitoring will begin no later than the next full quarter after all responses and deadlines required by AIM Level 1 have been completed. After four quarters of monitoring, the parameter will either return to baseline (see Section 6.3) if it does not exceed the same benchmark threshold or, another annual average exceeds the benchmark threshold causing the facility to move to AIM Level 2.

6.3.2 AIM Level

When a second benchmark threshold exceedance occurs at an outfall, the PPT will review the SWPPP and implement additional pollution prevention/good housekeeping SCMs, (considering good engineering practices), beyond those implemented in response to AIM Level 1.

Additional control measures required in response to AIM Level 2 will be implemented within 14 days of identification of the AIM Level 2 exceedance. If it is feasible to implement a measure, but not within 14 days, facility personnel may take up to 45 days to implement the measure. In this case, documentation will be entered into the MSGP CAR database identifying why it was infeasible to implement the control measure within 14 days. EPA may grant an extension beyond 45 days, based on an appropriate demonstration by the operator.

An additional four quarters of benchmark monitoring will occur at the outfall where the parameter exceeded the benchmark threshold for AIM Level 2. This monitoring will begin no later than the next full quarter after all responses and deadlines required by AIM Level 2 have been completed. After four quarters of monitoring, the parameter will either return to baseline (see Section 6.3) if it does not exceed the same benchmark threshold or, the parameter continues to exceed the benchmark threshold causing the facility to move to AIM Level 3.

6.3.3 AIM Level 3

When a third benchmark threshold exceedance occurs at an outfall, facility personnel will install structural source controls (e.g., permanent controls such as permanent cover, berms, and secondary containment), and/or treatment controls (e.g., sand filters, hydrodynamic separators, oil-water separators, retention ponds, and infiltration structures). The controls, treatment technologies, or treatment train installed will be appropriate for the pollutant that triggered AIM Level 3, will be sufficient to bring the exceedance below the benchmark threshold and, will be more rigorous than the SCMs implemented under AIM Level 2. These controls will be installed for the outfall that exceeded the benchmark threshold and SIDPs, unless monitoring of the SIDPs demonstrates AIM Level 3 requirements are not triggered at those discharge points.

A schedule for installing the structural source and/or treatment stormwater control measures will be identified and documented in the MSGP CAR database within 14 days. Control measures in response to AIM Level 3 will be installed within 60 days unless it is not feasible to install them within 60 days. In this case, up to 90 days can be taken provided justification identifying why it is infeasible to install the measure within 60 days is documented in the MSGP CAR database. EPA may grant an extension beyond 90 days, based on an appropriate demonstration by the operator.

An additional four quarters of benchmark monitoring will occur at the outfall where the parameter exceeded the benchmark threshold for AIM Level 3. This monitoring will begin no later than the next full quarter after all responses and deadlines required by AIM Level 3 have been completed. After four quarters of monitoring, the parameter will either return to baseline (see Section 6.3) if it does not exceed the same benchmark threshold or, the facility will remain in AIM Level 3 and EPA may require the facility to apply for an individual permit.

6.3.4 AIM Exceptions

Any AIM Level exceedance may qualify for an exception from specific AIM requirements and continued benchmark monitoring after four quarters of monitoring, provided the requirements to demonstrate qualification of the exception are followed (see Parts 5.2.6.1 through 5.2.6.5 of the permit). These exceptions include the following for benchmark exceedances:

- 1) Solely attributable to natural background pollutant levels;
- 2) Due to run-on;
- 3) Due to an abnormal event;
- 4) Demonstrated to not result in an exceedance of facility-specific value using the national recommended water quality criteria in-lieu of the applicable MSGP benchmark threshold (for aluminum and copper benchmark parameters only); or
- 5) Demonstrated to not result in any exceedance of water quality standards.

Note: There are very specific and complicated documentation requirements and time frames that have to be met to qualify for any of these exceptions. Therefore, any demonstration to qualify for an exception will be coordinated through a representative of the EPC-CP Storm Water Permitting/Compliance Team.

6.4 Corrective Actions and AIM Documentation

Upon discovery, conditions requiring corrective action are documented by the DEP or EPC-CP on a Routine Facility Inspection Form and/or entered into the CAR database. The action will be kept open in the database until the issue has been resolved. Documentation of maintenance and repairs of stormwater control measures (BMPs) will be kept in Attachment 10 of this SWPPP. Where corrective actions result in changes to procedures or controls documented in this SWPPP, modifications to the SWPPP are made accordingly within 14 calendar days of completing the corrective action(s). LANL procedure EPC-CP-QP-022, *MSGP Corrective Actions* can be found in Attachment 17.

Any AIM Level triggering event will conform to the requirements and time frames provided in Sections 6.3 and 6.3.1 through 6.3.4.

7.0 ACRONYMS

| | |
|--------|--|
| AIM | Additional Implementation Measures |
| BMP | Best Management Practice |
| CAR | Corrective Action Report |
| DEP | Deployed Environmental Professional |
| DOE | Department of Energy |
| EIS | Environmental Impact Statement |
| ELG | Effluent Limitation Guidelines |
| EMD-ER | Emergency Management Division-Emergency Response |
| EPA | Environmental Protection Agency |

| | |
|------------------------|---|
| EPC-CP | Environmental Protection and Compliance – Compliance Programs |
| FOD | Facility Operations Division |
| IPaC | Information for Planning and Consultation |
| LANL or the Laboratory | Los Alamos National Laboratory |
| MSGP or Permit | Multi-Sector General Permit |
| NOI | Notice of Intent |
| NPDES | National Pollutant Discharge Elimination System |
| OUO | Official Use Only |
| PPT | Pollution Prevention Team |
| SCM | Stormwater Control Measure |
| SIDP | Substantially Identical Discharge Points |
| SWPPP | Stormwater Pollution Prevention Plan |
| URL | Uniform Resource Locator |

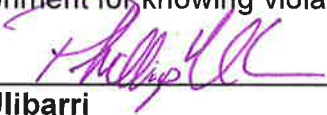
8.0 SWPPP CERTIFICATION

STORMWATER POLLUTION PREVENTION PLAN
TA-60 Roads and Grounds Facility, Sigma Mesa Staging Areas, and Asphalt
Batch Plant
Los Alamos National Laboratory

CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature



Date

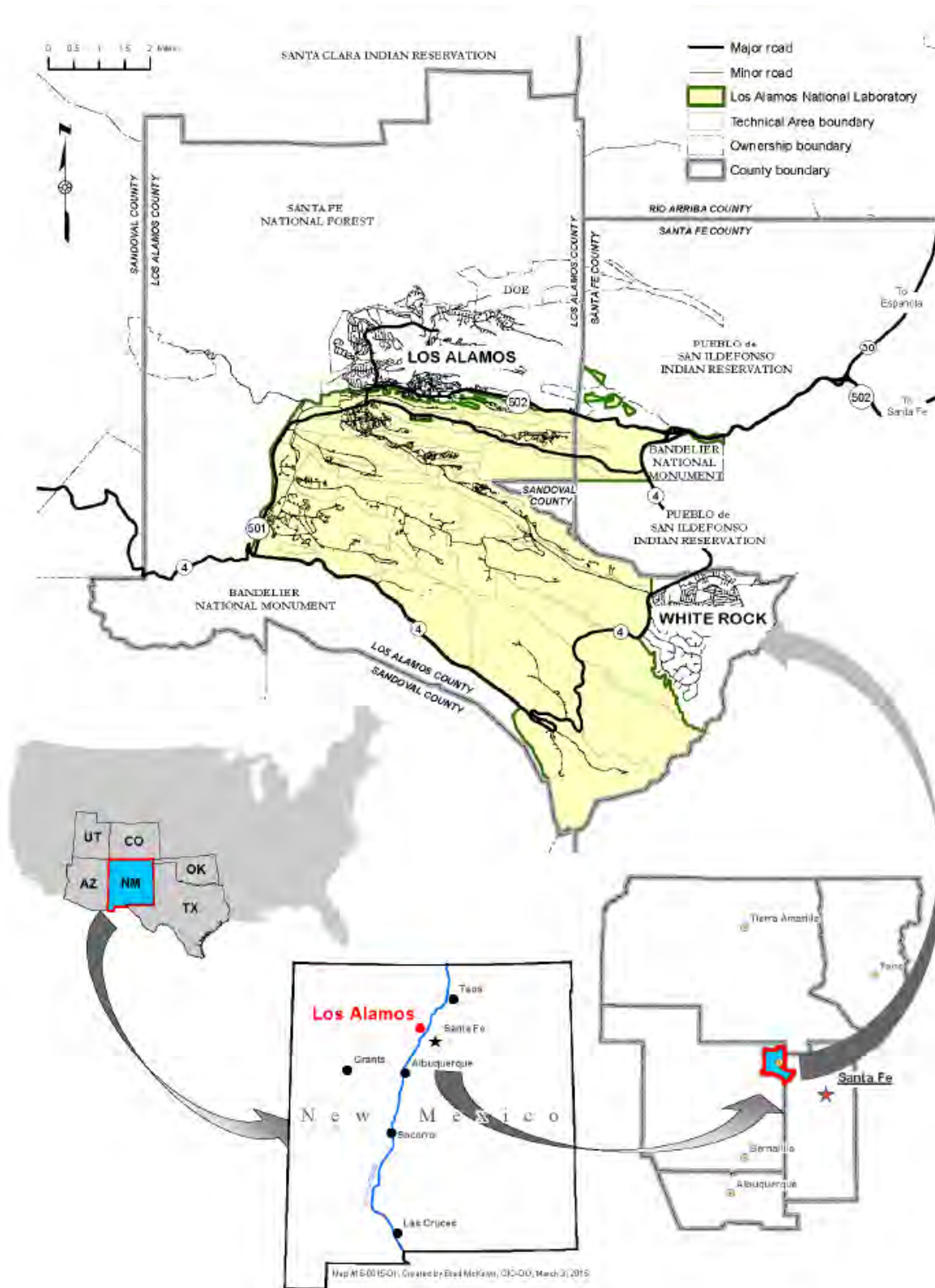
5/19/2021

Phillip E. Ulibarri

Operations Manager 3

Utilities and Institutional Operations, UI-OPS

FIGURE A: GENERAL LOCATION MAP



FIGURES B-1 TO B-4: FACILITY SITE MAPS

TA-60 ROADS AND GROUNDS WEST SITE MAP

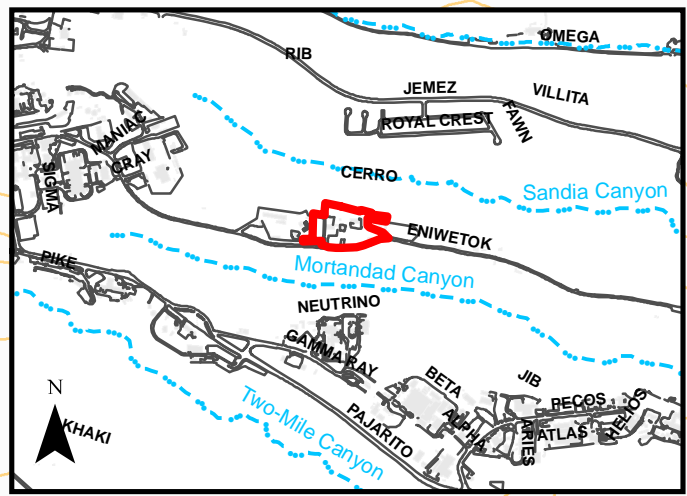
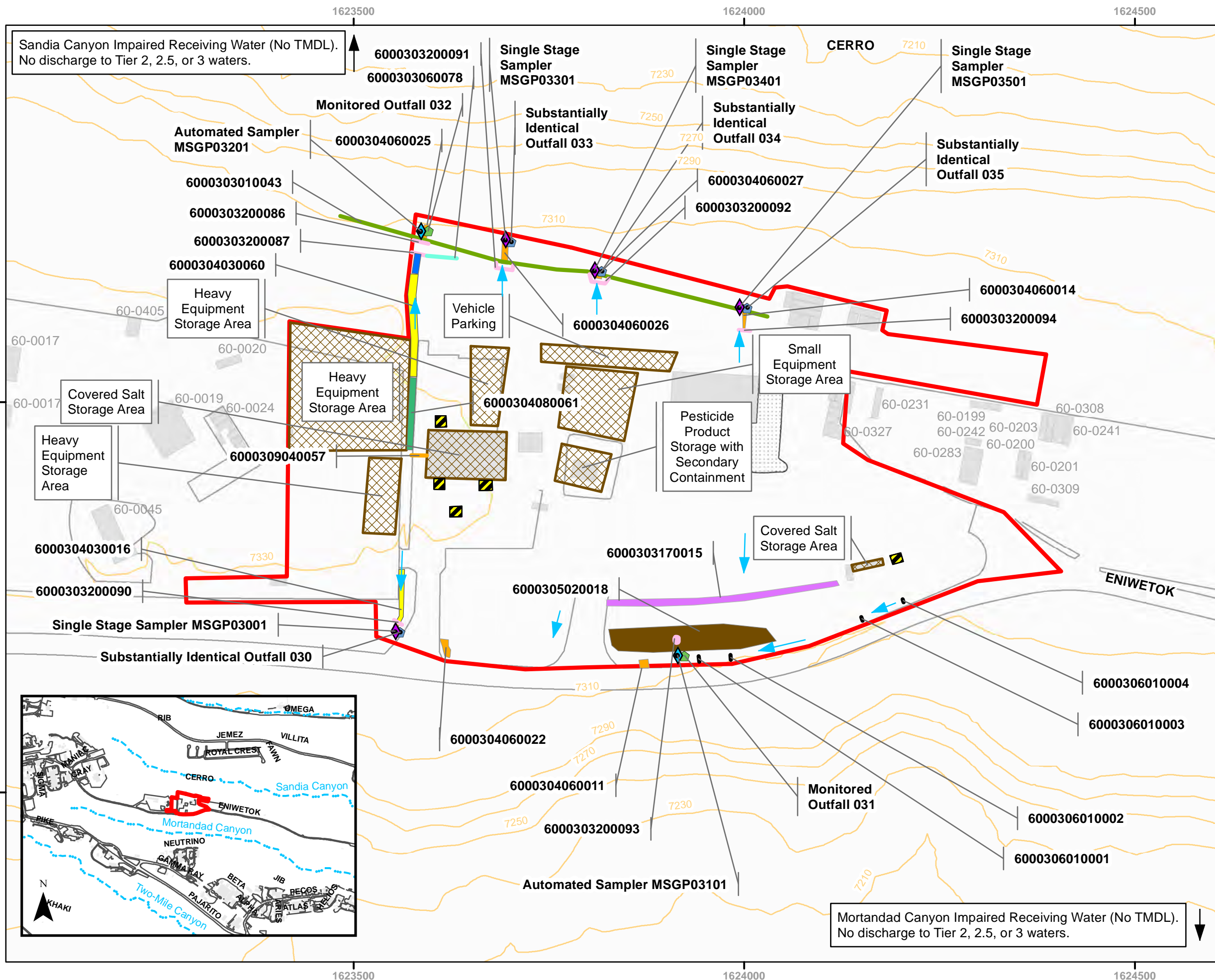
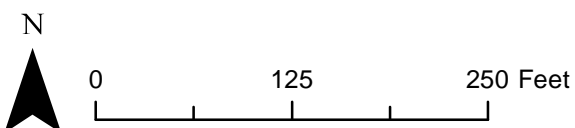
- Automated Sampler
- Single Stage Samplers
- Monitored Outfall
- Substantially Identical Outfall
- Rock Check Dam
- Straw Wattle
- Trench Drain
- EnviroSoxx w/ MetalLoxx
- Earthen Berm
- Asphalt Berm
- Culvert
- Drainage
- Paved Roads
- 10 ft Contour
- Boundary of Industrial Activity
- Jersey Barrier
- Rip Rap
- Rock Channel/Swale
- Sediment Basin
- TRM-Lined Swale
- Industrial Activity Areas
- Loading/Unloading Areas
- LANL Structures
- Paved Parking
- Flow Direction

8.6 Acres, 65% Impervious Surface.
Note - No Critical Habitat Areas.

Map number: 16-0015-TA-60 Roads and Grounds West
Map created by: Ben Sutter, IFPROG
Updated: March 29, 2021
Version 11

New Mexico State Plane Coordinate System Central Zone (3002)
North American Datum, 1983 (NAD 83)
US Survey Ft

DISCLAIMER: This map was created for work processes associated with the Multi-Sector General Permit. All other uses for this map should be confirmed with LANL EPC-CP staff.



TA-60 ROADS AND GROUNDS EAST SITE MAP

Legend

- Single Stage Samplers
- Substantially Identical Outfall
- Automated Sampler
- Monitored Outfall
- Drainage
- EnviroSoxx w/ MetalLoxx
- Earthen Berm
- Industrial Activity Areas
- 50 ft Vegetated Buffer Strip
- Rip Rap
- Rock Channel/Swale
- Sediment Basin
- Boundary of Industrial Activity
- Paved Roads
- LANL Structures
- 10 ft Contour
- LANL_Vector.ER.PLAN_lanlarea_ply
- Flow Direction
- Runon

11.2 Acres, <1% Impervious Surface.
Note - All Areas Within Developed
Buffer Mexican Spotted Owl Habitat

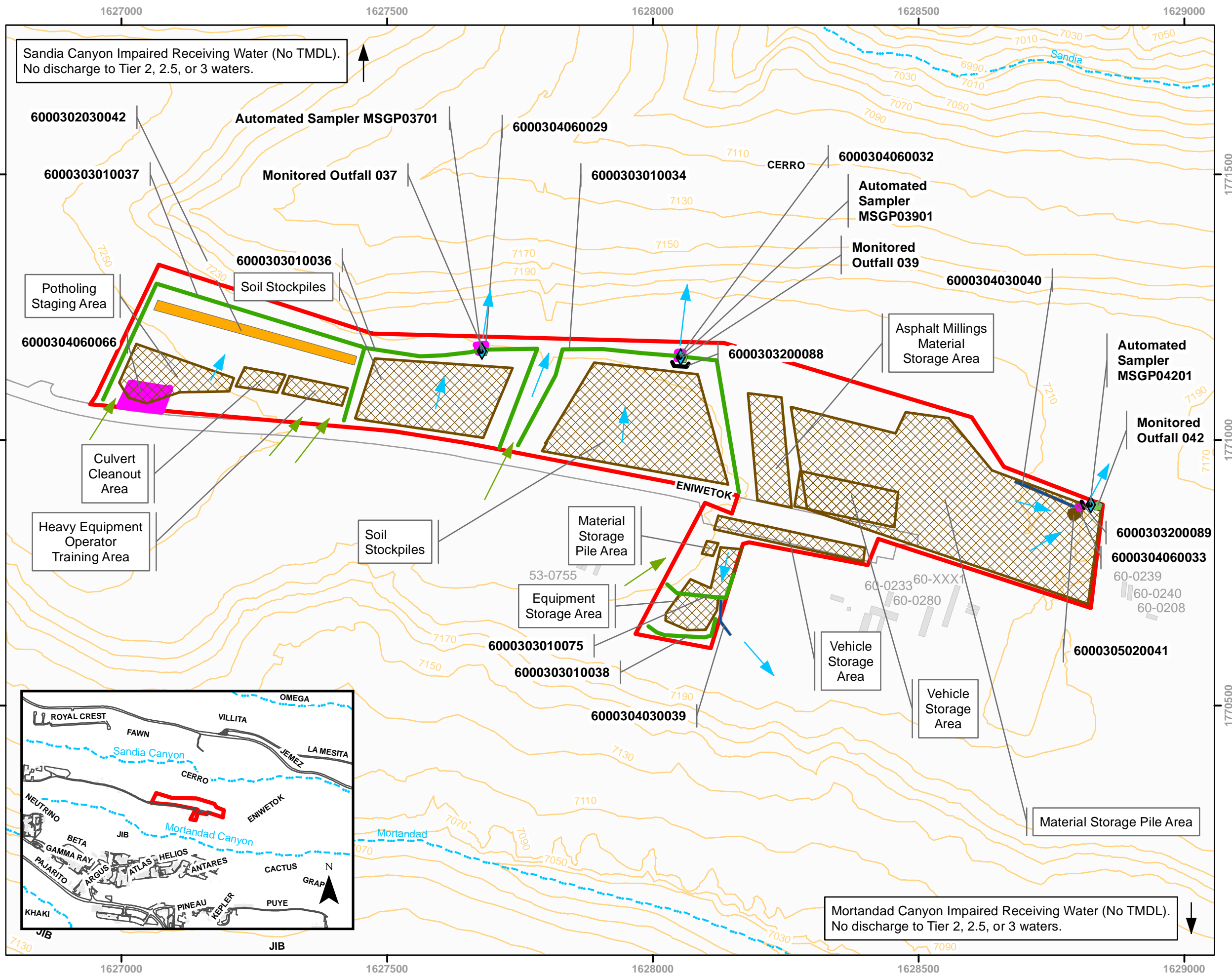
Map number: 16-0015-TA-60 Roads and Grounds East
Map created by: Ben Sutter, IFPROG
Date: March 29, 2021
Version 10

New Mexico State Plane Coordinate System Central Zone (3002)
North American Datum, 1983 (NAD 83)
US Survey Ft

DISCLAIMER: This map was created for work processes associated
with the Multi-Sector General Permit. All other uses for this map
should be confirmed with LANL EPC-CP staff.

N

0 175 350 Feet



TA-61
ASPHALT MILLINGS STAGING AREA
SITE MAP

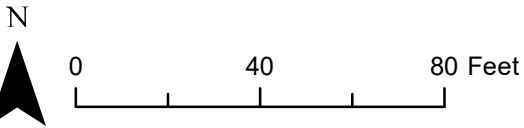
- Asphalt Berm
- Drainage
- Boundary of Industrial Activity
- Industrial Activity Areas
- Flow Direction

0.58 Acres, 100% Impervious Surface.
Note - No Critical Habitat Areas.

Map number: 16-0015-TA-61 Asphalt Millings Staging Area
Map created by: Ben Sutter, IFPROG
Date: January 23, 2019
Version 2

New Mexico State Plane Coordinate System Central Zone
(3002)
North American Datum, 1983 (NAD 83)
US Survey Ft

DISCLAIMER: This map was created for work processes
associated with the Multi-Sector General Permit. All other uses
for this map should be confirmed with LANL EPC-CP staff.



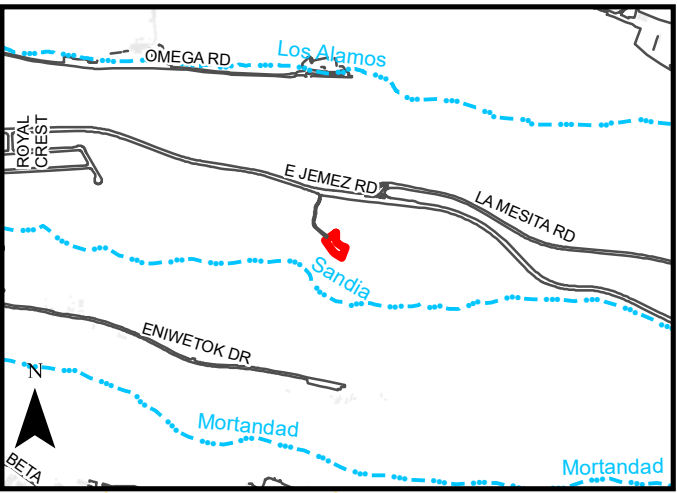
Sandia Canyon Impaired Receiving Water (No TMDL).
No discharge to Tier 2, 2.5, or 3 waters.

Asphalt Milling
Material Storage Area

6000303040052

6000303040062

Access Road



**TA-60
ASPHALT BATCH PLANT
SITE MAP**

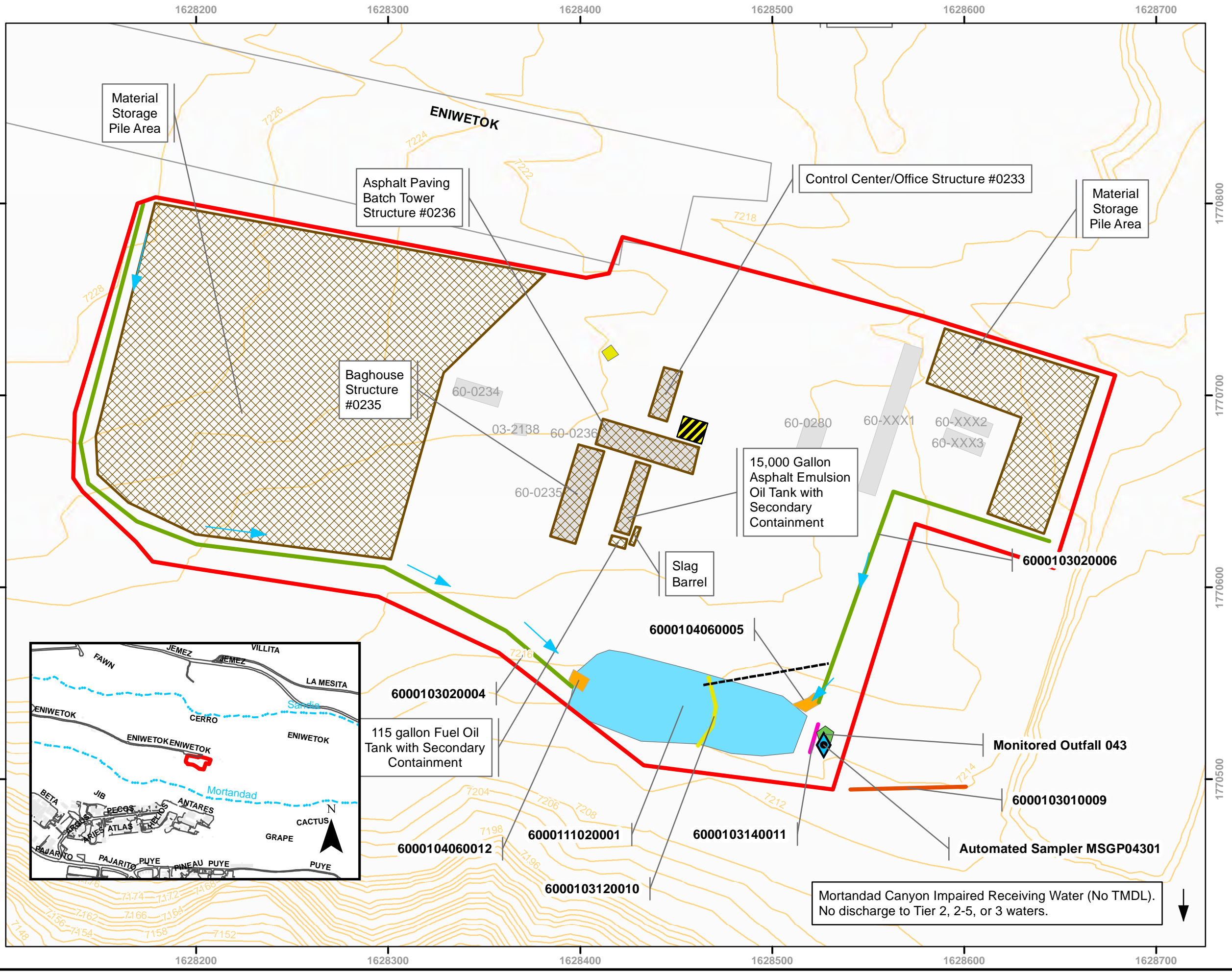
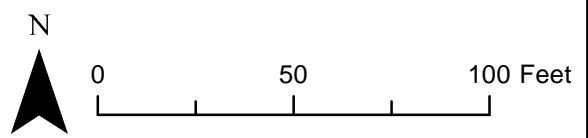
- Automated Sampler
- Monitored Outfall
- Base Course Berm
- Earthen Berm
- Rock Berm
- Rock Check Dam
- Core Log
- Drainage
- Paved Roads
- 2 ft Contour
- Boundary of Industrial Activity
- Detention Pond
- Rip Rap
- Industrial Activity Areas
- Loading/Unloading Areas
- Dumpster
- LANL Structures
- Culvert
- Flow Direction

2.3 Acres, 4% Impervious Surface.
Note - No Critical Habitat Areas.

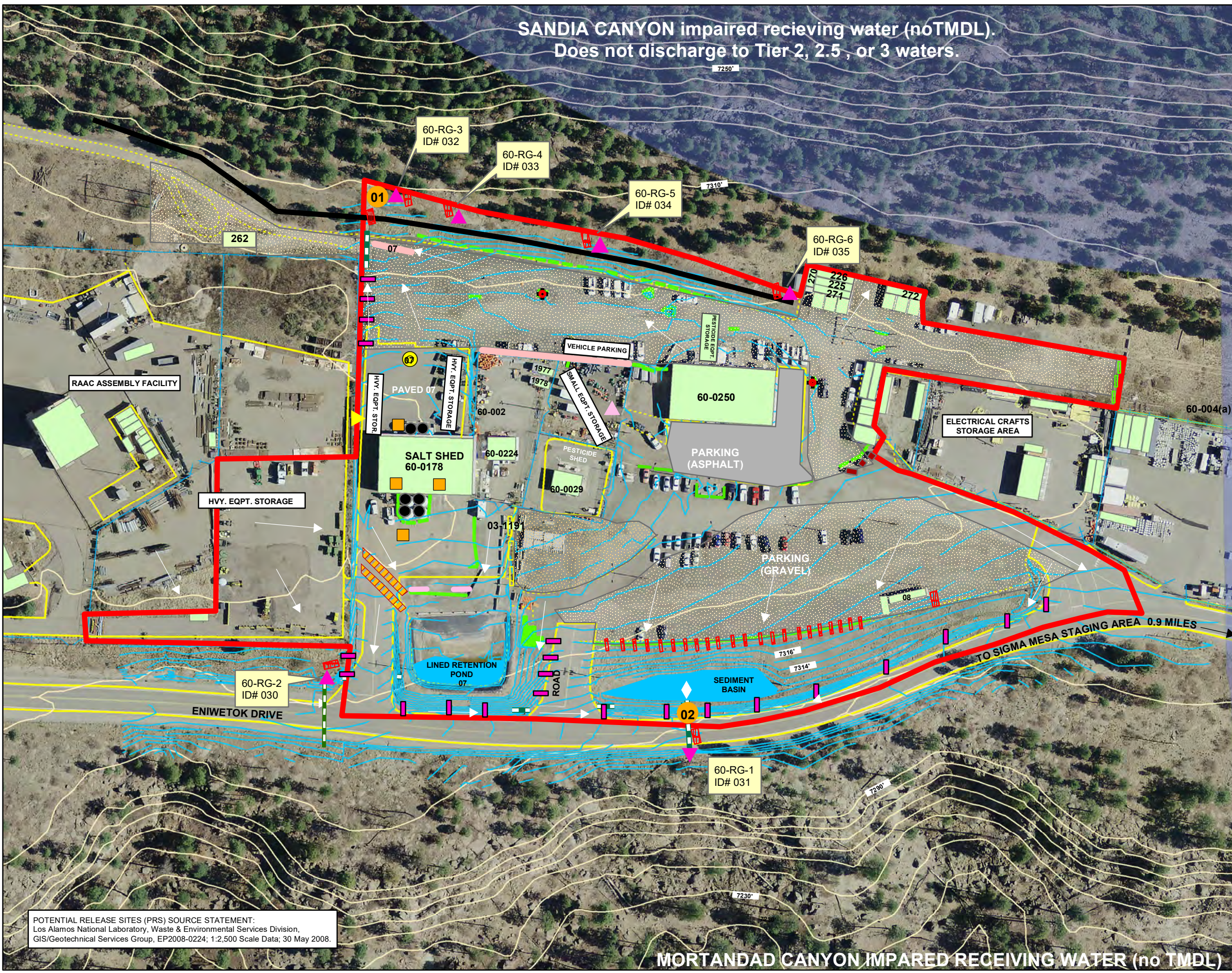
Map number: 16-0015-TA-60 Asphalt Batch Plant
Map created by: Ben Sutter, IFPROG
Date: December 15, 2020
Version 5

New Mexico State Plane Coordinate System Central Zone (3002)
North American Datum, 1983 (NAD 83)
US Survey Ft

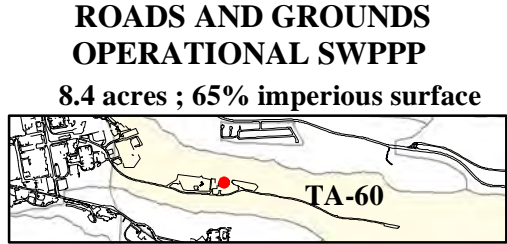
DISCLAIMER: This map was created for work processes associated with the Multi-Sector General Permit. All other uses for this map should be confirmed with LANL EPC-CP staff.



FIGURES B-5 TO B-8: NEARBY RECEIVING WATERS



SANDIA CANYON impaired receiving water (noTMDL).
Does not discharge to Tier 2, 2.5 , or 3 waters.



**ROADS AND GROUNDS
OPERATIONAL SWPPP**
8.4 acres ; 65% impervious surface

LEGEND

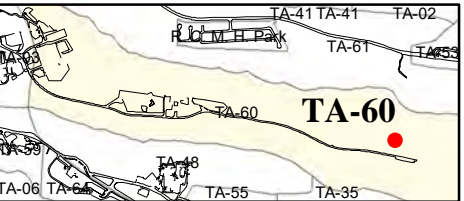
- DRAINAGE PATTERN
- DIRECTION OF FLOW
- 6-SNOW TRT. MIX TANKS
- PRS
- FIRE HYDRANTS
- FLAMMABLE CONTAINMENT
- STAND PIPE
- DISCHARGE PTS.
- MSGP SAMPLER (E123.4)
- MSGP SAMPLER
- BASE COURSE BERM
- FACILITY BOUNDARY
- MANHOLE
- RUN ON POINT
- PAVED ROADS (ASPHALT)
- FENCES
- 20 FT CONTOURS
- DRAIN PIPE
- CULVERT
- JERSEY BARRIER
- WATTLE (S)
- LOADING AREAS
- SPEED BUMP BERMS
- STRUCTURES
- ROCK CHECK DAM
- GRAVEL
- ROCK RUN DOWN
- DUMPSTER
- DEVELOPED BUFFER
MEXICAN SPOTTED
OWL HABITAT

POTENTIAL RELEASE SITES (PRS) SOURCE STATEMENT:
Los Alamos National Laboratory, Waste & Environmental Services Division,
GIS/Geotechnical Services Group, EP2008-0224; 1:2,500 Scale Data; 30 May 2008.

SANDIA CANYON impaired receiving water (noTMDL).
Does not discharge to Tier 2, 2.5 , or 3 waters.

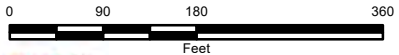
ROADS AND GROUNDS OPERATIONAL
SWPPP SIGMA MESA STAGING AREA

10.55 acres, <1% impervious surface



LEGEND

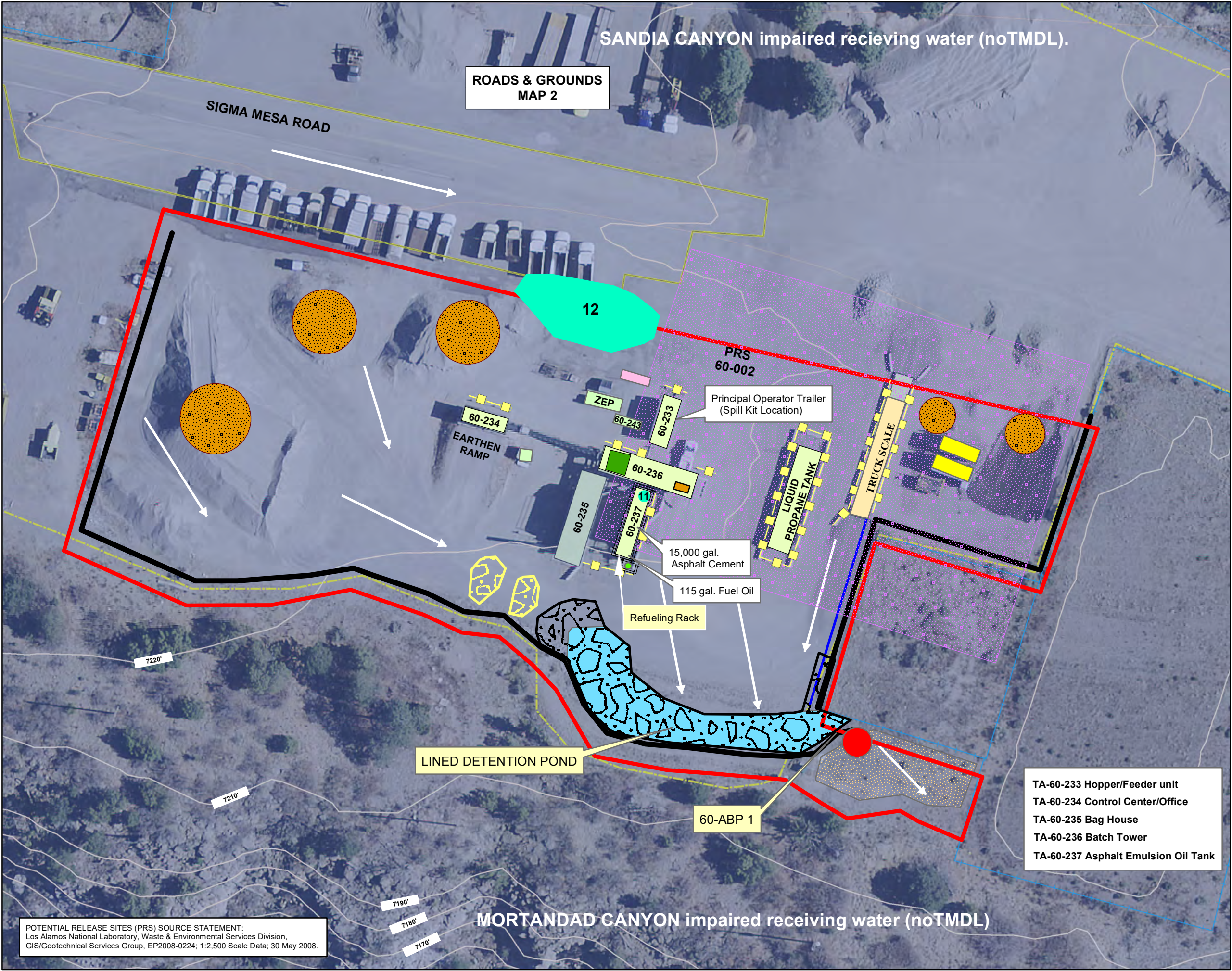
- CONSTRUCTION MATERIAL PILE
- MSGP SAMPLER
- SPILL
- RUN ON POINT
- VEHICLE STORAGE
- FENCE
- DIRECTION OF FLOW
- EQUIPMENT STORAGE
- EARTHEN BERM
- SIGMA MESA STAGING AREA BOUNDARY
- PAVED ROAD
- 20 FT CONTOURS
- WATTLE
- 50' WIDE VEGETATIVE BUFFER STRIP
- DRAIN PIPE
- CLEAN FILL PILE
- SHED
- GRAVEL
- PRS
- OUT FALL
- ROCK RUN DOWN
- WEIR
- ASPHLAT MILLING STAGING AREA
- DEVELOPED BUFFER MEXICAN SPOTTED OWL HABITAT



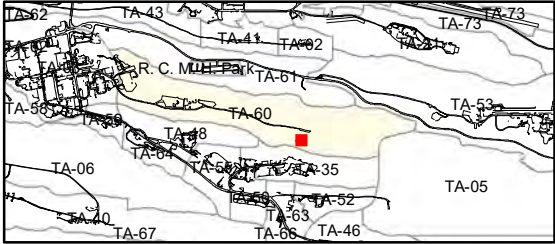
U07001.rev1

POTENTIAL RELEASE SITES (PRS) SOURCE STATEMENT:
Los Alamos National Laboratory, Waste & Environmental Services Division,
GIS/Geotechnical Services Group, EP2008-0224; 1:2,500 Scale Data; 30 May 2008.

MORTANDAD CANYON IMPAIRED RECEIVING WATER (no TMDL)



**ASPHALT BATCH PLANT
OPERATIONAL SWPPP
2.3 acres, <1% impervious surface
TA-60**



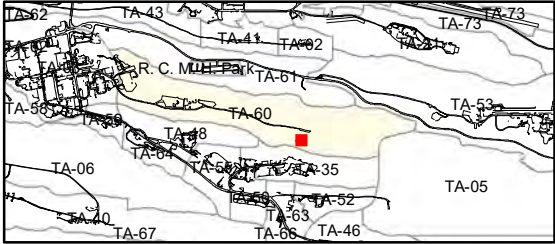
LEGEND

- CONSTRUCTION MATERIAL PILE
- SPILL (YEAR)
- MSGP SAMPLER E200.5
- SLAG BARREL
- DRAINAGE PATTERN
- DIRECTION OF FLOW
- BASE COURSE BERM
- BOUNDARY
- PAVED ROADS
- DIRT ROADS
- FENCES
- CONTOUR LINES
- DITCH
- JERSEY BARRIER
- SECONDARY CONTAINMENT
- LOADING AREA
- PRS/SWMU
- CHECK DAM
- RIPRAP
- STORAGE TRAILER
- STRUCTURES
- DUMPSTER
- BASE COURSE
- PROCESSED ASPHALT AREA
- DEVELOPED BUFFER
- MEXICAN SPOTTED OWL HABITAT

POTENTIAL RELEASE SITES (PRS) SOURCE STATEMENT:
Los Alamos National Laboratory, Waste & Environmental Services Division,
GIS/Geotechnical Services Group, EP2008-0224; 1:2,500 Scale Data; 30 May 2008.

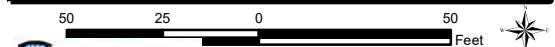
SANDIA CANYON impaired receiving water (noTMDL).
Does not discharge to Tier 2, 2.5, or 3 waters.

**ASPHALT BATCH PLANT
OPERATIONAL SWPPP**
2.3 acres, <4% impervious surface
TA-60



LEGEND

- CONSTRUCTION MATERIAL PILE
- SPILL (YEAR)
- MSGP SAMPLER E200.5
- SLAG BARREL
- DRAINAGE PATTERN
- DIRECTION OF FLOW
- BASE COURSE BERM
- BOUNDARY
- PAVED ROADS
- DIRT ROADS
- FENCES
- CONTOUR LINES
- DITCH
- JERSEY BARRIER
- SECONDARY CONTAINMENT
- LOADING AREA
- PRS/SWMU
- CHECK DAM
- RIPRAP
- STORAGE TRAILER
- STRUCTURES
- DUMPSTER
- BASE COURSE
- PROCESSED ASPHALT AREA
- DEVELOPED BUFFER
- MEXICAN SPOTTED OWL HABITAT



SIGMA MESA ROAD

12

PRS
60-002

Principal Operator Trailer
(Spill Kit Location)

EARTHEN
RAMP

60-234

ZEP

60-243

60-233

60-236

60-235

60-237

15,000 gal.
Asphalt Cement

115 gal. Heating Oil

Refueling Rack

LIQUID
PROPANE TANK

TRUCK SCALE

LINED RETENTION POND

60-ABP 1
ID# 043

Significant Structure

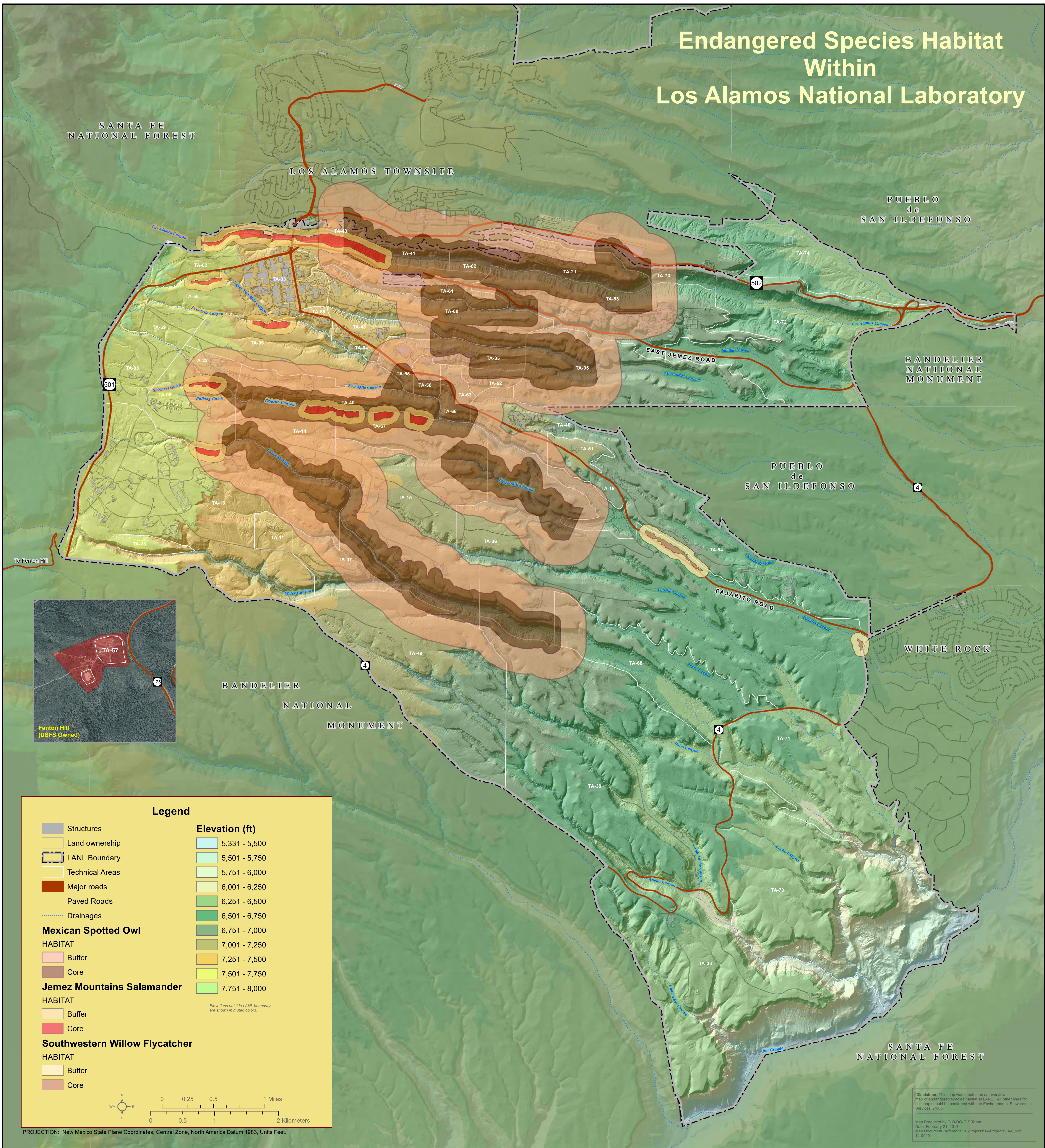
- TA-60-233 Hopper/Feeder unit
- TA-60-234 Control Center/Office
- TA-60-235 Bag House
- TA-60-236 Batch Tower
- TA-60-237 Asphalt Emulsion Oil Tank

MORTANDAD CANYON impaired receiving water (noTMDL)

POTENTIAL RELEASE SITES (PRS) SOURCE STATEMENT:
Los Alamos National Laboratory, Waste & Environmental Services Division,
GIS/Geotechnical Services Group, EP2008-0224; 1:2,500 Scale Data; 30 May 2008.

FIGURE B-9: LANL ENDANGERED SPECIES MAP

Endangered Species Habitat Within Los Alamos National Laboratory




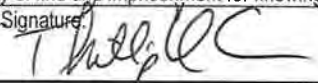
ATTACHMENT 1: NOTICE OF INTENT, SUPPORTING DOCUMENTATION, AND UPDATES

ATTACHMENT 2: SWPPP AMENDMENTS

| Date | Plan Section | Reason for Amendment | Amendment |
|----------|--------------|---|--|
| Jan 2019 | All | New MSGP Plan for new Laboratory Contract | New MSGP Plan for Triad, LLC (replacing LANS LLC) |
| Jan 2020 | All | Implementation of the new SWPPP template as required by EPC-CP-QP-2110, MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance. Also included all inspections, assessments and reports required for the yearly update. | Inserted new template language to standardize all MSGP SWPPPs and inserted all required documentation for the yearly revision. |
| Jan 2021 | All | To include all inspections, assessments, and reports required for yearly update. | Insert all required documentation for the yearly revision. |
| May 2021 | All | The 2021 MSGP was published on January 15, 2021, and became effective on March 1, 2021. The new permit requires a SWPPP update. | Plan was reviewed to reflect new permit requirements. |

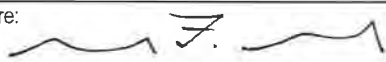
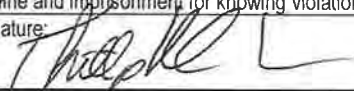
ATTACHMENT 3: CERTIFICATION OF NO UNAUTHORIZED STORMWATER DISCHARGES

Unauthorized Non-Storm Water Discharge Assessment and Certification

| | | | |
|---|--|---|--|
| Facility: | TA-60 Roads and Grounds | | |
| Outfalls (including SIOs*) or Other Onsite Drainage Points Observed During the Assessment | Identified Potential Sources of Unauthorized Non-Storm Water Discharge (if applicable) | Description of Assessment Criterion Used | Describe any Required Actions to Control or Eliminate the Discharge |
| Monitored Outfall 031 | None | Visual evaluation | None |
| Monitored Outfall 032 | None | Visual evaluation | None |
| Monitored Outfall 037 | None | Visual evaluation | None |
| Monitored Outfall 039 | None | Visual evaluation | None |
| Monitored Outfall 042 | None | Visual evaluation | None |
| SIDP 030 | None | Visual evaluation | None |
| SIDP 033 | None | Visual evaluation | None |
| SIDP 034 | None | Visual evaluation | None |
| Assessor: | | | |
| Print Name: Leonard F. Sandoval | Signature:  | Title: Deployed Environmental Professional | Date Assessed: 5/11/2021 |
| Authorized Signatory: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information contained therein. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. | | | |
| Print Name: Philip Ulibarri | Signature:  | Title: UF OPS-MGR | Date Certified: 5/12/21 |

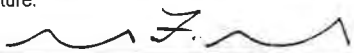
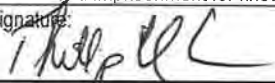
*SIO = Substantially Identical Outfall

Unauthorized Non-Storm Water Discharge Assessment and Certification

| | | | |
|---|---|---|--|
| Facility: | TA-60 Roads and Grounds | | |
| Outfalls (including SIOs*) or Other Onsite Drainage Points Observed During the Assessment | Identified Potential Sources of Unauthorized Non-Storm Water Discharge (if applicable) | Description of Assessment Criterion Used | Describe any Required Actions to Control or Eliminate the Discharge |
| SIDP 035 | None | Visual evaluation | None |
| | | | |
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| | | | |
| | | | |
| | | | |
| Assessor: | | | |
| Print Name: | Signature: | Title: | Date Assessed: |
| Leonard F. Sandoval |  | Deployed Environmental Professional | 5/11/2021 |
| Authorized Signatory: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information contained therein. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. | | | |
| Print Name: | Signature: | Title: | Date Certified: |
| Philip Ulibarri |  | UI-ops-MGR | 5/12/21 |

*SIO = Substantially Identical Outfall

Unauthorized Non-Storm Water Discharge Assessment and Certification

| | | | |
|---|---|---|--|
| Facility: | TA-60 Asphalt Batch Plant | | |
| Outfalls (including SIOs*) or Other Onsite Drainage Points Observed During the Assessment | Identified Potential Sources of Unauthorized Non-Storm Water Discharge (if applicable) | Description of Assessment Criterion Used | Describe any Required Actions to Control or Eliminate the Discharge |
| Monitored Outfall 043 | None | Visual evaluation | None |
| | | | |
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| | | | |
| Assessor: | | | |
| Print Name: | Signature: | Title: | Date Assessed: |
| Leonard F. Sandoval |  | Deployed Environmental Professional | 5/7/2021 |
| Authorized Signatory: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information contained therein. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. | | | |
| Print Name: | Signature: | Title: | Date Certified: |
| Phillip U. Barr. |  | UF-OPS-MGR | 5/12/21 |

*SIO = Substantially Identical Outfall

ATTACHMENT 4: DULY AUTHORIZED SIGNATORY MEMORANDUM



***Environmental Protection & Compliance
Division***

Los Alamos National Laboratory
PO Box 1663, K490
Los Alamos, NM 87545
505-667-0666

Symbol: EPC-DO: 18-453
LAUR: 18-31574
Date: **DEC 11 2018**

Ms. Anne L. Idsal, Regional Administrator
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue, Suite 1200
Mail Code: 6RA
Dallas, TX 75202-2733

**Subject: Notification of Triad National Security, LLC, Signatory Officials and
Authorized Representatives for NPDES Permits**

Dear Ms. Idsal:

The purpose of this letter is to provide an update to the U. S. Environmental Protection Agency (EPA) Region 6 on the Triad National Security, LLC delegation of authority for signature of documents associated with the various Los Alamos National Laboratory (LANL) NPDES Permits, pursuant to 40 CFR 122.22(c). This letter supersedes and replaces the signatory authority letter dated March 14, 2018 (ADESH: 18-017).

The positions of Associate Laboratory Director of Environment, Safety, Health & Quality and Safeguards & Security (ESHQSS), and Division Leader of the Environmental Protection & Compliance Division (EPC-DO) are identified as Triad's primary signatory officials under 40 CFR 122.22(a) for certifying and signing permit applications (including Notice of Intents (NOIs)) required under the LANL NPDES Industrial Point Source Outfall Permit (Permit No. NM0028355), the NPDES Storm Water Construction General Permit, the NPDES Multi-Sector General Permit (Permit No. NMR050013), and the NPDES Pesticide General Permit (Permit No. NMG87B113).

The following positions are hereby designated as authorized representatives under 40 CFR 122.22(b) to sign reports, Storm Water Pollution Prevention Plans, Discharge Monitoring Reports, Pesticide Discharge Management Plans, and any other compliance documentation required by the permits:

NPDES Industrial Point Source Outfall Permit (No. NM0028355)

- Positions listed as primary signatory officials above.
- Group Leader or Team Leaders within the Environmental Compliance Programs Group.
- Responsible Facility Operations Director (FOD).

NPDES Construction General Permit:

- Positions listed as primary signatory officials above.
- Group Leader or Team Leaders within the Environmental Compliance Programs Group.
- Cognizant Project Manager, Construction Manager, or Subcontractor Technical Representative for the regulated construction activity.

NPDES Multi-Sector General Permit (ID No. NMR053195)

- Positions listed as primary signatory officials above.
- Group Leader or Team Leaders within the Environmental Compliance Programs Group.
- Division Leader, Deputy Division Leader, or Group Leader of the LANL division responsible for the overall operation of the regulated facility or activity.
- Responsible FOD; Deputy FOD, Operations Manager; or Deployed Environment, Safety, & Health Manager responsible for the overall operation of the regulated facility or activity.

NPDES Pesticide General Permit (No. NM687A041)

- Positions listed as primary signatory officials above.
- Group Leader or Team Leaders within the Environmental Compliance Programs Group.

If you have questions, please contact me at (505) 667-7269 or at etorres@lanl.gov.

Sincerely,



Enrique Torres
Division Leader
Environmental Protection & Compliance Division

ET/TWL/MTS:jdm

Attachment(s): None.

Copy: Nancy Williams, USEPA, Region 6, williams.nancy@epa.gov, (E-File)
Brent E. Larsen, USEPA, Region 6, Larsen.brent@epa.gov, (E-File)
Robert Houston, USEPA, Region 6, Houston.robert@epa.gov, (E-File)
Sarah Holcomb, NMED, sarah.holcomb@state.nm.us, (E-File)
Karen E. Armijo, LASO-MA-LS, Karen.armijo@nnsa.doe.gov, (E-File)
Jody Pugh, NA-LA, jody.pugh@nnsa.doe.gov, (E-File)
Michael W. Hazen, ESHQSS, mhazen@lanl.gov, (E-File)
William R. Mairson, ESHQSS, wrmairson@lanl.gov, (E-File)
Enrique Torres, EPC-DO, etorres@lanl.gov, (E-File)
Taunia Van Valkenburg, EPC-CP, tauniav@lanl.gov, (E-File)
Michael T. Saladen, EPC-CP, saladen@lanl.gov, (E-File)
Terrill W. Lemke, EPC-CP, tlemke@lanl.gov, (E-File)
Tim Dolan, GC-ESH, tdolan@lanl.gov, (E-File)
emla.docs@em.doe.gov, (E-File)
locatesteam@lanl.gov, (E-File)
epc-correspondence@lanl.gov, (E-File)
adesh-records@lanl.gov, (E-File)

ATTACHMENT 5: DISCHARGE MONITORING REPORTS

ATTACHMENT 6: ANNUAL REPORTS

ATTACHMENT 7: ROUTINE FACILITY INSPECTIONS

ATTACHMENT 8: QUARTERLY VISUAL ASSESSMENTS

ATTACHMENT 9: CORRECTIVE ACTION DOCUMENTATION AND CERTIFICATION

ATTACHMENT 10: SCHEDULED MAINTENANCE LOG

SCHEDULED MAINTENANCE LOG : TA-60 Roads and Grounds/TA-60 Asphalt Batch Plant

| Date | Control Measure or Equipment Description | Action Taken/Comments | Action Taken By |
|------------|--|---|-------------------------|
| 4/30/2019 | Monitored Outfalls 031, 032, 039, and 042. Substantially Identical Outfalls 033, 034, and 035. | MetalLoxx Wattles with Enviro-Soxx were replaced. | Gary McMillan 241754 |
| 6/28/2019 | Sediment retention pond at monitored outfall 042. | Half full of sediment that was cleaned out. | Gary McMillan 241754 |
| 7/23/2019 | Substantially Identical Outfall 035. | Torn MetalLoxx Wattle with Enviro-Soxx was replaced. | Gary McMillan 241754 |
| 10/3/2019 | Monitored Outfall 037. | MetalLoxx Wattles with Enviro-Soxx was installed. | Gary McMillan 241754 |
| 10/4/2019 | Monitored Outfalls 032, 039, and 042. Substantially Identical Outfalls 033, 034, and 035. | MetalLoxx Wattles with Enviro-Soxx were replaced. | Gary McMillan 241754 |
| 10/30/2019 | Culvert that runs along Eniwetok Road. | Half full of sediment that was cleaned out. | Gary McMillan 241754 |
| 10/30/2019 | Swale/channel that runs along the western fence line of the small equipment staging area. | Lined with angular rock to help prevent erosion. | Gary McMillan 241754 |
| 3/8/2019 | Replacement pump for the heating oil at the TA-60 Asphalt Batch Plant. | Replaced to help address a slow leak. | Gary McMillan 241754 |
| 4/24/2019 | Monitored Outfall 043. | Terra tube at the concrete flume was replaced. | Gary McMillan 241754 |
| 10/10/2019 | Sediment retention pond at monitored outfall 043. | Sediment/sludge from the retention pond was removed down to Tufa. | Gary McMillan 241754 |
| 10/21/2019 | Sediment retention pond at monitored outfall 043. | Angular rock was added to the riprap at the NE corner and West end of the sediment retention pond at outfall 043 to help prevent erosion. | Gary McMillan 241754 |
| 3/25/2020 | Monitored Outfalls 031, 032, 039, and 042. Substantially Identical Outfalls 033, 034, and 035. | MetalLoxx Wattles with Enviro-Soxx were replaced. | Jack Caldwell 116986 |
| 3/30/2020 | River rock at the entrance to the Potholing Staging Area. | Added at the entrance to help with tracking in and out of the potholing staging area. | Kevin Graham 105008 |

SCHEDULED MAINTENANCE LOG : TA-60 Roads and Grounds/TA-60 Asphalt Batch Plant

| Date | Control Measure or Equipment Description | Action Taken/Comments | Action Taken By |
|-----------|--|--|-------------------------|
| 4/1/2020 | Monitored Outfall 043. | Terra tube at the concrete flume was replaced. | Jack Caldwell 116986 |
| 6/23/2020 | Monitored Outfalls 031, 032, 039, and 042. Substantially Identical Outfalls 033, 034, and 035. | MetalLoxx Wattles with Enviro-Soxx were replaced. | Jack Caldwell 116986 |
| 7/23/2020 | Base course berm north of where Outfall 041 was previously located. | Installed to cut off storm water discharge. | Jack Caldwell 116986 |
| 7/23/2020 | The two rock check dams west of the ABP retention pond. | Removed and angular rock used to expand rip rap at west end of retention pond. | Jack Caldwell 116986 |
| 7/23/2020 | Monitored Outfall 043. | Terra tube at the concrete flume was replaced with a core log. | Jack Caldwell 116986 |
| 8/14/2020 | Monitored Outfall 032. | MetalLoxx Wattles with Enviro-Soxx were replaced at the mouth of the culvert that discharges to the MSGP sampler and at the flume before the MSGP sampler. Several core logs were installed at the edge of the pavement to help prevent sediment migration to monitoring location. | Jack Caldwell 116986 |
| 9/16/2020 | Monitored Outfalls 031, 032, 039, and 042. Substantially Identical Outfalls 033, 034, and 035 | MetalLoxx Wattles with Enviro-Soxx were replaced. | Jack Caldwell 116986 |
| 10/8/2020 | Rock Channel/Swale NW of TA-60 Building 250 | Additional angular rock added to completely line the swale. | Jack Caldwell 116986 |
| 3/29/2021 | Monitored Outfalls 031, 032, 039, and 042. Substantially Identical Outfalls 033, 034, and 035 | MetalLoxx Wattles with Enviro-Soxx were replaced. | Jack Caldwell 116986 |
| 3/29/2021 | Monitored Outfalls 032. | Core logs at the edge of the pavement to help prevent sediment migration to monitoring location were replaced. | Jack Caldwell 116986 |
| 3/29/2021 | Monitored Outfalls 043. | Core log at the concrete flume was replaced. | Jack Caldwell 116986 |

ATTACHMENT 11: TRAINING DOCUMENTATION

Information on employees receiving training is available upon request.

Agenda

For

TA-60 Roads and Ground Release Reporting Briefing

1. Multi-Sector General Permit (MSGP)
 - a. The MSGP is a nation-wide general permit
 - b. It authorizes the discharge of stormwater from specific industrial activities to meet Clean Water Act provisions (*here it is transportation and use of all the heavy equipment and associated fueling activities*)
 - c. EPA is the regulatory authority
 - i. NM Environment Department is delegated authority to conduct inspections for them.
 - d. Purpose of the MSGP is to MINIMIZE off-site migration of pollutants
 - i. Spill prevention and response is a key part of this.
2. Pesticide General Permit (PGP)
 - a. PGP is a nation-wide general permit
 - b. Authorizes discharges of pesticides (insecticides/herbicides) throughout LANL to meet Clean Water Act provisions
 - c. EPA is regulatory authority
 - i. New Mexico Department of Agriculture is delegated authority to conduct inspections for them.
3. Release Reporting Requirements
 - a. Use dry clean-up methods
 - b. Call the EPC-CP spills pager at 505-664-7722
 - c. If trained, implement the requirements of the IWD *immediately*
 - d. All complex/emergency spills or releases are reported to the Emergency Operations Support Center (EOSC) 667-2400
 - e. For fire or explosion call 911 or activate fire pull box
 - f. Under MSGP, significant spills require inspection monthly for 3 years
 - i. Ensures that spill residual is not discharging off-site
4. Documentation Requirements
 - a. Reportable vs. non-reportable release
 - i. Spill report must be filled out
 - b. All spills within MSGP facilities are considered conditions requiring corrective action
 - i. Deployed Environmental Professional must enter the spill into the MSGP Corrective Action Report database

Spill Prevention Control and Countermeasures (SPCC) and Aboveground Storage Tank (AST)

Annual Oil Discharge Prevention Briefing Training

EPC-CP AST/SPCC Program



EST. 1943
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Slide 1



Content Slide Notes

“UNCLASSIFIED” marking of slides is not a security requirement and may be deleted from the Slide Master (View › Master › Slide Master). In general, slides should be marked “UNCLASSIFIED” if there is potential for confusion or misinterpretation of something that could be deemed classified. For guidance on marking slides containing classified and unclassified controlled information, see the Protecting Information Web site at <http://int.lanl.gov/security/protectinfo/>.

SPCC and AST Annual Training Objectives

- Why take training
- Federal SPCC and state AST regulations
 - Why have the regulations
 - Some differences
- SPCC content overview and annual highlights
- Prevention
- How to respond
- How to report

*This training does not
replace reading your facility's
SPCC plan
Or
Completing on-line training
(Course # 30441)*



Established 1943

Managed by National Security and Research, U.S. Department of Energy, NNSA



Slide 2

Why take training

Please choose all that apply:

1. Learn about SPCC/AST requirements
2. Take in place of the on-line training
3. Review what to do if an event happens
4. Understand what is in the plan
5. Replaces reading of your SPCC Plan
6. Review reporting requirements
7. Allows you to complete all required inspections



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Slide 2



Answers and discussion on next slides.

Go through the questions one by one here for about 3 minutes total

Why take training

Answers to questions with discussion:

1. **Learn about SPCC/AST requirements – Yes.**
Annual training reinforces the contents of the plan and requirements.
Let's discuss types of oils covered by the rules and types of containers
2. **Take in place of the on-line training – No**
Oil handling personnel are required to read the SPCC Plan and have annual site specific training. The combination of the on-line course and this briefing meets the annual site specific training requirement.
3. **Review what to do if an event happens – Yes**
Re-inforce requirements so if an event happens responses are better.
4. **Understand what is in the plan – Yes**
We will cover general contents of your plan today supplemented with discussion

1. Supplement for #1 - All types of oils are covered including petroleum and nonpetroleum including vegetable oils, fruit oils (citrus), animal fats etc.
2. Supplement for #4 – LANL SPCC Plans have a cross reference in the first couple of pages for you to see the scope. Includes things such as security, lighting, inspections, conformance with rules (including state), what-if scenarios to size response equipment, etc.

Why take training

Answers to questions with discussion:

5. **Replaces reading of your SPCC Plan - No**
As stated on previous slides oil handling personnel are required to read the SPCC Plan annually
6. **Review reporting requirements - Yes**
Your SPCC Plan combined with existing Laboratory procedures identifies both internal and external reporting requirements
7. **Allows you to complete all required inspections – No**
Dependent upon job duties, trainings, and certifications you may also be completing inspections.
This training by itself does not allow personnel to complete inspections
If you see anything of the of ordinary please report it immediately (spills, drips, leaks, etc.) per procedure or to your DEP if no other reporting is required (open or not fully stocked spill kits, etc.)

1. Item #7 – see something/say something. Think of your spill kit like your
 1. first aid kit. When you need it you do not want it to be empty
 2. Fire extinguisher. If you make the decision after calling EMR you want it full
 3. AED. If you pull it you want to ensure the batteries are working.
2. In all instances EMR is primary but you may be first on the scene.

Federal and State Regulations

Why have them:

Oil's contaminating potential

- A spill of only one gallon of oil can contaminate a million gallons of water
- A single pint of oil released into a lake or wetland can cover one acre of surface water and seriously damage aquatic habitat

Historic and recent events

Differences:

- All tanks listed under the SPCC Plan do not require registration under NM AST regulations
- Requirements are not the same but work together
- Many more differences exist



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Slide 6

Part of Clean Water Act –

History (pick one or two of the following to discuss)

- Cuyahoga River catching fire on June 22, 1969, around 12pm, floating pieces of oil slicked debris were ignited on the **river** by sparks **caused** by a passing train. Specifically, following an investigation, the **cause** was determined to be the oily debris trapped beneath two wooden trestles, rigid support frame
- \$1.6M in 2014 for Superior Oil (Midland/Odessa) – plan not updated w/in 6-months (Oct 2008). Follow-up inspection (Oct 2009) - few changes made since Apr 2008. Feb 2010, 1 of 3 ASTs began leaking rapidly, remaining oil transferred from leaking tank (Tank 13) to another tank (Tank 15). Tank 15 then began leaking crude, and secondary containment for both tanks failed, material flowed into other containments, over land, and into adjacent unnamed creek/wetlands, which connect to waters of the US about ½ mile from facility.
- Travel Centers of America - alleged violations identified during inspection: (1) no training on O&M for equipment to prevent discharges and/or facility operations; (2) no training on discharge procedure protocols; (3) no training on applicable pollution control laws, rules and regulations, and/or SPCC Plan; (4) no designated person accountable for spill prevention; (5) spill prevention briefings are not scheduled and conducted at least once a year; (6) plan inadequate/no discussion of personal/spill prevention procedures, transfer operations, pumping, and process; (7) secondary containment inadequate for mobile/portable storage tanks

Differences - PSTB registration for tanks 1320 gal < Volume < 55,000 gal. 30 – day notice

requirements prior to certain activities, licenses for people completing activities, etc. ****BE
AWARE THAT SPCC REGS 40 cfr112.1(e) REQUIRES COMPLIANCE WITH FEDERAL/STATE/LOCAL
REGULATIONS****

Federal and State Regulation Overview

Federal Oil Pollution Prevention Regulation 40 CFR 112 Requires Annual Briefing Training

- ... conduct discharge prevention briefings for oil-handling personnel **at least once a year** to assure adequate understanding of the SPCC Plan for that facility

- **XXXXX SPCC Plan Section XXX. Training requires:**

"Additional spill prevention briefings and information on known spill events or failures, malfunctioning equipment, and recently developed precautionary measures is provided to oil handling personnel through the LANL Institutional Program, Lessons Learned Notification and Feedback Program, OST 402-130-01.A.3, or through periodic facility briefings on small spills... Personnel who interact with the tanks covered by this plan will receive site specific training by required reading of this SPCC Plan."



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Slide 7



Our training has three components:

1. This annual briefing
2. Mandatory reading of SPCC Plan Annually
3. U-Train course 30441

Regulatory Drivers: **Federal SPCC**

- **Spill Prevention Control & Countermeasures (SPCC) 40 CFR 112**
- **Applicability (waters of the US / natural resources)**
- **Requires all facilities that have at least 1320 gallons of oil to develop, implement, and operate in accordance with a SPCC Plan. All ≥ 55 gallon oil containers/equipment are included in the 1320 gallon threshold.**
- **There are currently >15 different SPCC Plans here at LANL.**
- **Update requirements**
- **Notification requirements**
- **Types of oils**
- **Conformance**

Focus on:

1. Discuss Natural Resources vs Waters of the US for federal lands.
40 CFR 112.1(a) outlines requirements for SPCC Plans “....into or upon the navigable waters of the United States, or that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States..”).
2. 1320 volume threshold.
3. Why >15 Plans

Regulatory Drivers:



NM Petroleum Storage Tank Regulations 20.5 NMAC

NMPST Regulations require all ≥ 1320 gallon capacity petroleum storage tanks to be:

- Registered annually with the NM Environment Department
- Operated in compliance with PST regulations including periodic inspections, engineering and administrative controls for spill prevention
- Tanks piping and secondary containment structures meet national industry standards periodic inspections (monthly, annual or semi-annual, certified)
- Emergency generator fuel tanks became state regulated in March 2012.

Touch on each bullet

SPCC Contents and Annual Highlights

SPCC Plan Contents:

- **Certifications / Approvals**
 - management
 - engineering
 - substantial harm
- **Conformance with**
 - 40 CFR 112 requirements
 - industry standards e.g., Steel Tank Institute Standard SP001
 - NM requirements
- **Facility Information**
- **Training**
- **Spill Reporting**
- **Spill History / Predictions / Prevention**
 - engineering and administrative controls for spill prevention
 - periodic inspections (monthly, annual or semi-annual, certified)
 - tests & records
 - security
 - loading/unloading
- **Site diagram showing locations of oil containers addressed in the plan**
- **Recordkeeping**

Touch on each major bullet.

Focus on training, spill reporting, recordkeeping

SPCC Contents and Annual Highlights



Cutting lubricant and oil release:

Status: closed

Time frame from release to closure:

>9 months



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Slide 11



Highlights for discussion:

1. 55-gallon drum left open
2. Fire sprinklers went due to unrelated issue
3. Overfilled drum, secondary containment
4. Flowed out doorway and into storm drain
5. Actions:
 1. NMED Notifications / Initial Response
 2. Lessons learned
 3. Procedures/Upgrades
 4. Pipe cleanout
 5. Analytical testing
 6. Waste (vegetation/soils/used BMPs, etc.)
 7. Frequent inspections of discharge location and verification samples.
 8. Final closeout from NMED from initial event was >9 months

Prior to moving to next slide ask what was cause of the additional activities

SPCC Contents and Annual Highlights



Asphalt Cement Release:

Status: Open

Time frame from release to closure:



(unknown/ >6 months)

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Highlights for discussion:

1. Equipment under maintenance - 3-way valve replacement (like-for-like substitution). Valve was misaligned (unknowingly)
2. Started heating asphalt cement
3. Left unattended overnight.
4. New valve not in off position. Looked like it was during installation and when left in evening.
5. Overnight material flowed through valve and discharged – total volume >1000 gallons (~5700 gallons)
6. Actions:
 1. NMED Notifications/Initial Response
 2. Lessons learned
 3. Procedures/Upgrades
 4. Material cleanup (still ongoing) – cliff top included replacing topsoil, cliff side removal on-going
 5. Drainage improvements
 6. EPA 60-day notice (required amendments to USEPA if requested) –
 1. first time one has been submitted
 2. reporting of spills in excess of 1,000 gallons or two combined spills greater than 42 gallons in 12 months
 7. Final closeout from NMED is unknown currently 6+ months

Prior to moving to next slide ask what was cause of the additional activities

Prevention

- Defense in depth
- Your role
 - Awareness
 - Maintenance
 - See something – say something / ask questions
 - drips
 - liquid in secondary containment
 - weeping
 - more?
- Response kits
 - where is it?
 - take a look what is inside

Prevention

Liquid Discharge from Secondary Containment

- Applicability
- Secondary containment drainage:
 - Visual inspection (what to look for?)
 - Notifications (any?)
 - Sampling requirements (any?)
 - Authorizations (who provides?)
 - Drainage activity (when?)
 - Records

LADL LIQUID DISCHARGE FORM Los Alamos National Laboratory Environmental Compliance Programs (EPC-CP)

| | |
|---|------------------|
| LOCATION: RA | BIDG |
| USER GROUP | CONTACT PERSON |
| | PHONE NUMBER |
| MATERIAL DISCHARGED Potable Water (Source) Potable Line Disinfection (Source) Steam Condensate (Manhole #) Storm Water (Source) | |
| DATE and TIME of DISCHARGE | |
| PERSONNEL CONDUCTING DISCHARGE | |
| DURATION OF DISCHARGE | DISCHARGE VOLUME |
| DISCHARGE DESCRIPTION | |
| LABORATORY AFFECTED | |
| SAMPLES TAKEN YES <input type="checkbox"/> NO <input type="checkbox"/> | |
| COMMENTS | |
| I certify that I am in compliance with the information on this form. The information for liquid discharge is true, accurate, and complete. | |
| Name of Certifying Official | Organization |
| Certification | Date |
| RETURN FORM TO EPC-CP: Brian Lorenz bialorenz@lanl.gov | |

How to respond

- Discussion of requirements
 - Personal
 - EMR
 - SPCC Plan requirements

How to report

- Should you report anything and if yes to who and how?

EPC-CP Contacts

- Get to know your DEP
- Steve Pearson – Aboveground Storage Tank SME
 - Phone: 667-3005
 - email: spearson@lanl.gov
- Bill Foley – SPCC SME
 - Phone: 665-8423
 - email: bfoley@lanl.gov
- Water Quality Team Lead – Mike Saladen
 - Phone: 665-6085
 - email: saladen@lanl.gov
- DEP Team Lead – Bob Lechel
 - Phone: 665-6912
 - email: lechel@lanl.gov



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Slide 17

Questions?



New Mexico Water Quality Control Commission Compliance

**Spills and Unplanned Releases
Legacy Equipment – Lesson's Learned**

Presentation Overview

- Environmental Reporting Requirements
- Who to Contact in the Event of a Release
- Ways to Prevent Spills
- NPDES MSGP Requirements
- Legacy Equipment – Lessons Learned
- Questions

Spills- Unplanned Releases to the Environment

- Water Quality investigates and evaluates spills throughout LANL to determine if external reporting is required to comply with State and Federal Regulations
 - NMWQCC Regulations, Clean Water Act, CERCLA, EPCRA



Spills- Unplanned Releases to the Environment

- Corrective actions need to be taken for all spills that occur
- There is not a de minimis volume of spilled material that does not need to be addressed



Who to Contact in the Event of a Spill

- Notify Supervisor of Spill Occurrence
- Notify the Roads and Grounds Deployed Environmental Professional
 - Leonard Sandoval
- Notify Water Quality Spills Pager – **664-7722**
- Notify Emergency Operations in the event of an emergency **667-6211**



Spill Prevention and Minimization

- Plan work to eliminate avoidable spills
- Use secondary containment to prevent releases to the environment
- Ensure preventive maintenance on equipment is completed
- Know where spill kits are located and how to use contents
- Know who to contact in the event of a release



NPDES Multi-Sector General Permit (MSGP) Requirements

- Drain fluids from equipment and vehicles that will be decommissioned, and, for any equipment and vehicles that will remain unused for extended periods of time, inspect at least monthly for leaks.
 - At LANL—"an extended period of time" is considered to be 6 months.



Slide 7

Legacy Equipment

Sheep's Foot Compactor-Lesson's Learned

- Compactor discovered on Sigma Mesa-slated to be salvaged
- Diesel was identified to be leaking from equipment
- Initially thought to be empty
 - Actually filled with over 900 gallons of diesel/water



Legacy Equipment

Sheep's Foot Compactor-Lesson's Learned Continued

- Diesel filled compactor presented significant environmental compliance and safety concern
 - SPCC, NMWQCC, Site Safety
- Notify your management and environmental resources to investigate any unknown equipment or equipment suspected to contain potential water contaminants to mitigate safety and environmental issues



Questions?



ATTACHMENT 12: MSGP (OR ACTIVE URL)

A copy of the 2021 MSGP is kept on file with the SWPPP in hard copy.

The active URL for the permit is: 2021 Multi-Sector General Permit

ATTACHMENT 13: THREATENED AND ENDANGERED SPECIES HABITAT MANAGEMENT PLAN FOR LOS ALAMOS NATIONAL LABORATORY

LA-UR-17-29454

*Approved for public release;
distribution is unlimited.*

October 2017

Threatened and Endangered Species Habitat Management Plan for Los Alamos National Laboratory



Cover photo: Mexican Spotted Owls at Los Alamos National Laboratory

Prepared by: Environmental Protection and Compliance Division
Resources Management Team
Los Alamos National Laboratory

Prepared for: U.S. Department of Energy, National Nuclear Security Administration,
Los Alamos Field Office

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ACRONYMS AND TERMS

| | |
|--------------|---|
| AEI | area of environmental interest |
| Bd | Batrachochytrium dendrobatidis (Chytrid Fungus) |
| DARHT | Dual-Axis Radiographic Hydrodynamic Test (Facility) |
| dB | decibel |
| dB(A) | A-weighted decibel |
| dB(C) | C-weighted decibel |
| DDT | (dichloro-diphenyl-trichloroethane) |
| DOE | U.S. Department of Energy |
| ESA | Endangered Species Act of 1973 |
| fc | foot candles |
| Field Office | U.S. Department of Energy Los Alamos Field Office |
| FR | Federal Register |
| GIS | geographic information system |
| HMP | Threatened and Endangered Species Habitat Management Plan |
| HVAC | heating, ventilation, and air conditioning |
| LANL | Los Alamos National Laboratory |
| LANS | Los Alamos National Security, LLC |
| NEPA | National Environmental Policy Act of 1969 |
| PCBs | polychlorinated biphenyls |
| TNT | trinitrotoluene(2,4,6-) |
| USFWS | U.S. Fish and Wildlife Service |

I. THREATENED AND ENDANGERED SPECIES HABITAT MANAGEMENT PLAN GENERAL OVERVIEW

1.0 Introduction

Los Alamos National Laboratory's (LANL) Threatened and Endangered Species Habitat Management Plan (HMP) fulfills a commitment made to the U.S. Department of Energy (DOE) in the "Final Environmental Impact Statement for the Dual-Axis Radiographic Hydrodynamic Test Facility Mitigation Action Plan" (DOE 1996). The HMP received concurrence from the U.S. Fish and Wildlife Service (USFWS) in 1999 (USFWS consultation numbers 2-22-98-I-336 and 2-22-95-I-108). This 2017 update retains the management guidelines from the 1999 HMP for listed species, and updates some descriptive information.

2.0 Role of Site Plans in the HMP

The purpose of the HMP is to provide a management strategy for Endangered Species Act (ESA) 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 following federally listed threatened or endangered species currently have site plans at LANL: Mexican Spotted Owl (*Strix occidentalis lucida*), Southwestern Willow Flycatcher (*Empidonax trailii extimus*), and Jemez Mountains Salamander (*Plethodon neomexicanus*). Site plans provide guidance to ensure that LANL operations do not adversely affect threatened or endangered species or their habitats.

The Black-footed Ferret (*Mustela nigripes*) is federally listed as endangered. However, no sightings of Black-footed Ferrets have been reported in Los Alamos County for more than 50 years. In addition, no large prairie dog towns, prime habitat for Black-footed Ferrets, have been observed at LANL. Therefore, there is no site plan for this species.

The New Mexico Meadow Jumping Mouse (*Zapus hudsonius luteus*) and Yellow-billed Cuckoo (*Coccyzus americanus*) do not require a site plan because they do not have breeding habitat on LANL property. In Keller (2015), it was concluded that if any LANL work activities might affect habitat for these two species, those activities would be reviewed for impacts.

3.0 Description of Areas of Environmental Interest

Suitable habitats for federally listed threatened and endangered species have been designated as areas of environmental interest (AEIs). AEIs are geographical units at LANL that are managed for the protection of federally listed species and consist of core habitat areas and buffer areas. The purpose of the core habitat is to protect areas essential for the existence of the specific threatened or endangered species. This includes the appropriate habitat type for breeding, prey availability, and micro-climate conditions. The purpose of buffer areas is to protect core areas from undue disturbance and habitat degradation.

Site plans identify restrictions on activities within the AEIs. The USFWS reviewed allowable activities and provided concurrence that these activities are not likely to adversely affect federally listed species. Activities discussed in site plans include day-to-day activities causing

disturbance (hereafter referred to as “disturbance activities”), such as access into an AEI, and long-term impacts, such as habitat alteration.

3.1 Definition and Role of Developed Areas in AEI Management

Developed areas include all building structures, paved roads, improved gravel roads, paved and unpaved parking lots, and firing sites. The extent of developed areas in each AEI was determined using two methods. First, LANL geographic information system (GIS) analysts placed a 15-m (49-ft) border around all buildings and parking lots. For paved and improved gravel roads, the developed area was defined as the area to a roadside fence, if one exists within 9 m (30 ft) of the road, or 5 m (15 ft) on each side of the road if there is no fence within 9 m (30 ft). If an area of highly fragmented habitat was enclosed by roads, a security fence, or connected buildings, that area was also classified as developed. Developed areas at firing sites were defined as a circle with a 91-m (300-ft) radius from the most centrally located firing pad. Second, LANL GIS analysts overlaid scanned orthophotos onto a map of the Los Alamos area and digitized all areas that appeared developed. These two information sources were overlaid and combined, so that areas classified as developed by either method were considered developed in final maps and analyses. Some areas were confirmed by ground surveys, such as the firing sites.

Developed areas occur in the core and/or buffer of all AEIs. However, developed areas do not constitute suitable habitat for federally listed species. Current ongoing activities in developed areas constitute a baseline condition for the AEIs and are not restricted. New activities, including further development within already existing developed areas, are not restricted unless they impact undeveloped portions of an AEI core. For example, if light or noise from a new office building in a developed area were to raise levels in an undeveloped core area, those light and noise levels would be subject to the guidelines on habitat alterations.

3.2 General Description of Buffer Areas and Allowable Buffer Area Development

The purpose of buffer areas is to protect core areas from undue disturbance or habitat degradation. The current levels of development in buffer and core areas represent baseline conditions for this HMP. No further development is allowed in the core area under the guidelines of this HMP. A limited amount of development is allowed in buffer areas. Under the guidelines of this HMP, individual development projects are limited to 2 ha (5 ac) in size, including a 15-m (49-ft) developed-area border around structures and a 5-m (15-ft) developed-area border around paved and improved gravel roads. Projects greater than 2 ha (5 ac) in size require individual review for ESA compliance (see exceptions for fuels management activities and utility corridor maintenance). New development projects in AEI buffer areas must be reported to Los Alamos National Security, LLC (LANS) biologists for tracking (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

3.3 Emergency Actions

Managers may activate emergency actions if safety and/or property is immediately threatened by something occurring within an AEI (for example, wildfire, water line breakage, etc.). Contact a LANS biologist (<http://int.lanl.gov/environment/bio/controls/index.shtml>), the Environmental Stewardship Group (505-665-8855), or the DOE Los Alamos Field Office (Field Office; 505-667-6819) as soon as possible. If the emergency occurs outside of regular business hours, contact

the Emergency Management Office (505-667-6211); this office will then communicate with the appropriate LANL and DOE Field Office personnel.

4.0 Implementation of Site Plans

4.1 Roles and Responsibilities

LANL's facility managers and operational staff are responsible for ensuring that activities are reviewed for compliance with all applicable site plans. Figure 1 illustrates the process for utilizing site plans. If activities follow approved guidance, there is no requirement for additional ESA regulatory compliance. However, additional National Environmental Policy Act (NEPA), cultural resources, wetlands, or other regulatory compliance actions may be required.

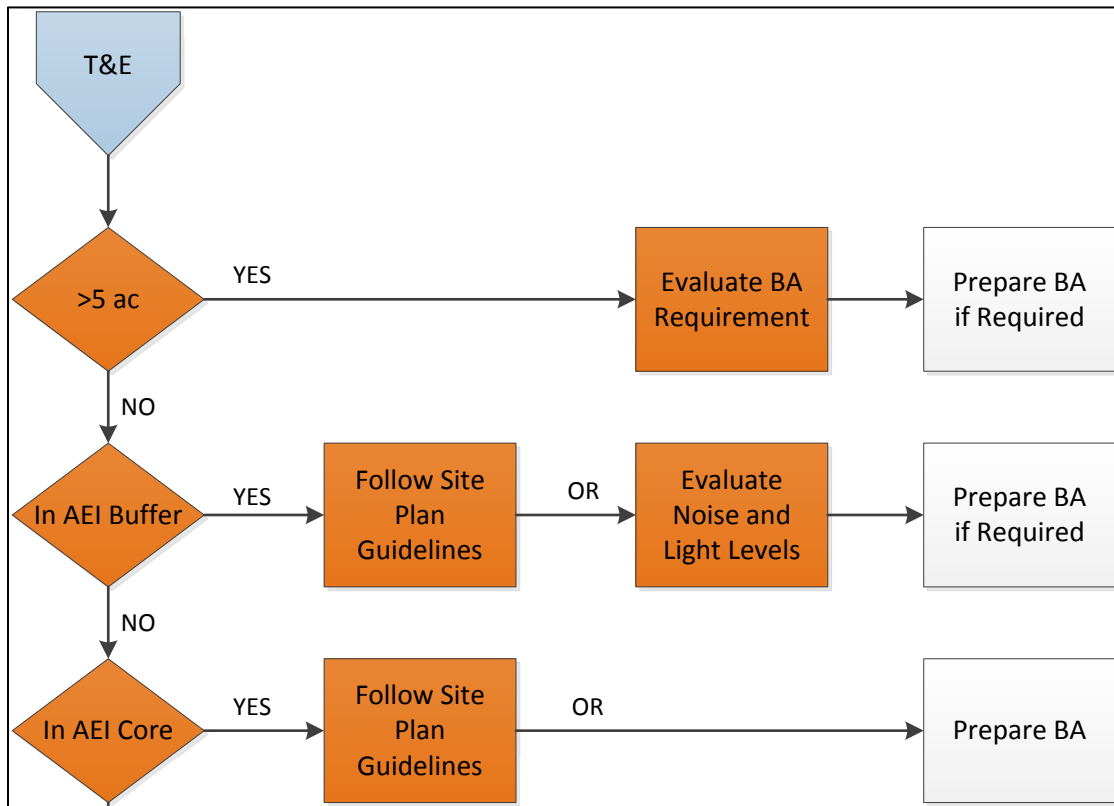


Figure 1. Process flowchart for determining site plan requirements

If an activity or project occurs outside of all LANL AEIs and will not impact habitat within an AEI, it does not have to be reviewed for ESA compliance unless it is a large project. Projects that are larger than 2 ha (5 ac) or cost more than \$5 million require an individual ESA compliance review, even if they are not located within an AEI.

LANL's facility managers are responsible for determining if operations within their geographic and/or programmatic area of responsibility comply with the guidelines in these site plans. Submission of a project into the integrated review tool for a new or modified project is required under Program Description 400 (LANL 2016) and allows managers to identify the requirements within their project area. Deployed environmental professionals and core LANS biologists are

available to support facility managers. If activities follow site plan guidelines, they do not require any additional ESA regulatory compliance action. However, NEPA, cultural resources, wetlands, or other regulatory compliance actions are not addressed in site plans and additional compliance actions may be required. It is the responsibility of the project leader or facility management staff to ensure that all requirements are satisfied. If you have questions, contact biological, cultural, NEPA, or other environmental subject matter experts. Contacts can be found at <http://int.lanl.gov/environment/compliance/ier/index.shtml>.

A single facility may have one or more AEIs within its boundary and the AEIs may be for different species. Some AEIs overlap. In areas where overlap occurs, project managers must follow the guidelines for AEIs of all involved species.

4.2 If an Activity Does Not Meet Site Plan Guidelines

If a project reviewer determines that an activity or project cannot meet the guidelines in applicable site plans, LANS biologists evaluate that activity individually for compliance with the ESA. Results of the evaluation of potential impacts allow LANS biologists to make recommendations to the DOE Field Office Biological Resources Program Manager regarding the need for USFWS consultation. An evaluation may result in 1) a DOE Field Office determination that there is no effect and the activity can proceed, 2) a DOE Field Office suggestion for modifications of the action to avoid adverse effects so that it can proceed, or 3) a DOE Field Office decision to prepare a biological assessment for the activity and submit it to the USFWS for concurrence. Fieldwork and preparation of a biological assessment can take a few months with an additional 2 to 12 months for DOE Field Office review and then final USFWS concurrence.

4.3 Dissemination of Information

Habitat locations of threatened and endangered species are not considered sensitive; however, it is in the best interest of threatened and endangered species to restrict specific knowledge about their locations.

5.0 Changes in the HMP since Implementation

The HMP received concurrence from USFWS and was first implemented in 1999. Since that time, both the Peregrine Falcon (*Falco peregrinus*) and the Bald Eagle (*Haliaeetus leucocephalus*) have been delisted. Site plans for those species have been removed from LANL's HMP. Both species are protected at LANL under the Migratory Bird Treaty Act, and the Bald Eagle is also protected under the Bald and Golden Eagle Protection Act.

In 2005, the USFWS concurred with DOE's proposal for updated Mexican Spotted Owl habitat boundaries based on a revised analysis of Mexican Spotted Owl habitat quality within DOE property around LANL (USFWS consultation number 22420-2006-I-0010).

In 2012, the USFWS concurred with DOE's proposal to modify the habitat boundaries for the Los Alamos Canyon Mexican Spotted Owl AEI due to changes from the fire response activities after the Las Conchas wildfire (USFWS consultation number 02ENNM00-2012-IE-0088).

In 2013, the USFWS concurred with the DOE's new site plan for the Jemez Mountains Salamander and its addition to LANL's HMP (USFWS consultation number 02ENNM00-2014-I-0014).

In 2015, the USFWS concurred with the DOE's addition of the New Mexico Meadow Jumping Mouse and Yellow-billed Cuckoo to LANL's HMP (USFWS consultation number 02ENNM00-2015-I-0538).

In 2017, the USFWS concurred with DOE's proposal to modify the habitat boundaries for the lower section of Water Canyon Mexican Spotted Owl AEI due to habitat degradation resulting from long-term drought and fire effects (USFWS consultation number 02ENNM00-2017-I-0255).

6.0 Data Management

The data used in the implementation of the HMP are stored in a geodatabase at LANL. The current map of all of the AEIs at LANL is in Figure A-1 in the appendix.

II. AREA OF ENVIRONMENTAL INTEREST SITE PLAN FOR THE MEXICAN SPOTTED OWL

1.0 Species Description—Mexican Spotted Owl

1.1 Status

In 1993, the USFWS determined the Mexican Spotted Owl to be a threatened species under the authority of the ESA, as amended (58 Federal Register [FR] 14248). In 1995, the USFWS released its final recovery plan for the owl (USFWS 1995), which was revised in 2012 (USFWS 2012). The USFWS most recently designated critical habitat for Mexican Spotted Owl in 2004 (69 FR 53181).

1.2 General Biology

The Mexican Spotted Owl is found in northern Arizona, southeastern Utah, and southwestern Colorado south through New Mexico, west Texas, and into Mexico. It is the only subspecies of Spotted Owl recognized in New Mexico (USFWS 1995).

The Mexican Spotted Owl generally inhabits mixed conifer and ponderosa pine- (*Pinus ponderosa*; Lawson & C. Lawson) Gambel oak (*Quercus gambelli*; Nutt.) forests in mountains and canyons. High canopy closure, high stand diversity, multilayered canopy resulting from an uneven-aged stand, large mature trees, downed logs, snags, and stand decadence as indicated by the presence of mistletoe are characteristics of Mexican Spotted Owl habitat. Some owls have been found in second-growth forests (i.e., younger forests that have been logged); however, these areas were found to contain characteristics typical of old-growth forests. Mexican Spotted Owls in the Jemez Mountains prefer cliff faces in canyons for their nest sites (Johnson and Johnson 1985). The recovery plan for the Mexican Spotted Owl recommends that mixed conifer and pine-oak woodland types on slopes greater than 40 percent be protected for the conservation of this owl.

A mated pair of adult Spotted Owls may use the same home range and general nesting areas throughout their lives. A pair of owls requires approximately 800 ha (1,976 ac) of suitable nesting and foraging habitat to ensure reproductive success. Incubation is carried out by the female. The incubation period is approximately 30 days and most eggs hatch by the end of May. Most owlets fledge in June, 34 to 36 days after hatching (USFWS 1995). The owlets are “semi-independent” by late August or early September, although juvenile begging calls have been heard as late as September 30. Young are fully independent by early October. The non-breeding season runs from September 1 through February 28. Although seasonal movements vary among owls, most adults remain within their summer home ranges throughout the year.

The diet of Mexican Spotted Owls nesting in canyons consists primarily of woodrats (*Neotoma* spp.) and deer mice (*Peromyscus* spp.) with lesser amounts of rabbits, birds, reptiles, and arthropods (Willey 2013). The relative abundance of prey types in Mexican Spotted Owl pellets collected at LANL are listed in Table A-1 in the appendix. Ganey and Balda (1994) found core areas of individuals (i.e., where owls spent 60 percent of their time) averaged 134 ha (331 ac), and core areas for pairs averaged 160 ha (395 ac).

1.3 Threats

The Mexican Spotted Owl was listed as threatened because of destruction and modification of habitat caused by timber harvest, wildfires, increased predation on owls associated with habitat fragmentation, and a lack of adequate protective regulations.

2.0 Impact of Human Activities

2.1 Introduction

The primary threats to Mexican Spotted Owls on LANL property are 1) impacts to habitat quality from LANL operations and 2) disturbance of nesting owls. This section provides a review and summary of scientific knowledge of the effects of various types of human activities on the Mexican Spotted Owl and provides an overview of the current levels of activities at LANL.

2.2 Impacts on Habitat Quality

2.2.1 Development

The type of habitat used by Mexican Spotted Owls, late seral stage forests with large trees, is usually not found in large quantities near developed areas or near areas that have had recent agricultural or forest product extraction land uses. Therefore, Mexican Spotted Owls are generally not found near developments. Whether it is the development or a lack of suitable habitat that discourages colonization of these areas by Mexican Spotted Owls is unknown.

Areas of LANL vary from remote, undeveloped areas to heavily developed and/or industrialized facilities. Most LANL facilities are situated atop mesas, primarily in the northern and western portion of the DOE property. LANL is bounded by developed residential, industrial, and retail areas along its northern boundary (the town of Los Alamos) and by residential and retail development along a portion of its eastern boundary (the town of White Rock). Three major paved roads traverse LANL from northeast to southwest. Sandia, Pajarito, and Los Alamos canyons have paved roads within AEIs, and several AEIs have dirt roads along at least a portion

of the canyon bottom. AEIs containing paved or dirt roads in the canyon bottoms have not been occupied at LANL (Hathcock et al. 2010).

2.2.2 Ecological Risk

There is no specific information on the impact of chemicals on the Mexican Spotted Owl, although experience with other raptor species suggests that exposure to polychlorinated biphenyls (PCBs), dichloro-diphenyl-trichloroethane (DDT) and its derivatives, and other organophosphate or organochlorine pesticides would probably be harmful. Exposure to other chemicals could also be harmful (Cain 1988).

LANS subject matter experts completed three ecological risk assessments that included the Mexican Spotted Owl between 1997 and 2009. The ecological risk assessment process involves using computer modeling to assess potential effects to animals from chemicals of potential concern that have been detected in the environment. All of the following ecological risk assessments concluded that, on average, no appreciable impact is expected to Mexican Spotted Owls from chemicals of potential concern (Gallegos et al. 1997; Gonzales et al. 2004; Gonzales et al. 2009).

2.2.3 Disturbance

2.2.3.1 Pedestrians and Vehicles

Based on work with other raptors, LANS biologists assume that Mexican Spotted Owls would likely be disturbed by the approach of either pedestrians or vehicles. At an equal distance, pedestrians are frequently more disturbing to raptors than vehicles (Grubb and King 1991). Brown and Stevens (1997) reported that during surveys in Grand Canyon National Park, 22 times more Bald Eagles were found in canyon reaches with low human recreational use compared to reaches with moderate to high human recreational use. Human activity 100 m (328 ft) from Bald Eagle nests in Alaska caused clear and consistent changes in behavior of breeding eagles (Steidl and Anthony 2000).

Swarthout and Steidl (2001) found that both juvenile and adult roosting Mexican Spotted Owls were unlikely to alter their behavior in the presence of a single hiker at distances greater than 55 m (180 ft). Swarthout and Steidl (2003) concluded that cumulative effects of high levels of short-duration recreational hiking near Mexican Spotted Owl nests may be detrimental.

Many canyon bottoms and mesa tops at LANL have dirt roads traversing them. Most of these roads are gated; however, these roads are accessible to LANL employees and some of them are accessible to the public on foot or by bike. LANS biologists found that AEIs are occupied less often if there is recreational access into a canyon (Hathcock et al. 2010).

2.2.3.2 Aircraft

Ground-based disturbances appear to impact raptor reproductive success more than aerial disturbances (Grubb and King 1991). Grubb and Bowerman (1997) concluded that an exclusion of aircraft within 600 m (1,968 ft) of Bald Eagle nest sites would limit Bald Eagle response frequency to 19 percent.

Delaney et al. (1999) found that for Mexican Spotted Owls, chainsaws consistently elicited higher response rates than helicopters at similar distances. Owl flush rates did not differ between nesting and non-nesting seasons. No owls flushed when noise stimuli (helicopter or chainsaws) were at distances greater than 105 m (344 ft). Distance was generally a better predictor of owl response to helicopter overflights than sound level.

LANL is restricted airspace and planes infrequently fly less than 609 m (2,000 ft) above ground level. The County of Los Alamos operates an airport along the northern edge of LANL. The airport is located on the southern rim of Pueblo Canyon. Most flights approach and depart to the east of the airport, over the Rio Grande.

2.2.3.3 Explosives

There is currently no specific information available on the reaction of Mexican Spotted Owls to explosives detonation. Explosive blasts set off 120 to 140 m (393 to 459 ft) from active Prairie Falcon (*Falco mexicanus*) nests caused perched Prairie Falcons to flush from perches 79 percent of the time, and, in 26 percent of the cases, caused incubating Prairie Falcons to flush from nests. Measured sound levels at aerie entrances during blasts ranged from 129 to 141 decibel (dB) (Holthuijzen et al. 1990). Explosives blasting for dam construction 560 to 1,000 m (1,837 to 3,280 ft) from active Prairie Falcon nests caused a change in behavior 26 percent of the time, and birds flushed in 17 percent of all cases. No incubating birds flushed (Holthuijzen et al. 1990). Brown et al. (1999) found little activity change in roosting or nesting Bald Eagles and no population-level impacts from weapons detonations at the Aberdeen Proving Ground. Holthuijzen et al. (1990) found that a 167-g (5.89-oz) charge of Kinestik produced noise levels between 138 and 141 dB at 100 m (328 ft), and that a 500-g (17.6-oz) charge of trinitrotoluene(2,4,6-) (TNT) produced noise levels between 144 and 146 dB at 100 m (328 ft). A 20-kg (44-lb) charge of TNT produced noise levels that measured 163 dB at 100 m (328 ft) (Paakkonen 1991).

Measurements of noise levels during explosives testing were conducted at three locations at LANL using quantities of high explosives ranging from 4.5 to 67.5 kg (10 to 148 lb) of TNT during six shots. Noise levels increased during the test from a background level of 31 A-weighted decibel [dB(A)]¹ to a range between 64 and 71 dB(A) during shots at a distance of 1.8 km (1.1 mi). At a distance of 4.3 km (2.67 mi), noise levels rose from a background range of 35 to 64 dB(A) to a range of 60 to 63 dB(A) (Vigil 1995). At a distance of 6.7 km (4.16 mi), noise levels rose from a background range of 38 to 51 dB(A) to a range of 60 to 71 dB(A) (Burns 1995). LANS biologists estimated that the noise from a shot at the Dual-Axis Radiographic Hydrodynamic Test (DARHT) Facility would be 150 dB(A) at the source and 80 dB(A) at 400 m (1,312 ft) (Keller and Risberg 1995). LANS biologists found that Mexican Spotted Owl AEIs located within the explosives testing buffer area were occupied more frequently than AEIs in other locations (Hathcock et al. 2010). This is likely due to the strict access control in explosives areas that limit human activity and development in the canyon bottoms.

¹ Sound can be measured as decibels (dB), C-weighted dB [dB(C)], or A-weighted dB [dB(A)]. The dB(A) measurement best resembles the response of the human ear by filtering out lower and higher frequency sound not normally heard by the human ear.

2.2.3.4 Other Sources of Noise

Major noise-producing activities at LANL include automobile and truck traffic and noise associated with office buildings, construction activities, a live-fire range, and explosives testing. Noise is also associated with aircraft traffic at the Los Alamos County airport. Construction and maintenance activities involved with operations at LANL are fairly common. In addition, implementation of the 2016 Compliance Order on Consent issued by the New Mexico Environmental Department has resulted in an increased frequency of drilling groundwater monitoring wells in protected habitat at LANL. Also, forest fuels management operations use chainsaws, chippers, and other noise-generating equipment. The 2010 National Pollutant Discharge Elimination System Individual Permit (EPA 2010) issued by the Environmental Protection Agency requires sediment control features such as berms and small rock check dams to be installed at various sites with stormwater runoff; these are sometimes installed in protected habitat. LANS biologists conducted a study of noise levels in canyons and found that the primary sources of noise exceeding 55 dB(A) were cars and trucks. Readings taken near flowing water were up to 11 dB(A) higher than readings taken elsewhere. The average dB(A) in canyons near paved roads ranged from 41 to 62, with maximum values ranging from 62 to 74. Away from paved roads 1.6 km (1 mi) or more, average dB(A) in canyons ranged from 37 to 50, with all but one average below 45. Maximum dB(A) away from paved roads ranged from 38 to 76, 76 dB(A) was measured during a thunder clap (Huchton et al. 1997).

In December 1997, LANS biologists conducted noise measurements at the Los Alamos County airport and in Bayo and Pueblo canyons, including the Los Alamos County Sewage Treatment Facility. Sound levels near the airport runway during the maximum use time (6:30 to 7:30 am) had background values averaging 54 dB(A). Noise during plane arrivals ranged from 47 to 63 dB(A). No measurements were collected during plane take-off. Sound measurements conducted in the bottoms of Pueblo and Bayo canyons ranged from 37 to 40 dB(A) in most areas of the canyon. At the sewage treatment facility parking lot during a working day, the average dB(A) during a 3-minute period was 46 (range 45 to 49). At the intersection of the road going into Pueblo Canyon with State Road 502, the average dB(A) during a 3-minute period was 60 (range 41 to 70).

LANS biologists conducted sound measurements at successive distances from an industrial area near a canyon rim, into the canyon, and to the opposite rim, using a C-weighted decibel (dB(C)) scale (Keller and Foxx 1997). Measurements of noise levels using the dB(C) scale are greater than if measured using the dB(A) scale. The average background noise on the mesa was 65.8 dB(C) [with a range of 43–81 dB(C)]. The average background noise in the canyon bottom was 62.3 dB(C) [with a range of 54–78 dB(C)]. The average background noise at the bottom of the north-facing slope was 53.8 dB(C) [with a range of 48–64 dB(C)]. Measurements were taken mid-day.

LANS biologists measured sound levels from various pieces of construction equipment used at LANL project sites over 5-minute intervals at distances of 6 to 31 m (20 to 100 ft) (Knight and Vrooman 1999). Average values ranged from 58.5 to 80.9 dB(A). Peak values ranged from 75.7 to 155.4 dB(A). Additional data were collected by other LANL operators on specific pieces of construction equipment and on the Security Computer Complex construction site fence perimeter at Technical Area 3 before and during construction (Knight and Vrooman 1999). The average

noise level before construction began was 56.6 dB(A), and the average during construction was 82.1 dB(A).

LANS biologists conducted a series of sound measurements at LANL to investigate background noise levels around AEIs (Vrooman et al. 2000). Background noise levels were significantly higher in daytime than in nighttime. AEIs with greater than a 10 percent developed area in their buffers had significantly higher levels of background noise than undeveloped AEIs. The mean background sound level was 51.3 dB(A) in developed AEIs and 39.6 dB(A) in undeveloped AEIs. The LANL biological resources project review process uses the individual AEI background measurements from Vrooman et al. (2000) to screen project activities for increases more than 6 dB(A) above background.

LANS biologists took sound level measurements of heavy equipment use associated with concrete recycling on Sigma Mesa at LANL in 2004 (Hansen 2004). At this location, background noise levels at two different locations were 55.2 and 58.8 dB(A). Operation of a dump truck hauling and dumping concrete increased noise levels above background by a mean of 22.7 dB(A) at 30 m (98 ft) and 2.4 dB(A) at 80 m (262 ft). Additional sound level measurements were taken in the same general area on Sigma Mesa in 2005 as part of a biological assessment for the operation of an asphalt batch plant (Hansen 2005). Measurements were taken on the north rim of Mortandad Canyon (south of the asphalt batch plant at distances of approximately 30 to 122 m (100 to 400 ft), at the bottom of Mortandad Canyon approximately 183 to 244 m (600 to 800 ft) from the asphalt batch plant, and on the south rim of Mortandad Canyon approximately 305 m (1,000 ft) from the asphalt batch plant. Background noise levels at the various locations ranged from 41.1 to 48.7 dB(A). The only locations with increases greater than 3 dB(A) during operation of the asphalt batch plant were the locations on the north rim of Mortandad Canyon, within 122 m (400 ft) of the asphalt batch plant. Noise from the operation of the asphalt batch plant was not detected in the bottom of Mortandad Canyon or on the south rim.

LANS biologists took sound level measurements around the LANL Biosafety Level 3 laboratory with the heating, ventilation, and air conditioning (HVAC) system on and with it off (Hansen 2009). The area to the north of the Biosafety Level 3 laboratory is developed, the area to the south is not. Background noise levels north of the facility ranged from 53.6 to 57.6 dB(A). Background noise levels south of the facility ranged from 41.6 to 49.7 dB(A). Noise from the HVAC system was detected at 25 m (82 ft) from the facility on both sides, but was not detected at 81 m (266 ft) on the north side, or at 107 m (351 ft) on the south side.

Overall, these studies appear to show that areas adjacent to or within developed areas or paved roads are likely to have daytime average background noise levels between 45 and 63 dB(A). Less disturbed areas are likely to have average background noise levels between 37 and 50 dB(A).

2.2.3.5 Artificially Produced Light

There is no information available on the effects of artificially produced light on Mexican Spotted Owls. Under the Los Alamos County Code, commercial site development plans are reviewed to ensure that lighting serves the intended use of the site while minimizing adverse impacts to adjacent residential property (Section 16-276). Section 16-276 of the County Code includes light source measurement limitations by zoning district. The code allows off-site light to be 0.5 foot candles (fc) in residential areas. By comparison, full moonlight measures 0.1 fc, and a crescent

moon was measured at 0.01 fc. Table A-2 in the appendix presents preliminary light measurements in fc.

Preliminary surveys were conducted for light levels within Los Alamos Canyon at the Omega Reactor (Keller and Foxx 1997). The Omega Reactor was brightly lit for purposes of security; therefore, total light intensity was greater than the average street lighting. Measurements were conducted at a light pole in an open parking lot at the reactor as the source. Trees did not obscure the area. Using the relationship of light intensity reducing as a square of the distance, calculations using the field data indicated that at 30 m (98 ft) from the source, the light levels would be equivalent or nearly equivalent to full moonlight.

3.0 AEI General Description for Mexican Spotted Owl

An AEI consists of two areas—a core and a buffer. The core of the habitat is defined as suitable canyon habitat from rim to rim and 100 m (328 ft) out from the top of the canyon rim. The buffer area is 400 m (1,312 ft) wide extending outward from the edge of the core area. Although adult Mexican Spotted Owls may be found within their home range anytime throughout the year, the primary threat from disturbance to the owls is during the breeding season when owl pairs are tied to their nest sites. Therefore, management of disturbance in Mexican Spotted Owl AEIs is concentrated on the breeding season.

3.1 Method for Identifying a Mexican Spotted Owl AEI

The original location of each Mexican Spotted Owl AEI was identified using a habitat model developed by Johnson (1998) that classified nesting and roosting habitat for Mexican Spotted Owls using topographic characteristics and vegetative diversity. LANS biologists compared the results from the Johnson (1998) model to a different model identifying slopes >40 percent in mixed conifer and ponderosa pine cover types at LANL. Areas identified from the Johnson (1998) model application to LANL that were over five contiguous 30 × 30 m (97 × 98 ft) pixels in size, were above 1,980 m (6,496 ft) in elevation, and that had mixed conifer or ponderosa pine forest cover, were considered suitable Mexican Spotted Owl habitat. Where suitable habitat was identified, AEI core area boundaries were established to include the canyons and 100 m (328 ft) outward from the canyon rims.

An updated Mexican Spotted Owl habitat model was developed and refined for application on LANL property following the Cerro Grande wildfire (Hathcock and Haarmann 2008). This model incorporated finer-scale vegetation characteristics into the Mexican Spotted Owl habitat quality assessment. This model was used to redelineate the boundaries of the Mexican Spotted Owl AEIs at LANL in 2005 following wildfire, drought, and a regional bark beetle outbreak (USFWS consultation number 22420-2006-I-0010).

The new core boundaries were delineated with an area approximately 0.4 km (0.25 mi) from the edge of the nearest suitable habitat, up and down canyon. Core boundaries were established along readily recognizable geologic features or anthropogenic features in the terrain wherever possible to facilitate the ease of identification of core boundaries when in the field.

3.2 Location and Number of Mexican Spotted Owl AEIs

There are currently five Mexican Spotted Owl AEIs on LANL property, each encompassing one or more canyons. In general, the AEI cores are centered in canyons on the western side of LANL. The canyons with AEIs are Cañon de Valle, Water, Pajarito, Los Alamos, Sandia, Mortandad, and Three-Mile.

4.0 AEI Management

4.1 Overview

This AEI management section provides guidelines for LANL operations to reduce or eliminate the threats to Mexican Spotted Owls from 1) habitat alterations that reduce habitat quality and 2) disturbance of breeding or potentially breeding owls. Habitat alterations are considered for all AEIs and for both core and buffer areas. Disturbance activities to owls are considered only for occupied AEIs and only for impacts on core areas. Developed areas (see Part I, Section 3.1) that have ongoing baseline levels of activities and are not suitable habitat for Mexican Spotted Owls have different restrictions than undeveloped core or buffer areas. Therefore, the location of the disturbance activity within the AEI, the occupancy status of the AEI, and the type of activity all affect whether or not the activity is allowable. AEIs for different species may overlap, and an activity must meet the guidelines of all applicable site plans to be allowable.

4.2 Definition and Role of Occupancy in AEI Management

Occupancy simply refers to whether or not an AEI is occupied during a species' period of sensitivity. For Mexican Spotted Owls, the primary concern is to protect the owls from disturbance during the breeding season. Because individuals may colonize suitable habitat, all Mexican Spotted Owl AEIs are treated as though they are occupied from March 1 through August 31 or until surveys show an AEI to be unoccupied. Mexican Spotted Owl surveys are conducted from late March through June. In general, surveys in areas with ongoing or proposed projects are completed by May 15. If a nest is located during surveys, then the AEI can be treated as unoccupied except for the area within a 400 m (1,312 ft) radius of the nest site. Because owls are not as sensitive to disturbance during the non-breeding season, Mexican Spotted Owl AEIs are treated as unoccupied from September 1 to February 28.

The occupancy status of an AEI affects what activities are allowable in the AEI. Although activities causing habitat alterations are restricted in all AEIs, disturbance activities are restricted only in occupied AEIs. The Activity Table (Table 1, Section 4.5.2) provides dates and levels of allowable disturbance activities within occupied Mexican Spotted Owl AEIs under the guidelines of this site plan. Contact a LANS biologist to find out the current occupancy status of an AEI (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

4.3 Introduction to AEI Management Guidelines

Sections 4.4 and 4.5 provide the guidelines for habitat alterations and allowable activities in AEI core and buffer areas. Section 4.4 describes what and where habitat alterations are allowed under the guidelines of this site plan. Section 4.5 describes what, when, and where disturbance activities are allowed in occupied AEIs under the guidelines of this site plan. If an activity does not meet the restrictions given in the guidelines, the activity must be individually reviewed for

ESA compliance. This site plan only provides guidelines for Mexican Spotted Owl AEIs. If an activity is desired in an area with overlapping AEIs, all applicable site plans must be consulted. AEI maps show the location of all AEIs in an area. Section 4.6 describes management practices that should be applied when working or considering work in an AEI. LANS biologists are available to answer questions and provide advice (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

4.4 Definition of and Restrictions on Habitat Alterations

4.4.1 Definition of Habitat Alterations

Habitat alteration includes any action that alters the soil structure, vegetative components necessary to the species, prey quality and quantity, water quality, hydrology, or noise or light levels in undeveloped areas of an AEI. Long term means the alteration lasts for more than one year. For physical disturbances, in general, any activity that can be accomplished by one person with a hand tool is generally not considered habitat alteration; any activity that requires mechanized equipment on a landscape is habitat alteration. An actual activity may take place outside of the AEI and will be considered habitat alteration if consequences of the activity have effects inside the AEI core.

The habitat components most important to Mexican Spotted Owls include vegetative structure, food quality and quantity, and disturbance levels, including noise and light. The forest structure within a canyon designated as a Mexican Spotted Owl AEI is important because it provides roost sites and a suitable habitat for nesting and foraging. Trees along the canyon rim are used for foraging and territorial calling, and they shelter the canyon interior from light and noise disturbances.

A long-term change in light or noise levels within the undeveloped core of an AEI is considered to be a habitat alteration if it increases average noise levels by ≥ 6 dB(A) during any portion of the 24-hour day, or it increases average light levels by ≥ 0.05 fc at night. Changes in noise and light levels are measured at the core area boundary if the source is outside the core area, or at 10 m (33 ft) from the source if the source is inside the undeveloped core area. Impacts of changes in developed areas on undeveloped cores are measured at the developed area boundary if it is within the core, or at the core area boundary if the developed area is outside of the core.

4.4.2 Fuels Management Practices to Reduce Wildfire Risk

The recovery plan for the Mexican Spotted Owl lists stand-replacing wildfires as a primary threat to their habitat and encourages land managers to reduce fuel levels and abate fire risks in ways compatible with owl presence on the landscape (USFWS 1995). Within undeveloped core areas, on slopes >40 percent, in the bottoms of steep canyons, and within 30 m (100 ft) of a canyon rim, thinning of trees <22 cm (9 in) diameter at breast height, treatment of fuels, and prescribed and natural prescribed fires are allowed. Exceptions allowing trees >22 cm (9 in) to be thinned within 30 m (100 ft) of buildings are granted to protect facilities. Large logs (>30 cm [11.8 in] midpoint diameter) and snags should be retained. Thinning within core areas not meeting the characteristics listed above, and in buffer areas, may include trees of any size to achieve 8 m (25 ft) spacing between tree crowns. However, clear cutting is not allowed in undeveloped core areas.

For health and safety reasons, any trees within 30 m (100 ft) of buildings, but outside a developed area, may be thinned to achieve 8 m (25 ft) spacing between crowns. Habitat alterations including thinning are not restricted in developed areas. However, LANS biologists encourage the retention of trees and snags along canyon rims if the rim is in a developed area. Because of the extreme fire danger associated with firing sites and the potential impact of a fire on Mexican Spotted Owl habitat, firing sites and burn areas are treated separately for the purposes of fuels management. Trees within 380 m (1,246 ft) of firing sites and burn areas in both core and buffer areas may be thinned to a 15 m (49 ft) spacing between trees everywhere except on slopes >40 percent or in the bottoms of steep canyons. Any tree over 22 cm (9 in) diameter at breast height within 380 m (1,246 ft) of a firing site may be delimbed to a height of 2 m (6 ft) to help prevent crown fires.

In historically occupied core areas, fuels treatment may not exceed 10 percent of the undeveloped core area and is not allowed within 400 m (1,312 ft) of nesting areas. In occupied core areas, forest management activities must take place during the nonbreeding season (September 1 to February 28) (USFWS 1995). Fuels management activities that are allowable in core areas must be reported to LANS biologists for tracking (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

4.4.3 Utility Corridors

Habitat alterations such as cutting down trees that threaten power lines are allowed within 8 m (26 ft) of either side of an existing utility line in all areas of an AEI (Trujillo and Racine 1995). New utility lines and utility lines requiring clearance of a right-of-way greater than 16 m (52 ft) total must be individually reviewed for ESA compliance. Disturbance activities must follow the guidelines given in the Activities Table (Table 1, Section 4.5.2) for occupied AEIs.

4.4.4 Restrictions on Habitat Alterations

Habitat alterations other than the fuels management practices and utility corridor maintenance described above are not allowed in undeveloped core areas under the guidelines of this site plan. If a project or activity is planned that would alter habitat in an undeveloped core area, it must be individually evaluated for ESA compliance. Habitat alterations in undeveloped buffer areas other than the fuels management activities and utility corridor maintenance described above are restricted to 2 ha (5 ac) in area per project and are subject to other restrictions including light and noise effects in the core (see Section 2.2.3). Projects in the buffer area over 2 ha (5 ac) in size will require individual ESA compliance review.

Habitat alterations in a buffer area other than the fuels management and utility corridor maintenance described above must be reported to LANS biologists for tracking (<http://int.lanl.gov/environment/bio/controls/index.shtml>). There is a cumulative maximum area that can be developed in each AEI's buffer. Once that cumulative area is reached, all habitat alterations in a buffer will require individual ESA reviews for compliance.

4.5 Definition of and Restrictions on Disturbance Activities

4.5.1 Definitions of Disturbance Activities

LANS biologists considered six categories of activities that might cause disturbance in an AEI. Most of the categories were first identified in the document “Peregrine Falcon Habitat Management in the National Forests of New Mexico,” prepared for the United States Forest Service (Johnson 1994). LANS biologists added explosives detonation, other light production, and other noise production to provide the most comprehensive list of activities possible, thereby reducing the need for individual review of activities for ESA compliance. The categories of activities are people, vehicles, aircraft, other light production, other noise production, and explosives detonation. LANS biologists defined low, medium, and high levels of impact for these activities except for explosives detonation. Activity levels for explosives detonation have been designed to follow the guidelines agreed upon by LANL, DOE, and USFWS in the DARHT biological assessment (Keller and Risberg 1995). Restrictions on explosives detonation are described in the definition of the activity, but are not included in the Activity Table (Table 1, Section 4.5.2). These six categories of activities are restricted only in AEIs that are classified as occupied.

People—includes any entry of people into an AEI on foot.

- Low impact is the presence of three or fewer people per project and duration of one day or less during a breeding season.
- Medium impact is the exceedance of either the number of people or the duration criteria.
- High impact is the exceedance of both the number of people and the duration criteria.

Vehicles—includes the entry of any two-axle highway vehicle, all-terrain vehicle, or motorized machinery into an AEI by any route other than a paved road or an improved gravel road.

- Low impact is the presence of two or fewer vehicles per project and duration of one day or less during a breeding season.
- Medium impact is the exceedance of either the number of vehicles or the duration criteria.
- High impact is the exceedance of both the number of vehicles and the duration criteria.

Aircraft—includes the operation of any aircraft below an elevation of 600 m (2,000 ft) above the highest ground level in the local vicinity.

- Low impact is the presence of one single-engine airplane and the duration of one day or less during a breeding season.
- Medium impact is the exceedance of either the number of aircraft or the duration criteria.
- High impact is the exceedance of both the number of aircraft and the duration criteria.

Any use of helicopters, jet airplanes, and propeller airplanes with two or more engines is classified as medium impact or above, depending on duration.

Other Light Production—includes any activity not previously listed that causes additional light to occur in an AEI core area. For example, plans for construction of a new building at the edge of a developed area may call for lighting at night to facilitate nighttime work that impacts an undeveloped core area.

- Low impact is the increase of light intensity by ≤ 0.05 fc and a duration of one night or less per project per breeding season.
- Medium impact is the exceedance of either the intensity or duration criteria.
- High impact is the exceedance of both the intensity and duration criteria.

Measurements for increases in light are taken at the AEI core area boundary closest to the light source if the source is outside the core and at 10 m (33 ft) from the source if the source is inside the core. Light measurements for developed areas are taken at the edge of the developed area if the developed area is within an AEI core or at the closest core boundary if the developed area is outside of an AEI core.

Other Noise Production—includes any activity not previously listed except for explosives detonation that causes additional noise to occur in an AEI. For example, operation of machinery creates noise.

- Low impact is increasing noise levels in an AEI core by 6 dB(A) or less for one day or less per project per breeding season.
- Medium impact is the exceedance of either the level or the duration criteria.
- High impact is the exceedance of both the level and the duration criteria.

Measurements for increases in noise are taken at the AEI core boundary closest to the noise source if the source is outside the core and at 10 m (33 ft) from the source if the source is inside the core. Noise measurements for developed areas are taken at the edge of the developed area if the developed area is within an AEI core or at the closest core boundary if the developed area is outside of an AEI core.

Explosives Detonation—includes the use of high explosives for any purpose. LANS biologists did not define low, medium, and high levels of this activity because of the difficulty of determining levels for a shot before actually doing the shot. For the purpose of explosives detonation near Mexican Spotted Owl AEIs, occupied habitat is defined as the area within 400 m (1,312 ft) of the current year's nest/roost sites or the previous year's nest site if a current site has not been identified. No explosives detonation will take place within 400 m (1,312 ft) of nest/roost sites in occupied habitat between March 1 and August 31. Explosives detonation at night at sites within 400 to 800 m (1,312 to 2,624 ft) of a nest site in occupied habitat is restricted to once a month from March 1 and August 31. There are no restrictions on daytime explosives testing between 400 and 800 m (1,312 to 2,624 ft). There are no restrictions between September 1 and February 28 or in unoccupied habitat. Explosives detonation adjacent to AEIs that have not previously been recorded by LANS biologists as occupied will have no restrictions unless surveys detect Mexican Spotted Owls. Explosives tests not allowed under the guidelines of this site plan must be individually reviewed for ESA compliance.

4.5.2 Activity Table

The dates shown in the Activity Table (Table 1) are the dates between which the activity in the row is restricted under the guidelines of this site plan. All AEIs are considered occupied from March 1 to August 31 or until surveys show an AEI to be unoccupied. If owls are detected, AEIs are considered occupied until August 31 within 400 m (1,312 ft) of the nest site. Consult with LANS biologists to find out occupancy status of AEIs and what locations are within 400 m (1,312 ft) of nest sites (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

Table 1. Restrictions on Activities in Undeveloped Occupied Mexican Spotted Owl AEIs

| | Levels of Impact | Core | Buffer |
|--|------------------|----------------------|----------------------|
| <i>People</i> | | | |
| | Low | No Restrictions* | No Restrictions |
| | Medium | March 1 to August 31 | No Restrictions |
| | High | March 1 to August 31 | No Restrictions |
| <i>Vehicles</i> | | | |
| | Low | No Restrictions | No Restrictions |
| | Medium | March 1 to August 31 | No Restrictions |
| | High | March 1 to August 31 | No Restrictions |
| <i>Aircraft</i> | | | |
| | Low | March 1 to August 31 | No Restrictions |
| | Medium | March 1 to August 31 | March 1 to May 15 |
| | High | March 1 to August 31 | March 1 to August 31 |
| <i>Other Light Production</i> | | | |
| | Low | March 1 to August 31 | No Restrictions** |
| | Medium | March 1 to August 31 | No Restrictions** |
| | High | March 1 to August 31 | No Restrictions** |
| <i>Other Noise Production</i> | | | |
| | Low | March 1 to August 31 | No Restrictions** |
| | Medium | March 1 to August 31 | No Restrictions** |
| | High | March 1 to August 31 | No Restrictions** |
| <i>Explosives Detonation (see text in Section 4.5.1)</i> | | | |

* Entry is restricted in core areas that are occupied within 400 m (1,312 ft) of the nest site from March 1 to August 31. If the current nest has not been located, entry is restricted within 400 m (1,312 ft) of the previous year's nest site.

** Noise or light production in the buffer is restricted if the activity would violate core area restrictions on noise or light.

4.6 Protective Measures

This section provides a list of management practices to apply in Mexican Spotted Owl AEIs.

- Timing of projects must take into account that projects in core areas or projects that violate restrictions for occupied buffer areas must stop on February 28 each year until occupancy status of the AEI is determined.

- Make every reasonable effort to reduce the noise from explosives testing within 800 m (2,624 ft) of occupied habitat. Methods to reduce noise could include contained shots, noise shields in the direction of AEI cores, etc. For night shots, every reasonable effort should be made to limit the amount of light directed into AEI core areas.
- Install signs on dirt roads and trails leading into AEIs labeling them as restricted access areas and provide a contact number for access restrictions.
- Keep disturbance and noise to a minimum.
- Avoid unnecessary disturbance to vegetation (e.g., excessive parking areas or equipment storage areas, off-road travel, materials storage areas, crossing of streams or washes).
- Avoid removal of vegetation along drainage systems and stream channels.
- Avoid all vegetation removals not absolutely necessary.
- Employ appropriate erosion and runoff controls to reduce soil loss. The controls must be put in place and periodically checked throughout the life of projects.
- Revegetate all exposed soils as soon as feasible after construction to minimize erosion.
- Focus development away from undeveloped areas on the western end of the Los Alamos Canyon AEI.

5.0 Levels of Development in AEI Core and Buffers

5.1 Allowable Habitat Alteration in the Buffer Areas

The following quantifications of development and guidance for allowable habitat alteration in buffer areas were published and consulted on in the 1999 version of the HMP. Most AEIs changed in dimensions during the 2005 redelineation of the habitats, and many have experienced additional development under past consultations. Many projects were reviewed and received USFWS concurrence between 1999 and 2017.

The current development status for each of the AEIs is at the end of each AEI description.

Cañon de Valle—In 1999, 16.3 ha (40.3 ac) of the core was developed and 52.2 ha (129 ac) of the buffer was developed. For this AEI, it was recommended that only an additional 25.30 ha (62.5 ac) of the AEI buffer be developed. The 1999 HMP stated that once this cap is reached or a large-scale project is proposed, additional consultation with USFWS would be required. By 2011, 28 ha (69.2 ac) of the core and 84 ha (207.5 ac) of the buffer was developed, with most of the changes due to consultations. The 2017 redelineation of the lower Water Canyon AEI resulted in another reduction of 69 ha (170 ac). The current size of this AEI is 277 ha (685 ac) of core and 524 ha (1295 ac) of buffer habitat. Of that, 21 ha (52 ac) of the current core is developed and 71 ha (176 ac) of the current buffer is developed.

Pajarito—In 1999, 6.7 ha (16.5 ac) of the core was developed and 75.1 ha (186.5 ac) of the buffer was developed. For this AEI, it was recommended that only an additional 35 ha (86.4 ac) of the buffer be developed. The 1999 HMP stated that once the cap is reached or a single large-scale project is proposed, additional consultation with the USFWS would be required. By 2011,

27 ha (66.7 ac) of the core and 89 ha (220 ac) of the buffer was developed, with most of the changes due to consultations. The current size of this AEI is 236 ha (585 ac) of core and 449 ha (1,111 ac) of buffer habitat. Of that, 27 ha (67 ac) of the current core is developed and 89 ha (220 ac) of the current buffer is developed.

Los Alamos—In 1999, 77.16 ha (190 ac) of the core was developed and 167.2 ha (413.1 ac) of the buffer was developed. Because this AEI is heavily developed, additional development was restricted to a few selected areas within the buffer. By 2011, 94 ha (232.2 ac) of the core and 181 ha (447.3 ac) of the buffer was developed, with most of the changes due to consultations. The current size of this AEI is 325 ha (805 ac) of core and 535 ha (1,323 ac) of buffer habitat. Of that, 64 ha (158 ac) of the current core is developed and 129 ha (319 ac) of the current buffer is developed.

Sandia-Mortandad—In 1999, 29 ha (71.7 ac) of the core was developed and 75.1 ha (185.6 ac) of the buffer was developed. For this AEI, LANS biologists recommended only an additional 38.1 ha (94.1 ac) of the buffer be developed before additional USFWS consultations take place. By 2011, 45 ha (111.2 ac) of the core and 83 ha (205.1 ac) of the buffer was developed, with most of the changes due to consultations. The current size of this AEI is 270 ha (669 ac) of core and 371 ha (918 ac) of buffer habitat. Of that, 44 ha (110 ac) of the current core is developed and 83 ha (206 ac) of the current buffer is developed.

Three Mile—In 1999, 3.8 ha (9.4 ac) of the core was developed and 21.5 ha (51.1 ac) of the buffer was developed. For this AEI, LANS biologists recommended only 64.3 ha (158.8 ac) additional area of buffer be developed before additional USFWS consultations take place. By 2011, 12 ha (29.6 ac) of the core and 37 ha (91.4 ac) of the buffer was developed, with most of the changes due to consultations. The current size of this AEI is 131 ha (325 ac) of core and 295 ha (730 ac) of buffer habitat. Of that, 11 ha (29 ac) of the current core is developed and 36 ha (91 ac) of the current buffer is developed.

III. AREA OF ENVIRONMENTAL INTEREST SITE PLAN FOR THE SOUTHWESTERN WILLOW FLYCATCHER

1.0 Species Description—Southwestern Willow Flycatcher

1.1 Status

In 1995, the USFWS designated the Southwestern Willow Flycatcher as a federally endangered species (60 FR 10693). The USFWS most recently designated critical habitat for the Southwestern Willow Flycatcher in 2013 (78 FR 343). The most recent recovery plan for the Southwestern Willow Flycatcher was published in 2002 (USFWS 2002).

1.2 General Biology

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, Nevada,

and far western Texas. In winter it is found in southern Mexico, Central America, and northern South America (USFWS 2002).

Southwestern Willow Flycatchers are present in New Mexico from early May through mid-September and breed from late May through late July (Finch and Kelly 1999; USFWS 2002; Yong and Finch 1997). The flycatcher's nesting cycle is approximately 28 days. Three or four eggs are laid at one-day intervals, and incubation begins when the clutch is complete. The female incubates eggs for approximately 12 days, and the young fledge about 13 days after hatching. Southwestern Willow Flycatchers typically raise one brood per year (USFWS 2002). Because arrival dates vary, northbound migrant Willow Flycatchers (of all subspecies) pass through areas where Southwestern Willow Flycatchers have already begun nesting. Similarly, southbound migrants (of all subspecies) in late July and August may occur where Southwestern Willow Flycatchers are still breeding. Therefore, it is only during a short period of the breeding season (approximately June 15 through July 20) that a Willow Flycatcher seen within Southwestern Willow Flycatcher range is probably of that subspecies (USFWS 2002).

The Southwestern Willow Flycatcher only nests along rivers, streams, and other wetlands. It is found in close association with dense stands of willows (*Salix* spp.), arrowweed (*Pluchea* spp.), buttonbush (*Cephalanthus* spp.), tamarisk (*Tamarix* spp.), Russian olive (*Eleagnus angustifolia* L.), and other riparian vegetation, often with a scattered overstory of cottonwood (*Populus* spp.) (USFWS 2002). The size of vegetation patches or habitat mosaics used by Southwestern Willow Flycatchers varies considerably and ranges from as small as 0.8 ha (1.9 ac) to several hundred hectares (Hatten and Paradzick 2003). The Southwestern Willow Flycatcher nests in thickets of trees and shrubs approximately 2 to 15 m (6 to 49 ft) tall, with a high percentage of canopy cover and dense foliage from 0 to 4 m (0 to 13 ft) above ground. Regardless of the plant species composition or height, occupied sites always have dense vegetation in the patch interior (Allison et al. 2003; USFWS 2002).

The Southwestern Willow Flycatcher is an insectivore. It forages within and occasionally above dense riparian vegetation, taking insects on the wing and gleaning them from foliage. The flycatcher's prey includes flies, bees, wasps, ants, beetles, moths, butterflies, grasshoppers, crickets, dragonflies, damselflies, and spiders (Durst et al. 2008; Wiesenborn and Heydon 2007).

1.3 Threats

The current population of Southwestern Willow Flycatchers in the United States occupies an estimated 1,214 territories (Durst et al. 2006). The distribution of breeding groups is highly fragmented, with groups often separated by considerable distances. This subspecies has suffered declines attributed to extensive loss of its cottonwood-willow habitat and to poor productivity resulting from brood parasitism by Brown-headed Cowbirds (*Molothrus ater*) (USFWS 2002).

2.0 Impact of Human Activities

2.1 Introduction

The primary threats to the Southwestern Willow Flycatcher on LANL property are 1) impacts on habitat quality from LANL operations and 2) disturbance of nesting flycatchers. This section includes a review and summary of the known effects of various types of human activities to the

Southwestern Willow Flycatcher and an overview of the current levels of activities at LANL within species habitat.

2.2 Impacts on Habitat Quality

2.2.1 Development

Throughout the Southwest, riparian habitats are rare and tend to be small and separated by vast expanses of arid lands. The Southwestern Willow Flycatcher has experienced extensive habitat loss and modification resulting from urban and agricultural development, water diversion and impoundment, channelization of waterways, livestock grazing, off-road vehicle and other recreational uses, and hydrological changes resulting from these and other land uses (USFWS 2002). River and stream impoundments, groundwater pumping, and overuse of riparian areas have altered as much as 90 percent of the Southwestern Willow Flycatcher's habitat (USFWS 2002). Loss of cottonwood-willow riparian forests has had widespread impact on the distribution and abundance of bird species associated with that forest. Development may be tolerated if the habitat is left intact.

Because watercourses at LANL tend to be intermittent to ephemeral, riparian habitat is uncommon. There has been extensive degradation of the riparian zone along the Rio Grande caused by feral cattle grazing and flood control operations at Cochiti Lake. There are other riparian/wetland areas on LANL property associated with canyon bottoms, the most significant being the Pajarito wetlands in the lower end of Pajarito Canyon. A major paved road parallels the wetlands area in Pajarito Canyon.

2.2.2 Ecological Risk

There is no specific information on the impact of chemicals on the Southwestern Willow Flycatcher.

2.2.2.1 Ecorisk Assessment

LANS subject matter experts completed two ecological risk assessments between 1997 and 2009 that included the Southwestern Willow Flycatcher. The ecological risk assessment process involves using computer modeling to assess potential effects to animals from chemicals of potential concern that have been detected in the environment. The ecological risk assessments concluded that, in general, there is a small potential for effects to Southwestern Willow Flycatcher from chemicals of potential concern (Gonzales et al. 1998; Gonzales et al. 2009).

An ecotoxicological risk assessment for the Southwestern Willow Flycatcher, centered on the Pajarito wetlands, found that between 7 and 16 percent of 100 hypothetical nest sites examined had hazard indices >1.0 and <10.0 , depending on the foraging scenario (Gonzales et al. 1998). This indicates a small potential for impacts from chemicals. The primary chemicals driving the risk scenario were pentachlorophenol, aluminum, radium-226, calcium, and thorium-228. Aluminum, radium, and thorium are naturally occurring substances in northern New Mexico.

2.2.3 Disturbance

2.2.3.1 Pedestrians and Vehicles

There is no specific information available on the reactions of Southwestern Willow Flycatchers to pedestrians and vehicles. The recovery plan for the Southwestern Willow Flycatcher recommends providing protected areas, reducing unpredictable activities, providing visual barriers, and reducing noise disturbance (USFWS 2002).

2.2.3.2 Aircraft

There is no specific information available on the reaction of Southwestern Willow Flycatchers to aircraft.

LANL lies within restricted airspace and planes infrequently fly less than 609 m (2,000 ft) above ground level. The County of Los Alamos operates an airport along the northern edge of LANL. The airport is located on the southern rim of Pueblo Canyon. Most flights approach and depart to the east of the airport, over the Rio Grande.

2.2.3.3 Explosives

There is no specific information available on the reaction of Southwestern Willow Flycatchers to explosives detonation. The Southwestern Willow Flycatcher AEI is not located close to any explosives testing sites at LANL.

2.2.3.4 Other Sources of Noise

LANS biologists do not have good information on the effects of noise, including machinery operation, on Southwestern Willow Flycatchers. However, Southwestern Willow Flycatchers are probably not as sensitive to disturbance as some other threatened or endangered species (USFWS 2002). For a description of noise levels at LANL, see Part I, Section 2.2.3.

2.2.3.5 Artificially Produced Light

There is no information available on the effects of artificially produced light on Southwestern Willow Flycatchers. Under the Los Alamos County Code, commercial site development plans are reviewed to ensure that lighting serves the intended use of the site while minimizing adverse impacts to adjacent residential property (Section 16-276). Section 16-276 of the County Code includes light source measurement limitations by zoning district. The code allows off-site light to be 0.5 fc in residential areas. By comparison, full moonlight measures 0.1 fc, and a crescent moon was measured at 0.01 fc.

3.0 AEI General Description for the Southwestern Willow Flycatcher

The AEI consists of two types of areas—core and buffer. Core areas represent wetland areas with suitable vegetation for nesting, primarily dense willows. The buffer area is the area within 100 m (328 ft) of core areas. The Southwestern Willow Flycatcher AEI on LANL property consists of two separate core areas. For purposes of this site plan, both core areas and associated buffers are considered one AEI unit.

3.1 Method for Identifying the Southwestern Willow Flycatcher AEI

The core areas were defined by the presence of riparian habitat and suitable wetland vegetation. These areas were identified in 1994 during a survey of wetlands at LANL and mapped using a global positioning system receiver. Wetlands without stands of dense willows at least 2 m (7 ft) tall and 30 m (98 ft) wide were not included in the AEI. The buffer area is the area within 100 m (328 ft) of the core areas.

3.2 Location of the Southwestern Willow Flycatcher AEI

There is one Southwestern Willow Flycatcher AEI on LANL property. It is composed of two core areas with associated buffers. The AEI core areas are located in the bottom of Pajarito Canyon, on the eastern side of LANL adjacent to Pajarito Road and State Road 4.

4.0 AEI Management

4.1 Overview

This AEI management section provides guidelines for LANL operations to reduce or eliminate the threats to the Southwestern Willow Flycatcher from 1) habitat alterations that reduce habitat quality and 2) disturbance of breeding or potentially breeding flycatchers. Habitat alterations are considered for all AEIs and for both core and buffer areas. Disturbance activities to flycatchers are considered only for occupied AEIs and only for impacts on core areas. Developed areas (see Part I, Section 2.3) that have ongoing baseline levels of activities and are not suitable habitat for Southwestern Willow Flycatchers have different restrictions than undeveloped core or buffer areas. Therefore, the location of the disturbance activity within the AEI, the occupancy status of the AEI, and the type of activity all affect whether or not the activity is allowable. AEIs for different species may overlap, and an activity must meet the guidelines of all applicable site plans to be allowable. Protective measures are described as management practices that should be followed when working in AEIs.

4.2 Definition and Role of Occupancy in AEI Management

Occupancy simply refers to whether or not an AEI is occupied during a species' period of sensitivity. For Southwestern Willow Flycatchers, LANS biologists are primarily concerned with protecting the birds from disturbance during the breeding season. Because individuals may colonize suitable habitat, the Southwestern Willow Flycatcher AEI is treated as though it is occupied from May 15 through September 15 or until surveys show an AEI to be unoccupied. Southwestern Willow Flycatcher surveys are conducted during May, June, and July. Because Southwestern Willow Flycatchers migrate south for the winter, the AEI is treated as unoccupied from September 16 to May 14.

The occupancy status of an AEI affects what activities are allowable in the AEI. Although activities causing habitat alterations are always restricted, disturbance activities are restricted only in occupied AEIs. The Activity Table (Table 2, Section 4.5.2) provides dates and levels of disturbance activities allowable in the occupied Southwestern Willow Flycatcher AEI under the guidelines of this site plan. The dates in Table 2 indicate the time period during which the activity is restricted. Contact a LANS biologist to find out the current occupancy status of an AEI (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

4.3 Introduction to AEI Management Guidelines

Sections 4.4 and 4.5 provide the guidelines for habitat alterations and allowable activities in AEI core and buffer areas. The flowchart (see Figure 1) provides a quick reference that should be used to determine if a project or activity will affect an AEI and what sections of the site plan need to be consulted. The section on habitat alterations (Section 4.4) describes what and where habitat alterations are allowed under the guidelines of this site plan. The section and table on allowable activities (Section 4.5 and Table 2) describe what, when, and where disturbance activities are allowed in occupied AEIs under the guidelines of this site plan. If an activity does not meet the restrictions given in the guidelines, the activity must be individually reviewed for ESA compliance. This site plan only provides guidelines for the Southwestern Willow Flycatcher AEI. If an activity is desired in an area with overlapping AEIs, all applicable site plans must be consulted. Section 4.6 describes management practices that should be applied when working or considering work in an AEI. LANS biologists are available to help interpret site plans and answer questions (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

4.4 Definition of and Restrictions on Habitat Alterations

4.4.1 Definition of Habitat Alterations

Habitat alteration includes any action that over the long term alters the soil structure, vegetative components necessary to the species, prey quality and quantity, water quality, hydrology, or noise or light levels in undeveloped areas of an AEI. Long term means the alteration lasts for more than one year. Habitat alteration includes any activity that removes vegetative components important to the Southwestern Willow Flycatcher (primarily trees and shrubs). An actual activity may take place outside of the AEI and will be considered habitat alteration if consequences of the activity have effects inside the AEI core.

The habitat components most important to flycatchers include vegetative structure, food quality and quantity, and disturbance levels, including noise and light. The thickets of certain trees and shrubs along wetlands are important because they provide roost sites and a suitable habitat for nesting and foraging.

4.4.2 Fuels Management Practices to Reduce Wildfire Risk

Thinning within undeveloped buffer areas may include trees of any size to achieve 7.6 m (25 ft) spacing between tree crowns. However, clear cutting is not allowed in undeveloped buffer areas. No fuels management practices are allowed in core areas. Habitat alterations including thinning are not restricted in developed areas.

4.4.3 Utility Corridors

Habitat alterations such as cutting down trees that threaten power lines are allowed within 8 m (26 ft) of either side of an existing utility line in all areas of an AEI (Trujillo and Racine 1995). New utility lines and utility lines requiring clearance of a right-of-way greater than 16 m (52 ft) total must be individually reviewed for ESA compliance. Disturbance activities must follow the guidelines given in the Activities Table (Table 2, Section 4.5.2) for occupied AEIs.

4.4.4 Restrictions on Habitat Alterations

Habitat alterations other than the utility corridor maintenance described above are not allowed in undeveloped core areas under the guidelines of this site plan. Habitat alteration in buffers is limited. If a project or activity is planned that would alter habitat in an undeveloped core area, it must be individually evaluated for ESA compliance. Habitat alterations in a buffer area other than fuels management activities or utility corridor maintenance must be reported to a LANS biologist for tracking (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

4.5 Definition of and Restrictions on Disturbance Activities

4.5.1 Definition of Disturbance Activities

LANS biologists considered five categories of activities that might cause disturbance in an AEI. Most of the categories were first identified in the document “Peregrine Falcon Habitat Management in the National Forests of New Mexico” prepared for the United States Forest Service (Johnson 1994). Other light production and other noise production were included to provide the most comprehensive list of activities possible, reducing the need for individual review of activities for ESA compliance. The categories of activities are people, vehicles, aircraft, other light production, and other noise production. The impact of explosives detonation on this species is not considered here because there are no explosives testing sites within 2 km (1.25 mi) of potential nesting habitat. Low, medium, and high levels of impact for these activities are considered here. The following categories of activities are restricted only in AEIs that are classified as occupied.

People—includes any entry of people into an AEI on foot.

- Low impact is the presence of three or fewer people per project and duration of one day or less during a breeding season.
- Medium impact is the exceedance of either the number of people or the duration criteria.
- High impact is the exceedance of both the number of people and the duration criteria.

Vehicles—includes the entry of any two-axle highway vehicle, all-terrain vehicle, or motorized machinery into an AEI by any route other than a paved road or an improved gravel road.

- Low impact is the presence of two or fewer vehicles per project and duration of one day or less during a breeding season.
- Medium impact is the exceedance of either the number of vehicles or the duration criteria.
- High impact is the exceedance of both the number of vehicles and the duration criteria.

Aircraft—includes the operation of any aircraft below an elevation of 600 m (2,000 ft) above the highest ground level in the local vicinity.

- Low impact is the presence of one single-engine airplane and duration of one day or less during a breeding season.
- Medium impact is the exceedance of either the number of aircraft or the duration criteria.

- High impact is the exceedance of both the number of aircraft and the duration criteria.

Any use of helicopters, jet airplanes, and propeller airplanes with two or more engines is classified as medium impact or above, depending on duration.

Other Light Production—includes any activity not previously listed that causes additional light to occur in an AEI core area (e.g., plans for construction of a new building at the edge of a developed area may call for lighting at night to facilitate nighttime work that impacts an undeveloped core area).

- Low impact is the increase of light intensity by up to 0.05 fc and a duration of one night or less per project per breeding season.
- Medium impact is the exceedance of either the intensity or duration criteria.
- High impact is the exceedance of both the intensity and duration criteria.

Measurements for increases in light are taken at the AEI core area boundary closest to the light source if the source is outside the core, and at 10 m (33 ft) from the source if the source is inside the core. Light measurements for developed areas are taken at the edge of the developed area if the developed area is within an AEI core, or at the closest core boundary, if the developed area is outside of an AEI core.

Other Noise Production—includes any activity not previously listed except for explosives detonation that causes additional noise to occur in an AEI. For example, operation of machinery causes noise.

- Low impact is increasing noise levels in an AEI core by 6 dB(A) or less for one day or less per project per breeding season.
- Medium impact is the exceedance of either the level or the duration criteria.
- High impact is the exceedance of both the level and the duration criteria.

Measurements for increases in noise are taken at the AEI core boundary closest to the noise source if the source is outside the core, and at 10 m (33 ft) from the source if the source is inside the core. Noise measurements for developed areas are taken at the edge of the developed area if the developed area is within an AEI core, or at the closest core boundary if the developed area is outside of an AEI core.

4.5.2 Activity Table

The dates shown in the Activity Table (Table 2) are the dates between which the activity in the row is restricted under the guidelines of this site plan. Disturbance activities are of concern only when Southwestern Willow Flycatchers occupy an AEI. The AEI is always considered occupied between May 15 and September 15, or until surveys show the AEI to be unoccupied. The Southwestern Willow Flycatcher AEI is always considered unoccupied between September 16 and May 14, when flycatchers have migrated for the winter. For occupancy status of an AEI after completion of surveys, contact a LANS biologist (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

Table 2. Restrictions on Activities in Undeveloped Occupied Southwestern Willow Flycatcher AEI

| | Levels of Impact | Core | Buffer |
|-------------------------------------|------------------|------------------------|---------------------|
| <i>People</i> | | | |
| | Low | No Restrictions | No Restrictions |
| | Medium | May 15 to August 15 | No Restrictions |
| | High | May 15 to September 15 | No Restrictions |
| <i>Vehicles</i> | | | |
| | Low | May 15 to September 15 | No Restrictions |
| | Medium | May 15 to September 15 | No Restrictions |
| | High | May 15 to September 15 | No Restrictions |
| <i>Aircraft</i> | | | |
| | Low | No Restrictions | No Restrictions |
| | Medium | May 15 to August 15 | May 15 to August 15 |
| | High | May 15 to September 15 | May 15 to August 15 |
| <i>Other Light/Noise Production</i> | | | |
| | Low | May 15 to September 15 | No Restrictions* |
| | Medium | May 15 to September 15 | No Restrictions* |
| | High | May 15 to September 15 | No Restrictions* |

* Noise or light production in the buffer is restricted if the activity would violate core area restriction on noise or light.

4.6 Protective Measures

This section provides a list of management practices to apply in the AEI.

- No wetland vegetation will be removed outside of developed areas.
- Employ appropriate erosion and runoff controls to reduce soil loss.
- Avoid unnecessary disturbance to vegetation (e.g., excessive parking areas or equipment storage areas, off-road travel, materials storage areas, crossing of streams or washes).
- Avoid removal of vegetation along drainage systems and stream channels.
- Avoid all vegetation removals not absolutely necessary.
- Appropriate erosion controls must be put in place and periodically checked throughout the life of any projects.
- Revegetate all exposed soils as soon as feasible after disturbance to minimize erosion.

5.0 Southwestern Willow Flycatcher AEI Description

5.1 Pajarito Canyon Southwestern Willow Flycatcher AEI

5.1.1 Allowable Habitat Alteration in the Buffer Area

Since the purpose of the buffer area is to help maintain the core area as suitable Southwestern Willow Flycatcher habitat, habitat alteration in the buffer area will be extremely limited. There are two areas in which restrictions on habitat alteration are relaxed.

1. The mesa top of Mesita del Buey. This mesa top can be developed as long as restrictions on impacts to the core area are met.
2. Pajarito Road within the AEI. Mowing of upland vegetation is allowed up to 5 m (15 ft) from Pajarito Road, or to the fence, if the fence is within 9 m (30 ft). Vegetation must cover the roadsides to prevent sediment runoff, so mowed plants should be at least 5 cm (2 in) high. LANS biologists encourage the growth of willow throughout the AEI—even the area along Pajarito Road—to enhance habitat. If, within this area, it is absolutely necessary to remove new willow growth (i.e., to improve visibility for human safety), LANS biologists recommend that only willows at or above the level of the roadway surface be mowed.

IV. AREA OF ENVIRONMENTAL INTEREST SITE PLAN FOR THE JEMEZ MOUNTAINS SALAMANDER

1.0 Species Description—Jemez Mountains Salamander

1.1 Status

The Jemez Mountains Salamander was listed in New Mexico as endangered under the Wildlife Conservation Act of New Mexico in 2006 (NMDGF 2006). In September 2012 the USFWS proposed the Jemez Mountains Salamander as endangered under the ESA (77 FR 56481) and the final listing as endangered was on September 10, 2013 (78 FR 55599).

1.2 General Biology

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 (Stebbins and Rierner 1950). It is one of two endemic plethodontid salamanders that occur in New Mexico. It occurs predominantly at elevations between 2,130 to 3,430 m (6,988 to 11,254 ft) in mixed-conifer forest with greater than 50 percent canopy cover consisting mainly of Douglas fir (*Pseudotsuga menziesii* [Mirb.] Franco), blue spruce (*Picea pungens* Engelm.), Engelmann spruce (*Picea engelmannii* Parry ex Engelm.), white fir (*Abies concolor* [Gord. & Glend.] Lindl. ex Hildebr.), limber pine (*Pinus flexilis* James), ponderosa pine, and quaking aspen (*Populus tremuloides* Michx.). The ground surface in forest areas has (a) moderate to high volumes of large fallen trees and other woody debris, especially coniferous logs at least 25 cm (10 in) in diameter, particularly Douglas fir, which are in contact with the soil in varying stages of decay from freshly fallen to nearly fully decomposed; or (b) structural features, such as rocks, bark, and

moss mats that provide the species with food and cover. Underground habitat in forest or meadow areas contains interstitial spaces provided by (a) igneous rock with fractures or loose rocky soils, (b) rotted tree root channels, or (c) burrows of rodents or large invertebrates (Degenhardt et al. 1996; 78 FR 9876).

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 (77 FR 56481). 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. During this time, the Jemez Mountains Salamander can be found under rocks, bark, and moss mats, and inside and under logs (Ramotnik 1986, Everett 2003). The Jemez Mountains Salamander eats invertebrates, including ants, mites, and beetles, and is thought to lay its eggs underground (78 FR 9876).

1.3 Threats

Principal threats to habitat include historical fire exclusion and suppression and severe wildland fires; forest composition and structure conversions; post-fire rehabilitation; forest and fire management; roads, trails, and habitat fragmentation; recreation; and disease (77 FR 56482).

2.0 Impact of Human Activities

2.1 Introduction

Primary threats to the Jemez Mountains Salamander on LANL property are impacts to habitat quality or destruction of individual salamanders caused by LANL or Los Alamos County operations. Forested LANL property is also subject to impacts from severe wildland fire and wildfire suppression.

2.2 Impacts on Habitat Quality

2.2.1 Development

Property at LANL varies from remote isolated land to heavily developed and/or industrialized. Most of the large developed areas at LANL are found on mesa tops, generally in the northern and western portion of LANL. The areas of Jemez Mountains Salamander habitat currently most impacted by development occur in Los Alamos Canyon. There is a secondary paved road (West Road) in the bottom of the canyon that exits the canyon on the north-facing slope through Jemez Mountains Salamander habitat. The canyon bottom also contains a recreational ice rink operated by Los Alamos County on an inholding owned by Los Alamos County. Development that reduces the occurrence of primary constituent elements of Jemez Mountains Salamander in core habitat would likely have a negative impact on the species.

2.2.2 Pedestrians and Vehicles

Many canyon bottoms and mesa tops at LANL have dirt roads traversing them. Most of these roads are gated; however, many of these roads are accessible to LANL employees and the public on foot or by bike. Some areas, such as Los Alamos Canyon, are frequently used by hikers and dog owners on active and historic trails that traverse the canyon, through Jemez Mountains

Salamander habitat in places. Maintenance of roads and trails in the habitat may have a negative impact on the species.

2.2.3 Severe Wildland Fire and Wildfire Suppression

Stand-replacing wildfires significantly change forest composition and structure, and reduce canopy cover. Even ground wildfires may reduce the volume of fallen logs and large woody debris. Large areas of historic Jemez Mountains Salamander habitat have been impacted by stand-replacing wildfires associated with current forest stocking conditions, drought, and high temperatures (77 FR 56482). Forested habitats on LANL property are also subject to severe wildland fires. To mitigate wildfire risks, some areas of LANL have been treated for fuels reduction and creation of fuel breaks both pre-emptively and during active wildfire suppression. Both wildfires and wildfire suppression activities can negatively impact the primary constituent elements of Jemez Mountains Salamander core habitat.

2.3 Impacts on Individual Salamanders

2.3.1 Disease

The amphibian pathogenic fungus *Batrachochytrium dendrobatidis* (Bd) was found in a wild-caught Jemez Mountains Salamander in 2003 (Cummer et al. 2005) on the east side of the species' range and again in another Jemez Mountains Salamander in 2010 on the west side of the species' range (77 FR 56482). Bd causes the disease chytridiomycosis, whereby the Bd fungus attacks keratin in amphibians. In adult amphibians, keratin primarily occurs in the skin. The symptoms of chytridiomycosis can include sloughing of skin, lethargy, morbidity, and death. Chytridiomycosis has been linked with worldwide amphibian declines, die-offs, and extinctions, possibly in association with climate change (Pounds et al. 2006). Chytridiomycosis may be a threat to the Jemez Mountains Salamander because this disease is a threat to many other species of amphibians and the pathogen has been detected in the Jemez Mountains Salamander (77 FR 56482).

As part of a cooperative study with the New Mexico Department of Game and Fish between 2007 and 2013, various amphibian species, including the canyon tree frog (*Hyla arenicolor*), western chorus frog (*Pseudacris triseriata*), Woodhouse's toad (*Anaxyrus woodhousii*), tiger salamander (*Ambystoma tigrinum*), and Jemez Mountains Salamander were tested for Bd infection at LANL. To date, all sampling has been negative for Bd infection (Fresquez et al. 2013).

2.3.2 Destruction of Individual Salamanders

During periods of the year when Jemez Mountains Salamanders are on the soil surface, when conditions are warm and wet (generally July to October), they are vulnerable to injury and mortality from soil-disturbing activities, including operation of heavy equipment in core habitat. They also are at risk to be found and collected by people.

3.0 AEI General Description for the Jemez Mountains Salamander

The AEI consists of two areas—a core area and a buffer area. The core habitat is defined as suitable habitat where the Jemez Mountains Salamander occurs or may occur at LANL. The core habitat consists of sections of north-facing slope that contain the required micro-habitat to

support Jemez Mountains Salamander. The buffer area is 100 m (328 ft) wide extending outward from the edge of the core area.

3.1 Method for Identifying a Jemez Mountains Salamander AEI

The first step in identifying potential Jemez Mountains Salamander AEIs at LANL was to use a GIS to model habitat. Early modeling efforts by Hathcock (2008) identified areas of potential habitat and that model was further refined. The following parameters were modeled in the GIS:

- Elevation: 2,150 m (7,000 ft) and above
- Slope: Greater than 20 degrees
- Aspect: north-facing +/- 20 degrees
- Land cover: Mixed conifer
- Land use: Undeveloped
- Modeled habitat is only selected if it is greater than five contiguous 30 × 30 m (98 × 98 ft) pixels in size

Once this habitat layer was developed, a second layer was modeled that examined the level of shade in the habitat, also known as an illumination index. Since the Jemez Mountains Salamander needs cool moist conditions, an illumination index model would further highlight areas where this habitat type may occur or further reinforce the areas selected by the GIS modeling. The illumination index describes the amount and extent of solar radiation reaching the Earth's surface at a given point. This takes into account the topography that may cast shadows. The illumination model was developed using the 5 m (16 ft) resolution digital elevation model hillshade and using the Surface toolbox in ArcToolbox (Environmental Science Research Institute, Redlands, California) using the highest height of the sun on June 21 at 1:00 pm, altitude of 74.4 and Azimuth of 178.4, when the sun would be at its maximum height. These procedures were based on work done by Reilly et al. (2009).

Once this modeling was complete, LANS biologists performed field validation to verify the suitability of the modeled habitat. The goal was to verify that mixed conifer was still the dominant cover class in the selected area. The GIS analysis used data from a landcover map created by McKown et al. (2003). There have been changes in habitat from fire and extreme drought effects since this landcover map was published. Since LANL is on the extreme edge of Jemez Mountains Salamander lower elevational range, a key component in this part of its range is soil moisture content. During field validation, evidence of a moist mixed conifer habitat versus a dry mixed conifer habitat was noted. One of the key indicators used to delimit areas of moist versus dry mixed conifer during the field validation was the presence of white fir (Evans et al. 2011) combined with a high canopy cover.

Field validation of the model occurred in May 2013, or decisions were based on earlier field visits to the sites from other projects. Each field validation consisted of LANS biologists walking down all of the modeled habitat polygons to look for the presence of indicator features. If a polygon of modeled habitat contained white fir, indicating a moist wet conifer type habitat, a high canopy closure, and other signs of high habitat quality such as dead logs, moss, or other

areas that could be used as cover by the Jemez Mountains Salamander, then the polygon was marked for retention in the final core habitat. Polygons that did not contain the necessary habitat requirements were omitted.

After the field validation was complete, the final core habitat boundaries were hand digitized using ArcGIS (Environmental Science Research Institute, Redlands, California) by LANS biologists in and around the validated modeled polygon and areas between polygons, if appropriate. The final identified core habitat at LANL occurs on the north-facing slopes of canyons. Toward the rim of the canyon, the core boundaries end where the mixed conifer ends. In the canyon bottoms, the core boundary extends to the edge of the stream channel. The upstream and downstream core boundaries end where the mixed conifer ends. A buffer habitat was extended around the core to a distance of 100 m (328 ft) outward. The LANL Fenton Hill satellite facility in the Jemez Mountains off of New Mexico Highway 126 is on land leased to DOE by the Santa Fe National Forest. The entire footprint is considered to be developed core habitat for the Jemez Mountains Salamander, since proposed critical habitat is adjacent to the facility.

3.2 Location and Number of Jemez Mountains Salamander AEIs

The identified Jemez Mountains Salamander core habitats were grouped by canyon system into AEIs, which contain contiguous and noncontiguous habitat areas. The largest contiguous section of habitat at LANL is in Los Alamos Canyon. There are two noncontiguous areas of habitat in Two-mile Canyon, four in Pajarito Canyon, one contiguous area in Cañon de Valle, and the entire Fenton Hill footprint.

4.0 AEI Management

4.1 Overview

This AEI management section provides guidelines for LANL operations to reduce or eliminate the threats to the Jemez Mountains Salamander from habitat alterations that reduce habitat quality. Habitat alterations are considered for all AEIs and for both core and buffer areas. Developed areas that have ongoing baseline levels of activities and are not suitable habitat for Jemez Mountains Salamander have different restrictions than undeveloped core or buffer areas. AEIs for different species may overlap, and an activity must meet the guidelines of all applicable site plans to be allowable. Protective measures are described as management practices that should be followed when working in AEIs.

4.2 Definition and Role of Occupancy in AEI Management

Occupancy simply refers to whether or not an AEI is occupied by the Jemez Mountains Salamander. The Los Alamos Canyon AEI is known to be occupied based on past surveys. Surveys for the Jemez Mountains Salamander are known to have a very low detection rate for occupied areas, so at LANL, all AEIs are assumed to be occupied at all times. If needed, site-specific surveys will be conducted by federally permitted LANS biologists.

4.3 Definition and Role of Developed Areas in AEI Management

Developed areas include all building structures, paved roads, improved gravel roads, and paved and unpaved parking lots. The majority of Jemez Mountains Salamander core habitat is in

undeveloped areas, except for the satellite facility at Fenton Hill and a small amount of habitat in Los Alamos Canyon where West Road crosses the habitat. Generally, developed areas will not have restrictions; however, some of the undeveloped sections within the footprint of Fenton Hill may have restrictions because they may contain Jemez Mountains Salamanders when they move to the surface between July and October. Any project that occurs within developed core habitat will be evaluated by LANS biologists for ESA compliance.

4.4 General Description of Core and Buffer Areas and Allowable Area Development

The purpose of buffer areas is to protect core areas from habitat degradation. The current levels of development in buffer and core areas represent baseline conditions for this site plan. No further development is allowed in the core area under the guidelines of this site plan. Any development in a buffer area will be reviewed by LANS biologists to ensure that there are no impacts to the core habitat.

4.5 Emergency Actions

If safety and/or property are immediately threatened by something occurring within an AEI (for example, wildfire, water line breakage, etc.) please contact a LANS biologist (505-665-3366) as soon as possible. If the emergency occurs outside of regular business hours, contact the Emergency Management Office (505-667-6211). This office will then communicate with the appropriate LANS personnel.

4.6 Introduction to AEI Management Guidelines

Section 4.7 provides the guidelines for habitat alterations and allowable activities in AEI core and buffer areas. It describes what and where habitat alterations are allowed under the guidelines of this site plan. If an activity does not meet the restrictions given in the guidelines, the activity must be individually reviewed for ESA compliance. This site plan only provides guidelines for the Jemez Mountains Salamander AEIs. If an activity is desired in an area with overlapping AEIs, all applicable site plans must be consulted. AEI maps show the location of all AEIs in an area. LANS biologists are available to help interpret site plans and answer questions (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

4.7 Definition of and Restrictions on Habitat Alterations

4.7.1 Definition of Habitat Alterations

Habitat alteration includes any action that alters the soil structure, vegetative components necessary to the species, water quality, or hydrology in undeveloped areas of an AEI. An actual activity may take place outside of the AEI and will be considered habitat alteration if consequences of the activity have effects inside the AEI core. Habitat alterations would also include soil pits for soil samples deeper than 15 cm (6 in) using either hand or mechanized augers. Any activity that might disturb the soil will need to be reviewed by LANS biologists.

The habitat components most important to the Jemez Mountains Salamander include soil structure and vegetative structure. The forest structure within an area designated as a Jemez Mountains Salamander AEI is important because it provides the necessary moist, cool microclimate.

4.7.2 Fuels Management Practices to Reduce Wildfire Risk

One of the primary threats to the Jemez Mountains Salamander is wildfire (77 FR 56482), but they also require habitat with a high canopy cover, which makes fuels reduction challenging. Within undeveloped core areas, thinning trees to a level of 80 percent canopy cover or higher is approved. Trees may not be thinned below 80 percent canopy cover without further ESA review by LANS biologists. Large logs on the ground should be left in place and not chipped.

Understory thinning that does not reduce total canopy cover below 80 percent is permitted. Large trees that are felled should be left as large logs on the ground. Smaller trees and understory shrubs that may be thinned should be dispersed and left on-site to aid in soil moisture retention. Thinning activities should not occur during the rainy season between July to October (or when freezing temperatures begin, whichever comes first) when the Jemez Mountains Salamander is found on the surface.

In buffer areas, thinning of trees can occur to the current LANL-approved prescription level (LAAO 2000). LANS biologists are available to provide guidance and mark trees for thinning (<http://int.lanl.gov/environment/bio/controls/index.shtml>).

4.7.3 Utility Corridors

Habitat alterations such as cutting down trees that threaten power lines are allowed within 8 m (26 ft) of either side of an existing electrical utility line at LANL under existing guidelines and engineering controls (Hathcock 2013). This level is approved in all areas of an AEI. New utility lines and utility lines requiring clearance of a right-of-way greater than 16 m (52 ft) total in core habitat must be individually reviewed for ESA compliance.

4.7.4 Restrictions on Habitat Alterations

Habitat alterations other than the fuels management practices and utility corridor maintenance described above are not allowed in undeveloped core areas under the guidelines of this site plan. If a project or activity is planned that would alter habitat in an undeveloped core area, it must be individually evaluated for ESA compliance. Habitat alterations in buffer areas must be reviewed by LANS biologists to ensure that there are no impacts to core habitat.

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APPENDIX

Table A-1. The Percentage of each Food Type Found in Mexican Spotted Owl Food Remains at LANL

| Species | Relative Abundance |
|------------------------|--------------------|
| <i>Neotoma</i> spp. | 26.22 |
| <i>Peromyscus</i> spp. | 10.22 |
| <i>Microtus</i> spp. | 4.44 |
| Gophers | 4.89 |
| Bats | 5.78 |
| Chipmunks | 0.89 |
| Rabbits | 12.89 |
| Shrews | 1.33 |
| Small Mammal | 1.33 |
| Medium Mammal | 1.78 |
| Medium Bird | 8.00 |
| Small Bird | 4.89 |
| Nocturnal Birds | 0.89 |
| Reptiles | 4.89 |
| Arthropods | 11.56 |

Table A-2. Preliminary Light Measurements in ftc for Mexican Spotted Owl Site Plan

| | | Distance from Source | | | |
|-----|-----------------------|----------------------|------|------|------|
| | Source (street light) | 5 m | 10 m | 15 m | 20 m |
| ftc | 3.70 | 2.28 | 1.20 | 0.62 | 0.32 |

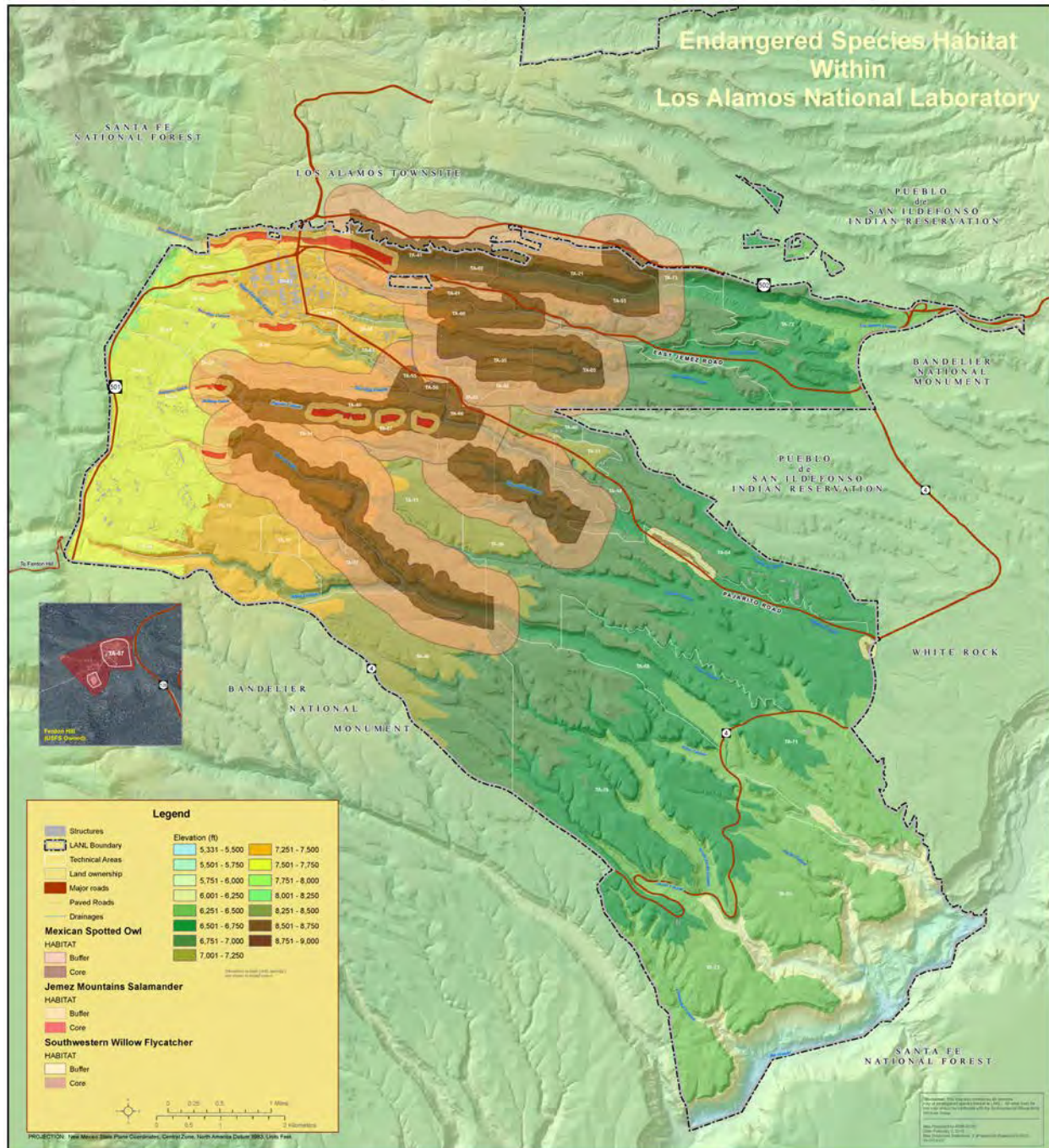


Figure A-1. Most recent map of all AEIs at LANL

ATTACHMENT 14: MSGP IPAC TRUST RESOURCES REPORT

MSGP

IPaC Trust Resource Report

Generated July 27, 2015 07:29 PM MDT



IPaC Information for Planning and Consultation U.S. Fish & Wildlife Service

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Los Alamos, Sandoval, and Santa Fe counties, New Mexico



Local office

New Mexico Ecological Services Field Office

☎ (505) 346-2525

📠 (505) 346-2542

2105 Osuna Road Ne
Albuquerque, NM 87113-1001

<http://www.fws.gov/southwest/es/NewMexico/>

http://www.fws.gov/southwest/es/ES_Lists_Main2.html

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

-
1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
 2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an

office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

| NAME | STATUS |
|---|------------|
| New Mexico Meadow Jumping Mouse <i>Zapus hudsonius luteus</i> Wherever found There is final critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/7965 | Endangered |

Birds

| NAME | STATUS |
|--|------------|
| Mexican Spotted Owl <i>Strix occidentalis lucida</i> Wherever found There is final critical habitat for this species. Your location overlaps the critical habitat. https://ecos.fws.gov/ecp/species/8196 | Threatened |
| Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i> Wherever found There is final critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/6749 | Endangered |
| Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is proposed critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/3911 | Threatened |

Amphibians

| NAME | STATUS |
|------|--------|
|------|--------|

Jemez Mountains Salamander *Plethodon neomexicanus* Endangered

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/4095>

Fishes

NAME

STATUS

Rio Grande Silvery Minnow *Hybognathus amarus*

Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/1391>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME

TYPE

Mexican Spotted Owl *Strix occidentalis lucida*

Final

<https://ecos.fws.gov/ecp/species/8196#crithab>

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.

2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed->

[species/
birds-of-conservation-concern.php](#)

- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle *Haliaeetus leucocephalus*

Breeds Dec 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

Black-chinned Sparrow *Spizella atrogularis*

Breeds Apr 15 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9447>

Brewer's Sparrow *Spizella breweri*

Breeds May 15 to Aug 10

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9291>

Golden Eagle *Aquila chrysaetos*

Breeds Jan 1 to Aug 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/1680>

Grace's Warbler *Dendroica graciae*

Breeds May 20 to Jul 20

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Gray Vireo *Vireo vicinior*

Breeds May 10 to Aug 20

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8680>

Lesser Yellowlegs *Tringa flavipes*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9679>

Lewis's Woodpecker *Melanerpes lewis*

Breeds Apr 20 to Sep 30

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9408>

Long-billed Curlew *Numenius americanus*

Breeds Apr 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/5511>

Long-eared Owl *asio otus*

Breeds Mar 1 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/3631>

Olive-sided Flycatcher *Contopus cooperi*

Breeds May 20 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/3914>

Pinyon Jay *Gymnorhinus cyanocephalus*

Breeds Feb 15 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9420>

Rufous Hummingbird *selasphorus rufus*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/8002>

Virginia's Warbler *Vermivora virginiae*

Breeds May 1 to Jul 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9441>

Willet *Tringa semipalmata*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Willow Flycatcher *Empidonax traillii*

Breeds May 20 to Aug 31

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/3482>

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most

likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

[PEM1C](#)

FRESHWATER FORESTED/SHRUB WETLAND

[PSS1A](#)

RIVERINE

[R4SBA](#)

[R4SBC](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and

nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

ATTACHMENT 15: EPC-CP-PIP-2101 NPDES MULTI-SECTOR GENERAL PERMIT

EPC-CP-PIP-2101Revision: **0**

Effective Date: 01/19/2021

Next Review Date: 01/19/2024

**Environment, Safety, Health, Quality, Safeguards and Security Directorate****Environmental Protection and Compliance Division – Compliance Programs Group****Program Implementation Plan (PIP)****NPDES Multi-Sector General Permit****Document Owner/Subject Matter Expert:**

| | | | |
|---------------|---------------|-------------------|----------|
| Name: | Organization: | Signature: | Date: |
| Terrill Lemke | EPC-CP | Signature on File | 01-15-21 |

Derivative Classifier: ☒ **Unclassified** or ☐ _____

| | | | |
|------------------|---------------|-------------------|----------|
| Name: | Organization: | Signature: | Date: |
| Steven E. Wolfel | EPC-CP | Signature on File | 01-14-21 |

Approval Signatures:

| | | | |
|-------------------------------------|---------------|-------------------|----------|
| EPC-CP Reviewer: | Organization: | Signature: | Date: |
| Holly Wheeler | EPC-CP | Signature on File | 01-14-21 |
| EPC-CP Team Leader: | Organization: | Signature: | Date: |
| Terrill Lemke, Team Leader | EPC-CP | Signature on File | 01-15-21 |
| EPC-CP Group Leader: | Organization: | Signature: | Date: |
| Taunia Van Valkenburg, Group Leader | EPC-CP | Signature on File | 01-19-21 |

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REVISION HISTORY

| Document Number and Revision | Effective Date | Description of Changes |
|------------------------------|----------------|--|
| ENV-RCRA-QAPP-MSGP, R0 | 06/03 | New Document. |
| ENV-RCRA-QAPP-MSGP, R1 | 12/05 | Annual review and revision. |
| ENV-RCRA-QAPP-MSGP, R2 | 07/07 | Annual review, incorporated organizational restructure changes. |
| ENV-RCRA-QAPP-MSGP, R3 | 07/09 | Biennial Review and Revision. |
| ENV-RCRA-QAPP-MSGP, R4 | 07/09 | Biennial Review and Revision. |
| ENV-CP-QAPP-MSGP, R5 | 10/13 | Biennial Review and Revision. New format implemented. |
| EPC-CP-PIP-2101, R0 | 01/19/2021 | Initial issue under this document number. It supersedes/replaces ENV-CP-QAPP-MSGP, R5. Changes include revision to the document template, addition of MLs, software requirements, and detail to Section 4.5. |

| | | |
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1.0 PURPOSE

This document describes the Program Implementation Plan (PIP) for the National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit (MSGP) Program at Los Alamos National Laboratory (LANL or the Laboratory). Performance of the processes and procedures described herein, are done so in accordance with EPC-CP-QAP-001, *Environmental Compliance Programs Quality Assurance Plan*. This PIP provides detail and context regarding the implementation of those work activities generally described in EPC-CP-QAP-001. Work conducted under this program ensures compliance with the MSGP and the Clean Water Act.

2.0 AUTHORITY AND APPLICABILITY

2.1 Authority

This document is issued under the authority of the Environmental Protection and Compliance Division's Compliance Programs Group Leader to direct the management and operation of the MSGP Program.

2.2 Applicability

This PIP applies to personnel performing work by or for the MSGP Program, including but not limited to Triad National Security, LLC (Triad) employees, subcontractors and suppliers at all tiers (in accordance with subcontract documents), students, guests, and associates.

3.0 PROGRAM SCOPE

The MSGP Program is responsible for compliance oversight of LANL's NPDES MSGP, coordination and performance of institutional MSGP stormwater compliance activities, and developing and implementing institutional standards and policies regarding MSGP stormwater management. EPC-CP is the institutional point of contact regarding MSGP environmental compliance interactions with entities outside of LANL (i.e., regulatory agencies, stakeholders, and the public).

3.1 Requirements

The MSGP Program satisfies requirements contained in the following documents:

- EPC-CP-QAP-001, Section 3.3, Table 2
- NPDES MSGP
- Title 40 of the Code of Federal Regulations (CFR) Part 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants
- Title 20, Chapter 6, Part 4 of the New Mexico Administrative Code (NMAC), Standards for Interstate and Intrastate Surface Waters

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3.2 Description of Work Activities

Triad will implement the monitoring requirements specified by the most current NPDES MSGP for industrial activities at LANL. The EPC-CP Storm Water Permitting/Compliance Team oversees institutional stormwater compliance related activities at the Laboratory.

3.3 Graded Approach

The following sections provide reference to the applicable Management Level Determinations and Software Risk Level forms.

3.3.1 Management Level Determination

The following Management Level Determinations are applicable to equipment and/or work activities for the MSGP Program (see Appendix A):

- ML-4, per MLDS No.: MLDS-TA-60-324, Revision 0.

3.3.2 Software Risk Levels

The following Software Risk Level Forms are applicable to software used during the performance of the MSGP Program (see Appendix B, C, and D):

- Environmental Information Management (EIM)
- MSGP Corrective Action Reporting Database and corresponding administrative module
- Maintenance Connection and Maintenance Connection Express

4.0 PROGRAM-SPECIFIC QUALITY ASSURANCE REQUIREMENTS AND IMPLEMENTING WORK ACTIVITIES

Based on the Graded Approach results referenced above, this PIP is determined to be consistent with the work activity types covered by EPC-CP-QAP-001, Section 3.3, Table 2. Attachment 1 presents a summary of the work practices (procedures, instructions, etc.) that EPC-CP uses to meet the quality assurance (QA) requirements of SD300/DOE Order 414.1D, Chg. 1.

4.1 Criterion 1 – Management/Program

4.1.1 Program Goals

The MSGP Program supports EPC Division in efforts to protect:

- Public health and environment by implementing rigorous compliance programs designed to assure institutional compliance with state and federal environmental protection regulations;
- Designated uses of the Laboratory's natural resources by applying sound ecological and engineering principles towards mitigation of the Laboratory's impact; and

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- Human health and the environment during emergencies by assuring technical capabilities are available to measure and evaluate unplanned release of hazardous materials into the environment.

Triad complies with the monitoring requirements, such as parameters, frequency of sampling, reporting, etc., set forth in the NPDES MSGP for industrial point source discharges through the Laboratory's MSGP Program. Compliance is demonstrated through the successful implementation of this PIP and applicable procedures.

4.1.2 Roles and Responsibilities

EPC-CP is responsible for the Laboratory's MSGP Program and a description of the group organization, level of authorities, and lines of communication are found within this PIP. The group is organized by program teams under the line management direction of the Group Leader. Teams are cross-functional and focus on specific Program responsibilities, deliverables, or products. Program teams are guided by Team Leaders who have the responsibility to assure that the program is properly implemented. The following sections identify the roles and responsibilities for EPC-CP personnel, contractors, and program interfaces.

4.1.2.1 Group Leader

- Assure that the program has adequate resources (e.g., budget, staffing, etc.) and that qualified staff properly gather and evaluate information submitted to the Environmental Protection Agency (EPA) as required by the MSGP Program.
- Sign Discharge Monitoring Reports (DMR), Annual Reports, Quarterly Visual Assessment Certifications, and change NOIs prior to submittal to the EPA.
- Ensure that program personnel conduct procurements in accordance with P840-1, *Quality Assurance for Procurements*.
- Plan, conduct, and document periodic management assessments and Management Observation and Verifications (MOVs) of MSGP Program activities as required by P328-3 and P328-4.

4.1.2.2 Storm Water Permitting/Compliance Team Leader

- Ensure that program personnel perform the work areas/types associated with the MSGP Program in accordance with the processes, procedures, and requirements specified in this plan.
- Ensure all MSGP Program personnel have the appropriate level of education, experience, and training to perform their job duties.
- Ensure that the most recent versions of the quality-related documents are used for all activities.
- Monitor and trend MSGP Program performance and track deficiencies.

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- Support Facility Operations Directors (FODs) and DEPs with the implementation of corrective actions in a timely manner.
- Sign/submit DMRs, Annual Reports, Quarterly Visual Assessment Certifications, etc.
- Ensure PIP meets minimum specifications for documentation and records required by ADESH-QAP-001, *ADESH Quality Assurance Plan*.
- Conduct periodic reviews of records and documentation for accuracy, applicability, and to ensure compliance.
- Provide oversight and ensure that monitoring requirements are followed in accordance with the MSGP Program.
- Ensure that all required compliance documents are submitted to EPA in accordance with the MSGP.
- Recommend to Group Leader contracting items and services.
- Assist the Group Leader in planning and implementing management assessments and MOVs.
- Identify issues, concerns, or problems that warrant management assessment.
- Oversee resolution and correction of all problems found during management assessments.

4.1.2.3 MSGP Program Lead

- Perform MSGP Program related activities as assigned by the Storm Water Permitting/Compliance Team Leader.
- Engage other team members to support implementation of the MSGP Program.
- Support DEPs and permitted industrial facility owners with the implementation of corrective actions in a timely manner.
- Ensure analytical instruments used in the field are calibrated as per Institutional Procedure P330-2, *Control and Calibration of Measuring and Test Equipment (M&TE)*. Periodically review and update the calibration procedures to ensure permit requirements are met.
- Identify opportunities for process improvement, health and safety enhancement, environmental protection, or other improvements of the program's operations.
- Ensure deficiencies are reported to the Storm Water Permitting/Compliance Team Leader in a timely manner.
- Implement a monitoring program as required by the MSGP.
- Ensure DMRs are prepared and submitted as required by the MSGP Program.
- Review documents for accuracy and completeness to assure that the requirements of the MSGP are met.

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- Oversee data quality assessments prior to submittal of monthly, quarterly, and annual DMRs.
- Ensure procedures for sample handling and control during sample preparation, retrieval and analysis are followed.
- Identify issues, concerns, or problems that warrant management assessment.
- Periodically evaluate corrective actions to determine if there are issues that need to be entered into the Issues Management Tool.
- Oversee preparation, conduct quality review, and submit all required compliance documents (e.g., Notice of Intent (NOI)/Notice of Termination (NOT), DMRs, Annual Reports, and correspondence) to EPA.
- Oversee preparation and conduct quality review of Stormwater Pollution Prevention Plans (SWPPP) coordinated with the responsible organization.

4.1.2.4 Storm Water Tracking System/Discharge Monitoring Report Manager

- Perform MSGP Program related activities as assigned by the Storm Water Permitting/Compliance Team Leader.
- Serve as database administrator for the Storm Water Tracking System (SWTS) and Discharge Monitoring Report modules in EIM.
- Maintain current MSGP station and monitoring requirement configuration content in SWTS.
- Ensure all results from sampling are returned and are eligible for reporting.
- Assist MSGP Program Lead in conducting data quality assurance review.
- Conduct data quality assessments prior to submittal of monthly, quarterly, and annual DMRs.
- Ensure compliance reports (NOI/NOT, DMRs, and Annual Reports) are prepared as required by the MSGP.
- Prepare stormwater DMRs for the Multi-Sector General Permit program.

4.1.2.5 MSGP Personnel

- Perform MSGP Program related activities as assigned by the Storm Water Permitting & Compliance Team Leader.
- Implement approved processes and procedures for any equipment and instrumentation used to collect field data (i.e., visual assessment parameters, temperature, and pH).
- Mentor and train new personnel, as needed.
- Conduct sampling activities in accordance with approved processes and procedures.

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- Perform sample handling and control during sample preparation, retrieval, and analysis in accordance with approved processes and procedures.
- Notify the MSGP Program Lead immediately upon discovery of field parameter(s) (visual assessment parameters, temperature, and/or pH) exceedances.
- Conduct QA check of methods/equipment.
- Procure sampling equipment (i.e., bottles, standards, preservatives) in accordance with P840-1, *Quality Assurance for Procurements*. Order materials and supplies in accordance with LANL protocol.

4.1.2.6 EIM Database Administrator

- Coordinate with the Subcontract Technical Representative (STR) to ensure that formal contracts are in place to support MSGP Program compliance activities.
- Coordinate with the STR to oversee contract analytical laboratories and ensure they follow the DOE Analytical Services Program.
- Coordinate with the STR to ensure that the off-site laboratory participates in the DOE Consolidated Audit Program and that the analytical laboratory has been audited on an annual basis.
- Maintain and administer the database.
- Provide role-related database access.
- Maintain facility and personnel configuration content, permit-defined lists of limited values (LLVs), and e-mail notification distribution lists.
- Ship/transport samples to the correct off-site analytical laboratory for analysis.
- Maintain and administer sampling plans and sample documentation.
- Load analytical data into the EIM database and run auto-validation checks.
- Manage analytical laboratory data packages.

4.1.2.7 Corrective Action Reporting Database Administrator

- Maintain and administer the database.
- Provide role-related database access.
- Maintain facility and personnel configuration content, permit-defined lists of limited values (LLVs), and e-mail notification distribution lists.

4.1.2.8 Maintenance Connection Database Administrator

- Maintain and administer the database.
- Provide role-related database access.

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- Maintain facility and personnel configuration content
- Extract data to support preparation of the MSGP Annual Report.

4.1.3 Internal Interfaces

4.1.3.1 Facility Operations Directors

The FOD provides organizational leadership to ensure that all facility and programmatic activities under their authority are performed in compliance with the MSGP. The FOD is also responsible for establishing an environmental compliance envelope. It is the FOD's responsibility to maintain trained and qualified DEPs and Waste Management Coordinators on staff under their authority.

4.1.3.2 Permitted Industrial Activity Facility Owner/Operator

The permitted industrial activity facility owner/operator is the organization or individual(s) designated by management to oversee the day-to-day operation and maintenance of each facility and its associated stormwater outfalls. The designated owner/operator may be the Facility Operations Manager, Maintenance Manager, or Group Leader that is responsible for the buildings, facilities, and areas where the stormwater outfall is located. The MSGP Program interfaces with the owners/operators to assist in determining appropriate maintenance, corrective actions, inspections, site walks, and monitoring.

4.1.3.3 Deployed Environmental Professional

DEPs are embedded within FODS as assigned by the Deployed Environment Professionals Team Leader. The DEP provides daily environmental oversight, guidance, and support to the FOD and each designated permitted industrial facility owner/operator. The MSGP Program interfaces with the DEPs regularly to coordinate outfall surveys, inspections, site walks, and monitoring. The DEP performs the following MSGP activities.

- Act as a liaison between the industrial operating facilities, the FOD, and EPC-CP.
- Write and update the facility-specific MSGP SWPPP.
- Conduct Routine Facility Inspections.
- Document, update, and coordinate correction of identified conditions requiring corrective actions.
- Identify personnel within industrial operating facilities requiring training.
- Update MSGP facility specific training and present the training annually.

4.1.3.4 Sample Management Office

The EPC-CP SMO is the central point for all analytical laboratory selection, evaluations, sample submittal, and data return. The SMO performs the following activities.

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- Evaluates potential analytical laboratories, prepares analytical statements of work that include requirements, and arrange contracts with selected laboratories for analysis of all samples.
- Accepts samples from field collection personnel, prepares the sample for shipment, ships the samples to the off-site analytical laboratories, and receives the data packages from the laboratories.
- Analytical data is received from analytical laboratories in electronic format and uploaded into a database. Received data is checked for completeness and adherence to contract requirements. After uploading, data undergoes verification and validation for evidence of laboratory contamination, improper analytical method, and other analytical issues, which could potentially affect data quality.
- Field data collected by sample collection personnel is verified and entered into the EIM by SMO personnel when field personnel deliver samples to the SMO.
- If significant verification and validation issues are identified, results are forwarded to and discussed with the responsible program leads.
- Data issues that result from procedural failures, personnel errors, or other failures to follow requirements are documented as issues and corrected according to P322-4, *Issues Management*.

4.1.4 External Interfaces

4.1.4.1 Environmental Protection Agency

The EPA Region 6 issues and administers NPDES Permits in the State of New Mexico. The MSGP Program interfaces with the EPA, as needed, to complete permit applications, support permit development, support public comments and meetings, and ensure compliance with the NPDES MSGP.

4.1.4.2 New Mexico Environmental Department

The New Mexico Environmental Department (NMED) Surface Water Quality Bureau assists the EPA with compliance evaluations, monitoring and Section 401(a), Clean Water Act certification through a joint federal and state agreement. Section 401(a) requires that all federally issued permits are certified by the state in which the discharge occurs and that the effluent limits set forth in the permit issued adheres to state water quality standards. The MSGP Program interfaces with the NMED as needed to ensure compliance with the Permit.

4.1.4.3 National Nuclear Safety Administration/Los Alamos Field Office

The National Nuclear Safety Administration (NNSA)/Los Alamos Field Office is the LANL facility owner and is responsible for providing oversight of LANL operations. It is the responsibility of the Los Alamos Field Office to ensure that the LANL operates in compliance with all state and federal

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regulations. The MSGP Program interfaces with the Los Alamos Field Office as needed to ensure compliance with the Permit.

4.1.4.4 Analytical Laboratory Contractors

An independent off-site analytical laboratory performs analytical services for the MSGP Program. The analytical laboratory is required to participate in the DOE Consolidated Audit Program; maintain positive control of samples, perform analyses for samples received, and report sample results as specified in statements of work and internal procedures. The STR and SMO personnel interface with the off-site analytical laboratory. Interface between MSGP Program personnel and the analytical laboratory is conducted with the STR and SMO oversight, as needed, to ensure that samples are handled correctly and that analytical results are received per the contract requirements.

4.2 Criterion 2 – Management/Personnel Training and Qualification

The Storm Water Permitting/Compliance Team Leader shall determine skills, knowledge, and abilities required to perform MSGP Program work area/type activities. Program personnel will be qualified and trained in accordance with P781-1, *Conduct of Training* and ADESH-TPP-301, *ADESH Training Program Plan*. The Storm Water Permitting/Compliance Team Leader assigns minimum training requirements using a training plan. The Triad Human Resources Division maintains documentation of education qualification. Table 4.2 provides a summary of the qualification and training requirements for the MSGP Program.

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Table 4.2 Management/Personnel Training and Qualification

| Key Personnel/Role | Qualification Standard | Program Specific Training |
|---|--|----------------------------------|
| Storm Water Permitting/Compliance Team Leader | <ul style="list-style-type: none"> • EPC-CP Manager Qualification Standard • EPC-CP Group Qualification Standard • EPC-CP-QS-2005, Stormwater Inspector Qualification Standard • EPC-CP-QS-2006, Stormwater Pollution Prevention Plan Preparer Qualification Standard • EPC-CP-QS-2007, Stormwater Design Reviewer Qualification Standard | EPC-CP-PIP-2101 |
| MSGP Program Lead, MSGP Personnel | <ul style="list-style-type: none"> • EPC-CP Group Qualification Standard • EPC-CP-QS-2005, Stormwater Inspector Qualification Standard • EPC-CP-QS-2006, Stormwater Pollution Prevention Plan Preparer Qualification Standard • EPC-CP-QS-2007, Stormwater Design Reviewer Qualification Standard* | |
| Discharge Monitoring Report Manager | <ul style="list-style-type: none"> • EPC-CP Group Qualification Standard | |
| Database Administrator | <ul style="list-style-type: none"> • EPC-CP Group Qualification Standard | |
| * As required by job duties. | | |

4.3 Criterion 3 – Management/Quality Improvement

The MSGP Program adheres to the EPC-CP-QAP-001 principles of problem prevention and continuous improvement. The MSGP Program Lead will evaluate improvement opportunities identified by trending and reporting.

4.3.1 Performance Reporting

Personnel involved in activities associated with the MSGP Program are encouraged to provide periodic updates, either verbal or written, to the MSGP Program Lead. The program uses these updates to determine areas that require attention and corrective actions.

4.3.2 Corrective Actions

Corrective actions for all EPC-CP programs and projects are initiated, tracked, corrected, and documented according to P330-6, *Nonconformance Control and Reporting*, P322-4, *Issues Management*, ADESH-QAP-001, *ADESH Quality Assurance Plan*, and Group procedures. A corrective action that meets any of the following criteria will be entered into the Issues Management Tool that will be screened as high, medium, or low.

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- Corrective action was not completed by the expected completion date.
- A schedule is sent to the EPA Region 6 requesting an extension of the 45-day timeframe to complete a corrective action and corrective action was not completed by the required completion date provided in the letter.
- Repeat corrective actions or trends identified by EPC-CP personnel.
- Conditions requiring immediate action, where failure to take action would result in pollutants being released to a water body of the State or an immediate non-compliance with the MSGP.
- Violations identified by the regulatory authority.
- Other issues as deemed necessary by EPC-CP personnel.

4.4 Criterion 4 – Management/Documents and Records

4.4.1 Document Control

Procedures, permits, NOIs, NOTs, reports, and quality affecting correspondence are controlled by the organization's document control system (ESH-AP-007, *Document Control*). As a Best Management Practice (BMP), EPC-CP keeps an approved hard copy of the MSGP as well as all of the reapplication materials associated with the permit.

Controlled copies of EPC documents are located on the Internet:

- <https://edrms.lanl.gov/edrms/?docbase=lanldocs&locateld=0b02a68c800079c1>, all other copies are uncontrolled.

Phone calls, emails, or fax communications are documented and controlled if the content provides direction or results in decisions.

4.4.2 Procedures

Procedures that implement the work area/type scope identified in this PIP will be developed and controlled, as needed, in accordance with ADESH-QAP-001, *ADESH Quality Assurance Plan*, ESH-AP-007, *Document Control*, and EPC-CP-QP-0901, *EPC-CP Quality Procedure to Supplement ESH-AP-007, Document Control*.

4.4.3 Electronic Media

The MSGP utilizes electronic means as necessary to maintain data. Databases used to hold data and generate reports to be used in demonstrating compliance are maintained on a common drive of a server or on a cloud platform. These databases are backed-up daily to minimize potential loss of data. The database administrator(s) control access to these databases, allowing only trained authorized personnel access to the databases.

EIM (<https://www.locusfocus.com/eim/eim.cfm>) is a cloud-based database information system designed in part to support the information management needs of the Laboratory's MSGP. MSGP

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support includes analytical data management, stormwater discharge monitoring reporting, Geographic Information System (GIS) development, and other information management activities as needed.

Maintenance Connection (https://www.maintenanceconnection.com/mcv18/online/mc_login.htm) is a cloud-based computerized maintenance management system, or CMMS, used to manage MSGP field activities such as monitoring station installation and removal, inspections, maintenance, sample collection and retrieval, visual inspections, and information management change controls for data stored in Maintenance Connection and in the SWTS Module in EIM.

The MSGP Corrective Action Reporting (MSGP CAR) database <https://epc.lanl.gov> is a Laboratory-managed Oracle APEX database and associated administration module that tracks corrective action data.

4.4.4 Records Management

Records are maintained and available for auditing in accordance with ADESH-AP-006, *Records Management Plan*. The Storm Water Permitting/Compliance Team generates and retains records to ensure compliance with monitoring and recordkeeping requirements as specified by the Laboratory, DOE, and the EPA. Records kept by the MSGP Program include the following:

- Copy of the MSGP
- Annual Reports
- Discharge Monitoring Reports
- Corrective Action Reports
- Notices of Intent (NOIs) and Notices of Termination (NOTs)
- Reports and certifications required by the MSGP
- Data used for compliance purposes
- Inspection forms
- Logbook entries and/or field forms to document inspection and monitoring activity
- Equipment and instrument calibration and maintenance records
- QA documents
- General correspondence that affects the program (e.g., phone calls, emails, log entries, faxes that provide directions or results in decisions)
- Applicable IWDs
- General MSGP compliance documents (correspondence with regulators and stakeholders, notice of change conditions, etc.)

Analytical data packages are stored in EDRMS and are available for public viewing on the Intellus New Mexico website.

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The DEPs assigned to the FOD in which an industrial facility resides keep, as part of the Stormwater Pollution Prevention Plan, the following records pertaining to that facility.

- Stormwater Pollution Prevention Plan
- Reports and certifications required by the MSGP
- Routine Facility Inspection forms
- Visual Assessment forms
- Corrective Action Reports
- Discharge Monitoring Reports
- Annual Reports

All monitoring data shall be collected in accordance with the requirements specified in the MSGP. Triad submits monitoring results to EPA within 60 days of the end of the monitoring period. All Annual Reports and DMRs must be submitted electronically in accordance with the MSGP. Most information required to be submitted by the MSGP is submitted via EPA's electronic tool CDX electronic reporting website (cdx.epa.gov), unless the permit states otherwise or unless a waiver has been granted.

Triad keeps copies of the following documentation for a period of at least 3 years from the date that LANL's coverage under the MSGP expires or is terminated.

- SWPPP (including any modifications made during the term of the MSGP)
- Additional documentation requirements as identified in Section 5.5 of the MSGP
- All reports and certifications required by the MSGP
- Monitoring data
- Records of all data used to complete the NOI.

4.5 Criterion 5 – Performance/Work Processes

Work that contributes to achieving the quality specifications of the MSGP deliverables, is planned and documented, as described in this document and implementing procedures.

Work is performed according to applicable plans and implementing procedures. The Program Lead provides first line supervision of personnel assigned to program tasks to ensure work is performed to achieve program quality specifications. Before changing a work process that affects the program quality specifications, the Program Lead ensures the same level of planning and review as used in the initial program planning steps.

4.5.1 Work Processes

All work should be regarded as a process. Each process consists of a series of actions and is planned and carried out by qualified workers using specified work processes and equipment under

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administrative, technical, and environmental controls established by management to achieve an end result. Workers are the best resource of contributing ideas for improving work processes and will be involved in work process design, process evaluation, and providing the feedback necessary for improvement.

Work is planned and performed using the principles of Integrated Safety Management and is in compliance with P300, *Integrated Work Management for Work Activities*.

4.5.2 Stormwater Pollution Prevention Plans

Stormwater Pollution Prevention Plan (SWPPP) development and implementation by the regulated industrial facility is required for MSGP compliance (refer to Sections 5.0 and 8.0 of the MSGP for general SWPPP requirements and Sector-Specific Requirements for Industrial Activity, and Attachment 2, *MSGP Facilities and Monitored Outfalls Associated with Industrial Activity*). The SWPPP is intended to document the selection, design, and installation of control measures. Additional documentation requirements are intended to document the implementation (including inspection, maintenance, monitoring, and corrective action) requirements identified in the MSGP. The SWPPP is a written assessment of potential sources of pollutants in stormwater runoff and control measures that are implemented at the specific industrial facility to minimize the discharge of pollutants in runoff from the site. These control measures include site-specific BMPs, inspections, employee training, and reporting. The plans and procedures detailed in the SWPPP must be implemented by the facility and updated as necessary, with a copy of the SWPPP kept on-site.

The SWPPP development process involves evaluating regulated industrial activities and requires FOD and Operational support for implementation, improvement, and revision of the plans. EPC-CP personnel follow guidance in EPC Division and Group documents including the most current revision of EPC-CP-QP-2110, *MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance*.

4.5.3 Inspections

The MSGP requires periodic inspection of industrial processes and maintenance of BMPs to assure effectiveness of control measures. The Laboratory has implemented a routine inspection process (e.g., monthly or quarterly) of facilities permitted under the MSGP to support this determination. For information about how to perform a Routine Facility Inspection and how to complete the associated form, refer to the most current revision of EPC-CP-QP-2108, *MSGP Routine Facility Inspections*.

Visual assessments are also required by the MSGP as an important tool for collecting information to determine the effectiveness of controls in preventing potential contaminants from migrating off Laboratory property. Accordingly, field personnel conduct visual assessments for stormwater collected at the monitoring stations or discharged through substantially identical outfalls associated with industrial facilities located throughout the Laboratory. Information recorded documents all observations that are required by the MSGP. For information about how to perform a Visual Assessment and how to complete the associated form, refer to the most current revision of EPC-CP-QP-2105, *MSGP Stormwater Visual Assessments*.

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4.5.4 Stormwater Corrective Actions

It is critical that the Laboratory be able to effectively inspect and maintain the BMPs that have been installed at various locations. Quarterly inspections are completed and provided to the Program Lead for inclusion into the records system. In addition, the Program Lead accompanies the DEPs on the last Routine Facility Inspection of the year. All identified conditions requiring corrective action are summarized in an Annual Report submitted EPA each year. Laboratory management has made an investment in time and materials, in addition to a commitment to minimizing the potential migration of contaminants in stormwater. Report findings are evaluated and in conjunction with facility personnel, BMPs are modified, installed, or removed as necessary. EPC-CP personnel will follow guidance in EPC Division and Group documents including the most current revision of EPC-CP-QP-022, *MSGP Corrective Actions*.

4.5.4.1 Responding to Water Quality Exceedances

Federal stormwater regulations implemented under the Laboratory's MSGP require that corrective action be taken if exceedances of water quality standards or MSGP numeric effluent limits are identified. The identification of a pollutant source(s) contributing to a water quality exceedance is addressed through the creation of a condition requiring corrective action that is entered into the MSGP CAR database in accordance with EPC-CP-QP-022, *MSGP Corrective Actions*. Corrective actions are typically accomplished by modifying, as appropriate, existing BMPs and SWPPPs or installing new BMPs.

When a water quality exceedance occurs, the MSGP Data Administrator assures the analytical data is reviewed and submitted on the required DMR. The Program Lead enters the exceedance as a condition requiring corrective action in the MSGP CAR database. DEPs, and other SWPPP team members then investigate the occurrence, implement corrective action and document all corrective actions taken.

When an exceedance of the MSGP benchmark parameters is detected, the same process is followed as identified for a water quality exceedance above.

4.5.5 Stormwater Monitoring

The MSGP requires stormwater monitoring to address three separate criteria: Quarterly Benchmark, Effluent Limitations, and Impaired Waters. Refer to Attachment 2, *MSGP Facilities Associated with Industrial Activity* for a list of Laboratory sites that have monitoring requirements. Stormwater monitoring is conducted by EPC-CP personnel in accordance with the MSGP, EPC-CP procedures, and the current year MSGP Sampling and Analysis Plan. Considerations to be used for MSGP stormwater monitoring include, but may not be limited to, MSGP requirements, State water quality standards, and Administrative Authority requests.

Quarterly benchmark monitoring is used for determining the effectiveness of stormwater controls and, corrective actions for meeting the requirements of the MSGP. Four benchmark stormwater samples per year are required under the MSGP, but it is not necessary to collect them in consecutive quarters if climatic conditions that prevented quarterly collection are documented (see *Adverse Weather Conditions* in Part 6.1.5 of the MSGP). Stormwater monitoring results are used to

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demonstrate compliance with water quality standards and requirements to evaluate results against benchmark parameters.

Annual Impaired Waters stormwater discharge monitoring of all pollutants for which a waterbody is impaired and for which a standard analytical method exists (see 40 CFR Part 136) is required. The canyons within and surrounding the Laboratory are declared as impaired waters by the New Mexico Environment Department. The pollutants vary from canyon to canyon. The impaired waters pollutants are evaluated and published biannually by NMED in the Clean Water Act §303(d)/305(b) Integrated Report (IR). The pollutants may be discontinued in subsequent annual monitoring if the concentration is below background levels in stormwater or if the constituent is not detected for three consecutive years.

MSGP analytical methods applicable to LANL are consistent with the requirements of 40 CFR Part 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants*.

Since LANL is located in an area where limited rainfall occurs during parts of the year (i.e., in a semi-arid climate) and has periods of freezing conditions, Triad has identified an alternative monitoring period, as allowed by the Permit, of four quarters as follows for each calendar year.

- April 1-May 31
- June 1-July 31
- August 1-September 30
- October 1-November 30

Documentation of the rationale for no monitoring or inspections due to adverse weather conditions must be included in the facility specific SWPPP. Adverse weather conditions are those that are dangerous or create inaccessibility for personnel, such as local flooding, high winds, or electrical storms, or situations that otherwise make sampling impractical, such as drought or extended frozen conditions.

Compliance is tracked by performing inspections of samplers and other associated equipment, and inspecting BMPs. Adequate records are maintained to demonstrate the operating history of essential instrumentation and equipment.

Triad operates and maintains systems of monitoring, control, and related equipment that are installed or used to achieve compliance with the MSGP and the SWPPP. Backup instrumentation and equipment will be timely deployed in the event of equipment failure.

Instrument calibration is essential for documenting the quality of data obtained with the instrument. Technical work that depends upon the accuracy of data is performed using equipment for which the calibration status and limits of accuracy are known and controlled.

Field team personnel calibrate and perform maintenance procedures on all monitoring and analytical field instruments to ensure accuracy of measurements and maintain appropriate records of such activities. Calibrations are documented as prescribed by procedures or manufacturer's instructions.

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Any persons involved in the preparation, retrieval, and analysis must maintain positive control of samples at all times until sample disposal. Chain of custody responsibilities are summarized in Table 4.5.5-1. EPC-CP personnel follow guidance in EPC Division documents including the most current revision of:

- EPC-CP-TP-2102, Installing, Setting Up, and Operating ISCO Samplers;
- EPC-CP-TP-2103, Inspecting Stormwater Runoff Samplers and Retrieving Samples for the MSGP;
- EPC-CP-QP-2104, Installing, Inspecting, and Maintaining MSGP Single Stage Samplers;
- EPC-CP-QP-2111, Per- and Polyfluoroalkyl Substances (PFAS) Sampling for EPC-CP Surface Water Programs; and
- EPC-CP-QP-2106, Processing MSGP Stormwater Samples.

| Table 4.5.5-1 Chain of Custody | |
|---------------------------------------|---|
| Activity | Responsibility |
| Sample collection and preparation | All persons (other than analytical personnel) performing sample preparation and collection are trained to sample collection procedures and adhere to the chain of custody requirements therein. |
| Analysis | Analytical laboratories performing sample analysis maintain sufficient procedures to ensure positive control of samples as specified in the existing Statement of Work. |
| Storage/Disposal | Analytical laboratories maintain/retained samples and/or sample portions under chain of custody until reanalysis, or ultimate disposal. |

The EPC-CP SMO is the central point of contact for analytical laboratory selection, evaluations, sample submittal, and data return. See Section 4.1.3.3 for SMO roles and responsibilities.

4.5.5.1 Quality Control Samples

The planning and coordination of each sampling event and/or monitoring period may include the following quality control (QC) samples to detect potential sources of sample contamination or to track analytical laboratory performance:

- **Equipment Rinse Blank:** A sample of analyte-free water that is prepared in the field using the appropriate sampling equipment with an aliquot of deionized (DI) or certified contaminant-free water that is processed using applicable field equipment in the same manner as the samples.
- **Field Duplicates:** Two samples taken from and representative of the same population and carried through all steps of the sampling and analytical procedures in an identical manner.

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Duplicate samples are used to assess variance of the total method including sampling and analysis.

- **Trip Blank:** Samples of analyte-free water that are prepared in the laboratory using DI or certified contaminant-free water and preserved as required. Trip blanks are used for volatile organic compound (VOC) samples only. Trip blanks are transported, unopened, to the field with other sample containers, handled like environmental samples and shipped to the analytical laboratory for analysis with the collected samples. VOC samples are not a requirement of the MSGP.
- **Field Blank:** A sample of analyte-free water that is prepared in the field using a clean sample container.

The MSGP Program Lead shall consider and include, at a minimum, the collection of QC samples at the frequencies identified in Table 4.5.5.1-1.

| Table 4.5.5.1-1 Quality Control Sampling Requirements | | |
|--|--------------------------------|---|
| Sample Type | Analysis | Frequency |
| Equipment Rinsate Blank | PFAS, o | At the MSGP Program Lead's discretion. |
| Field Blank and/or Field Duplicate | Includes all analytical groups | 10% of samples or a minimum of one per calendar year. |
| PFAS= Per- and polyfluoroalkyl substances | | |

All QC samples shall be collected in accordance with procedures provided in EPC-CP-QP-3027, Sample Containers, Preservation, and Field Quality Control.

4.5.6 Reporting

4.5.6.1 Discharge Monitoring Reports

DMRs are prepared in accordance with the most recent version of the procedure for generating DMRs using the DMR module in EIM. The DMR module is used to prepare the DMR in two formats: a paper form (EPA Form 3320-1) which may be printed as a hard copy or saved as a PDF, and an electronic comma-separated value file for import into the NetDMR electronic reporting system. The Laboratory is required to submit DMRs to EPA electronically using the NetDMR system and to keep a printed copy with the facility-specific SWPPP.

DMRs are due in the NetDMR system no later than 60 days following each monitoring period. NetDMR is accessed via EPA's Central Data Exchange (CDX) website (<https://cdx.epa.gov/>). The DMR manager may import DMRs into NetDMR; however, a designated EPC Signatory Official or Authorized Representative may only submit the DMRs for NPDES Permits. NetDMR roles and permissions for these functions are described on the NetDMR Support Portal (<https://netdmr.zendesk.com/hc/en-us>).

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4.5.6.2 Annual Reports

The Laboratory is required to submit an annual report electronically to the EPA that includes a summary of the findings from inspections and corrective action documentation. The documentation includes the following:

- Information relative to whether a waiver was granted, by whom, and the date the waiver was approved;
- The NPDES Permit Tracking Number;
- A summary of the past year's routine facility inspection documentation (see Part 3.1.2 of the MSGP);
- A summary of your past years quarterly visual assessment documentation (see Part 3.2.2 of the MSGP);
- A summary of the corrective action documentation over the past year (see Part 4.4 of the MSGP); and
- For a four-sample average benchmark monitoring exceedance, if after reviewing the selection, design, installation, and implementation of the site's control measures and considering whether any modifications are necessary to meet the effluent limits in the permit, personnel determine that no further pollutant reductions are technologically available and economically practicable and achievable in light of best industry practice and the rationale for why it is believed no further reduction are achievable (see Part 6.2.1.2 of the MSGP).
- The annual report is submitted electronically via the NetMSGP program service via EPA's CDX website. The annual report may be submitted on a paper form (EPA Form 6100-28) if the Laboratory has been granted a waiver from electronic reporting by the applicable EPA Regional Office.

4.6 Criterion 6 – Performance/Design

Design activities are conducted and reviewed in accordance with:

- PD340, Conduct of Engineering and Configuration Management for Facility Work;
- P341, Facility Engineering Processes Manual and;
- P342, Engineering Standards.

Design standards under this program include, but are not limited to temporary and permanent BMPs, corrective action measures, and stormwater monitoring support.

Design inputs are specified and approved on a timely basis for making design decisions. Inputs contain the level of detail required to permit the performance of design activities correctly.

Formal design reviews, including design verifications and evaluation of design changes, are conducted to ensure that the design input is correctly incorporated into the design output. Changes

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to design will undergo the same review as the original design. A Professional Engineer must stamp engineered designs.

Verification and validation of the adequacy of designs are conducted before relying on the performance of the design function. Verification and validation are conducted in accordance with implementing procedures.

4.7 Criterion 7 – Performance/Procurement

Items and services required to perform the scope for the MSGP Program are commercial grade in nature and no special procurement requirements or needs are necessary. All procurements of equipment, supplies, and/or services will be made in accordance with P840-1, *Quality Assurance for Procurements*.

4.8 Criterion 8 – Performance/Inspection and Acceptance Testing

Materials and services used in this program will be inspected and/or tested prior to acceptance in accordance with P330-8, *Inspection and Test*. Most supplies used during performance of program activities are commercial grade in nature and require no special acceptance practices or procedures.

4.9 Criterion 9 – Assessment/Management Assessment

The EPC-CP Group Leader conducts management assessments and/or MOV assessments of the MSGP Program work areas/types in accordance with P328-3, *Management Assessment* and P328-4, *Management Observation and Verification*. Assessments are documented and filed as records in accordance with ADESH-AP-006, *Records Management*. Violations of requirements and/or findings from management assessments and MOVs will initiate a nonconformance report in accordance with P330-6 Nonconformance Reporting. Corrective actions to resolve the nonconforming services or processes are tracked and documented in accordance with P322-4, *Issues Management*.

4.10 Criterion 10 – Assessment/Independent Assessment

Independent assessments are those assessments conducted by organizations external to EPC-CP. As required by the SD330, *Los Alamos National Laboratory Quality Assurance Program*, this program may be assessed by outside organizations in accordance with P328-2, *Independent Assessment*.

Annual audits/assessments will be conducted, with input from the Storm Water Permitting/Compliance Team Leader identifying one or more areas of the program to be audited each year. If a violation of requirements is found during an independent audit/assessment, a nonconformance report is initiated in accordance with P330-6, *Nonconformance Control and Reporting*. Corrective actions are tracked and documented in accordance with P322-4, *Issues Management*.

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4.11 Suspect/Counterfeit Items Prevention

Suspect/Counterfeit items (S/CI) are prevented from being purchased by Triad at LANL. Potential S/CI are prevented, detected, reported and investigated in accordance with the procedures defined in the LANL procedure P330-9, Suspect/Counterfeit Items (S/CI).

4.12 Safety Software Quality Assurance Requirements for Nuclear Facilities

This section is only applicable for nuclear facilities in accordance with DOE Order 414.1D, Attachment 1 Contractor Requirements Document (CRD), Section 1.b. As such, this section is not applicable to the NPDES MSGP Program.

5.0 IMPLEMENTATION

The requirements of this document are effective on the date provided on the cover page.

6.0 TRAINING

The required training associated with this document is as follows and is documented in accordance with ADESH-TPP-301, *ADESH Training Program Plan*. Training for EPC-CP MSGP employees, DEPs, and subcontractors must be assigned and tracked using UTrain, the institutional training records management system.

- Self-study of this procedure (required reading) is required for all MSGP Program employees, including subcontractors.

7.0 DOCUMENTS AND RECORDS

The ESHQSS DCRM is the Office of Record for this document and maintains the administrative record. Documents and records must be maintained in accordance with PD1020, *Document Control and Records Management*; ESH-AP-007, *Document Control*; and ADESH-AP-006, *Records Management Plan*.

8.0 DEFINITIONS AND ACRONYMS

Use the LANL *Definition of Terms* and those in SD330.

Use the LANL *Acronym Master List*.

| | |
|--------|--|
| BMP | Best Management Practice |
| CFR | Code of Federal Regulations |
| CRD | Contractor Requirements Document |
| DCRM | Document Control and Records Management |
| DEP | Deployed Environmental Professional |
| DMR | Discharge Monitoring Report |
| DOE | Department of Energy |
| ESHQSS | Environment, Safety, Health, Quality, Safeguards, and Security |

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| | |
|--------|---|
| EPC-CP | Environmental Protection and Compliance-Compliance Programs |
| EIM | Environmental Information Management |
| ELG | Effluent Limitations Guidelines |
| EPA | Environmental Protection Agency |
| FOD | Facility Operations Director |
| LANL | Los Alamos National Laboratory |
| MSGP | Multi-Sector General Program |
| MOV | Management Observation and Verification |
| NeT | NPDES eReporting Tool |
| NOI | Notice of Intent |
| NOT | Notice of Termination |
| NMED | New Mexico Environmental Department |
| NNSA | National Nuclear Safety Administration |
| NPDES | National Pollutant Discharge Elimination System |
| PIP | Program Implementation Plan |
| QA | Quality Assurance |
| QBM | Quarterly Benchmark Monitoring |
| S/CI | Suspect/Counterfeit Items |
| STR | Subcontract Technical Representative |
| SMO | Sample Management Office |
| SWPPP | Stormwater Pollution Prevention Plan |
| SWTS | Storm Water Tracking Module |

9.0 REFERENCES

The latest document revision, available through LANL's Electronic Document and Records Management System, shall be used unless otherwise specified.

Prime Contract

DOE Order 414.1D, Chg. 1, *Quality Assurance*

NPDES MSGP

40 CFR Part 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants*

Clean Water Act, Title 33 U.S.C. 1251

20.6 Part 4 NMAC, Standards for Interstate Surface Waters

LANL Documents:

SD330, *Los Alamos National Laboratory Quality Assurance Program*

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P101-17, *Excavation/Fill/Soil Disturbance*

P300, *Integrated Work Management for Work Activities*

P322-4, *Issues Management*

P328-2, *Independent Assessment*

P328-3, *Management Assessment*

P328-4, *Management Observation and Verification*

P330-2, *Control and Calibration of Measuring and Test Equipment (M&TE)*

P330-6, *Nonconformance Control and Reporting*

P330-8, *Inspection and Test*

P330-9, *Suspect/Counterfeit Items (S/CI)*

P340, *Conduct of Engineering and Configuration Management for Facility Work*

P341, *Facility Engineering Process Manual*

P342, *Engineering Standards*

EPC-ES-FSD-001, *Implementing Environmental Requirements*

EPC-CP-FSD-001, *Water Quality*

P781-1 *Conduct of Training*

P840-1, *Quality Assurance for Procurements*

P1040, *Software Quality Management*

PD1020, *Document Control and Records Management*

EPC Documents:

ADESH-AP-006, *Records Management Plan*

ESH-AP-007, *Document Control*

ADESH-TPP-301, *ADESH Training Program Plan*

ADESH-QAP-001, *ADESH Quality Assurance Plan*

EPC-DO-QP-100, *General Field Safety*

EPC-CP-QAP-001, *Environmental Compliance Programs Quality Assurance Plan*

EPC-CP-QAP-901, *EPC-CP Quality Procedure to Supplement ESH-AP-007, Document Control*

ENV-RCRA-QP-026, *PR-ID and EX-ID Review Process*

EPC-CP-QP-022, *MSGP Corrective Actions*

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EPC-CP-QP-2104, *Installing, Inspecting, and Maintaining MSGP Single Stage Samplers*

EPC-CP-QP-2105, *MSGP Stormwater Visual Assessments*

EPC-CP-QP-2106, *Processing MSGP Stormwater Samples*

EPC-CP-QP-2107, *Preparing Discharge Monitoring Reports for the NPDES Multi-Sector General Permit*

EPC-CP-QP-2108, *MSGP Routine Facility Inspections*

EPC-CP-QP-2110, *MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance*

EPC-CP-TP-2102, *Installing, Setting Up, and Operating ISCO Samplers*

EPC-CP-TP-2103, *Inspecting Stormwater Runoff Samplers and Retrieving Samples for the MSGP*

10.0 APPENDICIES

Appendix A: NPDES Multi-Sector General Permit Program Management Level Determination, MLDS-TA-60-324 Rev. 0

Appendix B: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for Environmental Information Management System

Appendix C: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for the MSGP Corrective Action Reporting Database

Appendix D: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for Maintenance Connection and Maintenance Connection Express

11.0 ATTACHMENTS

Attachment 1: Summary of QA Requirements and Program-Level (Local) Work Practices

Attachment 2: MSGP Facilities Associated with Industrial Activity

12.0 CONTACT INFORMATION

Entity: EPC-CP Group Leader

Name: Taunia Van Valkenburg

Telephone: (505) 665-9827

E-mail: tauniav@lanl.gov

Website: <https://int.lanl.gov/org/ddops/aladeshqss/environmental-protection/index.shtml>

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Appendix A: NPDES Multi-Sector General Permit Program Management Level Determination, MLDS-TA-60-324 Rev. 0

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**Multi-Sector Conduct of Engineering
NPDES Construction General Permit Program
Management Level Determination**

MLDS No.: MLDS-TA-60-324

Rev.: 0

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| | | |
|---|--|--|
| 1.0 SYSTEM INFORMATION | | |
| 1.1 TA No.: All | 1.2 Facility No.: All | 1.3 Facility Name: All LANL |
| 1.4 Facility Hazard Category: | | |
| <input type="checkbox"/> Nuclear Facility <input checked="" type="checkbox"/> Nonnuclear Facility | | |
| <input type="checkbox"/> HC-2 <input type="checkbox"/> HC-3 <input type="checkbox"/> Less than HC-3 | <input type="checkbox"/> Chemical High-PSM <input type="checkbox"/> Chemical High-non-PSM <input type="checkbox"/> Chemical Moderate <input checked="" type="checkbox"/> Chemical Low | <input type="checkbox"/> Accelerator <input type="checkbox"/> Firing Range <input type="checkbox"/> Biological <input type="checkbox"/> Explosive |
| 1.5 Operating System ID: WSTWTR | 1.6 Operating System Name: Waste Water | |
| 1.7 System ID: STW | 1.8 System Name: Storm Water – Multi-Sector General Permit Program | |

| | |
|---|--|
| 2.0 SECURITY CLASSIFICATION REVIEW | |
| 2.1 Security Classification: Unclassified | |
| 2.2 DC/RO: (Name, Z Number, Organization, Signature, Date) | |
| Tania Van Valkenburg, 145666, EPC-CP  12/16/19 | |

| | | |
|--|---|--|
| 3.0 SYSTEM MANAGEMENT LEVEL DETERMINATION ANALYSIS | | |
| 3.1 Does this system meet one of the criteria below? If "Yes", then check the applicable criteria, insert the safety function(s) and safety analysis reference(s), and go to Section 4.0 and designate the system as ML-1. | | |
| | | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| <ul style="list-style-type: none"> The system is an SSC of a Hazard Category 2 or 3 Nuclear Facility that performs Documented Safety Analysis (DSA) designated Safety Class (SC) function(s). The system is an SSC of an Accelerator Facility that performs Safety Assessment Document (SAD) designated public protection function(s). The system is an SSC of a High Hazard Nonnuclear Facility that performs function(s) identified in the Facility Safety Analysis (FSA) for protection of the public. | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| If "No" is checked then go to Field 3.2 | | |
| No. | SC or public protection functions as defined by Safety Analysis | DSA, SAD, or FSA Reference |
| 3.1-1 | N/A | N/A |
| 3.1-2 | N/A | N/A |
| 3.1-3 | N/A | N/A |
| 3.2 Does this system meet one of the criteria below? If "Yes", then check the applicable criteria, insert the safety function(s) and safety analysis reference(s), and go to Section 4.0 and designate the system as ML-2. | | |
| | | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |

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**Appendix A: NPDES Multi-Sector General Permit Program Management Level Determination,
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Multi-Sector
NPDES Construction General Permit Program
Management Level Determination

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Conduct of Engineering

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- The system is an SSC of a Hazard Category 2 or 3 Nuclear Facility that performs DSA designated Safety Significant (SS) function(s). ☐
- The system is an SSC of an Accelerator Facility that performs SAD designated worker protection function(s). ☐
- The system is an SSC of a High Hazard Nonnuclear Facility that performs function(s) identified in the FSA for protection of the uninvolved or noninvolved worker. ☐

If "No" is checked then go to Field 3.3.

| No. | SS functions or worker protection functions as defined by Safety Analysis | DSA, SAD, or FSA Reference |
|-------|---|----------------------------|
| 3.2-1 | N/A | N/A |
| 3.2-2 | N/A | N/A |
| 3.2-3 | N/A | N/A |

3.3 Does this system meet one of the criteria below? If "Yes", then check the applicable criteria, insert the function(s) and safety analysis or Facility Management reference(s), and go to Section 4.0 and designate the system as ML-3. Yes ☐ No ☒


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Appendix A: NPDES Multi-Sector General Permit Program Management Level Determination, MLDS-TA-60-324 Rev. 0 (cont.)

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Multi-Sector
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Management Level Determination

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- The system is an SSC of a Hazard Category 2 or 3 Nuclear Facility that is designated Other Hazard Control (OHC) in the DSA. ☐
- The system is an SSC that performs function(s) for protection of Category I or II Special Nuclear Material (SNM) or Classified Matter as determined by the Facility Management. ☐
- The system is an SSC of a Moderate Hazard Nonnuclear Facility that performs function(s) identified in the FSA for protection of uninvolved or noninvolved worker and the Facility Management requires enhanced engineering, quality, or maintenance support above national codes and standards requirements. ☐
- The system is an SSC that performs important function(s) for compliance with Waste Acceptance Criteria (WAC) for a Waste Receiving Site and as determined by the Facility Management. ☐
- The system is an SSC that performs function(s) for radiation protection that are not covered in the Radiation Protection Safety Management Program (SMP) and are considered important to normal, abnormal, or emergency response by the Facility Management ☐
- The system is an SSC that performs function(s) for environmental protection that are called out in a permit or used to demonstrate environmental compliance that are considered important by the Facility Management. *(See discussion below)* ☒
- The system is an SSC that performs function(s) that are essential to the facility mission as determined by the Facility Management. ☐

Evaluation. This MLDS is for the overall Multi-Sector General Permit (MSGP) Program at LANL, which is responsible for monitoring the storm water discharges at the outfalls to meet Water Quality Standards. The MSGP Program is responsible for the following:

- Determines inspection requirements, how often to conduct these inspections and what to monitor for;
- Evaluates sample results and compares those results to established effluent limits;
- Provides storm water discharge summary reports to the associated enforcement agencies at a predetermined reporting frequency;
- Works with the enforcement agencies to address identified issues.

In summary, this MLDS is associated with a program and not equipment. There is nothing in the program that would require it to be elevated to ML-3. While the program may rely on equipment to support permit requirements, the equipment (as applicable) should be evaluated separately from the program to determine the appropriate management level.

If "No" is checked then go to Field 3.4

| No. | OHC Functions defined by Safety Analysis or other ML-3 functions as determined by Facility Management | DSA or Facility Management Reference |
|-------|---|--------------------------------------|
| 3.3-1 | Obtain permit coverage (NOI) and modification | N/A |
| 3.3-2 | Permit implementation | N/A |
| 3.3-3 | Compliance inspections | N/A |
| 3.3-4 | Data management | N/A |


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|---|--|-------------------------------|
|  | Multi-Sector NPDES Construction General Permit Program Management Level Determination | Conduct of Engineering |
| MLDS No.: MLDS-TA-60-324 | Rev.: 0 | Page 4 of |

| | | |
|---|-----------|-----|
| 3.3-5 | Reporting | N/A |
| 3.4 If the System does not meet any of the criteria in fields 3.1, 3.2, or 3.3, then designate the system as ML-4 in Section 4.0. | | |

| | | | |
|--|-------------------------------|-------------------------------|--|
| 4.0 SYSTEM MANAGEMENT LEVEL DESIGNATION | | | |
| ML-1 <input type="checkbox"/> | ML-2 <input type="checkbox"/> | ML-3 <input type="checkbox"/> | ML-4 <input checked="" type="checkbox"/> |

| | |
|--|---------------------------------------|
| 5.0 APPROVALS | |
| 5.1 Responsible Engineer (Name, Z Number, Organization, Signature, and Date) | |
| Terrill Lemke, 120092, EPC-CP | <i>Terrill Lemke</i> 4/25/19 |
| 5.2 Verifier (Name, Z Number, Organization, Signature, and Date) | |
| Taunia Van Valkenburg, 145666, EPC-CP | <i>Taunia Van Valkenburg</i> 12/11/19 |
| 5.3 Facility Design Authority Representative (Name, Z Number, Organization, Signature, and Date) | |
| Jason Apperson, 222827, ES-DO | <i>Jason Apperson</i> 12/12/19 |

| | | | | | |
|----------------------|------|----------------|----|----------|------|
| 6.0 REVISIONS | | | | | |
| Rev. No. | Date | Description | RE | Verifier | FDAR |
| 0 | | Original Issue | | | |
| | | | | | |
| | | | | | |

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Appendix B: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for Environmental Information Management System

(Page 1 of 4)



Reference No: _____

Form 2033

The Software Owner RLM must retain completed forms as a record.

Safety/Non-Safety Software Determination, Categorization, and Software Risk Level (SRL) (See Page 5 for Guidance)

| | | | |
|---|---|--|---|
| Part 1: Document the rationale supporting the reasonable probability that the software may be safety software, or risk significant software. | | | |
| 1.1 Excluding personal productivity software that does not provide calculation output (e.g., e-mail software, presentation software), indicate whether the software is or will be used in connection with the design, analysis and/or operation of: <input type="checkbox"/> a nuclear (including radiological) facility (Ref. LANL Nuclear Facility List , Conduct of Operations Resources Website), or <input type="checkbox"/> an accelerator, live-firing range, biological hazard facility, high explosive facility, or moderate- or high- chemical hazard facility as determined using SBP111-1 , <i>Facility Hazard Categorization and Documentation</i> ; or <input type="checkbox"/> LANL's Essential Functions as described in SEO-COOP-006 , <i>LANL NA-LA Continuity of Operations (COOP) Plan</i> . Provide supporting comments (as necessary to document the selection above). | | | |
| Part 2: Document the software information, software application(s) and software function(s). A separate form may be used for each software item or one form may be used for multiple software items. | | | |
| 2.1 Provide software name(s). EIM | 2.2 Provide software version(s). N/A | 2.3 Indicate software owner (SO). John McCann | 2.4 Indicate SO organization. EPC-CP |
| 2.5 Provide a description of the specific facility application(s) to sufficient detail to allow the software to be readily traceable to the point(s) of application within the facility. Include technical area (TA) and building number; or, site-wide or Facility Operating Directorate (FOD)-wide use. Add other descriptive information as required. EIM is a cloud-based software service used by the EPC-CP personnel to support and streamline various activities related to environmental sampling and management, including: sample planning development/documentation, sample tracking/chain-of-custody, quality checks, and reporting. This software can be used by anyone at LANL associated with environmental sampling. | | | |
| 2.6 Indicate System, Structure or Components (SSCs) controlled or affected by the software. Indicate NA if not applicable. N/A | | | |
| 2.6.1 Provide SSC name(s). N/A | | | |
| 2.6.2 Provide functional requirement(s) of the software associated with the SSC. N/A | | | |
| 2.6.3 Provide reference document(s) describing the SSC/software. N/A | | | |
| Provide supporting comments (as required). N/A | | | |
| 2.7 Indicate facility classification (SBP111-1), design, or analysis controlled or affected by the software. Indicate NA if not applicable. N/A | | | |
| 2.7.1 Provide facility classification, design or analysis name. N/A | | | |
| 2.7.2 Provide software functional requirement(s) associated with the facility classification, design or analysis. N/A | | | |
| 2.7.3 Provide reference document(s) describing the facility classification, design, or analysis. N/A | | | |
| Provide supporting comments (as required). N/A | | | |

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Appendix B: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for Environmental Information Management System (cont.)

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| 2.8 | Indicate the hazard control, Safety Management Program (SMP) and or technical safety requirements (TSRs) controlled or affected by the software. Indicate NA if not applicable. N/A |
| 2.8.1 | Provide the hazard control, SMP and/or TSR name. N/A |
| 2.8.2 | Provide the software functional requirement(s) for the hazard control, SMP and/or TSR. N/A |
| 2.8.3 | Provide reference document(s) describing the hazard control, SMP and/or TSR. N/A |
| | Provide supporting comments (as required). N/A |

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| Part 3: Determine whether the software type is (1) safety software; or (2) non-safety software and the associated category for each type. | |
| 3.1 Check one of the following (3.1.1 through 3.1.5) to determine one of the two software types (safety software or non-safety software) and one of the associated 5 categories for each type (i.e. Categories include SSS, SHADS or SMACS for safety software; and, Risk Significant or Commercially Controlled for non-safety software). | |
| Note: If software is determined to be safety software or risk significant software, complete all parts of this form. If software is determined to be commercially controlled software, complete all parts of this form except for Part 4 . | |
| 3.1.1 Safety software: SSS <input type="checkbox"/> | This is software for a nuclear (including radiological) facility that performs, or will perform a safety function as part of a Structure, System, and Component (SSC) and is cited in either (a) a Department of Energy (DOE)-approved documented safety analysis; or, (b) an approved hazard analysis per DOE P 450.4A , <i>Integrated Safety Management Policy</i> and 48 Code of Federal Regulations (CFR) 970.5223-1 , <i>Integration of Environment, Safety, and Health into Work Planning and Execution</i> . This is safety software and is categorized as Safety System Software (SSS). Provide supporting comments (as required). |
| 3.1.2 Safety software: SHADS <input type="checkbox"/> | This is software that is used, or will be used to classify, design, or analyze nuclear (including radiological) facilities. This software is not part of an SSC, but helps to ensure the proper accident or hazards analysis of nuclear (including radiological) facilities or an SSC that performs a safety function. This is safety software and is categorized as Safety and Hazard Analysis Software and Design Software (SHADS). Provide supporting comments (as required). |
| 3.1.3 Safety software: SMACS <input type="checkbox"/> | <input type="checkbox"/> This is software that performs or will perform a hazard control function in support of nuclear (including radiological) facility radiological safety management programs (SMPs) or technical safety requirements (TSRs). This is safety software and is categorized as Safety Management and Administrative Controls Software (SMACS). Provide supporting comments (as required). |
| | <input type="checkbox"/> This is software that performs, or will perform a control function in support of a nuclear (including radiological) facility necessary to provide adequate protection from nuclear (including radiological) facility radiological hazards. It supports eliminating, limiting, or mitigating nuclear hazards to workers, the public, or the environment as addressed in 10 CFR 830 , <i>Nuclear Safety Management</i> , 10 CFR 835 , <i>Occupational Radiation Protection</i> , and the Department of Energy Acquisition Regulation (DEAR) Integrated Safety Management System (ISMS) clause 48 CFR 970.5223-1 , <i>Integration of Environment, Safety, and Health into Work Planning and Execution</i> . This is safety software and is categorized as Safety Management and Administrative Controls Software (SMACS). Provide supporting comments (as required). |
| 3.1.4 Non-safety software: Risk Significant <input type="checkbox"/> | This is software that is, or will be used for any of the purposes that safety software is used for only such purposes are in or for an accelerator, live-firing range, biological hazard facility, high explosive facility, or moderate- or high- chemical hazard facility OR, failure of the software would <u>prevent</u> LANL from performing Essential Functions as described in SEO-COOP-006 , <i>LANL NA-LA Continuity of Operations (COOP) Plan</i> . This is non-safety software and is categorized as Risk Significant software. Provide supporting comments (as required). |

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Appendix B: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for Environmental Information Management System (cont.)

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| <p>3.1.5 Non-safety software: Commercially Controlled <input checked="" type="checkbox"/></p> | <p>This is software that is not, or will not be used for any of the above purposes in 3.1.1–3.1.4. Such software may be acquired (including commercial off the shelf (COTS)) or designed software. Examples of this software include personal productivity software (e.g., Microsoft PowerPoint, Oracle Project Primavera, MS Outlook, etc.) and other types of software (e.g., some business accounting systems, facility personnel comfort temperature monitoring systems). This is non-safety software and is categorized as Commercially Controlled software. Proceed to Part 5. Part 4 is not required.</p> <p>Provide supporting comments (as required).</p> <p>EIM is a cloud-based software tool used to streamline the collection and retention of environmental sampling and analysis data, and meets the Laboratory's obligation to publish all environmental data for public access. While analytical results are made available to anyone (output/customer-side), all approved user interactions (user-side) and software-related activities are controlled through approved procedures (various EPC-CP QPs, and EPC-ES TPs and Guides). While the approved/authorized use of this software item is important to completion of program goals, its use is not consistent with any of the purposes described above in 3.1.1 - 3.1.4. Various LANL Nuclear Facility Documented Safety Analyses (DSAs) discuss sampling within the Hazardous Material Protection Program (HMPP) Safety Management Plan (SMP); however, the DSAs do not explicitly credit any such sampling process or tool (including software) for providing a hazard control function. A failure, modification, or misuse of this software item may cause program-level complications, delays, or operational issues (e.g. sample reporting errors, etc.); however, it is extremely unlikely that such an event (i.e. on its own/without a separate failure of a credited safety system) would adversely effect a facility SSC Safety Function (per 3.1.1), a SSC design analysis (per 3.1.2), an administrative control function (per 3.1.3) as described in any LANL facility DSA, or an COOP Essential Function (per 3.1.4). As such, the EIM software item, as used within the approved EPC-CP scope of work (does not cover any other LANL program/group scope), is considered Non-Safety/Commercially Controlled software.</p> |
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| Part 4: Determine the Software Risk Level (SRL). | |
| <p>4.1 Complete this section for safety software and risk significant software only. Do not complete this section for commercially controlled software. Check only one of the following to determine the SRL. Text shown in <i>[brackets]</i> is applicable to safety software only.</p> | |
| <p>SRL 1 <input type="checkbox"/></p> | <p>4.1.1 This level includes software applications that meet one or more of the following criteria. Failure of the software could:</p> <ul style="list-style-type: none"> ▪ <i>[Compromise a limiting condition for operation].</i> ▪ <i>[Cause a reduction in the safety margin for a safety SSC that is cited in a DOE approved documented safety analysis.]</i> ▪ Cause a reduction in the safety margin for other systems such as toxic or chemical protection systems that are cited in either (a) a DOE approved documented safety analysis or (b) an approved hazard analysis per DOE P 450.4A, <i>Integrated Safety Management Policy</i>, and the DEAR ISMS clause (48 CFR 970.5223-1, <i>Integration of Environment, Safety, and Health into Work Planning and Execution</i>). ▪ Result in non-conservative safety analysis, design, or misclassification of facilities or SSCs. <p>Provide supporting comments (as required).</p> |
| <p>SRL 2 <input type="checkbox"/></p> | <p>4.1.2 This level includes <i>[safety]</i> software applications that do not meet SRL 1 criteria, but meet one or more of the following criteria:</p> <ul style="list-style-type: none"> ▪ <i>[Safety management databases used to aid in decision making whose failure could impact safety SSC operation.]</i> ▪ Software failure that could result in incorrect analysis, design, monitoring, alarming, or recording of hazardous exposures to workers or the public. ▪ <i>[Software failure could compromise the defense-in-depth capability for a nuclear (including radiological) facility.]</i> <p>Provide supporting comments (as required).</p> |
| <p>SRL 3 <input type="checkbox"/></p> | <p>4.1.3 This level includes software applications that do not meet SRL 2 criteria, but meet one or more of the following criteria. Failure of the software could:</p> <ul style="list-style-type: none"> ▪ Cause a potential violation of regulatory permitting requirements. ▪ Affect environment, safety, health monitoring, or alarming systems. ▪ Affect the safe operation of an SSC. <p>Provide supporting comments (as required).</p> |

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**Appendix B: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL)
(Form 2033) for Environmental Information Management System (cont.)**

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| Part 5: Attest to compliant completion, review and approve. A signature is required in 5.1, 5.2 and 5.3 for all completed 2033 Forms. | |
| <p>5.1 As the Software Owner (SO), I have determined the software type, category, and as appropriate, SRL, in accordance with <u>P1040</u>, <i>Software Quality Management</i> and the instructions associated with this form.</p> <p>Provide Name/Z No. (print) John MCCann, 115625</p> | <p>Signature, Date</p> <p> 11-6-2019</p> |
| <p>5.2 As the Software Owner Responsible Line Manager (SO RLM or SRLM), I have reviewed and approve the determination of the software type, category and, as appropriate, SRL for the software as described on this form.</p> <p>Provide Name/Z No. (print) Taunia Van Valkenburg, 145666</p> | <p>Signature, Date</p> <p> 11/6/2019</p> |
| <p>5.3 As the <input checked="" type="checkbox"/> <u>Facility Design Authority Representative</u> (FDAR) for my representative facilities, as the <input type="checkbox"/> LANL Design Authority (DA), or, as the <input type="checkbox"/> Responsible Associate Laboratory Director (RALD), I have reviewed and approve the determination of the software type, category and, as appropriate, SRL for the software as described on this form. Check one.</p> <p>Provide Name/Z No. (print) Jason Apperson, 222827</p> <p>Note: The RALD is authorized to review and approve <u>Form 2033</u> (rather than the FDAR or DA) for software applications where, as determined by the FDAR or DA, the FDAR or DA does not have the knowledge and/or a reasonable connection to the software.</p> | <p>Signature, Date</p> <p> 11/19/19</p> |

Supporting Comments Continuation Page

As needed, use this space to provide supporting comments. Provide the Form section number that corresponds to the comments.

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Appendix C: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for the MSGP Corrective Action Reporting Database

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Reference No: _____

Form 2033

The Software Owner RLM must retain completed forms as a record.

Safety/Non-Safety Software Determination, Categorization, and Software Risk Level (SRL) (See Page 5 for Guidance)

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| Part 1: Document the rationale supporting the reasonable probability that the software may be safety software, or risk significant software. | | | |
| 1.1 Excluding personal productivity software that does not provide calculation output (e.g., e-mail software, presentation software), indicate whether the software is or will be used in connection with the design, analysis and/or operation of: <div style="margin-left: 20px;"> <input type="checkbox"/> a nuclear (including radiological) facility (Ref. LANL Nuclear Facility List, Conduct of Operations Resources Website), or <input type="checkbox"/> an accelerator, live-firing range, biological hazard facility, high explosive facility, or moderate- or high- chemical hazard facility as determined using SBP111-1, <i>Facility Hazard Categorization and Documentation</i>; or <input type="checkbox"/> LANL's Essential Functions as described in SEO-COOP-006, <i>LANL NA-LA Continuity of Operations (COOP) Plan</i>. Provide supporting comments (as necessary to document the selection above). </div> | | | |
| Part 2: Document the software information, software application(s) and software function(s). A separate form may be used for each software item or one form may be used for multiple software items. | | | |
| 2.1 Provide software name(s). MSGP Corrective Action Reporting Database and corresponding APEX administrative module | 2.2 Provide software version(s). Oracle Fusion Middleware Forms Services 12C and Oracle APEX | 2.3 Indicate software owner (SO). Holly Wheeler | 2.4 Indicate SO organization. SAE-4 |
| 2.5 Provide a description of the specific facility application(s) to sufficient detail to allow the software to be readily traceable to the point(s) of application within the facility. Include technical area (TA) and building number; or, site-wide or Facility Operating Directorate (FOD)-wide use. Add other descriptive information as required. The MSGP Corrective Action Reporting (CAR) Database and APEX are software tools used to facilitate the documentation, tracking, and closure of conditions requiring corrective action identified by MSGP Storm Water Permitting and Compliance or DESH personnel. These software tools can be used by anyone at LANL associated with the MSGP Storm Water Program. | | | |
| 2.6 Indicate System, Structure or Components (SSCs) controlled or affected by the software. Indicate NA if not applicable. N/A | | | |
| 2.6.1 Provide SSC name(s). N/A | | | |
| 2.6.2 Provide functional requirement(s) of the software associated with the SSC. N/A | | | |
| 2.6.3 Provide reference document(s) describing the SSC/software. N/A | | | |
| Provide supporting comments (as required). N/A | | | |
| 2.7 Indicate facility classification (SBP111-1), design, or analysis controlled or affected by the software. Indicate NA if not applicable. N/A | | | |
| 2.7.1 Provide facility classification, design or analysis name. N/A | | | |
| 2.7.2 Provide software functional requirement(s) associated with the facility classification, design or analysis. N/A | | | |
| 2.7.3 Provide reference document(s) describing the facility classification, design, or analysis. N/A | | | |
| Provide supporting comments (as required). N/A | | | |

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Appendix C: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for the MSGP Corrective Action Reporting Database (cont.)

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| 2.8 | Indicate the hazard control, Safety Management Program (SMP) and/or technical safety requirements (TSRs) controlled or affected by the software. Indicate NA if not applicable. N/A |
| 2.8.1 | Provide the hazard control, SMP and/or TSR name. N/A |
| 2.8.2 | Provide the software functional requirement(s) for the hazard control, SMP and/or TSR. N/A |
| 2.8.3 | Provide reference document(s) describing the hazard control, SMP and/or TSR. N/A |
| | Provide supporting comments (as required). N/A |

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| Part 3: Determine whether the software type is (1) safety software; or (2) non-safety software and the associated category for each type. | |
| 3.1 Check one of the following (3.1.1 through 3.1.5) to determine one of the two software types (safety software or non-safety software) and one of the associated 5 categories for each type (i.e. Categories include SSS, SHADS or SMACS for safety software; and, Risk Significant or Commercially Controlled for non-safety software). | |
| Note: If software is determined to be safety software or risk significant software, complete all parts of this form. If software is determined to be commercially controlled software, complete all parts of this form except for Part 4 . | |
| 3.1.1 Safety software: SSS <input type="checkbox"/> | This is software for a nuclear (including radiological) facility that performs, or will perform a safety function as part of a Structure, System, and Component (SSC) and is cited in either (a) a Department of Energy (DOE)-approved documented safety analysis; or, (b) an approved hazard analysis per DOE P 450.4A, Integrated Safety Management Policy and 48 Code of Federal Regulations (CFR) 970.5223-1, Integration of Environment, Safety, and Health into Work Planning and Execution . This is safety software and is categorized as Safety System Software (SSS). Provide supporting comments (as required). |
| 3.1.2 Safety software: SHADS <input type="checkbox"/> | This is software that is used, or will be used to classify, design, or analyze nuclear (including radiological) facilities. This software is not part of an SSC, but helps to ensure the proper accident or hazards analysis of nuclear (including radiological) facilities or an SSC that performs a safety function. This is safety software and is categorized as Safety and Hazard Analysis Software and Design Software (SHADS). Provide supporting comments (as required). |
| 3.1.3 Safety software: SMACS <input type="checkbox"/> | <div> <input type="checkbox"/> This is software that performs or will perform a hazard control function in support of nuclear (including radiological) facility radiological safety management programs (SMPs) or technical safety requirements (TSRs). This is safety software and is categorized as Safety Management and Administrative Controls Software (SMACS). Provide supporting comments (as required). </div> <div> <input type="checkbox"/> This is software that performs, or will perform a control function in support of a nuclear (including radiological) facility necessary to provide adequate protection from nuclear (including radiological) facility radiological hazards. It supports eliminating, limiting, or mitigating nuclear hazards to workers, the public, or the environment as addressed in 10 CFR 830, Nuclear Safety Management, 10 CFR 835, Occupational Radiation Protection, and the Department of Energy Acquisition Regulation (DEAR) Integrated Safety Management System (ISMS) clause 48 CFR 970.5223-1, Integration of Environment, Safety, and Health into Work Planning and Execution. This is safety software and is categorized as Safety Management and Administrative Controls Software (SMACS). Provide supporting comments (as required). </div> |
| 3.1.4 Non-safety software: Risk Significant <input type="checkbox"/> | This is software that is, or will be used for any of the purposes that safety software is used for only such purposes are in or for an accelerator, live-firing range, biological hazard facility, high explosive facility, or moderate- or high- chemical hazard facility OR, failure of the software would <u>prevent</u> LANL from performing Essential Functions as described in SEO-COOP-006, LANL NA-LA Continuity of Operations (COOP) Plan . This is non-safety software and is categorized as Risk Significant software. Provide supporting comments (as required). |

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Appendix C: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for the MSGP Corrective Action Reporting Database (cont.)

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| 3.1.5 Non-safety software: Commercially Controlled <input checked="" type="checkbox"/> | <p>This is software that is not, or will not be used for any of the above purposes in 3.1.1–3.1.4. Such software may be acquired (including commercial off the shelf (COTS)) or designed software. Examples of this software include personal productivity software (e.g., Microsoft PowerPoint, Oracle Project Primavera, MS Outlook, etc.) and other types of software (e.g., some business accounting systems, facility personnel comfort temperature monitoring systems). This is non-safety software and is categorized as Commercially Controlled software. Proceed to Part 5. Part 4 is not required.</p> <p>Provide supporting comments (as required).</p> <p>The MSGP CAR Database and APEX are software tools used to track corrective actions from initiation to closure. All approved user interactions and software-related activities are controlled through approved procedures (most directly through EPC-CP-QP-022). While the approved/authorized use of these software items are important to completion of program goals, their use is not consistent with any of the purposes described above in 3.1.1 – 3.1.4. Various LANL Nuclear Facility Documented Safety Analyses (DSAs) mention Quality Improvement within the Quality Assurance (QA) Safety Management Program (SMP). CARs are an important element of any such process within the QA SMP; however, LANL facility DSAs do not explicitly credit any such CAR process or tool (including software) for providing a hazard control function. The failure, modification, or misuse of these software items may cause MSGP program-level complications, delays, or operational issues (e.g. delay or additional effort required to status and close CA items); however, it is extremely unlikely that such an event would adversely effect a facility SSC Safety Function (per 3.1.1), a SSC design analysis (per 3.1.2), an administrative control function (per 3.1.3) as described in any LANL facility DSA, or an COOP Essential Function (per 3.1.4). As such, the MSGP CAR Database and APEX software items are considered Non-Safety/Commercially Controlled software.</p> |
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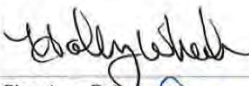
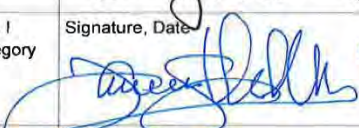

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| Part 4: Determine the Software Risk Level (SRL). | |
| 4.1 Complete this section for safety software and risk significant software only. Do not complete this section for commercially controlled software. Check only one of the following to determine the SRL. Text shown in <i>[brackets]</i> is applicable to safety software only. | |
| SRL 1 <input type="checkbox"/> | 4.1.1 This level includes software applications that meet one or more of the following criteria. Failure of the software could: <ul style="list-style-type: none"> <i>[Compromise a limiting condition for operation].</i> <i>[Cause a reduction in the safety margin for a safety SSC that is cited in a DOE approved documented safety analysis.]</i> Cause a reduction in the safety margin for other systems such as toxic or chemical protection systems that are cited in either (a) a DOE approved documented safety analysis or (b) an approved hazard analysis per DOE P 450.4A, <i>Integrated Safety Management Policy</i>, and the DEAR ISMS clause (48 CFR 970.5223-1, <i>Integration of Environment, Safety, and Health into Work Planning and Execution</i>). Result in non-conservative safety analysis, design, or misclassification of facilities or SSCs. Provide supporting comments (as required). |
| SRL 2 <input type="checkbox"/> | 4.1.2 This level includes <i>[safety]</i> software applications that do not meet SRL 1 criteria, but meet one or more of the following criteria: <ul style="list-style-type: none"> <i>[Safety management databases used to aid in decision making whose failure could impact safety SSC operation.]</i> Software failure that could result in incorrect analysis, design, monitoring, alarming, or recording of hazardous exposures to workers or the public. <i>[Software failure could compromise the defense-in-depth capability for a nuclear (including radiological) facility.]</i> Provide supporting comments (as required). |
| SRL 3 <input type="checkbox"/> | 4.1.3 This level includes software applications that do not meet SRL 2 criteria, but meet one or more of the following criteria. Failure of the software could: <ul style="list-style-type: none"> Cause a potential violation of regulatory permitting requirements. Affect environment, safety, health monitoring, or alarming systems. Affect the safe operation of an SSC. Provide supporting comments (as required). |

Part 5: Attest to compliant completion, review and approve. A signature is required in 5.1, 5.2 and 5.3 for all completed 2033 Forms.

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| <p>5.1 As the Software Owner (SO), I have determined the software type, category, and as appropriate, SRL, in accordance with <u>P1040, Software Quality Management</u> and the instructions associated with this form.</p> <p>Provide Name/Z No. (print) Holly Wheeler, 118432</p> | <p>Signature, Date</p> <p> 11/06/2019</p> |
| <p>5.2 As the Software Owner Responsible Line Manager (SO RLM or SRLM), I have reviewed and approve the determination of the software type, category and, as appropriate, SRL for the software as described on this form.</p> <p>Provide Name/Z No. (print) Taunia Van Valkenburg, 45666</p> | <p>Signature, Date</p> <p> 11/6/2019</p> |
| <p>5.3 As the <input checked="" type="checkbox"/> <u>Facility Design Authority Representative</u> (FDAR) for my representative facilities, as the <input type="checkbox"/> LANL Design Authority (DA), or, as the <input type="checkbox"/> Responsible Associate Laboratory Director (RALD), I have reviewed and approve the determination of the software type, category and, as appropriate, SRL for the software as described on this form. Check one.</p> <p>Provide Name/Z No. (print) Jason Apperson, 222827</p> <p>Note: The RALD is authorized to review and approve <u>Form 2033</u> (rather than the FDAR or DA) for software applications where, as determined by the FDAR or DA, the FDAR or DA does not have the knowledge and/or a reasonable connection to the software.</p> | <p>Signature, Date</p> <p> 11/19/19</p> |

Supporting Comments Continuation Page

As needed, use this space to provide supporting comments. Provide the Form section number that corresponds to the comments.

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Appendix D: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL)
(Form 2033) for Maintenance Connection and Maintenance Connection Express
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Reference No: _____

Form 2033

The Software Owner RLM must retain completed forms as a record.

Safety/Non-Safety Software Determination, Categorization, and Software Risk Level (SRL)
 (See Page 5 for Guidance)

| | | | |
|---|---|---|---|
| Part 1: Document the rationale supporting the reasonable probability that the software may be safety software, or risk significant software. | | | |
| 1.1 Excluding personal productivity software that does not provide calculation output (e.g., e-mail software, presentation software), indicate whether the software is or will be used in connection with the design, analysis and/or operation of: <ul style="list-style-type: none"> <input type="checkbox"/> a nuclear (including radiological) facility (Ref. LANL Nuclear Facility List, Conduct of Operations Resources Website), or <input type="checkbox"/> an accelerator, live-firing range, biological hazard facility, high explosive facility, or moderate- or high- chemical hazard facility as determined using SBP111-1, Facility Hazard Categorization and Documentation; or <input type="checkbox"/> LANL's Essential Functions as described in SEO-COOP-006, LANL NA-LA Continuity of Operations (COOP) Plan. Provide supporting comments (as necessary to document the selection above). | | | |
| Part 2: Document the software information, software application(s) and software function(s). A separate form may be used for each software item or one form may be used for multiple software items. | | | |
| 2.1 Provide software name(s). Maintenance Connection and Maintenance Connection Express | 2.2 Provide software version(s). N/A | 2.3 Indicate software owner (SO). Terrill Lemke (user) | 2.4 Indicate SO organization. EPC-CP (user org.) |
| 2.5 Provide a description of the specific facility application(s) to sufficient detail to allow the software to be readily traceable to the point(s) of application within the facility. Include technical area (TA) and building number; or, site-wide or Facility Operating Directorate (FOD)-wide use. Add other descriptive information as required. Maintenance Connection and Maintenance Connection Express are software items used by EPC-CP and DESH personnel associated with Storm Water Programs. They are COTS items used to track work activities conducted by the MSGP Storm Water Permitting and Compliance Team. | | | |
| 2.6 Indicate System, Structure or Components (SSCs) controlled or affected by the software. Indicate NA if not applicable. N/A 2.6.1 Provide SSC name(s). N/A 2.6.2 Provide functional requirement(s) of the software associated with the SSC. N/A 2.6.3 Provide reference document(s) describing the SSC/software. N/A Provide supporting comments (as required). N/A | | | |
| 2.7 Indicate facility classification (SBP111-1), design, or analysis controlled or affected by the software. Indicate NA if not applicable. N/A 2.7.1 Provide facility classification, design or analysis name. N/A 2.7.2 Provide software functional requirement(s) associated with the facility classification, design or analysis. N/A 2.7.3 Provide reference document(s) describing the facility classification, design, or analysis. N/A Provide supporting comments (as required). N/A | | | |

| | | |
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Appendix D: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for Maintenance Connection and Maintenance Connection Express (cont.)

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| | |
|-------|--|
| 2.8 | Indicate the hazard control, Safety Management Program (SMP) and or technical safety requirements (TSRs) controlled or affected by the software. Indicate NA if not applicable. N/A |
| 2.8.1 | Provide the hazard control, SMP and/or TSR name. N/A |
| 2.8.2 | Provide the software functional requirement(s) for the hazard control, SMP and/or TSR. N/A |
| 2.8.3 | Provide reference document(s) describing the hazard control, SMP and/or TSR. N/A |
| | Provide supporting comments (as required). N/A |

| | |
|---|--|
| Part 3: Determine whether the software type is (1) safety software; or (2) non-safety software and the associated category for each type. | |
| 3.1 Check one of the following (3.1.1 through 3.1.5) to determine one of the two software types (safety software or non-safety software) and one of the associated 5 categories for each type (i.e. Categories include SSS, SHADS or SMACS for safety software; and, Risk Significant or Commercially Controlled for non-safety software). | |
| Note: If software is determined to be safety software or risk significant software, complete all parts of this form. If software is determined to be commercially controlled software, complete all parts of this form except for Part 4 . | |
| 3.1.1 Safety software: SSS <input type="checkbox"/> | This is software for a nuclear (including radiological) facility that performs, or will perform a safety function as part of a Structure, System, and Component (SSC) and is cited in either (a) a Department of Energy (DOE)-approved documented safety analysis; or, (b) an approved hazard analysis per DOE P 450.4A, Integrated Safety Management Policy and 48 Code of Federal Regulations (CFR) 970.5223-1, Integration of Environment, Safety, and Health into Work Planning and Execution . This is safety software and is categorized as Safety System Software (SSS). Provide supporting comments (as required). |
| 3.1.2 Safety software: SHADS <input type="checkbox"/> | This is software that is used, or will be used to classify, design, or analyze nuclear (including radiological) facilities. This software is not part of an SSC, but helps to ensure the proper accident or hazards analysis of nuclear (including radiological) facilities or an SSC that performs a safety function. This is safety software and is categorized as Safety and Hazard Analysis Software and Design Software (SHADS). Provide supporting comments (as required). |
| 3.1.3 Safety software: SMACS <input type="checkbox"/> | <div> <input type="checkbox"/> This is software that performs or will perform a hazard control function in support of nuclear (including radiological) facility radiological safety management programs (SMPs) or technical safety requirements (TSRs). This is safety software and is categorized as Safety Management and Administrative Controls Software (SMACS). Provide supporting comments (as required). </div> <div> <input type="checkbox"/> This is software that performs, or will perform a control function in support of a nuclear (including radiological) facility necessary to provide adequate protection from nuclear (including radiological) facility radiological hazards. It supports eliminating, limiting, or mitigating nuclear hazards to workers, the public, or the environment as addressed in 10 CFR 830, Nuclear Safety Management, 10 CFR 835, Occupational Radiation Protection, and the Department of Energy Acquisition Regulation (DEAR) Integrated Safety Management System (ISMS) clause 48 CFR 970.5223-1, Integration of Environment, Safety, and Health into Work Planning and Execution. This is safety software and is categorized as Safety Management and Administrative Controls Software (SMACS). Provide supporting comments (as required). </div> |
| 3.1.4 Non-safety software: Risk Significant <input type="checkbox"/> | This is software that is, or will be used for any of the purposes that safety software is used for only such purposes are in or for an accelerator, live-firing range, biological hazard facility, high explosive facility, or moderate- or high- chemical hazard facility OR, failure of the software would <u>prevent</u> LANL from performing Essential Functions as described in SEO-COOP-006, LANL NA-LA Continuity of Operations (COOP) Plan . This is non-safety software and is categorized as Risk Significant software. Provide supporting comments (as required). |

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Appendix D: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL) (Form 2033) for Maintenance Connection and Maintenance Connection Express (cont.)

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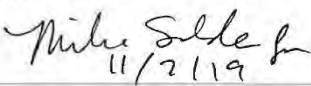


| | |
|---|---|
| <p>3.1.5 Non-safety software: Commercially Controlled <input checked="" type="checkbox"/></p> | <p>This is software that is not, or will not be used for any of the above purposes in 3.1.1–3.1.4. Such software may be acquired (including commercial off the shelf (COTS)) or designed software. Examples of this software include personal productivity software (e.g., Microsoft PowerPoint, Oracle Project Primavera, MS Outlook, etc.) and other types of software (e.g., some business accounting systems, facility personnel comfort temperature monitoring systems). This is non-safety software and is categorized as Commercially Controlled software. Proceed to Part 5. Part 4 is not required.</p> <p>Provide supporting comments (as required).</p> <p>Maintenance Connection and Maintenance Connection Express are COTS items, which have been configured for use in tracking work activities for the MSGP Storm Water Permitting and Compliance Team. All approved user interactions are controlled through approved procedures (QPa). Software-related activities are controlled through the contract LANL has with Maintenance Connection. While the approved/authorized use of these software items is important to completion of program goals, their use is not consistent with any of the purposes described above in 3.1.1 - 3.1.4. Various LANL Nuclear Facility Documented Safety Analyses (DSAs) make mention of Storm Water Monitoring and/or Sampling as part of the Hazardous Material Protection Program (HMPP) Safety Management Plan; however, all such discussion are limited to general facility permitting requirements, and do not mention an specific methods or tools (including software) used by the MSGP Storm Water Permitting and Compliance Team to complete the associated permitting activities. A failure, modification, or misuse of these software items may cause MSGP program-level complications, delays, or operational issues (e.g. work planning issues); however, it is extremely unlikely that such an event would adversely effect a facility SSC Safety Function (per 3.1.1), a SSC design analysis (per 3.1.2), an administrative control function (per 3.1.3) as identified in any LANL facility DSA, or a COOP Essential Function (per 3.1.4). As such, the Maintenance Connection and Maintenance Connection Express software items are considered Non-Safety/Commercially Controlled software.</p> |
|---|---|

| Part 4: Determine the Software Risk Level (SRL). | |
|--|--|
| 4.1 | Complete this section for safety software and risk significant software only. Do not complete this section for commercially controlled software. Check only one of the following to determine the SRL. Text shown in <i>[brackets]</i> is applicable to safety software only. |
| SRL 1 <input type="checkbox"/> | <p>4.1.1 This level includes software applications that meet one or more of the following criteria. Failure of the software could:</p> <ul style="list-style-type: none"> ▪ <i>[Compromise a limiting condition for operation].</i> ▪ <i>[Cause a reduction in the safety margin for a safety SSC that is cited in a DOE approved documented safety analysis.]</i> ▪ Cause a reduction in the safety margin for other systems such as toxic or chemical protection systems that are cited in either (a) a DOE approved documented safety analysis or (b) an approved hazard analysis per DOE P 450.4A, Integrated Safety Management Policy, and the DEAR ISMS clause (48 CFR 970.5223-1, Integration of Environment, Safety, and Health into Work Planning and Execution). ▪ Result in non-conservative safety analysis, design, or misclassification of facilities or SSCs. <p>Provide supporting comments (as required).</p> |
| SRL 2 <input type="checkbox"/> | <p>4.1.2 This level includes <i>[safety]</i> software applications that do not meet SRL 1 criteria, but meet one or more of the following criteria:</p> <ul style="list-style-type: none"> ▪ <i>[Safety management databases used to aid in decision making whose failure could impact safety SSC operation.]</i> ▪ Software failure that could result in incorrect analysis, design, monitoring, alarming, or recording of hazardous exposures to workers or the public. ▪ <i>[Software failure could compromise the defense-in-depth capability for a nuclear (including radiological) facility.]</i> <p>Provide supporting comments (as required).</p> |
| SRL 3 <input type="checkbox"/> | <p>4.1.3 This level includes software applications that do not meet SRL 2 criteria, but meet one or more of the following criteria. Failure of the software could:</p> <ul style="list-style-type: none"> ▪ Cause a potential violation of regulatory permitting requirements. ▪ Affect environment, safety, health monitoring, or alarming systems. ▪ Affect the safe operation of an SSC. <p>Provide supporting comments (as required).</p> |

| | | |
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**Appendix D: Safety/Non-Safety Determination, Categorization, and Software Risk Level (SRL)
(Form 2033) for Maintenance Connection and Maintenance Connection Express (cont.)**

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| | |
|---|---|
| Part 5: Attest to compliant completion, review and approve. A signature is required in 5.1, 5.2 and 5.3 for all completed 2033 Forms. | |
| <p>5.1 As the Software Owner (SO), I have determined the software type, category, and as appropriate, SRL, in accordance with <u>P1040, Software Quality Management</u> and the instructions associated with this form.</p> <p>Provide Name/Z No. (print) Terrill Lemke, 120092</p> | <p>Signature, Date</p> <p> 11/2/19</p> |
| <p>5.2 As the Software Owner Responsible Line Manager (SO RLM or SRLM), I have reviewed and approve the determination of the software type, category and, as appropriate, SRL for the software as described on this form.</p> <p>Provide Name/Z No. (print) Taunia Van Valkenburg, 145666</p> | <p>Signature, Date</p> <p> 11/2/19</p> |
| <p>5.3 As the <input checked="" type="checkbox"/> <u>Facility Design Authority Representative</u> (FDAR) for my representative facilities, as the <input type="checkbox"/> LANL Design Authority (DA), or, as the <input type="checkbox"/> Responsible Associate Laboratory Director (RALD), I have reviewed and approve the determination of the software type, category and, as appropriate, SRL for the software as described on this form. Check one.</p> <p>Provide Name/Z No. (print) Jason Apperson, 222827</p> <p>Note: The RALD is authorized to review and approve <u>Form 2033</u> (rather than the FDAR or DA) for software applications where, as determined by the FDAR or DA, the FDAR or DA does not have the knowledge and/or a reasonable connection to the software.</p> | <p>Signature, Date</p> <p> 11/19/19</p> |

Supporting Comments Continuation Page

As needed, use this space to provide supporting comments. Provide the Form section number that corresponds to the comments.

| | | |
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Attachment 1: Summary of QA Requirements and Program-Level (Local) Work Practices

| Summary of QA Requirements and Program-Level (Local) Work Practices | | |
|--|---|--|
| DOE Order 414.1D/SD 330 Requirements | LANL Work Practice | Local Implementing Procedure or QAP section (if applicable) |
| CRD Attach. 2, 1. Criterion 1 – Management/Program | LANL organization chart; SD100, <i>Integrated Safety Management System Description</i> ; PD100, <i>DOE/NNSA Approved Los Alamos National Laboratory</i> ; 10 CFR 851, <i>Worker Safety and Health Program</i> | EPC-CP organization chart; EPC-DO-QP-100; EPC-CP-IWD-2102 |
| CRD Attach. 2, 2. Criterion 2 – Management/Personnel Training and Qualification | PD781, <i>Training Program Management</i> ; P1040, <i>Software Quality Management</i> | EPC-CP-QAP-001; EPC-CP Manager Qualification Standard EPC-CP Group Qualification Standard EPC-CP-QS-2005; EPC-CP-QS-2006; EPC-CP-QS-2007 |
| CRD Attach. 2, 3. Criterion 3 – Management/Quality Improvement | P101-18, <i>Procedure for Pause/Stop Work</i> ; PD322-4, <i>Issues Management</i> ; PD324, <i>LANL Metrics Program</i> ; P330-6, <i>Nonconformance Control and Reporting</i> | EPC-CP-QAP-001 |
| CRD Attach. 2, 4. Criterion 4 – Management/Document and Records | PD1020, <i>Document Control and Records Management</i> | ADESH-QAP-001; ADESH-AP-006; ESH-AP-007; EPC-CP-QP-0901 |
| CRD Attach. 2, 5. Criterion 5 – Performance/Work Processes | SD100, <i>Integrated Safety Management System Description Document with embedded 10 CFR 851 Worker Safety and Health Program</i> ; PD100, <i>DOE/NNSA Approved Los Alamos National Laboratory</i> ; 10 CFR 851 <i>Worker Safety and Health Program Description</i> ; P151-1, <i>LANL Packaging and Transportation Program Procedure</i> ; PD311, <i>Requirements System and Hierarchy</i> ; | EPC-CP-PIP-2101, <i>NPDES Multi-Sector General Permit Program Implementation Plan</i> ; EPC-CP-TP-2102, <i>Installing, Setting Up, and Operating ISCO Samplers</i> ; EPC-CP-TP-2103, <i>Inspecting ISCO Stormwater Runoff Samplers and Retrieving Samples</i> ; EPC-CP-QP-2104, <i>Installing, Inspecting, and Maintaining MSGP Single Stage Samplers</i> |

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| Summary of QA Requirements and Program-Level (Local) Work Practices | | |
|--|---|--|
| DOE Order 414.1D / SD 330 Requirements | LANL Work Practice | Local Implementing Procedure or QAP section (if applicable) |
| | SD330, <i>Los Alamos National Laboratory Quality Assurance Program</i> ; PD340, <i>Conduct of Engineering for Facility Work</i> ; P315, <i>Conduct of Operations Manual</i> ; P330-2, <i>Control and Calibration of Measuring and Test Equipment (M&TE)</i> ; SD601, <i>Conduct of Research and Development</i> ; PD781, <i>Training Program Management</i> P1040, <i>Software Quality Management</i> | EPC-CP-QP-2105, <i>MSGP Stormwater Visual Assessments</i> ; EPC-CP-QP-2106, <i>Processing MSGP Stormwater Samples</i> ; EPC-CP-QP-2107, <i>Preparing Discharge Monitoring Reports for the NPDES Multi-Sector General Permit</i> ; EPC-CP-QP-2108, <i>MSGP Routine Facility Inspections</i> ; EPC-CP-QP-022, <i>MSGP Corrective Actions</i> ; EPC-CP-QP-2110, <i>MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance</i> EPC-CP-QP-2111, <i>Per- and Polyfluoroalkyl Substances (PFAS) Sampling for EPC-CP Surface Water Programs</i> |
| CRD Attach. 2, 6. Criterion 6 – Performance/Design | <u>For Facility Work:</u> PD340, <i>Conduct of Engineering and Configuration Management for Facility Work</i> ; P341, <i>Facility Engineering Processes Manual</i> ; P342, <i>Engineering Standards</i> ; Engineering Standards Manual; Functional Series documents; Engineering Administrative Procedures <u>For R&D:</u> PD370, <i>Conduct of Engineering for Research and Development (R&D)</i> | No local implementing procedures, LANL Work Practices apply. |
| CRD Attach. 2, 7. Criterion 7 – Performance/Procurement | P840-1, <i>Quality Assurance for Procurements</i> ¹ | No local implementing procedures, LANL Work Practices apply. |
| CRD Attach. 2, 8. Criterion 8 – Performance/Inspection and Acceptance Testing | P330-8, <i>Inspection and Test</i> ³ ; P330-2, <i>Control and Calibration of Measuring and Test Equipment (M&TE)</i> | No local implementing procedures, LANL Work Practices apply. |

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| Summary of QA Requirements and Program-Level (Local) Work Practices | | |
|---|---|--|
| DOE Order 414.1D / SD 330 Requirements | LANL Work Practice | Local Implementing Procedure or QAP section (if applicable) |
| CRD Attach. 2, 9. Criterion 9 – Assessment/Management Assessment | PD328, <i>LANL Assessment Program</i> ; P328-3, <i>Management Assessment</i> ; P328-4, <i>Management Observation and Verification</i> | ADESH-QAP-001 EPC-CP-QAP-001 |
| CRD Attach. 2, 10. Criterion 10 – Assessment/Independent Assessment | PD328, <i>LANL Assessment Program</i> ; P328-2, <i>Independent Assessment</i> ; P328-4, <i>Management Observation and Verification</i> | No local implementing procedures, LANL Work Practices apply. |
| CRD Attach. 3, Suspect/Counterfeit Items Prevention | P330-9, <i>Suspect/Counterfeit Items (S/CI)</i> ¹ | No local implementing procedures, LANL Work Practices apply. |
| CRD Attach. 4, Safety Software Quality Assurance Requirements for Nuclear Facilities ² | P1040, <i>Software Quality Management</i> ² ; Form 2033, <i>Safety Non-Safety Software Determination, Categorization, and Software Risk Level</i> | No local implementing procedures, LANL Work Practices apply. |
| ¹ S/CI prevention is also integrated into other listed work processes. Application of the S/CI oversight and prevention process is commensurate with the facility/activity hazards and mission impact. The extent of applicability of S/CI prevention for ML-4 items is as described in P840-1, <i>Quality Assurance for Procurements</i> , and P330-9, <i>Suspect/Counterfeit Items (S/CI)</i> . ² DOE Order 414.1D, Chg 1, <i>Quality Assurance</i> , Attachment 1 requires that all software meet the applicable quality assurance requirements in Attachment 2 of DOE Order 414.1D, Chg 1, using a graded approach. LANL uses risk levels to grade safety software and risk significant non-safety software. See P1040, <i>Software Quality Management</i> , for additional detail. ³ For ML-4 items and activities, inspections and tests are performed to extent required by the applicable codes and/or standards. ⁴ Core work practices applicable to R&D are described in SD601, <i>Conduct of Research and Development</i> . | | |


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Attachment 2: MSGP Facilities Associated with Industrial Activities

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| MSGP Facilities Associated with Industrial Activities | | | | | | |
|--|-------------------------------|------------------------------|---------------------------------|---------------|--------------------------------|---------------------|
| Location | Permitted Facility | Operation | Activity | Sector | Assessment Unit | Canyon |
| TA-3-22 | TA-3-22 Power and Steam Plant | Power Plant | Steam Electric Power | O | NM-9000.A_047 | Sandia |
| TA-3-38 | TA-3-38 Carpenter Shop | Timber Products | Fabricated wood products | A | NM-9000.A_047 | Sandia |
| TA-3-38 | TA-3-38 Metals Fab Shop | Metal Shop | Fabricated metal products | AA | NM-9000.A_047 | Sandia |
| TA-16 | Stockpile Area | Materials Storage | Materials Storage | P | NM-128.A_01 | Canyon de Valle |
| TA-60 | TA-60 Asphalt Batch Plant | Asphalt Batch Plant | Asphalt paving | D | NM-9000.A_042 | Mortandad |
| TA-60 | TA-60 MRF | Materials Recycling Facility | Scrap recycling | N | NM-9000.A_047 | Sandia |
| TA-60 | TA-60 Roads and Grounds | Roads and Grounds Facility | Vehicle maintenance and storage | P | NM-9000.A_042 NM-9000.A_047 | Mortandad Sandia |
| TA-60-1 | TA-60-1 Heavy Equipment Yard | Motor Pool | Vehicle maintenance | P | NM-9000.A_047 | Sandia |
| TA-60-2 | TA-60-2 Warehouse | Warehousing | Vehicle fueling | P | NM-9000.A_047 | Sandia |

ATTACHMENT 16: EPC-CP-QP-2108, MSGP ROUTINE FACILITY INSPECTIONS

| | | |
|----------------------------|------------------------------|---|
| EPC-CP-QP-2108 | Revision: 0 |  |
| Effective Date: 07/09/2020 | Next Review Date: 07/09/2023 | |

Environment, Safety, Health, Quality, Safeguards, and Security Directorate

Environment Protection and Compliance – Compliance Programs Group

Quality Procedure

MSGP Routine Facility Inspections

Hazard Grading: ☒ Low ☐ Moderate ☐ High/Complex

Usage Level: ☒ Reference ☐ UET ☐ Mixed: UET Sections: _____

Status: ☐ New ☐ Major Revision ☐ Minor Revision

☐ Review w/No Changes ☒ Other: New EPC-CP format & numbering system

Safety Basis: ☒ N/A ☐ USQ ☐ USI Number: _____

Document Author/Subject Matter Expert:

| | | | |
|------------------|---------------|-------------------|----------|
| Name: | Organization: | Signature: | Date: |
| Holly L. Wheeler | EPC-CP | Signature on File | 07-08-20 |

Derivative Classifier: ☒ **Unclassified** or ☐ _____

| | | | |
|------------------|---------------|-------------------|----------|
| Name: | Organization: | Signature: | Date: |
| Steven E. Wolfel | EPC-CP | Signature on File | 07-08-20 |

Approval Signatures:

| | | | |
|-------------------------------------|---------------|-------------------|----------|
| EPC-CP Reviewer: | Organization: | Signature: | Date: |
| Alethea Banar | EPC-CP | Signature on File | 07-08-20 |
| EPC-CP RLM: | Organization: | Signature: | Date: |
| Terrill W. Lemke, Team Leader | EPC-CP | Signature on File | 07-08-20 |
| EPC-CP RLM: | Organization: | Signature: | Date: |
| Taunia Van Valkenburg, Group Leader | EPC-CP | Signature on File | 07-09-20 |

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| | | |
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| MSGP Routine Facility Inspections | No: EPC-CP-QP-2108 | Page 2 of 21 |
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REVISION HISTORY

| Document Number and Revision <i>[Include revision number, beginning with Revision 0]</i> | Effective Date <i>[Document Control Coordinator inserts effective date]</i> | Description of Changes <i>[List specific changes made since the previous revision]</i> |
|--|---|---|
| EPC-CP-QP-023 R0 | 05/17/2018 | New Document. Process formerly part of procedure ENV-RCRA-QP-022 R2, <i>MSGP Corrective Actions</i> . |
| EPC-CP-QP-023 R1 | 03/07/2019 | Added question to inspection form, associated text to document, and renumbered steps. Removed reference to Los Alamos National Security, LLC. Added reference to LANL BMP Manual. Minor edits made. |
| EPC-CP-QP-2108, R0 | 07/09/2020 | Supersedes EPC-CP-QP-023 R1. Reformat to new EPC-CP template, re-number procedure and forms to new EPC-CP procedure numbering system, and other edits. |

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1.0 INTRODUCTION

The National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit (MSGP), also referred to as the permit, contains specific environmental requirements for inspecting areas of Los Alamos National Laboratory (LANL) covered by the permit. This includes areas where industrial materials or activities are exposed to stormwater, areas identified as potential pollutant sources, areas where leaks and spills have occurred in the past three years, discharge points, and control measures used to comply with the effluent limits of the MSGP.

LANL inspectors and facility personnel are required to perform routine facility inspections for industrial stormwater discharge on LANL areas covered by the MSGP at least quarterly and document observations. Conditions (as described by the MSGP) found during an inspection, requiring a corrective action(s), are managed through EPC-CP-QP-022, *MSGP Corrective Actions*.

1.1 Purpose

Part 3.1 of the MSGP contains specific requirements for conducting and documenting periodic industrial routine facility inspections. This procedure governs the activities of personnel involved in conducting industrial routine facility inspections. It also contains information and specific steps to be used for identifying and documenting conditions in order to meet the permit requirements.

1.2 Scope

Requirements set forth in this document apply to personnel responsible for meeting the permit conditions on behalf of LANL industrial facilities covered by the MSGP. The MSGP requires periodic inspection of facilities and identification, documentation, and reporting of conditions, including those requiring corrective actions.

Inspections conducted under this procedure are documented using the Maintenance Connection Express™ (MC Express) web application on a tablet or notebook style computer. (In the event of electronic hardware or web application failure, personnel may use a printed hard copy to conduct the inspection.)

1.3 Applicability

This procedure applies to Environmental Protection and Compliance—Compliance Programs (EPC-CP) technical staff, Deployed Environmental Professionals (DEPs), and other LANL staff who conduct inspections and monitoring activities at MSGP regulated LANL facilities.

2.0 ROLES AND RESPONSIBILITIES

Specific roles and responsibilities for implementation of requirements contained in this procedure are provided below.

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2.1 EPC-CP MSGP Stormwater Permitting and Compliance Team

EPC-CP MSGP Stormwater Permitting and Compliance personnel are fully knowledgeable of the specific regulatory requirements identified in the MSGP and are responsible for the following:

- Implementing this procedure;
- Performing routine facility inspections the last month or quarter of the year at regulated sites [depending on inspection frequency identified in site-specific Stormwater Pollution Prevention Plans (SWPPPs)];
- Performing “no exposure” site inspections once a year to ensure conditions of the “no exposure” exclusion are met;
- Performing routine facility inspections at inactive sites once a year;
- Identifying issues requiring a corrective action during any of the above inspections or assessments;
- Determining a condition of non-compliance;
- Notifying managers or legal counsel of non-compliances;
- Modifying the site-specific MSGP Routine Facility Inspection Forms (e.g., add or remove Best Management Practices (BMPs));
- Training personnel to use MC Express;
- Performing a quality review of routine facility inspections and “no exposure” site inspections; and
- Assisting customers with issues associated with MC Express.

2.2 Deployed Environmental Professionals

DEPs are responsible for the following:

- Implementing this procedure;
- Knowledgeable of the requirements contained in site-specific SWPPPs within their assigned Facility Operations Directorate (FOD);
- Meeting qualification requirements identified in the Quality Assurance Project Plan EPC-CP-PIP-2101, NPDES *Multi-Sector General Permit Program Implementation Plan*;
- Being trained on EPC-CP-QP-022, *MSGP Corrective Actions*;
- Being trained to *MSGP Routine Inspections OJT*;
- Being familiar with industrial site and facility operations assigned to them so that they minimize sources of pollutants and pro-actively maintain controls to prevent issues that require corrective action;

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- Performing routine facility inspections throughout the year at regulated sites within their FOD (depending on inspection frequency identified in site-specific SWPPPs) and documenting results accurately;
- Acting as liaison between the FOD, Deployed Environment, Safety, and Health (DESH) Manager and facility/operations personnel to ensure corrective actions are addressed appropriately by overseeing maintenance and/or installation of additional controls;
- Educating appropriate facility/operations personnel on the MSGP and site-specific SWPPPs so they successfully implement the conditions of the permit; and
- Notifying EPC-CP MSGP stormwater personnel when additional or substitute BMPs have been installed or old BMPs have been removed so the site-specific MSGP Routine Facility Inspection Form can be modified.

2.3 EPC-CP Stormwater Permitting and Compliance Team Leader

The EPC-CP Stormwater Permitting and Compliance Team Leader is responsible for compliance oversight relative to the MSGP. The Team Leader works with the EPC-CP Group Leader to ensure adequate resources needed to implement the regulatory requirements identified in the MSGP are identified and environmental risks are assessed. The Team Leader will notify upper management of these required resources or environmental risks, as deemed necessary. In the event there is a dispute regarding the regulatory requirements contained in the MSGP, the Team Leader makes the final determination of the required action. The Team Leader notifies upper management of instances of non-compliance with the permit.

2.4 EPC-CP Group Leader

The EPC-CP Group Leader or designee is responsible for ensuring there are adequate resources to implement the regulatory requirements identified in the MSGP. The Group Leader or Team Lead also acts as the duly authorized signatory that certifies the Annual Report and MSGP Routine Facility Inspections conducted by EPC-CP personnel. The Group Leader notifies upper management of instances of non-compliance with the permit or other identified environmental risk.

2.5 DESH Manager

The DESH manager works with programmatic entities and the FOD to identify adequate resources for their industrial facilities to ensure permit requirements can be implemented. The DESH Manager is responsible for the performance of DEPs under their management and to ensure DEPs are trained and qualified. They also provide oversight by ensuring that industrial facilities complying with the MSGP and will notify upper management of instances of non-compliance with the permit or other identified environmental risk.

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3.0 PRECAUTIONS AND LIMITATIONS

3.1 Precautions

The hazard rating for the activities described in this procedure is **LOW** and therefore, does not require an Integrated Work Document (IWD).

Personnel must wear appropriate clothing (e.g., boots, long pants, etc.) to perform work in the field.

Work may be discontinued during periods or conditions that make sites dangerous for worker safety or prevent personnel from safely accessing sites (e.g., weather-related events such as flash floods, flooding, lightning, wildfires, hail, icy roads, deep snow, or LANL operations such as firing shots or burns).

If conditions prevent fieldwork, document the conditions on the work order. Multiple attempts can be documented on the original form. If the target date cannot be met, the field personnel must contact the Program Lead no less than 24 hours before the target date for guidance.

3.2 Limitations

In MC Express, document responses to each question on a work order by clicking the expand arrow located on the right side of the task line and changing the "Complete" or "Failed" line to "Yes." When using a hard copy form, mark the appropriate "Yes" or "No" check box.

Throughout this process, the field personnel will document comments and notations in the "Comments" field of the associated task line. If field personnel need more space, additional comments can be entered in the "Labor Report Update" field (see Section 5.2) when the work order is updated to "Complete" status. When using a hard copy form, document comments on the corresponding task line. If additional space is needed, comments can be entered in the "Labor Report" section at the bottom of the form.

Some terminology varies between the MC Express software and the Maintenance Connection (MC) desktop software.

- The "Reading" field in MC Express is the same field as "Reading Final" in MC desktop and "Meas." on a hard copy (printed) work order.
- The "Complete" option in MC Express is the same as a "Yes" answer; the "Failed" option in MC Express is the same as a "No" answer. MC desktop and hard copy (printed) work orders use "Yes" and "No" terminology.

Click the "Save" bar after all entries for a task line question have been completed and before proceeding to the next task line question. Failure to "Save" results in lost data entries.

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4.0 PREREQUISITE ACTIONS

4.1 Planning and Coordination

1. Schedule work to be completed by the target date appearing on the inspection form or as requested by the MSGP Program Lead if an inspection form is not issued.
2. Inform (e.g., by e-mail) facility contacts (as needed) of the schedule for facility inspection work and locations up to a week (preferred) before but no later than the day before (for minor changes) to be added to the appropriate plan of the day (as necessary).
3. Gather the necessary equipment (see Section 4.2) for the work to be done.
4. Using the Safari or Chrome web browser on a tablet or notebook style computer, log into the MC Express application (<http://express.maintenanceconnection.com>) and confirm that the work order list displayed matches your sites. If the work order lists do not match, contact EPC-CP Data Management personnel for clarification.
5. In MC Express, click on the appropriate work order number to open the work order. The work order will open in the display to the Work Order Summary page.
6. Click on the "Tasks" bar to navigate to the work order Tasks page. See MC Express screen shot examples in Attachment 1.
7. Always log out of MC Express when you have finished work OR if work is interrupted.

4.2 Special Tools, Equipment, Parts, and Supplies

Ensure the following equipment is available.

- Sturdy hiking boots or steel-toed shoes with soles that grip.
- Facility-specific PPE as required by IWD Part II.
- Cell phone (Only government cell phones are allowed in secure areas. See <https://int.lanl.gov/policy/documents/P217.pdf> for requirements for using portable electronic devices on Laboratory property.)
- Copy of this procedure.
- Copy of facility specific SWPPP and map(s) (as needed).
- Current electronic or paper inspection form EPC-CP-QP-2108 R0 Form 1, *MSGP Routine Facility Inspection*.
- LANL issued tablet or notebook style computer with Safari web browser and Blackberry UEM™ app (see <https://int.lanl.gov/policy/documents/P217.pdf> for requirements for using portable electronic devices on Laboratory property).
- Necessary access keys.

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5.0 MSGP ROUTINE FACILITY INSPECTIONS

MSGP routine facility inspections are conducted by the DEP or other qualified facility personnel (as defined in the MSGP or as determined by MSGP Program Lead) during periods when the facility is in operation and during standard operating hours. Results of visual and analytical monitoring for the past year must be considered when planning and conducting an inspection. The inspections are performed on the following facility areas:

- Areas where industrial materials or activities are exposed to stormwater;
- Areas identified in the SWPPP and those that are potential pollutant sources;
- Areas where spills and leaks have occurred in the past;
- Discharge points; and
- Control measures used to comply with the effluent limits contained in the MSGP.

Routine facility inspections are conducted at least quarterly; however, some facilities may conduct monthly inspections (as specified in the facility specific SWPPP). At least once each calendar year, the routine facility inspections must be conducted during a period when stormwater discharge (either rain or snow) is occurring. During the inspection, you must look for the following:

- Industrial materials, residue or trash that may have or could come into contact with stormwater;
- Leaks or spills from industrial equipment, drums, tanks and other containers;
- Offsite tracking of industrial or waste materials, or sediment where vehicles enter or exit the site;
- Tracking or blowing of raw, final or waste materials from areas of “no exposure” to exposed areas; and
- Control measures that need replacement, maintenance or repair.

Conditions requiring corrective action identified during an inspection, monitoring, or other means must be entered into the MSGP Corrective Action Report database by the DEP(s), EPC-CP stormwater personnel and/or other qualified facility personnel (as defined in the MSGP or as determined by MSGP Program Lead). Follow the process in EPC-CP-QP-022, *MSGP Corrective Actions* to address issues found during an inspection.

If the industrial facility is inactive and unstaffed and there are no industrial materials or activities exposed to stormwater, routine inspections may not be required. A determination of whether a facility is inactive or unstaffed is made in coordination with stormwater personnel from EPC-CP, as there are specific documentation and certification requirements that have to be met prior to discontinuing routine inspections. Such a facility is only required to conduct an annual site inspection.

If the industrial facility is eligible for a “no exposure” exclusion, routine inspections are no longer required. A condition of “no exposure” exists when all industrial materials and activities are

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protected by a storm resistant shelter (e.g., moved to an indoor location) to prevent exposure to rain, snow, snowmelt, and/or runoff. A determination of whether a facility is eligible for “no exposure” status is made in coordination with stormwater personnel from EPC-CP, as there are specific documentation and certification requirements that have to be met prior to discontinuing routine inspections. Such a facility is only required to conduct an annual site evaluation and recertification every five years.

5.1 Conducting the Inspection

See Attachment 1 for screen shot examples of EPC-CP-QP-2108 R0 Form 1, *MSGP Routine Facility Inspection* in MC Express. See Attachment 2 for an example of the inspection form in hard copy format. **Questions will be answered “Yes/Complete” or “No/Failed” unless the instructions specify “N/A” may also be used.**

NOTE: Each item number listed in red font below corresponds to a red numbered box on both screenshots and hard copy format.

- [1] **ITEM 1:** Observe the weather at time of inspection. Document the weather and temperature in the “Comments” field of the task line (e.g., Temp. 78°F, sunny, wind less than 5mph).
- [2] **ITEM 2:** Observe and document the facility is free of **previously** unidentified discharges from and/or pollutants that have occurred **since the last inspection**. Describe any new discharges and the specific location in the “Comments” field of the task line.
- [3] **ITEM 3:**
IF the response to **ITEM 2** is “Yes”,
THEN answer this task line as “N/A”.
OR
IF the response to **ITEM 2** is “No”,
THEN answer this task line as “Yes” and document the corrective action previously initiated for the discharge.
- [4] **ITEM 4:** Check the facility is free of discharges of pollutants at the time of inspection. Describe any pollutant discharge and the specific location in the “Comments” field of the task line.
- [5] **ITEM 5:** Check the facility is free of evidence of pollutants entering the drainage system OR the potential for pollutants entering the drainage system. Describe any discharge or potential discharge and the specific location in the “Comments” field of the task line.
- [6] **ITEM 6:** Check the outfall does not have any **new** evidence of erosion **since the last inspection**. Describe any erosion observed in the “Comments” field of the task line.

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- [7] **ITEM 7:** Check all flow dissipation devices are operating effectively and are not in need of repair. Describe any non-functional status of devices in the “Comments” field of the task line (e.g., repair berm, replace rip rap, etc.).
- [8] **ITEM 8:** Check the outfall is free of evidence of pollutants in the discharge and/or the receiving water. Describe any pollutants observed in the “Comments” field of the task line (e.g., sediment from nearby erosion, etc.).
- [9] **ITEM 9:** Check the outfall is free of unauthorized non-stormwater discharges. Describe any unauthorized discharges observed in the “Comments” field of the task line (e.g., street sweeper emptied contents at Outfall 001, etc.).
- [10] Repeat Steps 6 through 9 for each outfall shown on the work order, if the location has more than one outfall.
- [11] **ITEM 10:** Check each control measure is operating effectively. Describe any non-operational condition of the control measure (e.g., erosion, damage, etc.,) and if the control measure needs maintenance, repair, or replacement in the “Comments” field of the task line.
 - [a] Determine if additional controls are necessary, or that existing controls are insufficient and require replacement with a different type of control.
 - [b] The DEPs are responsible for the selection and oversight of proper installation of appropriate control measures per guidance provided in the LANL Stormwater BMP Manual.
- [12] Repeat Step 11 for each control measure shown on the work order, if the location has more than one control measure.
- [13] **ITEM 11:** Check each sector of NPDES specified industrial area/activity is inspected for exposure to stormwater (e.g., metal fabrication; foundry operations; power generation; asphalt production; fabricating timber products; material recycling; warehouse and transportation activity; treatment and storage of hazardous waste).
 - [a] Determine if the control measures associated with each industrial area/activity are appropriate for the activity, effectively controlling stormwater exposure, and operating.
 - [b] Describe any non-operational condition of the control(s) and needed maintenance or a description of corrective actions in the “Comments” field of the task line.
 - [c] For industrial activities that do not occur at the facility, select “N/A” on that task line.
- [14] Repeat Step 13 for each industrial area/activity shown on the work order, if the facility has more than one sector of NPDES specified industrial area/activity.

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- [15] **ITEM 12:** Check the facility is free of any incidence of non-compliance not documented elsewhere on the inspection form. Describe any additional incidences of non-compliance in the “Comments” field of the task line.
- [16] **ITEM 13:** Check the facility meets the MSGP requirements with existing control measures. Describe any additional control measures needed to comply with the Permit.
- [17] After all task lines have been completed, make sure you have clicked the “Save” bar at the bottom of the page.

5.2 Completing the Inspection Form

See Attachment 1 for completing EPC-CP-QP-2108 R0 Form 1 in MC Express and Attachment 2 for a hard copy example.

- [1] Ensure the inspection form has been filled out completely.
- [2] Click the “Back” arrow button  in the upper left hand corner to exit the work order Tasks page and return to the Work Order Summary page.
- [3] Click the checkered flag  in the upper right corner of the work order Summary page to open the Work Order Status Update page. MC Express auto-populates the date and time fields.

CAUTION

MC Express automatically changes the work order status to “Closed.”

- [4] **ITEM 14:** Click on the expand arrow located on the right side of the “New Status” field and select “Completed” from the available dropdown menu.
 - [a] Ensure the date and time that is auto-populated are the date and time that the **work was completed** and **not the date/time the form was filled out**.
 - [b] IF work needs to be performed over multiple days, THEN note the date and time the work began in the Labor Report field.
 - [c] To update the date or time, click the “Date” field and make necessary adjustments using the available timestamp application. Click “Set” to apply changes.
 - [d] IF using a hard copy form, THEN write the date and time the work was completed.
- [5] **ITEM 15:** The field personnel must type or write his/her name in the “Labor Report Update” field.
- [6] Additional notes, observations, or site conditions not documented in a task line “Comments” field can be documented in the “Labor Report Update” field.


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- [7] Scroll down the page to the “Signature” bar and click the expand arrow on the left side of the bar to open the “Signature” field.
 - [a] **ITEM 16:** Capture an electronic signature by drawing with a finger on the tablet screen.

NOTE: The mouse must be used to sign electronically when using MC Express on a desktop screen (not a tablet).
 - [b] If using a hard copy form, the field personnel will sign his/her name and write in the date of when the form was signed.
 - [c] By electronically signing the work order, field personnel certifies that the information submitted is “true, accurate, and complete.”
- [8] Click on the “Save” bar at the bottom of the page to close the “Signature” field.

5.3 Completing the Certification Statement

Follow Steps 1 through 5 in this section if the inspection form was completed electronically (see Attachment 1). If the inspection form was completed on a hard copy form, skip to Step 6.

- [1] Using the Chrome web browser on a desktop computer, navigate to <http://www.maintenanceconnection.com>. Log into the MC desktop application using your login credentials.
- [2] Click “Open” in the tool bar at the top of the page to open the MC module selections. Click on the “Work Orders” module.
- [3] Click on the “Search” tab at the top left of the page.
 - [a] Enter the work order number in the “Search Value” field.
 - [b] Click the arrow to the right of the “Search Value” field to open the work order in the right split screen.
- [4] Click on the “Report” tab at the top of the page and click the “Work Order Statement” sub-tab.
- [5] Click the Tools drop down menu  in the top right corner of the page.
 - [a] Select “Print” from the options.
 - [b] When the print dialog box opens, select the print options as appropriate for your local printer.
- [6] **ITEM 17:** Obtain a printed name and title, signature, and date on the certification statement.

The certification statement will be signed no more than 14 days after completion of the inspection and a copy sent to the EPC-CP Program Lead or designee.

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- [a] The routine facility inspection form must be certified with a signature from a manager that meets the definition of a signatory in MSGP Permit Section B.11.A (e.g., FOD, Operations Manager, DSESH Group Leader, EPC-CP Group Leader, EPC-CP Team Lead).
- [b] The manager is certifying the information submitted is “true, accurate, and complete” by signing the inspection form.
- [7] Attach the completed, signed, and certified inspection form to the facility SWPPP.
- [8] Submit a copy of the completed form to the MSGP Program Lead.

6.0 TRAINING

The following personnel require training before implementing this procedure.

- DESH Group and Team Leaders
- EPC-CP MSGP stormwater compliance personnel
- DEPs
- Other personnel identified as being required to conduct stormwater assessments as part of their job duties

All EPC-CP personnel that execute the activities specified in this procedure must meet the minimum qualification and training requirements for their position as identified EPC-CP-PIP-2101, NPDES *Multi-Sector General Permit Program Implementation Plan*. This will include “self-study” (required reading) for this procedure as assigned and documented in accordance with ADOSH-TTP-301, *ADOSH Training Program Plan*.

Contract personnel that execute the activities specified in this procedure will be qualified and trained as required by the Exhibit D and Exhibit F. In addition, contract personnel will be required to complete “self-study” (required reading) of this procedure.

7.0 RECORDS

MSGP Routine Facility Inspection forms are signed and certified by individual LANL facilities. These completed forms are maintained in the facility’s SWPPP and managed by the facility’s document management system. The MSGP team may retain a copy for reference purposes.

Below are records generated as a result of implementing this procedure. Records generated are identified by title and type.

| Record Title | QA Record | Non-QA Record |
|---|-------------------------------------|--------------------------|
| EPC-CP-QP-2108 R0 Form 1, <i>MSGP Routine Facility Inspection</i> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

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8.0 DEFINITIONS AND ACRONYMS

8.1 Definitions

See LANL [Definition of Terms](#).

Best Management Practice (BMP) – Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of “waters of the United States.” BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage (*40 CFR Part 122.2*).

Control Measure – Any BMP or other method (including effluent limitations) used to prevent or reduce the discharge of pollutants to waters of the United States.

8.2 Acronyms

See LANL Acronym Master List.

| | |
|------------|---|
| BMP | Best Management Practice |
| EPC-CP | Environmental Protection and Compliance – Compliance Programs |
| DEP | Deployed Environmental Professional |
| DESH | Deployed Environment, Safety, and Health |
| FOD | Facility Operations Director |
| LANL | Los Alamos National Laboratory |
| MC | Maintenance Connection |
| MC Express | Maintenance Connection Express |
| MSGP | Multi-Sector General Permit |
| NPDES | National Pollutant Discharge Elimination System |
| SWPPP | Stormwater Pollution Prevention Plan |

9.0 REFERENCES

Federal Register, Final National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Industrial Activities. Federal Register: June 16, 2015, Volume 80, Number 115.

Los Alamos National Laboratory Storm Water BMP Manual

10.0 ATTACHMENTS

Attachment 1: Screenshot Examples of EPC-CP-QP-2108 R0 Form 1, *MSGP Routine Facility Inspection* in MC Express

Attachment 2: EPC-CP-QP-2108 R0 Form 1, *MSGP Routine Facility Inspection* Hard Copy Example

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Attachment 1: Screenshot Examples of EPC-CP-QP-2108 R0 Form 1, *MSGP Routine Facility Inspection in MC Express*

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Work Order Tasks Page (Section 5.1, Steps 1-5)

The screenshot shows the 'MC Express' mobile application interface. At the top, a blue header bar contains a back arrow, the text 'MC Express', and a menu icon. Below the header, a white bar displays 'WORK ORDER: MSGP-RI-52112' and 'Tasks' with a search icon. A 'Tasks' dropdown menu is visible. The main content area is titled 'Weather Information' and lists five tasks, each with a flag icon, a number in a red box, and a description. Task 1 is 'Describe the weather at time of inspection and document the temperature (F°)'. Task 2 is 'Is the facility free of previously unidentified discharges from and/or pollutants that have occurred since the last inspection If "No" describe.'. Task 3 is 'If "No" has a CAR been previously initiated for this new discharge?'. Task 4 is 'Is the facility free of discharge of pollutants at the time of inspection? If "No" describe.'. Task 5 is 'Is the facility free of evidence of, or the potential for, pollutants entering the drainage system. If "No" describe.'. Each task has a download icon on the right. At the bottom, a blue bar contains a 'Refresh' button, a grid icon, and a 'List' button.

Work Order Tasks Page (Section 5.1, Steps 6-9)

The screenshot shows the 'MC Express' mobile application interface. At the top, a blue header bar contains a back arrow, the text 'MC Express', and a menu icon. Below the header, a white bar displays 'WORK ORDER: MSGP-RI-52112' and 'Tasks' with a search icon. A black bar with white text reads 'Outfall Inspection (identify needed maintenance and repairs, failed control measures that need replacement, or a description of corrective actions in relevant task comment)'. The main content area lists five tasks, each with a flag icon, a number in a red box, and a description. Task 6 is 'Free of Evidence of Erosion? If "No", describe. Asset: [074] Monitored Outfall'. Task 7 is 'Flow Dissipation Devices Operating Effectively? If "No", describe. Asset: [074] Monitored Outfall'. Task 8 is 'Free of Evidence of Pollutants in Discharges and/or Receiving Water? If "No", describe. Asset: [074] Monitored Outfall'. Task 9 is 'Free of any unauthorized non-stormwater discharges? If "No" describe. Asset: [074] Monitored Outfall'. Each task has a download icon on the right. At the bottom, a blue bar contains a 'Refresh' button, a grid icon, and a 'List' button.

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Attachment 1: Screenshot Examples of EPC-CP-QP-2108 R0 Form 1, *MSGP Routine Facility Inspection* in MC Express (cont.)

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Work Order Tasks Page (Section 5.1, Step 11)

MC Express

WORK ORDER: MSGP-RI-52112

Tasks

Control Measures (identify needed maintenance and repairs, failed control measures that need replacement, or a description of corrective actions in relevant task comments).

- 180**
Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.
Asset: [0300503040002] Asphalt Berm
- 190**
Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.
Asset: [0300504060001] Rip Rap
- 200**
Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement.
Asset: [0300503200004] EnviroSoxx w/ MetalLoxx

Refresh List

Work Order Tasks Page (Section 5.1, Step 13)

MC Express

WORK ORDER: MSGP-RI-52112

Tasks

Area/Activity exposed to stormwater (identify needed maintenance or a description of corrective actions in relevant task comment).

- 220**
Material loading/unloading and storage areas: controls adequate (appropriate, effective, and operating)? If "No" describe.
- 230**
Transfer areas for substances in bulk: controls adequate (appropriate, effective, and operating)? If "No" describe.
- 240**
Product/chemical storage areas (raw material): controls adequate (appropriate, effective, and operating)? If "No" describe.
- 250**
Liquid tank storage/secondary containment: controls adequate (appropriate, effective, and operating)? If "No" describe.

Refresh List

| | | |
|--|--------------------|----------------------------|
| MSGP Routine Facility Inspections | No: EPC-CP-QP-2108 | Page 18 of 21 |
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Attachment 1: Screenshot Examples of EPC-CP-QP-2108 R0 Form 1, *MSGP Routine Facility Inspection* in MC Express (cont.)

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Work Order Tasks Page (Section 5.1, Steps 15 and 16)

MC Express

WORK ORDER: MSGP-RI-52112

Tasks

Non-Compliance

400

12 Free of incidents of observed non-compliance not already identified above? If "No" describe.

Additional Control Measures

420

13 Are permit requirements satisfied with existing control measure(s)? If "No" describe additional control measures needed.

Refresh List

Work Order Status Update Page (Section 5.2, Steps 4-6)

MC Express

WORK ORDER: MSGP-RI-52112

Status Update

Issued / Completed

New Status 14

Completed

Date

1/23/2019 10:39 AM

Percent Complete 100%

Labor Report Update 15

Select Comments to Add.....

Jane Doe

Cancel Save

Work Order Status Update Page (Section 5.2, Step 7)

MC Express

WORK ORDER: MSGP-RI-52112

Status Update

Signature 16

(Remove)

Jane Doe

Cancel Save

| | | |
|--|--------------------|----------------------------|
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Attachment 2: MSGP Routine Facility Inspection Hard Copy Example, EPC-CP-QP-2108 R0 Form 1
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Los Alamos National Laboratory

Work Order MSGP-RI-52112

MSGP Routine Inspection
Printed 1/23/2019 - 12:45 PM (Duplicate Copy)

Maintenance Details

Requested By: Admin, Jane on
1/23/2019 12:30:00 PM

Target: 12/31/2020

Priority/Type: / Inspection

 MSGP Program
RG121.9

Taken By: Banar, Alethea

Department: Utilities and Infrastructure

 TA-3-38 Carpenter Shop

Procedure: MSGP Routine Facility
Inspection (EPC-CP-
QP-2108 R0 Form 1)

Last PM: N/A

Contact: Admin, Jane
Phone: 123-4567

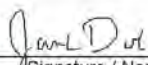
Reason: Example MSGP Routine Facility Inspection

Tasks

| # | Description | Meas. | No | N/A | Yes |
|---|---|-------|--------------------------|--------------------------|--------------------------|
| Weather Information | | | | | |
| 1 | 20 Describe the weather at time of inspection and document the temperature (F): | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Within the Facility Boundary | | | | | |
| 2 | 40 Is the facility free of previously unidentified discharges from and/or pollutants that have occurred since the last inspection? If "No" describe. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 | 50 If "No" has a CAR been previously initiated for this new discharge? | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4 | 60 Is the facility free of discharge of pollutants at the time of inspection? If "No" describe. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5 | 70 Is the facility free of evidence of, or the potential for, pollutants entering the drainage system. If "No" describe. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Outfall Inspection (identify needed maintenance and repairs, failed control measures that need replacement, or a description of corrective actions in relevant task comment) | | | | | |
| 6 | 90 Monitored Outfall [074] Free of Evidence of Erosion? If "No", describe. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7 | 100 Monitored Outfall [074] Flow Dissipation Devices Operating Effectively? If "No", describe. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8 | 110 Monitored Outfall [074] Free of Evidence of Pollutants in Discharges and/or Receiving Water? If "No", describe. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9 | 120 Monitored Outfall [074] Free of any unauthorized non-stormwater discharges? If "No" describe. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 130 Substantially Identical Outfall [073] Free of Evidence of Erosion? If "No", describe. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 140 Substantially Identical Outfall [073] Flow Dissipation Devices Operating Effectively? If "No", describe. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 150 Substantially Identical Outfall [073] Free of Evidence of Pollutants in Discharges and/or Receiving Water? If "No", describe. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 160 Substantially Identical Outfall [073] Free of any unauthorized non-stormwater discharges? If "No" describe. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Control Measures (identify needed maintenance and repairs, failed control measures that need replacement, or a description of corrective actions in relevant task comments). | | | | | |
| | 180 Asphalt Berm [0300503040002] Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 190 Rip Rap [0300504060001] Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 200 EnviroSoxx w/ MetalLoxx [0300503200004] Control Measure is operating effectively? If "No" describe condition & need for Maintenance, Repair, or Replacement. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Area/Activity exposed to stormwater (identify needed maintenance or a description of corrective actions in relevant task comment). | | | | | |
| | 220 Material loading/unloading and storage areas: controls adequate (appropriate, effective, and operating)? If "No" describe. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 230 Transfer areas for substances in bulk: controls adequate (appropriate, effective, and operating)? If "No" describe. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| | | |
|--|--------------------|----------------------------|
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Attachment 2: MSGP Routine Facility Inspection Hard Copy Example, EPC-CP-QP-2108 R0 Form 1
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| | | | | |
|---|---|--------------------------|--------------------------|--------------------------|
| 240 | Product/chemical storage areas (raw material): controls adequate (appropriate, effective, and operating)? If "No" describe. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 250 | Liquid tank storage/secondary containment: controls adequate (appropriate, effective, and operating)? If "No" describe. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 260 | Industrial processing and finished product storage areas: controls adequate (appropriate, effective, and operating)? If "No" describe. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 270 | Equipment operation and maintenance areas: controls adequate (appropriate, effective, and operating)? If "No" describe. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 280 | Fueling areas: controls adequate (appropriate, effective, and operating)? If "No" describe. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 290 | Outdoor vehicle and equipment washing areas: controls adequate (appropriate, effective, and operating)? If "No" describe. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 300 | Machinery: controls adequate (appropriate, effective, and operating)? If "No" describe. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 310 | Waste handling and disposal areas: controls adequate (appropriate, effective, and operating)? If "No" describe. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 320 | Erodible areas/construction: controls adequate (appropriate, effective, and operating)? If "No" describe. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 330 | Locations and sources of run-on to the site: controls adequate (appropriate, effective, and operating)? If "No" describe. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 340 | Salt storage piles or pile containing salt: controls adequate (appropriate, effective, and operating)? If "No" describe. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 350 | Dust generation and vehicle tracking: controls adequate (appropriate, effective, and operating)? If "No" describe. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 360 | Housekeeping (Industrial materials/residues/trash in contact with stormwater): controls adequate (appropriate, effective, and operating)? If "No" describe. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 370 | Leaks and spills: controls adequate (appropriate, effective, and operating)? If "No" describe. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 380 | Sector A [03005-] Wood processing, transport or treated wood storage areas: controls adequate (appropriate, effective, and operating)? If "No" describe. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Non-Compliance | | | | |
| 12 | 400 Free of incidents of observed non-compliance not already identified above? If "No" describe. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Additional Control Measures | | | | |
| 13 | 420 Are permit requirements satisfied with existing control measure(s)? If "No" describe additional control measures needed. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Labor Report | | | | |
| 14 | Completed: 1/23/2019 10:39:00 AM | | | |
| 15 | Report: [Additional notes, observations, or site conditions not documented in Task Line Comments field] | | | |
| | Jane Doe | | | |
| 16 |  | 1/23/2019 | | |
| | Signature / Name | Date | Signature / Name | Date |
| I confirm the information as recorded is true, accurate and complete. | | | | |

| | | |
|--|--------------------|----------------------------|
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Attachment 2: MSGP Routine Facility Inspection Hard Copy Example, EPC-CP-QP-2108 R0 Form 1 (cont.)

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CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations".

(Signatory must meet definition in Section B.11.A, eg., FOD, Ops Mgr, DESH Group Leader, EPC Group Leader)

17 Print name and title: _____

Signature: _____ Date: _____

EPC-CP-QP-2108 R0 Form 1

ATTACHMENT 17: EPC-CP-QP-022, MSGP CORRECTIVE ACTIONS

EPC-CP-QP-022Revision: **3**

Effective Date: 12/20/2018

Next Review Date: 12/20/21

Environment, Safety, Health, and Quality, Safeguards and Security Directorate
Environmental Protection and Compliance Division – Compliance Programs
Quality Procedure

MSGP Corrective Actions

Document Owner/Subject Matter Expert:

| | | | |
|---------------|---------------|-------------------|----------|
| Name: | Organization: | Signature: | Date: |
| Holly Wheeler | EPC-CP | Signature on File | 12-19-18 |

Derivative Classifier: ☒ **Unclassified**

| | | | |
|---------------|---------------|-------------------|----------|
| Name: | Organization: | Signature: | Date: |
| Jacob Meadows | EPC-CP | Signature on File | 12-19-18 |

Approval Signatures:

| | | | |
|---------------------------|---------------------|-------------------|----------|
| Subject Matter Expert: | Organization: | Signature: | Date: |
| Holly Wheeler | EPC-CP | Signature on File | 12-19-18 |
| Responsible Line Manager: | Organization: | Signature: | Date: |
| Terrill Lemke | EPC-CP Team Leader | Signature on File | 12-20-18 |
| Responsible Line Manager | Organization | Signature: | Date: |
| Taunia Van Valkenburg | EPC-CP Group Leader | Signature on File | 12-20-18 |

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| MSGP Corrective Actions | EPC-CP-QP-022 | Page 2 of 31 |
| | Revision: 3 | Effective Date: 12/20/2018 |

Revision History

| Document Number and Revision <i>[Include revision number, beginning with Revision 0]</i> | Effective Date <i>[Document Control Coordinator inserts effective date]</i> | Description of Changes <i>[List specific changes made since the previous revision]</i> |
|--|---|---|
| 0 | 08/10 | New Document. |
| 1 | 11/10 | Incorporated EPC-CP-QP-062 <i>MSGP Routine Inspections</i> into this document. |
| 2 | 01/13 | Biennial revision, new template implemented. |
| EPC-CP-QP-022 R3 | 12/202018 | Revision to reflect new 2015 MSGP requirements. New procedure format was used and organizational changes made. This document replaces ENV-RCRA-QP-022, R2, which was split into EPC-CP-QP-023, R0, MSGP Industrial Stormwater Routine Facility Inspections, and EPC-CP-QP-022, R3, MSGP Corrective Actions. |

| | | |
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1.0 INTRODUCTION

The National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit (MSGP) contains specific environmental requirements for identifying, implementing, documenting and reporting conditions requiring corrective actions. Laboratory personnel (the Deployed Environmental Professionals (DEPs) and Environmental Protection and Compliance Division – Compliance Programs (EPC-CP) Storm Water Team (also referred to as EPC-CP MSGP stormwater personnel) are required to perform routine facility inspections and document all conditions requiring corrective actions found on an inspection form (see EPC-CP-QP-023). Conditions requiring corrective actions can be identified during facility walk-downs, normal daily operations, and/or analytical data evaluations, and can be identified by facility personnel, the DEP or EPC-CP MSGP stormwater personnel.

1.1 Purpose

This procedure governs the activities of Laboratory personnel working at Los Alamos National Laboratory (LANL) involved in identifying, implementing, documenting and entering a condition requiring corrective action, including a permit limit exceedance, into the MSGP Corrective Action Report (CAR) Findings database or CAR database. Part 4.4 of the MSGP contains specific documentation requirements relative to corrective actions. This procedure satisfies these requirements.

1.2 Scope

Requirements set forth in this document apply to personnel responsible for meeting the permit conditions on behalf of LANL industrial sites covered by the MSGP. This permit requires periodic inspection of sites and identification, implementation, documentation, tracking and reporting of conditions requiring corrective actions.

1.3 Applicability

This procedure applies to the EPC-CP MSGP stormwater personnel and DEPs who conduct stormwater inspections and monitoring activities at permitted MSGP sites within LANL.

2.0 PRECAUTIONS AND LIMITATIONS

- 2.1 The hazard level for field activities and office work described in this procedure is a **LOW hazard** rating and does not require an Integrated Work Document (IWD).
- 2.2 Inspections or walk-downs may be discontinued during periods or conditions that make sites dangerous for worker safety or prevent personnel from safely accessing sites (e.g., weather-related events such as flash floods, flooding, lightning, wildfires, hail, icy roads, deep snow, or LANL operations such as firing shots or open burning).

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3.0 PREREQUISITE ACTIONS

3.1 Planning and Coordination

DEPs and EPC-CP MSGP stormwater personnel require a CAR database user account (https://msgp-car.lanl.gov/forms/frmservlet?config=msgp_car). Facility Operations Directors (FODs), Deployed Environment, Safety, and Health (DESH) Managers and Operations (Ops) Managers can request a read-access account by contacting the EPC-CP MSGP data administrator for access.

3.2 Tools and Equipment

Tools and equipment for documenting inspections and updating the CAR database include the following:

- LANS issued tablet or notebook style computer with Safari web browser and Blackberry UEM™ app. (see <https://int.lanl.gov/policy/documents/P217.pdf> for requirements on using portable electronic devices on Laboratory property), and
- Access to the CAR database.

Tools and equipment for field work associated with performing inspections and site walk-downs are listed below.

- Sturdy hiking boots or steel or composite toed shoes with soles that grip (some sites require steel or composite toed shoes).
- Safety glasses if required by site.
- Cell phone (only government cell phones with batteries removed are allowed in secure areas.) See <https://int.lanl.gov/policy/documents/P217.pdf> for requirements on using portable electronic devices on Laboratory Property.)
- Copy of this procedure.
- Copy of facility specific Stormwater Pollution Prevention Plan (SWPPP) and map(s) (as needed).
- Necessary access.
- Stockpile of temporary stormwater controls (Best Management Practices [BMPs], e.g., inlet protection, absorbent pads for spills, gravel bags, S-Fence, wattles, etc.)

4.0 ROLES AND RESPONSIBILITIES

Specific roles and responsibilities for implementation of requirements contained in the MSGP are provided below.

4.1 EPC-CP MSGP Stormwater Personnel

EPC-CP MSGP stormwater personnel will be fully knowledgeable of the specific regulatory requirements identified in the MSGP. Additional responsibilities are listed below.

| | | |
|--------------------------------|---------------|----------------------------|
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- Implement this procedure;
- Oversee the corrective action process;
- Identify conditions requiring corrective action during internal routine facility inspections, “no exposure” assessments, and/or facility walk-downs performed by them, or during evaluation of monitoring data when permit limits are exceeded;
- Perform a quality review of conditions requiring corrective action submitted in the CAR database;
- Notify managers and/or legal counsel of non-compliances;
- Assist DEPs and other customers with issues associated with the CAR database;
- Prepare and submit 45-day exceedance notification to Region 6, Environmental Protection Agency (EPA) containing information provided by the DEP;
- Prepare and submit the Annual Report summarizing all conditions requiring corrective action for the year in EPA’s electronic NPDES eReporting tool (NeT);
- Prepare management requested metrics relative to conditions requiring corrective action;
- Provide information to the Issues Management Coordinator (IMC) for entering water quality exceedances and other permit violations into the Issues Management (IM) tool; and
- Train personnel to use the CAR database.

4.2 Deployed Environmental Professionals

DEPs will be fully knowledgeable of the site-specific SWPPP for their assigned sites and corrective action requirements identified in the MSGP. In addition, they shall be appropriately trained to meet the job qualifications identified in the *Quality Assurance for Stormwater Multi-Sector General Permit for Industrial Activities Program* (ENV-CP-QAPP-MSGP) and shall be familiar with the regulatory requirements identified in the MSGP, demonstrated by achieving a satisfactory score on the *MSGP Routine Facility Inspections* on-the-job training course #53040. Further, they shall be familiar with facility operations and controls to minimize potential pollutant sources and proactively maintain controls in an attempt to prevent conditions that require corrective action.

The DEPs are responsible for implementing this procedure. They will identify conditions requiring corrective actions observed at their industrial sites and enter them into the CAR database. DEPs act as liaison between the FOD, DESH Manager and facility/operations personnel to ensure all corrective actions are addressed appropriately by overseeing maintenance and/or installation of additional controls, as needed. DEPs are responsible for ensuring corrective action(s) is completed per MSGP requirements and the corrective action timeline (see Sections 5.2.1 and 5.2.2 of this procedure). They will also provide timely updates to the CAR database for closure or update of corrective actions as they are implemented.

When permit limits are exceeded, DEPs are responsible for identifying the source and maintaining existing controls or implementing additional controls, as necessary, to prevent further exceedances.

| | | |
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If the DEP or EPC-CP MSGP stormwater personnel determine that additional controls are necessary, or that existing controls are insufficient and require replacement with a different type of control, the DEPs are responsible for the selection and oversight of proper installation of appropriate control measures per guidance provided in the [LANL Stormwater BMP Manual](#).

DEPs will notify the EPC-CP MSGP data administrator or MSGP Program Lead of key personnel changes (FOD, DESH Manager, Ops Manager, DEP) to ensure automated CAR status notifications are distributed to the appropriate personnel.

CAUTION

Failure to appropriately control pollutant discharges can result in fines and penalties.

Implementing the same control measure numerous times without an improvement in minimization of off-site pollutants is an indication that the control measure is not stringent enough to meet Technology-Based or Water Quality-Based effluent limits identified in the MSGP. Per the MSGP, documentation is required in the SWPPP that justified the selection, design, installation and implementation of a control measure to ensure effluent limits are met.

4.3 EPC-CP Storm Water Team Leader

The EPC-CP Storm Water Team Leader (or team leader) is responsible for compliance oversight relative to the MSGP. The team leader will ensure resources needed to implement the regulatory requirements identified in the MSGP are identified and environmental risks are assessed. Upper management will be notified of these resources or environmental risks, as deemed necessary. In the event there is a dispute regarding the regulatory requirements contained in the MSGP, the Team Leader will make the final determination of the required action. The Team Leader will notify upper management of instances of non-compliance with the permit.

4.4 EPC-CP Group Leader

The EPC-CP Group Leader or designee is responsible for ensuring there are adequate resources to implement the regulatory requirements identified in the MSGP. The group leader also acts as the duly authorized signatory that certifies the Annual Report or Routine Facility Inspections conducted by EPC-CP personnel. The group leader will notify upper management of instances of non-compliance with the permit or other identified environmental risk.

4.5 DESH Manager

The DESH Manager shall work with programmatic entities and the FOD to identify resources for their industrial sites to ensure permit requirements can be implemented. The DESH Manager is responsible for the performance of DEPs under their management. They also provide oversight for ensuring that industrial sites are complying with the MSGP and are responsible for notifying upper management of instances of non-compliance with the permit or other identified environmental risk they become aware of.

| | | |
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4.6 Facilities Operations Director

The FOD provides organizational leadership to ensure that all facility and programmatic activities under their authority are performed in compliance with the MSGP. The FOD is also responsible for establishing an environmental compliance envelope. It is the FOD's responsibility to maintain trained and qualified DEPs and Waste Management Coordinators (WMCs) on staff.

5.0 PROCESS DESCRIPTION

Requirements regarding corrective actions are described in Part 4 of the MSGP. These requirements and conditions are summarized in this section and directly correspond to data fields and lists of values available in the CAR database.

5.1 Identifying Conditions Requiring Corrective Actions

Deployed Environmental Professional (DEP)

- [1] **IF** any of the following conditions are identified,
THEN review and revise, as appropriate, the selection, design, installation, and implementation of control measures in the SWPPP to eliminate the condition and prevent recurrence in the future:
- An unauthorized release or discharge (e.g., spill, leak, or discharge of non-stormwater not authorized by the MSGP [see Section 5.6 of this procedure for a description of allowable discharges]);
 - An inspection or evaluation of the facility by an EPA official and/or local or State entity, determines that modification to the control measures are necessary to meet the non-numeric effluent limits in the MSGP;
 - It is observed during the routine facility inspection, facility walk-down, and/or the quarterly visual assessment that the control measures are not being properly operated and maintained;
 - Construction or a change in design, operation, or maintenance at the facility significantly changes the nature of pollutants discharged in stormwater from the facility, or significantly increases the quantity of pollutants discharged;
 - The average of four quarterly sampling results exceeds an applicable benchmark. If less than four benchmark samples have been taken, but the results are such that an exceedance of the four quarter average is mathematically certain, (i.e., if the sum of quarterly sample results to date is more than four times the benchmark level) this is considered a benchmark exceedance;
 - If effluent limitation guidelines are exceeded at the Asphalt Batch Plant (Sector D); or
 - If impaired water quality standards are exceeded.

| | | |
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DEP and/or EPC-CP MSGP stormwater personnel

- [2] Enter all conditions requiring a corrective action into the EPC-CP MSGP CAR database.

DEP and/or Facility Personnel

- [3] Take immediate action to mitigate the condition requiring a corrective action.
- [4] If needed, follow the permit timeline and process for individual corrective actions that require extensive maintenance.
- [5] Any person authorized to conduct work at LANL can identify a potential stormwater issue. If this occurs, they will:
 - [a] Contact the DEP or EPC-CP MSGP stormwater personnel.
 - [b] The DEP or EPC-CP MSGP stormwater personnel will determine if a condition exists that requires a corrective action.

5.2 Corrective Action Deadlines and Documentation

Specific deadlines for taking corrective action and required documentation are provided in the subsections below.

5.2.1 Immediate Action

DEP and/or Facility Personnel

- [1] **IF** a condition exists that requires corrective action, as described in Section 5.1 [1], **THEN** take the following action immediately (on the same day the condition is found):
 - [a] All reasonable steps necessary to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational.
 - [b] Clean up any contaminated surfaces so that material will not discharge during subsequent storm events.
 - [c] Minimize or prevent the discharge of pollutants until a permanent solution (if necessary) is installed and made operational.
 - [d] Any corrective action resulting in a change to a stormwater control or procedure (documented in the SWPPP) requires modification of the SWPPP within 14 calendar days of completing corrective action work.

NOTE

For minor conditions, immediate action is often sufficient and no additional action is necessary.

- [2] **IF** a condition is identified at a time in the work day when it is too late to initiate corrective action (i.e., 3:00 pm or later), **THEN**:

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- [a] Corrective action must begin no later than the following work day.
- [b] Implement the requirements identified in Section 5.2.1 [1] above.

CAUTION

Solely calling or e-mailing personnel requesting action to be taken is not considered taking immediate action. Entering a Facility Service Request (FSR) is appropriate if it formally starts the work process to address the condition. Temporary BMPs still need to be put in place to minimize or prevent off-site migration of pollutants, especially if a storm event is likely.

5.2.2 Subsequent Action

DEP and/or Facility Personnel

- [1] **IF** additional action is required,
THEN:
 - [a] Complete the corrective action (e.g., install a new or modified control and make it operational or complete the repair) before the next storm event or within 14 calendar days from the time of discovery.
 - [b] Any corrective action resulting in a change to a stormwater control or procedure documented in the SWPPP requires modification of the SWPPP within 14 calendar days of completing corrective action work.
- [2] **IF** completion of the corrective action is infeasible within the 14-day timeframe,
THEN:
 - [a] Document the reasoning in the database.
 - [b] Provide a schedule for completion of the corrective action in the database.

NOTE

Completion of the corrective action cannot exceed 45 days from the time of discovery without having to notify EPA. These time intervals are not grace periods, but are schedules considered reasonable for documenting finding(s) and for making repairs and improvements. They are included in the MSGP to ensure that the conditions prompting the need for these repairs and improvements are not allowed to persist indefinitely. In no instance will the corrective action remain open indefinitely (Part 4.3.2 of the MSGP).

5.2.3 Corrective Action Documentation

DEP and/or EPC-CP

- [1] Document existence of any of the conditions listed in Section 5.1 [1] of this procedure in the CAR database within 24 hours of becoming aware of such condition (or if identified late in the work day, by the following work day).

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[2] Include the following information in the documentation:

- Description of the condition triggering the need for corrective action review. For any spills or leaks, include the following information:
 - a description of the incident including material, date/time, amount, location, and reason for spill;
 - any leaks, spills or other releases that resulted in discharges of pollutants to waters of U.S., through stormwater or otherwise;
- Date the condition was identified; and
- Description of immediate actions taken (Part 4.3.1 of the MSGP) to minimize or prevent the discharge of pollutants. For any spills or leaks, include response actions, the date/time clean-up was completed, notifications made (if any), and staff involved. Also include any measures taken to prevent the reoccurrence of such releases (Part 2.1.2.4 of the MSGP).

[3] Provide the dates when each corrective action was initiated and completed (or is expected to be completed).

- [a] If applicable, document why it is infeasible to complete the necessary installations or repairs within the 14-day timeframe, and
- [b] Document your schedule for installing the controls and making them operational as soon as practicable after the 14-day timeframe.
- [c] **IF** EPA must be notified regarding an extension of the 45-day timeframe, **THEN** the DEP must document the rationale for an extension.

EPC-CP MSGP stormwater personnel

[4] Prepare and submit 45-day exceedance notifications based on information entered into the CAR database by the DEPs.

DEP

[5] Ensure that the information in the CAR database is kept up-to-date, to include the following:

- [a] a thorough description of the nature of the condition requiring corrective action,
- [b] corrective action(s) taken and/or outstanding,
- [c] the steps and schedule for completing a corrective action (if not completed within 14 days), and
- [d] rationale for why the corrective action cannot be completed within 45-days.

5.3 Effect of Corrective Action

When the condition requiring corrective action is a permit violation (e.g., non-compliance with an effluent limit or exceedance of a water quality standard), correcting it does not remove the original

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violation. Additionally, failing to take corrective action in accordance with Part 4 of the MSGP is an additional permit violation.

NOTE

The EPA will consider the appropriateness and promptness of corrective action in determining enforcement responses to permit violations (Part 4.5 of the MSGP).

5.4 Substantially Identical Outfalls

When the condition requiring corrective action is associated with an outfall that has been identified as a “substantially identical outfall” (see Parts 3.2.3 and 6.1.1 of the MSGP), a review will assess the need for corrective action for all related substantially identical outfalls. Any necessary changes to control measures that affect these other outfalls will be made before the next storm event if possible, or as soon as practicable following that storm event. Any condition requiring corrective action(s) will be addressed within the timeframes set forth in Part 4.3 of the MSGP (also see Section 5.2 of this procedure).

5.5 Spills

DEP and/or Facility Personnel

- [1] Clean up all leaks or spills immediately and enter into the CAR database.
 - [a] If the spill is immediately cleaned up, and controls are implemented to prevent further leakage, the condition requiring corrective action can be closed.

5.6 Allowable Non-Stormwater Discharges

The following are allowable non-stormwater discharges authorized by the MSGP:

- Discharges from emergency/unplanned fire-fighting activities;
- Fire hydrant flushing;
- Potable water, including water line flushing;
- Uncontaminated condensate from air conditioners, coolers/chillers, and other compressors and from the outside storage of refrigerated gases or liquids;
- Irrigation drainage;
- Landscape watering provided all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling;
- Pavement wash waters where no detergents or hazardous cleaning products are used (e.g., bleach, hydrofluoric acid, muriatic acid, sodium hydroxide, nonylphenols), and wash waters do not come into contact with oil and grease deposits, sources of pollutants associated with industrial activities (see Part 5.2.3 of the MSGP), or any other toxic or hazardous materials, unless residues are first cleaned up using dry clean-up methods (e.g., applying absorbent

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material and sweeping, using hydrophobic mops/rags) and you have implemented appropriate control measures to minimize discharges of mobilized solids and other pollutants (e.g., filtration, detention, settlement);

- Routine external building washdown/power wash water that does not use detergents or hazardous cleaning products (e.g., those containing bleach, hydrofluoric acid, muriatic acid, sodium hydroxide, nonylphenols);
- Uncontaminated ground water or spring water;
- Foundation of footing drains where flows are not contaminated with process materials; and
- Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of your facility, but not intentional discharges from the cooling tower (e.g., “piped” cooling tower blowdown or drains).

5.7 Entering a Condition Requiring Corrective Action

To enter a condition requiring corrective action into the CAR database, perform the steps in this section.

Enter clear, complete, and concise language. Correct grammar, punctuation, and spelling errors.

Select the appropriate value from each pull-down menu that applies to the condition requiring corrective action. This information will be used to populate a report that will be submitted to the EPA and is extracted from the database to populate automatic e-mail notifications to managers. Therefore, it is critical that all information entered into the CAR database is correct.

DEP or EPC-CP MSGP stormwater personnel

- [1] Using internet explorer, access the CAR database at https://msgp-car.lanl.gov/forms/frmservlet?config=msgp_car.
- [2] From the main screen, click on “Enter New Corrective Action.”
 - [a] Select the “Corrective Action Header” tab.
 - [b] Enter the following (refer to Attachment 1 for data entry screenshot cross reference to **Item numbers in red** listed below):
 - **Item 1:** Name of facility by clicking on the “List” tab and selecting a facility (refer to Attachment 2 for a list of available facilities).
 - **Item 2:** Date/Time problem was identified (mm/dd/yyyy hh:mm) (*the inspection date or the date you first become aware of the issue*).

There must be a space between the date (mm/dd/yyyy) and the time (hh:mm).

All dates and times will be entered as mm/dd/yyyy hh:mm in 24-hr (military time) format. Time is tracked to document whether immediate action was taken, whether the issue was documented within 24 hours, and the specific time interval before a corrective action is completed and closed (see Section 5.2 of

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this procedure for corrective action deadlines). Do not leave time as 00:00 (the system default) unless the action occurred at midnight.

- **Item 3:** Date/Time of Notification to EPC-CP (mm/dd/yyyy hh:mm) *(the date the condition is entered into the CAR database or verbal or written notification is provided to the EPC-CP MSGP Program Lead. Conditions reported by verbal or written notification must still be entered into the CAR database.)*

The existence of any of the conditions listed in Section 5.1 of this procedure must be documented in the CAR database within 24 hours of becoming aware of such condition (or if identified late in the work day, by the following work day).

- **Item 4:** FOD Responsible for CA (Name & Org) by clicking in the box. FOD designations (for example “STO”) and the associated name list will pop up. Select the appropriate FOD.

Contact the EPC-CP MSGP Program Lead at 667-1312 or hbenson@lanl.gov if the FOD name or organization is incorrect, so this can be corrected.

- **Item 5:** Describe Specific Evaluation Location (for example, “Northeast corner of Building TA-3-66.”)
- **Item 6:** Inspector Z-Number by clicking in the box, which will populate with the Z number of the person who is logged into the database and performing entry. In most instances, the DEP will be identified as the inspector.
- **Item 7:** Person Identifying Condition Z-Number by clicking in the box, which will populate with the Z number of the person who is logged into the database and performing entry. If the person identifying the condition is someone other than the inspector, enter that person’s Z-number.

Any person authorized to conduct work at LANL can identify a potential stormwater issue. If this occurs, they will contact the DEP or EPC-CP MSGP stormwater personnel who will determine if a condition exists that requires corrective action.

- **Item 8:** Status defaults to “A new corrective action” without making a selection. In the event a condition is entered that is determined to not require corrective action, this status can be changed to “Void” by clicking in the box and selecting from the Status list. The decision to assign a status of “Void” is at the discretion of EPC-CP MSGP stormwater personnel and reserved for EPC-CP use.
- **Item 9:** If the Status is changed to “Void,” enter a clear rationale for voiding the record.
- **Item 10:** Once all of the above information is entered correctly, click “Save” and go to Step 3.

All boxes identified with a red asterisk are “required fields” meaning the form cannot be saved unless these fields are completed. For the purpose of fulfilling

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corrective action documentation requirements (see Section 5.2.3 of this procedure), all applicable fields are required fields.

The system will automatically assign a Corrective Action Report identification (ID) number and move to the “Corrective Action Details” tab.

[c] Select the “Corrective Action Details” tab.

[d] Enter the following:

- **Item 11:** Identify the condition triggering the need for this review by clicking on the “List” button and selecting the appropriate condition or, if none of the available conditions fit the issue, selecting “Other” and entering a description of the condition (refer to Attachment 2 for a list of available conditions/finding descriptions).

These conditions are described in Section 5.1 of this procedure. Qualified personnel (EPC-CP MSGP stormwater personnel and DEPs) must be knowledgeable of these conditions and select the correct one when entering an issue. If there is uncertainty about which condition applies, refer to the definitions in Section 8.1 of this procedure or contact the MSGP Program Lead at 667-1312 or hbenson@lanl.gov for clarification prior to selecting “Other.”

- **Item 12:** If the condition in Item 11 is set to “Other,” enter a description of the condition in this field.
- **Item 13:** Briefly describe the nature of the problem identified during the inspection (e.g., erosion, damage to a BMP, trash, spill, etc.) and the specific evaluation location (e.g., at TA-60 Roads and Grounds).

Spills or other emergency conditions meeting the criteria for corrective action (identified in Parts 4.1 and 4.2 of the MSGP) will require documentation in the CAR database even though the condition was not identified during an inspection.

- **Item 14:** Enter how the problem was identified by clicking on the “List” button and selecting the appropriate option, or if none of the available options fit, selecting “Other.”
- **Item 15:** If “Other” is selected for Item 14, enter a description of how the problem was identified in this field.
- **Item 16:** Enter a description of the condition requiring corrective action, or identify action to be taken to eliminate or further investigate the problem (e.g., describe modifications or repairs to control measures, work conducted to address the condition or to be scheduled in the future, etc.) or if no modifications are needed, the basis for that determination. Include relevant dates and facts when updating this field as the corrective action progresses.
- **Item 17:** Indicate whether the problem was identified at a Substantially Identical Outfall (see Section 5.4 of this procedure) by typing “Y” for yes and “N” for no.

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- **Item 18:** If the answer to Item 17 is “Y,” enter the associated SIO(s) in this field. If the answer to Item 17 is “N,” leave this field blank. SIOs are identified in the site-specific SWPPPs. For assistance with identifying SIOs contact the MSGP Program Lead.
- **Item 19:** If the answer to Item 17 is “Y,” describe how the corrective action taken is appropriate for all SIOs (see Section 5.4 of this procedure), document any additional corrective action(s) needed for any of the SIOs, or document why no additional action is needed for the SIOs. If the answer to Item 17 is “N,” leave this field blank.
- **Item 20:** Did/will the corrective action require modification to the SWPPP? Type in “Y” for yes and “N” for no (see Section 5.1 of this procedure for conditions that require SWPPP review and revision).
- **Item 21:** Date/Time Corrective Action was initiated (mm/dd/yyyy hh:mm).
The duration between the Date/Time problem was identified and Date/Time corrective action was initiated is used to determine whether “immediate action” was taken (see Section 5.2.1 of this procedure). Immediate action is a requirement of the MSGP and therefore, will be documented in accordance with permit requirements.
- **Item 22:** Date/Time corrective action was completed **OR** expected completion Date/Time (mm/dd/yyyy hh:mm).
If the corrective action has not been completed, enter an expected completion date and time. The system will not allow entry of a date in both locations.
The duration between the Date/Time Problem was Identified and Date/Time corrective action was completed or the Date/Time Problem was identified and expected completion Date/Time is used to determine whether “subsequent action” timeframes and documentation requirements were/are being met, and to forecast where a 45-day exceedance notification to EPA is required (see Section 5.2.3 of this procedure). When information is incorrect or not entered, the MSGP data administrator or Program Lead will contact the originator and request correction(s).
- **Item 23:** If the corrective action is not or will not be completed within 14 days, provide the status of the corrective action at the end of the 14 day timeframe, the rationale for why it is infeasible to complete the corrective action within 14 days, and describe any remaining steps (including timeframe/schedule associated with each step) necessary to complete the corrective action.
- **Item 24:** Date EPA notified of intent to exceed 45 Days (mm/dd/yyyy hh:mm) is to be completed by EPC-CP MSGP stormwater personnel to document submittal of notification letter.
- **Item 25:** Once all of the above information is entered correctly, click “Save” so the corrective action information is retained.

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- [3] **IF** there are additional conditions to enter requiring corrective action, as described in Section 5.1 [1],
THEN perform these steps:
 - [a] Return to the “Corrective Action Header” tab.
 - [b] Click the “Enter New Corrective Action” button in the lower left hand corner of the screen.
 - [c] Click “Back to Record Selection” to return to the list of saved conditions requiring corrective action on the initial screen (if desired).

5.8 Updating Corrective Actions

DEP or EPC-CP MSGP stormwater personnel

- [1] Access the CAR database at https://msgp-car.lanl.gov/forms/frmservlet?config=msgp_car.
 - [a] On the main screen, scroll down to the corrective action number to be edited.
 - [b] Click “Edit.”
- [2] Navigate to the desired field, and input the updated information. Most changes will occur relative to updating the status, schedule, and dates of corrective actions.
- [3] Click “Save” to save all changes to the information.

5.9 Validation of Corrective Actions

EPC-CP MSGP stormwater personnel

- [1] Access the CAR database at https://msgp-car.lanl.gov/forms/frmservlet?config=msgp_car.
- [2] Ensure information entered into the CAR database is correct.
 - [a] Check all entered fields for a condition requiring corrective action to ensure that information is clear, correct, and concise.
 - [b] **IF** not,
THEN notify the DEP of the information that needs to be changed.
 - [c] The DEP is responsible for ensuring all information is validated before generating the annual report.
- [3] **IF** the identified condition requiring corrective action is a repeat of a previous condition or if it is determined not to be a condition requiring corrective action,
THEN
 - [a] Under “Status,” select “Void.”
 - [b] The “Void” designation allows MSGP stormwater personnel to manually exclude this information in the annual report.

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5.10 Issues Management

EPC-CP MSGP stormwater personnel or DEPs use the IM tool as the institutional performance issues and tracking system for identified quality assurance (QA) affecting issues. A QA affecting issue includes, but is not limited to, the following conditions.

- Exceedance of a water quality standard.
- Exceedance of an effluent limitation (i.e., at the Asphalt Batch Plant).
- Repeat conditions requiring corrective actions or trends identified by EPC-CP MSGP stormwater personnel.
- Conditions requiring immediate action, where failure to take action would result in pollutants being released to waters of the state.
- Immediate non-compliance with the MSGP.
- Violations identified by the regulatory authority.

The MSGP Program Lead periodically evaluates a summary of open conditions requiring corrective actions in the CAR database. Using the above conditions, the MSGP Program Lead or DEP determines which corrective actions, if any, will be transferred into the IM tool.

DEP or EPC-CP MSGP stormwater personnel

- [1] **IF** an issue needs to be entered into the IM tool,
THEN send the following information to the EPC Division IMC for entry into the IM tool:
- Organization responsible for the issue/problem;
 - A description of the nature of the condition identified and what needs to be done to address it;
 - Regulatory citation for the non-compliance;
 - Issues Responsible Manager (IRM);
 - Action, actionee, and due date for each issue; and
 - Whether the issue was identified internal or external to LANL.

5.11 Notifications for New and Overdue Corrective Actions

- [1] When a new condition requiring corrective action is entered into the CAR database, the FOD, Ops Manager, DESH Manager, inspector (usually the DEP) and EPC-CP MSGP stormwater personnel and managers are notified automatically by e-mail on the evening of the day the corrective action was entered.
- [2] Automated e-mail notifications will be sent during the corrective action process depending on the length of time it will take to close.
- [3] A notification will be sent out:

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- When a new corrective action is entered into the database (see Attachment 3); and
- Weekly notifications of outstanding (open) corrective actions (see Attachment 4).

Each notification contains a hyperlink to a web-based report containing a list of all open issues and timeline status where final corrective actions have not been completed (see Attachment 5) by the FOD. The report contains the FOD, Facility, unique Corrective Action identification number assigned by the CAR database, the person identifying the condition, the date the issue was identified, the date corrective action was initiated, the projected completion date, and a color-coded count (corresponding to the Corrective Action deadlines in Section 5.2 of this procedure) of the number of days to take action and the number of days the issue has been open, and the issue/problem description.

These notifications serve to apprise recipients of the status of open conditions requiring corrective actions and to provide sufficient time for MSGP stormwater personnel to provide documentation to EPA at the 45-day deadline. This will assist the FOD, DESH Managers, Ops Managers, and the DEPs with keeping track of conditions requiring corrective actions.

6.0 TRAINING

The following personnel require training before implementing this procedure:

- EPC-CP Group Leader and Team Leader;
- EPC-CP MSGP stormwater personnel;
- DEPs; and
- Other LANL or subcontract personnel identified as being required to conduct stormwater inspections, or other assessments and enter conditions requiring corrective actions into the CAR database as part of their job duties.

For EPC-CP MSGP stormwater personnel, the training method for this procedure is “self-study” (reading). DEPs shall achieve a satisfactory score on Training Course 53040, *MSGP Routine Facility Inspections OJT*. Other participating groups may require training documentation pursuant to local procedures.

Personnel performing this procedure will be familiar with the most current version of the following procedure:

- [ENV-CP-QAPP-MSGP, Multi-Sector General Permit for Industrial Activities Program](#)

7.0 RECORDS

Conditions requiring corrective actions are contained within the CAR database. DEPs will retain documentation substantiating these conditions, corrective actions, and timelines reported in the CAR database (e.g., e-mails, FSRs, Work Orders, etc., as appropriate). These documents shall be made available to EPC-CP upon request.

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8.0 DEFINITIONS AND ACRONYMS

See [LANL Definition of Terms](#).

8.1 Definitions

Best Management Practice (BMP)—Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of “waters of the United States.” BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. (40 CFR Part 122.2)

Control Measure—Any BMP or other method (including effluent limitations) used to prevent or reduce the discharge of pollutants to waters of the United States.

Numeric effluent limitation—The degree of effluent reduction attainable by the application of the best practicable control technology currently available (see 40 CFR Part 443.12). For LANL, numeric effluent limitations apply only to the Asphalt Batch Plant (Sector D) (see Table 1-1 of the MSGP). Constituents with limitations for Sector D include Total Suspended Solids, pH, and oil and grease (see Table 8.D-2 of the MSGP).

Note: Exceedance of a numeric effluent limitation is a violation of the MSGP (see Part 4.1 of the MSGP).

Non-numeric effluent limitations—Per Part 2.1.2 of the MSGP, these include minimizing exposure, good housekeeping, maintenance, spill prevention and response, erosion and sediment controls, management of runoff, salt storage controls, employee training, elimination of non-stormwater discharges, and minimizing dust generation and vehicle tracking of industrial materials.

Unauthorized release or discharge—The release of any liquid or solid substance (within the boundary of an MSGP site) that is not an allowable non-stormwater discharge (see Section 5.6). Examples are hydraulic oil, gasoline, diesel, powdered concrete, concrete washout, steam condensate line leaks, etc.

Impaired water quality exceedance—Exceedance of a New Mexico water quality standard. These standards are specified in the New Mexico Administrative Code, Title 20, Chapter 6, Part 4, *Standards for Interstate and Intrastate Surface Waters*.

Note: Industrial stormwater discharges must be controlled as necessary to meet applicable water quality standards within the State of New Mexico (see Part 2.2.1 of the MSGP).

8.2 Acronyms

See LANL *Acronym Master List*.

| | |
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| BMP | Best Management Practice |
| CA | Corrective Action |
| CAR | Corrective Action Report |
| EPA | Environmental Protection Agency |

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|--------|---|
| EPC-CP | Environmental Protection and Compliance-Compliance Programs |
| DEP | Deployed Environmental Professional |
| DESH | Deployed Environmental, Safety and Health |
| ID | Identification |
| IM | Issues Management |
| IMC | Issues Management Coordinator |
| IRM | Issues Responsible Manager |
| IWD | Integrated Work Document |
| FOD | Facility Operations Director |
| FSR | Facility Service Request |
| HEY | Heavy Equipment Yard |
| LANL | Los Alamos National Laboratory |
| MSGP | Multi-Sector General Permit |
| N | No |
| NPDES | National Pollutant Discharge Elimination System |
| Ops | Operations |
| P | Procedure |
| PD | Program Description |
| QA | Quality Assurance |
| QP | Quality Procedure |
| SD | System Description |
| STO | Science and Technology Operations |
| SWPPP | Stormwater Pollution Prevention Plan |
| 40 CFR | Title 40 of the Code of Federal Regulations |
| WMC | Waste Management Coordinator |
| Y | Yes |

9.0 REFERENCES

- *Final National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Industrial Activities.* Federal Register: June 16, 2015, Volume 80, Number 115.
- [Unites States Environmental Protection Agency \(EPA\) National Pollutant Discharge Elimination System \(NPDES\) Multi-Sector General Permit For Stormwater Discharges Associated With Industrial Activity \(MSGP\)](#)
- [Los Alamos National Laboratory Storm Water BMP Manual](#)

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- [PD100, DOE/NNSA Approved Los Alamos National Laboratory 10 CFR 857 Worker Safety and Health program Description](#)
- [SD100, Integrated Safety Management System](#)
- [P101-18, Procedure for Pause/Stop Work](#)
- [EPC-CP-QP-023, MSGP Routine Facility Inspections](#)

10.0 ATTACHMENTS

Attachment 1: Screenshot Example of CAR Database

Attachment 2: Lists of Limited Values in the CAR Database

Attachment 3: Example New Corrective Action Finding Notification

Attachment 4: Example Weekly Notification of Outstanding Corrective Action Findings

Attachment 5: Example Outstanding Corrective Action Report

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Attachment 1 – Screenshot Example of CAR Database

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Corrective Action Header tab

MSGP_CORRECTIVEACTIONREPORT

Corrective Action Header Corrective Action Details

NPDES MSGP CORRECTIVE ACTION REPORT Id. Number : 1150 (Assigned by computer)

1 * Name of Facility : TA-60-1 Heavy Equipment Yard List

2 * Date problem was identified : 05/19/2017 09:00 * Date of Notification to EPC-CP : 05/19/2017 12:00 3

4 * FOD Responsible for CA (Name & Org) : UI Erickson Andrew W

5 Describe Specific Evaluation Location : Trench drain east of the high bay that drains to the oil water separ

6 * Inspector Z-Number : 123456 Doe, Jane EPC-CP

7 * Person Identifying Condition Z-Number : 123456 Doe, Jane EPC-CP

Date Format Must be entered as MM/DD/YYYY HH24:MI

8 Status: 1 A new corrective action ? Annual Report ID (s):

9 Void Comments:

* required fields

10

Enter New Corrective Action Back To Record Selection Save Cancel

Prev Rec. Next Rec. Print Summary

| | | |
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Attachment 1 – Screenshot Example of CAR Database (cont.)

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Corrective Action Details tab

Action Edit Query Block Record Field Help Window

MSGP_CORRECTIVEACTIONREPORT

Corrective Action Header Corrective Action Details

*3. Identify the condition triggering the need for this review: If other, (describe here):

11 Control measures not properly operated or maintained List 12

*4. Briefly describe the nature of problem identified: (e.g., Erosion problem identified during inspection).

13 The trench drain east of the high bay at TA-60 HEY that drains to an oil/water separator was not draining during a precipitation event. This is a repeat issue that was previously identified on 3/22/2017 (see CAR #1067), when discharge resulted in an oily sheen at SIO 025.

*6. How problem was identified: If other, (describe here):

14 Other (describe) : List During monitoring after a storm event 15

*7. Description of corrective action taken or to be taken to eliminate or further investigate the problem (e.g., describe modifications, repairs to control measures, analyses to be conducted, etc.) or if no modifications are needed, basis for that determination:

16 On 05/19/2017, HEY personnel pumped water from the trench drain into storage tanks to prevent overflow and release and removed sediment from the trench drain and placed into drums. An on-site supervisor submitted FSR to unclog the line was submitted. Documentation of actual maintenance done on the trench drain and oil/water separator is required to close this corrective action. Additional controls may need to be implemented.

17 8. Was the problem identified at an outfall that is Substantially Identical? Yes/No : Y

18 9. Which SIO Affected? 021, 023, 024, and 025

19 10. If yes, provide documentation of how corrective action taken is appropriate for all related SIOs:

5/19/2017: Temporarily pumping water will prevent discharge from reaching the SIOs. 6/5/2017: Unclogging the trench drain and maintenance on the oil/water separator will prevent unauthorized discharges such as oil.

20 * 11. Did/will this corrective action require modification of your SWPPP ? Yes/No : Y

21 * 12. Date corrective action initiated (MM/DD/YYYY HH24:MI): 05/19/2017 14:00 OR expected completion :

22 * 13. Date corrective action completed (MM/DD/YYYY HH24:MI): 06/05/2017 16:00

23 14. If corrective action is not or will not be completed within 14 days of discovery, describe any remaining steps and the formal schedule necessary to complete the corrective action:

MSS and subcontractor are scheduled for 06/05/2017 AM to unclog trench drain and perform maintenance on the oil/water separator. Schedule exceeded 14 days due to no standing maintenance contract on the oil/water separator being in place. Standing maintenance contract is now in place.

24 15. Date EPA Notified of Intent to Exceed 45 Days (MM/DD/YYYY HH24:MI):

* required fields

List Values Prev Rec. Next Rec. BackToRecordSelection 25 Save Cancel

| | | |
|--------------------------------|---------------|----------------------------|
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Attachment 1 – Screenshot Example of CAR Database (cont.)

Page 3 of 3

Full Text for Item 16: Description of Corrective Action Taken or to be Taken

On 05/19/2017, HEY personnel pumped water from the trench drain into storage tanks to prevent overflow and release. Sediment was also removed from the trench drain and placed into drums. An on-site supervisor submitted an FSR to unclog the line. Documentation of actual maintenance done on the trench drain and oil/water separator is required to close this corrective action. Additional controls may need to be implemented until maintenance is complete to ensure that oil is not discharged into the drainage channel north of the site. In addition, the SWPPP must be modified to identify the preventative maintenance schedule and include the procedure for conducting it. On 05/30/2017, the SWPPP was modified to include a quarterly maintenance schedule and a procedure for routine maintenance on the oil/water separator. On 06/05/2017, MSS jet-routed the drain to remove the clog and a subcontractor performed maintenance on the oil/water separator.

| | | |
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Attachment 2 – Lists of Limited Values in the CAR Database

Page 1 of 2

Name of Facility (*Item 1 on Attachment 1 Screenshot*)

Valid MSGP Facilities

Find:

| Msgp_Facility_Desc |
|---|
| TA-14-23 OBOD |
| TA-15-185 PHERMEX |
| TA-15-313 Machine Shop |
| TA-16-0388 Burning Ground |
| TA-16-0399 Burning Ground |
| TA-22-52 Machine Shop |
| TA-3-22 Power & Steam Plant |
| TA-3-30 Warehouse |
| TA-3-32 Metal Shop |
| TA-3-34 Metal Shop |
| TA-3-38 Carpenter Shop |
| TA-3-38 Metals Fab. Shop |
| TA-3-39 & 102 Metal Shop |
| TA-3-66 Sigma Facility |
| TA-33-113 Machine Shop |
| TA-33-39 Machine Shop |
| TA-35-125 Machine Shop |
| TA-35-2 Machine Shop |
| TA-36-8 Minie |
| TA-39-57 OBOD |
| TA-39-6 OBOD |
| TA-46-31 Machine Shop |
| TA-46-77 Machine Shop |
| TA-48-8 Machine Shop |
| TA-50-37 WCRRF |
| TA-50-54 Metal Shop |
| TA-50-69 WCRRF |
| TA-53-16 Machine Shop |
| TA-53-18 Machine Shop |
| TA-53-2 Machine Shop |
| TA-53-22 Machine Shop |
| TA-53-26 Machine Shop |
| TA-53-39 Shop and Storage Building |
| TA-54 Area G |
| TA-54 Area L |
| TA-54 Maintenance Facility W |
| TA-54 RANT |
| TA-55 Plutonium Facility |
| TA-55-314 Warehouse |
| TA-60 Asphalt Batch Plant |
| TA-60 MRF |
| TA-60 Roads and Grounds |
| TA-60-1 Heavy Equipment Yard |
| TA-60-2 Warehouse |
| TA-63 Transuranic Waste Facility |
| TA-9-28 Heavy Equipment Maintenance Operations Facility |

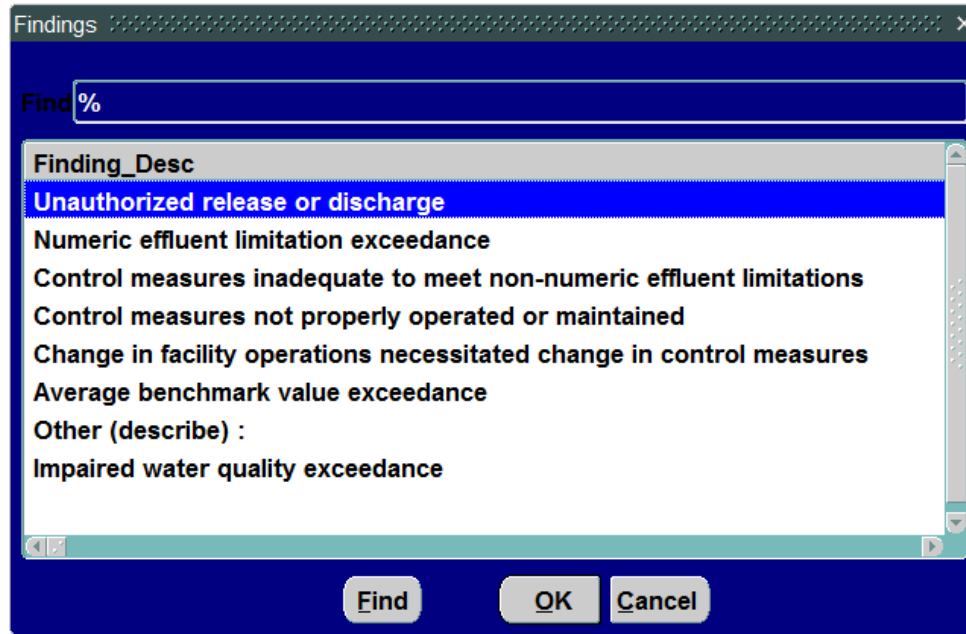
Find OK Cancel

| | | |
|--------------------------------|---------------|----------------------------|
| MSGP Corrective Actions | EPC-CP-QP-022 | Page 28 of 31 |
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Attachment 2 – Lists of Limited Values in the CAR Database (cont.)

Page 2 of 2

Finding Description/Condition Triggering Need for Review (*Item 11 on Attachment 1 Screenshot*)

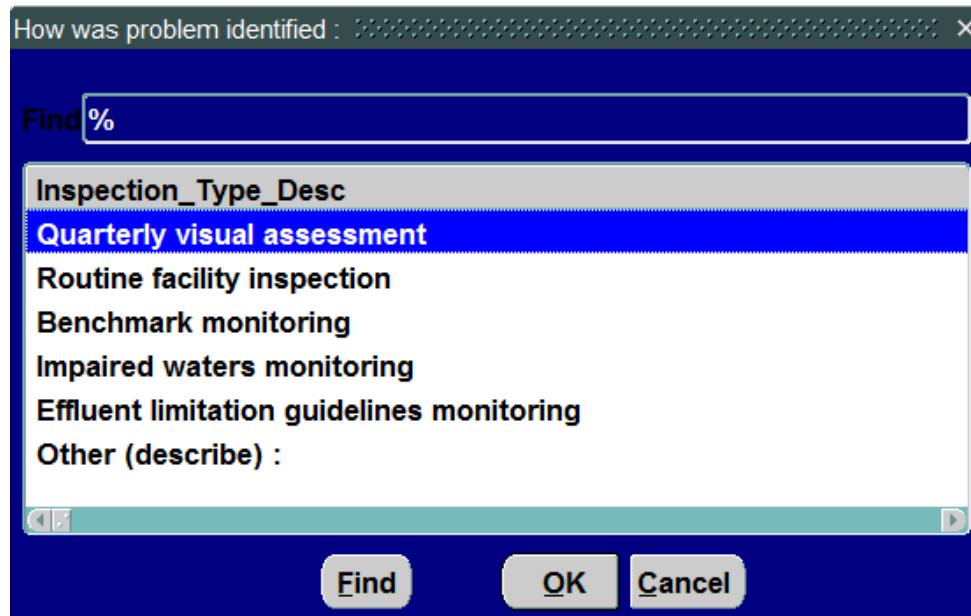


The screenshot shows a dialog box titled "Findings". It has a search bar at the top labeled "Find" with a "%" symbol. Below the search bar is a list box titled "Finding_Desc". The list contains the following items:

- Unauthorized release or discharge** (highlighted in blue)
- Numeric effluent limitation exceedance
- Control measures inadequate to meet non-numeric effluent limitations
- Control measures not properly operated or maintained
- Change in facility operations necessitated change in control measures
- Average benchmark value exceedance
- Other (describe) :
- Impaired water quality exceedance

At the bottom of the dialog box are three buttons: "Find", "OK", and "Cancel".

Inspection Type/How Problem was Identified (*Item 14 on Attachment 1 Screenshot*)



The screenshot shows a dialog box titled "How was problem identified :". It has a search bar at the top labeled "Find" with a "%" symbol. Below the search bar is a list box titled "Inspection_Type_Desc". The list contains the following items:

- Quarterly visual assessment** (highlighted in blue)
- Routine facility inspection
- Benchmark monitoring
- Impaired waters monitoring
- Effluent limitation guidelines monitoring
- Other (describe) :

At the bottom of the dialog box are three buttons: "Find", "OK", and "Cancel".

| | | |
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Attachment 3 – Example New Corrective Action Finding Notification

Page 1 of 1

From: MSGPCorrectiveActionDB@esp-esh-as01.lanl.gov [mailto:MSGPCorrectiveActionDB@esp-esh-as01.lanl.gov]

Sent: Friday, January 19, 2018 10:00 PM

To:

Cc:

Subject: New Corrective Action finding relative to the NPDES MSGP Program

This email is generated automatically by the National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit (MSGP) Corrective Action Report (CAR) database to provide notification of discovery of a new condition requiring corrective action. As the recipient of this notification, you are responsible for immediately taking all reasonable steps necessary to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational.

“Immediately” requires initial action on the same day a condition is found. However, if a problem is identified at a time in the work day when it is too late to initiate corrective action (after 2 P.M.), the initiation must begin no later than the following work day.

Documentation of newly identified conditions requiring corrective action must occur within 24 hours of discovery, evidenced by entry into the CAR database.

At TA-50-37 WCRRF on 01/17/18, a condition requiring a corrective action was observed and a corrective action report was generated per the 2015 Multi-Sector General Permit requirements for stormwater controls at industrial sites. The condition(s) requiring a corrective action(s) is/are listed below.

CA#: 1296 located at TA-50-37 WCRRF.

Person Identifying Condition: DOE JANE

Description of finding: Unauthorized release or discharge

Condition requiring corrective action: Forklift was leaking hydraulic fluid

Description of the corrective action taken or to be taken to eliminate the condition or further investigation: On 1/17/2018 prior to the start of work the operator noticed the forklift was leaking hydraulic fluid from the line to the mast. Approximately 4 to 6 oz leaked onto the asphalt. The Operation Center was notified and the WMC and ENV. The Nuc Operators placed spill pads under the leak. FSR#182723 was entered to repair forklift and apply microblaze. At 1702 MSS personnel applied micro blaze to the spill. On 1/18/2018 the WMC collected all spill pads and managed them accordingly.

Status: The corrective action was initiated on 01/17/2018 and was completed on 01/17/2018.

Click [HERE](#) to access the list of MSGP corrective action(s) not yet completed for EWMO.

Click [HERE](#) to access the list of all MSGP corrective action(s) not yet completed.

The ESH Deployed Environmental Professional (DEP) assigned to your organization/area is (are) Jane Doe.

The color legend on the linked reports corresponds to the following schedule for corrective action completion as required by the 2015 MSGP:

You must complete the corrective action within 14 calendar days of discovery.

If completion of final corrective actions within 14 days is not feasible, the reason(s) must be documented and a description of steps required and formal schedule for completion, which must be done as soon as practicable after the 14-day timeframe, but not longer than 45 days after discovery. The reasons, steps and schedule for completion must be entered into the CAR database.

If the completion of corrective action will exceed the 45-day timeframe, you must take the **minimum** additional time necessary, provided that you notify Region 6 of the Environmental Protection Agency:

- **of your intent to exceed 45 days,**
- **your rationale for an extension, and**
- **a completion date.**

To assist the preparation of this notification, as a responsible individual, you must contact the EPC-CP Project Lead at 667-1312 for any corrective action that remains open 35 days or more, and provide a formal status of the progress for each corrective action. By day 40, the DEP must provide the EPC-CP Project Lead the rationale for potentially exceeding the required 45-day timeframe and a proposed completion date for each associated corrective action. The DEP must also amend the rationale and completion date in the CAR database.

An extension request must be submitted to Region 6 of the U.S. Environmental Protection Agency by EPC-CP personnel prior to day 45 for final corrective actions not completed or estimated to be completed within 45 days of discovery.

The responsible individual must ensure compliance with the proposed completion schedule.

These intervals are not considered grace periods, but are defined schedules to ensure the conditions requiring corrective action do not persist indefinitely.

Where corrective actions result in changes to controls or any procedures documented in the facility's Storm Water Pollution Prevention Plan (SWPPP), the DEP must modify the SWPPP accordingly within 14 calendar days of completing corrective action work.

| | | |
|--------------------------------|---------------|----------------------------|
| MSGP Corrective Actions | EPC-CP-QP-022 | Page 30 of 31 |
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Attachment 4 – Example Weekly Notification of Outstanding Corrective Action Findings

Page 1 of 1

From: MSGPCorrectiveActionDB@esp-esh-as01.lanl.gov [mailto:MSGPCorrectiveActionDB@esp-esh-as01.lanl.gov]

Sent: Monday, January 01, 2018 10:00 PM

To:

Cc:

Subject: Weekly Notification of Outstanding NPDES MSGP Corrective Action finding(s)

This email is generated automatically by the National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit (MSGP) Corrective Action Report (CAR) database to provide notification of discovery of a new condition requiring corrective action. As the recipient of this notification, you are responsible for immediately taking all reasonable steps necessary to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational.

“Immediately” requires initial action on the same day a condition is found. However, if a problem is identified at a time in the work day when it is too late to initiate corrective action (after 2 P.M.), the initiation must begin no later than the following work day.

Documentation of newly identified conditions requiring corrective action must occur within 24 hours of discovery, evidenced by entry into the CAR database.

At TA-3-38 Carpenter Shop , 1 total MSGP stormwater corrective action(s) has (have) not been completed.

At TA-3-38 Metals Fab. Shop , 1 total MSGP stormwater corrective action(s) has (have) not been completed.

At TA-60-1 Heavy Equipment Yard , 7 total MSGP stormwater corrective action(s) has (have) not been completed.

At TA-60-2 Warehouse , 4 total MSGP stormwater corrective action(s) has (have) not been completed.

Click [HERE](#) to access the list of MSGP corrective action(s) not yet completed for UI.

Click [HERE](#) to access the list of all MSGP corrective action(s) not yet completed.

The ESH Deployed Environmental Professional (DEP) assigned to your organization/area is (are) Jane Doe :John Doe.

The color legend on the linked reports corresponds to the following schedule for corrective action completion as required by the 2015 MSGP:

You must complete the corrective action within 14 calendar days of discovery.

If completion of final corrective actions within 14 days is not feasible, the reason(s) must be documented and a description of steps required and formal schedule for completion, which must be done as soon as practicable after the 14-day timeframe, but not longer than 45 days after discovery. The reasons, steps and schedule for completion must be entered into the CAR database.

If the completion of corrective action will exceed the 45-day timeframe, you must take the **minimum** additional time necessary, provided that you notify Region 6 of the Environmental Protection Agency:

- **of your intent to exceed 45 days,**
- **your rationale for an extension, and**
- **a completion date.**

To assist the preparation of this notification, as a responsible individual, you must contact the EPC-CP Project Lead at 667-1312 for any corrective action that remains open 35 days or more, and provide a formal status of the progress for each corrective action. By day 40, the DEP must provide the EPC-CP Project Lead the rationale for potentially exceeding the required 45-day timeframe and a proposed completion date for each associated corrective action. The DEP must also amend the rationale and completion date in the CAR database.

An extension request must be submitted to Region 6 of the U.S. Environmental Protection Agency by EPC-CP personnel prior to day 45 for final corrective actions not completed or estimated to be completed within 45 days of discovery.

The responsible individual must ensure compliance with the proposed completion schedule.

These intervals are not considered grace periods, but are defined schedules to ensure the conditions requiring corrective action do not persist indefinitely.

Where corrective actions result in changes to controls or any procedures documented in the facility's Storm Water Pollution Prevention Plan (SWPPP), the DEP must modify the SWPPP accordingly within 14 calendar days of completing corrective action work.

| | | |
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Attachment 5 – Example Outstanding Corrective Action Report

Page 1 of 1




EPC-CP MultiSector General Permit (MSGP)
Corrective Action Report Findings
Final Corrective Actions Not Yet Complete (as of 02/01/2018)

| FOD | RAD | MSGP Facility | CA# | Person Identifying Condition | Date Problem Identified | Corrective Action Initiated Date | Days to Take Action | Projected Completion Date | Projected Days until Completion | Days Open (since Discovery) | EPA Notified of Intent to Exceed 45 Days | Problem Description |
|-----------------|----------|--------------------------|------|------------------------------|-------------------------|----------------------------------|---------------------|---------------------------|---------------------------------|-----------------------------|--|--|
| UI | DOE JOHN | TA-3-38 Carpenter Shop | 1298 | DOE JANE | 01/31/18 | | ! | 02/02/18 | 1 | 1 | | Tarp was totally torn off of the stack of metal posts at the southwest corner of the storage yard. |
| | DOE JOHN | TA-3-38 Metals Fab. Shop | 1299 | DOE JANE | 01/31/18 | | ! | 02/02/18 | 1 | 1 | | A pile of gravel (from a torn gravel bag) is directly east of the trench drain. |
| Total Findings: | | | | | | | | | | | 2 | |

Legend

| | | | |
|---|---|---|--|
| ! | Action must be taken and documented in CAR. | 3 | Indicates immediate action was not taken (i.e., <=2 days of discovery) |
| | Within 14 days of discovery | | Between 35 and 44 days of discovery |
| | Between 15 and 34 days of discovery | | 45 days of discovery or greater |

ATTACHMENT 18: EPC-CP-QP-2105, MSGP STORMWATER VISUAL ASSESSMENTS

| | | |
|----------------------------|------------------------------|---|
| EPC-CP-QP-2105 | Revision: 0 |  |
| Effective Date: 05/12/2020 | Next Review Date: 05/12/2023 | |

Environment, Safety, Health, Quality, Safeguards, and Security Directorate
Environment Protection and Compliance – Compliance Programs Group
Quality Procedure

MSGP Stormwater Visual Assessments

Hazard Grading: ☒ Low ☐ Moderate ☐ High/Complex

Usage Level: ☒ Reference ☐ UET ☐ Mixed: UET Sections: _____

Status: ☐ New ☐ Major Revision ☐ Minor Revision

☐ Review w/No Changes ☒ Other: New EPC-CP format and numbering system

Safety Basis: ☒ N/A ☐ USQ ☐ USI Number: _____

Document Author/Subject Matter Expert:

| | | | |
|------------------|---------------|-------------------|----------|
| Name: | Organization: | Signature: | Date: |
| Holly L. Wheeler | EPC-CP | Signature on File | 04-23-20 |

Derivative Classifier: ☒ **Unclassified** or ☐ _____

| | | | |
|------------------|---------------|-------------------|----------|
| Name: | Organization: | Signature: | Date: |
| Steven E. Wolfel | EPC-CP | Signature on File | 04-23-20 |

Approval Signatures:

| | | | |
|-------------------------------------|---------------|-------------------|----------|
| EPC-CP Reviewer: | Organization: | Signature: | Date: |
| Alethea Banar | EPC-CP | Signature on File | 04-23-20 |
| EPC-CP RLM: | Organization: | Signature: | Date: |
| Terrill W. Lemke, Team Leader | EPC-CP | Signature on File | 05-11-20 |
| EPC-CP RLM: | Organization: | Signature: | Date: |
| Taunia Van Valkenburg, Group Leader | EPC-CP | Signature on File | 05-12-20 |

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| | | |
|---|--------------------|----------------------------|
| MSGP Stormwater Visual Assessments | No: EPC-CP-QP-2105 | Page 2 of 19 |
| | Revision: 0 | Effective Date: 05/12/2020 |

REVISION HISTORY

| Document Number and Revision <i>[Include revision number, beginning with Revision 0]</i> | Effective Date <i>[Document Control Coordinator inserts effective date]</i> | Effective Date <i>[Document Control Coordinator inserts effective date]</i> |
|--|---|--|
| ENV-RCRA-QP-064, R0 | 7/09 | New document <i>MSGP Storm Water Visual Inspections</i> . |
| ENV-RCRA -QP-064, R1 | 3/10 | Clarifications and added attachments. |
| ENV-RCRA -QP-064, R2 | 2/12 | Biennial review/revision |
| EPC-CP-QP-064, R0 | 10/04/2017 | This document replaces ENV-RCRA-QP-064 R2. Converted into new format, and new organization name, clarified steps, updated attachments. |
| EPC-CP-QP-064, R1 | 10/09/2018 | Removed requirement to conduct visual assessment on filtered samples. Updated form to match text. |
| EPC-CP-QP-2105, R0 | 05/12/20 | Supersedes EPC-CP-QP-064, R1. Reformat to new EPC-CP template. Re-number procedure and forms to new EPC-CP procedure numbering system. |

| | | |
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1.0 INTRODUCTION

Los Alamos National Laboratory (LANL) through Environmental Protection and Compliance—Compliance Programs (EPC-CP) conducts stormwater monitoring activities required pursuant to the National Pollutant Discharge Elimination System (NPDES), Multi-Sector General Permit (MSGP). The MSGP requires LANL to monitor stormwater runoff from industrial sites relative to potential pollutants.

1.1 Purpose

This procedure describes the process for conducting visual assessments of stormwater from permitted outfall locations where LANL conducts stormwater monitoring activities for compliance under the MSGP.

1.2 Scope

Requirements set forth in this document apply to LANL industrial facilities covered by the MSGP. These facilities include, a warehouse, several metal fabrication areas/shops, a heavy equipment yard, an asphalt batch plant, roads and grounds, a foundry, a power plant, a material recycling facility and a carpenter shop. Inspection waivers may be granted by EPC-CP for adverse weather conditions and unstaffed or inactive sites.

At least once each MSGP monitoring quarter an unfiltered stormwater sample must be collected from each discharge point covered by the MSGP and site-specific Stormwater Pollution Prevention Plan (SWPPP). The sample must be visually inspected for water quality characteristics. Stormwater samples are collected with an automated sampler, single stage sampler, or by taking a grab sample. Visual assessments are **not** performed on filtered stormwater.

Visual assessments conducted under this procedure are documented using the Maintenance Connection Express™ (MC Express) web application on a tablet or notebook style computer. In the event of electronic hardware or web application failure, personnel may use a printed hard copy to document the work.

1.3 Applicability

This procedure applies to the EPC-CP technical staff and subcontractor personnel (as applicable) who conduct stormwater visual assessments during or after measurable storm events at MSGP outfalls.

A measurable storm event is identified in Section 6.1.3 of the MSGP as one “that results in an actual discharge from your site that follows the preceding measurable storm event by at least 72 hours (three days).”

| | | |
|---|--------------------|----------------------------|
| MSGP Stormwater Visual Assessments | No: EPC-CP-QP-2105 | Page 5 of 19 |
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2.0 PRECAUTIONS AND LIMITATIONS

2.1 Precautions

The hazard level for the activities described in this procedure is **LOW**, therefore an Integrated Work Document (IWD) Part I is not required. If required by a Facility Operations Division (FOD), an IWD Part II (2101 Form) will address any site-specific requirements and training for the FOD.

Personnel must wear appropriate clothing (e.g., boots, long pants, etc.) to perform work in the field.

Work may be discontinued during periods or conditions that make sites dangerous for worker safety or prevent personnel from safely accessing sites (e.g., weather-related events such as flash floods, flooding, lightning, wildfires, hail, icy roads, deep snow, or LANL operations such as firing shots or burns).

If conditions prevent field work, document the conditions on the work order. Multiple attempts can be documented on the original form. If the target date cannot be met, the field personnel must contact the Program Lead no less than 24 hours before the target date for guidance.

2.2 Limitations

In MC Express, document responses to each question on a work order by clicking the expand arrow located on the right side of the task line and changing the “Complete” or “Failed” line to “Yes”. When using a hard copy form, mark the appropriate check box.

Throughout this process, the field personnel will document comments and notations in the “Reading” field of the associated task line. Additional comments not documented in a “Reading” field can be entered in the “Comments” field of the same task line. If field personnel need more space, additional comments can be entered in the “Labor Report Update” field (see Section 4.3) when the work order is updated to “Complete” status. When using a hard copy form, document comments on the corresponding task line. If additional space is needed, comments can be entered in the “Labor Report” section at the bottom of the form.

Some terminology varies between the MC Express software and the Maintenance Connection (MC) desktop software.

- The “Reading” field in MC Express is the same field as “Reading Final” in MC desktop and “Meas.” on a hard copy (printed) work order.
- The “Complete” option in MC Express is the same as a “Yes” answer; the “Failed” option in MC Express is the same as a “No” answer. MC desktop and hard copy (printed) work orders use “Yes” and “No” terminology.

3.0 PREREQUISITE ACTIONS

3.1 Planning and Coordination

1. Schedule work to be completed by the target date appearing on the work order(s) or as requested by the MSGP Program Lead if a work order is not issued.

| | | |
|---|--------------------|----------------------------|
| MSGP Stormwater Visual Assessments | No: EPC-CP-QP-2105 | Page 6 of 19 |
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2. As specified in the IWD Part II (if applicable), inform (e.g., by e-mail) facility contacts and/or Deployed Environmental Professional (DEP) of the schedule for work and locations up to a week (preferred) before but no later than the day before (for minor changes) so work is added to the appropriate plan of the day.
3. Gather the required equipment (see Section 3.2) for the work to be done.
4. Using the Safari or Chrome web browser on a tablet or notebook style computer, log into the MC Express application (<http://express.maintenanceconnection.com>) and confirm that the work order list displayed matches your sites. If the work order lists do not match, contact EPC-CP Data Management personnel for clarification.
5. In MC Express, click on the appropriate work order number to open the work order. The work order will open in the display to the Work Order Summary page.
6. Click on the “Tasks” bar to navigate to the work order Tasks page. See MC Express screen shot examples in Attachment 1.
7. Always log out of MC Express when you have finished work OR work is interrupted.

3.2 Special Tools, Equipment, Parts, and Supplies

Ensure the following equipment is available in the field vehicle:

- Safety glasses
- Nitrile gloves
- Sturdy hiking boots or steel toed shoes with soles that grip
- Other facility specific personal protective equipment as required by the FOD
- Cell phone (only government cell phones are allowed in secure areas) (See <https://int.lanl.gov/policy/documents/P217.pdf> for requirements for using portable electronic devices on Laboratory property.)
- Current copy of this procedure
- Current copy of the IWD(s) Part II (as needed)
- Site map(s) (as needed)
- Current electronic work order or paper inspection form
- EPC-CP MSGP Sampling and Analysis Plan (SAP) most recent revision for the current monitoring year OR program specific monitoring plan
- Government issued electronic tablet with Safari web browser and Blackberry UEMTM app. (See <https://int.lanl.gov/policy/documents/P217.pdf> for requirements for using portable electronic devices on Laboratory property.)
- Necessary access and station keys

| | | |
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- Access to accurate time measurement
- Clean replacement sample bottles (clear glass or clear poly)
- Paper towels

4.0 VISUALLY ASSESSING STORMWATER

Stormwater visual assessments are determined at a sampling station based on the current year SAP. See Attachment 1 for screen shot examples of EPC-CP-QP-2105 R0 Form 1, *MSGP Visual Assessment* in MC Express. See Attachment 2 for an example of the form in hard copy format.

NOTE: Each item number listed in red font below corresponds to a red numbered box on both screenshots and hard copy format.

4.1 Documenting Sample Information

- [1] Take the sample bottle with water out of the automated sampler or single stage jar off the ground or fill a clear sample bottle with a grab sample and wipe off exterior.
 - [a] Grab samples will be collected during daylight hours in a wide-mouth clear glass or plastic container within 30 minutes of discharge from a storm event.
- [2] **ITEM 1:** Document the monitoring period by entering Apr-May, Jun-Jul, Aug-Sep, or Oct-Nov.
 - [a] IF the stormwater discharge collected is from a rain event from the previous monitoring period and the visual assessment is made in the following monitoring period,
THEN document monitoring period on the inspection to correspond to the period in which the rain event took place.
- [3] **ITEM 2:** Check the date and time stormwater discharge began and document by entering the date in the following formats: MM/DD/YY or MM-DD-YY. Time must be entered in 24-hour format.
 - [a] IF the discharge date/time is not available (e.g., precipitation report) when the visual is performed in the field,
THEN leave this Task Line incomplete and complete when the information is available.
- [4] **ITEM 3:** Check the date and time the sample was collected and document by entering the date in the following formats: MM/DD/YY or MM-DD-YY. Time must be entered in 24-hour format.
 - [a] IF the collection date/time is not available (e.g., precipitation report) when the visual is performed in the field,
THEN leave this Task Line incomplete and complete when the information is available.

| | | |
|---|--------------------|----------------------------|
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- [5] **ITEM 4:** Check the date and time stormwater was visually assessed and document by entering the date in the following formats: MM/DD/YY or MM-DD-YY. Time must be entered in 24-hour format.
- [6] **ITEM 5:** Describe the nature of the discharge (e.g., rain, snowmelt, hail) and the TOTAL amount of precipitation in inches from the event.
 - [a] IF the total amount of precipitation is not available (e.g., precipitation report) when the visual is performed in the field,
THEN leave this Task Line incomplete and complete when the information is available.
- [7] **ITEM 6:** Check the sample was collected in the first 30 minutes of discharge and document.
 - [a] IF it is not possible to collect the sample within the first 30 minutes of discharge,
THEN the sample must be collected as soon as practicable after the first 30 minutes.
 - [b] The field inspector will document the reason a sample could not be collected within the first 30 minutes (e.g., lightning hazard, flooding).

4.2 Assessing Parameters

While conducting the visual assessment, personnel will attempt to relate any evidence of stormwater pollution that is observed in the sample to a pollutant source on the site. A cleanup of the site can be conducted if the pollutant source is known and well defined. Refer to EPC-CP-QP-2109, *MSGP Corrective Actions* for specific steps to document, track, and report conditions of potential stormwater pollution.

- [1] **ITEM 7:** Observe the color of the discharge in the sample container. Document by describing the color.
- [2] **ITEM 8:** Observe any odors detected from sample. Document by describing the odor (e.g., musty, sewage, sulfur, sour, solvents, petroleum/gas).
- [3] **ITEM 9:** Observe the clarity of the discharge. Document by describing the clarity (e.g., slightly cloudy, cloudy, opaque).

NOTE 1: Clarity is described as the depth in which you can look-into or through water. For example, an individual can see through a clear glass of clean water in daylight. Generally, the clarity of the water is a good visual indicator of the purity of water. If the water is poor in clarity there is most likely suspended solids throughout the water.
- [4] **ITEM 10:** Observe any floating solids in the discharge. Document by describing the floating solids.

| | | |
|---|--------------------|----------------------------|
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NOTE 2: Careful examination will determine whether the solids are raw materials (e.g., product used to fabricate something, or ingredients used in a formulation) or waste materials (e.g., shavings, woodchips and sawdust, trash).

- [5] **ITEM 11:** Observe any settled solids in the sample. Document by describing the settled solids (e.g., sediment, vegetation, fine, coarse).

NOTE 3: Settled solids may be an indicator of unstable ground cover combined with a high intensity stormwater runoff event.

- [6] **ITEM 12:** Observe any suspended solids in the sample. Document by describing the suspended solids (e.g., vegetation, ash, sediment, fine, coarse).

NOTE 4: Most often suspended solids include fine sediment. This may be an indication of an unstable channel with eroding banks. Some water may appear to be colored because of relatively fine particulate material in suspension such as sediment.

- [7] **ITEM 13:** Check the sample is free of foam. Gently shake the sample container. Document by describing any bubbles in or on the surface of the water and the color of the foam.

[a] IF it is determined that foam is caused by a pollutant, THEN complete the visual assessment and contact the EPC-CP MSGP Program Leader **immediately following completion of the visual assessment.**

[b] Follow-up action is required within 24 hours (see EPC-CP-QP-2109).

- [8] **ITEM 14:** Check the sample is devoid of any oil sheen. Document by describing the thickness and consistency (e.g., flecks, globs).

[a] IF an oil sheen is present, THEN contact the EPC-CP MSGP Program Leader **immediately following completion of the visual assessment.**

[b] Document in the Labor Report (**ITEM 17**) the source of the oil sheen, if existing BMPs are effective in mitigation of potential pollutants, and if a new BMP needs to be installed.

[c] Follow-up action is required within 24 hours (see EPC-CP-QP-2109).

- [9] **ITEM 15:** Check the discharge is free of any other indicators of stormwater pollution not described in any other task line above.

- [10] IF there are any potential sources of pollutants observed on site, THEN document the following and contact the EPC-CP MSGP Program Lead within 24 hours of identification:

- Potential sources;

| | | |
|---|--------------------|----------------------------|
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- Indicate if there are Best Management Practices (BMPs) on site;
- Evaluate whether the BMPs are working correctly or need maintenance;
- Evaluate whether implementation of additional BMPs are needed to address the observed contaminant.

[11] Contact the FOD, DEP, and EPC-CP MSGP representative to inform them of the situation.

NOTE 5: Refer to EPC-CP-QP-2109, *MSGP Corrective Actions* for specific steps to document, track, and report conditions of potential stormwater pollution.

[12] After all task lines have been completed, make sure you have clicked the “Save” bar at the bottom of the page.

4.3 Completing the Visual Assessment Form

- [1] Ensure the inspection form has been filled out completely including information not available during the field inspection (e.g., date/time of discharge, date/time of sample collection, total precipitation amount).
- [2] Click the “Back” arrow button  in the upper left-hand corner to exit the work order Tasks page and return to the Work Order Summary page.
- [3] Click the checkered flag  in the upper right corner of the Work Order Summary page to open the Work Order Status Update page. MC Express auto-populates the date and time fields.

CAUTION

MC Express automatically changes the work order status to “Closed.”

- [4] **ITEM 16:** Click on the expand arrow located on the right side of the “New Status” field and select “Completed” from the available dropdown menu.
 - [a] Ensure the date and time that is auto-populated is the date and time that the **work was completed** and **not the date/time the form was filled out**.
 - [b] IF work is performed over multiple days, THEN note the date and time the work began in the Labor Report field.
 - [c] To update the date or time, click the “Date” field and make necessary adjustments using the available timestamp application. Click “Set” to apply changes.
 - [d] IF using a hard copy form, THEN write the date and time the work was completed.
- [5] **ITEM 17:** The field personnel must type or write his/her name in the “Labor Report Update” field.

| | | |
|---|--------------------|----------------------------|
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- [6] Any additional notes, observations, or site conditions not documented in a task line “Reading” or “Comments” field can be documented in the “Labor Report Update” field.
- [7] Scroll down the page to the “Signature” bar and click the expand arrow on the left side of the bar to open the “Signature” field.
 - [a] **ITEM 18:** Capture an electronic signature by drawing with a finger on the tablet screen. The Lead Inspector is certifying that the information submitted is “true, accurate, and complete” by electronically signing the work order.

NOTE: The mouse must be used to sign electronically when using MC Express on a desktop screen (not a tablet).
 - [b] If using a hard copy form, the field personnel will sign his/her name and the date of when the form was signed.
 - [c] By signing either electronically or on hard copy, the field personnel is certifying that the information submitted is “true, accurate, and complete”.
- [8] Click on the “Save” bar at the bottom of the page to close the “Signature” field.

4.4 Completing the Certification Statement

EPC-CP will send completed visual assessment forms to the DEPs at the end of each quarter that will contain a certification statement in the cover memorandum. The duly authorized signatory may sign and date this certification statement rather than the certification line associated with each attached form. However, the memorandum and associated completed forms must remain together.

5.0 TRAINING

All EPC-CP personnel that execute the activities specified in this procedure must meet the minimum qualification and training requirements for their position as identified EPC-CP-PIP-2101, NPDES Multi-Sector General Permit Program Implementation Plan. This will include “self-study” (required reading) for this procedure as assigned and documented in accordance with ADESH-TTP-301, *ADESH Training Program Plan*. Other participating LANL groups may require training to local procedures and document completion of training.

Contract personnel that execute the activities specified in this procedure will be qualified and trained as required by the Exhibit D and Exhibit F. In addition, contract personnel will be required to complete “self-study” (required reading) of this procedure.

6.0 RECORDS

EPC-CP is the Office of Record for this document. It must be maintained in accordance with [PD1020](#), *Document Control and Records Management* and ADESH-AP-006, *Records Management Plan*. Records generated by this document will be submitted to the Records Management designated point of contact or document manager for document management.

| | | |
|---|--------------------|----------------------------|
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Below are records generated as a result of implementing this procedure. Records generated are identified by title and type.

| Record Title | QA Record | Non-QA Record |
|---|-------------------------------------|--------------------------|
| EPC-CP-QP-2105 R0 Form-1, <i>MSGP Visual Assessment</i> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

7.0 DEFINITIONS AND ACRONYMS

7.1 Definitions

See LANL [Definition of Terms](#).

Adverse weather conditions – Weather that prohibits collection of samples such as local flooding, high winds, hurricanes, tornadoes, electrical storms, etc. Could also include drought, extended frozen conditions, etc.

Best Management Practices (BMPs) – Schedules of activities, practices, prohibitions of practices, structures, vegetation, maintenance procedures, and other management practices to prevent or reduce pollution. BMPs also include treatment requirements, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Clarity – Clearness or cleanness of appearance. This includes the visual observation of suspended sediment.

Color – Unpolluted water will be clear and colorless. Color must not be confused with clarity.

Floating solids – Particulate material floating on the surface of the water. Examples include raw or waste materials and common trash.

Foam – An accumulation of fine frothy bubbles formed in or on the surface of water. A mass of bubbles of air in a matrix of liquid film.

Measurable storm event – Precipitation that results in an actual discharge from your site that follows the preceding measurable storm event by at least 72 hours (3 days).

Odor – The property or quality of waters that affects or stimulates the sense of smell. Examples of odors that may be present are burnt oil, petroleum hydrocarbon, sewage, diesel, sulfuric, or detergent odors.

Oil sheen – The presence of rainbow-like colors glistening on the surface of a liquid. The color of oil sheen will vary dependent on thickness and consistency.

Settled solids – Settled particulate material i.e., heavier than water. Examples include sand, gravel, metal turnings, and glass.

Suspended solids – Particulate materials that are floating between the bottom of the sample and the surface of the water.

| | | |
|---|--------------------|----------------------------|
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Unstaffed and Inactive Sites – A facility maintaining certification with the SWPPP that it is inactive and unstaffed and visual examinations are not required.

7.2 Acronyms

See LANL [Acronym Master List](#).

| | |
|------------|---|
| BMP | Best Management Practice |
| DEP | Deployed Environmental Professional |
| EPC-CP | Environmental Protection and Compliance – Compliance Programs |
| FOD | Facility Operations Division |
| IWD | Integrated Work Document |
| LANL | Los Alamos National Laboratory |
| MC | Maintenance Connection |
| MC Express | Maintenance Connection MC Express web application |
| MSGP | Multi-Sector General Permit |
| NPDES | National Pollutant Discharge Elimination System |
| SAP | Sampling and Analysis Plan |
| SWPPP | Stormwater Pollution Prevention Plan |

8.0 REFERENCES

EPC-CP-QP-2109, MSGP Corrective Actions

EPC-CP-PIP-2101, NPDES Multi-Sector General Permit Program Implementation Plan

ADESH-TPP-301, ADESH Training Program Plan

ADESH-AP-006, Records Management Plan

PD1020, Document Control and Records Management

9.0 ATTACHMENTS

Attachment 1: Screenshot Examples of EPC-CP-QP-2105 R0 Form 1, MSGP Visual Assessment in MC Express

Attachment 2: EPC-CP-QP-2105 R0 Form 1, MSGP Visual Assessment Hard Copy Example

| | | |
|---|--------------------|----------------------------|
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Attachment 1: Screenshot Examples of EPC-CP-QP-2105 R0 Form 1, MSGP Visual Assessment in MC Express

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Work Order Summary Page (Section 3.1, Steps 5 and 6)

The screenshot displays the MC Express interface for a work order summary. At the top, the header shows 'MC Express' with a back arrow and a menu icon. Below the header, the work order number 'MSGP-4344' is displayed, along with a 'Summary' tab and a dropdown menu. The main content area shows a list of tasks and other work order details. The 'Tasks' item is circled in red. Below the list, there is a 'More Work Order Detail...' link with a right arrow icon. The bottom navigation bar includes a refresh icon, a grid icon, and a 'List' button.

| Task/Category | Count |
|---------------|-------|
| Tasks | 15 |
| Assignments | 1 |
| Labor | 0 |
| Parts | 0 |
| Other Costs | 0 |
| Attachments | 2 |
| Asset History | 121 |

| | | |
|---|--------------------|----------------------------|
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Attachment 1: Screenshot Examples of EPC-CP-QP-2105 R0 Form 1, MSGP Visual Assessment in MC Express (cont.)

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Work Order Tasks Page – Documenting Sample Information (Section 4.1, Steps 2-7)

MC Express

WORK ORDER: MSGP-4344

Tasks

The result of this VA applies to associated SIOs as defined in the SWPPP, where applicable.

Sample information

| | | |
|----|--|---|
| 30 | Document the monitoring Period (e.g., Apr-May) | ↓ |
| 40 | Document the Date/Time Discharge began in the "Reading" field of this line (using mm/dd/yy hh:mm format). | ↓ |
| 50 | Document the Date/time sample collected in the "Reading" field of this line (using mm/dd/yy hh:mm format). | ↓ |
| 60 | Document the Date/time sample visually assessed in the "Reading" field of this line (using mm/dd/yy hh:mm format). | ↓ |
| 70 | Document the nature of discharge (e.g., rain, snowmelt). Document the TOTAL amount (in) in the "Reading" field of this line. | ↓ |
| 80 | Sample collected in first 30 minutes of discharge? If "Failed" or unknown, provide a reason. | ↓ |

Refresh List

MC Express

WORK ORDER: MSGP-1423

Edit Task

30 Document the monitoring Period (e.g., Apr-May)

Reading

Jun-July

Initials

Failed?

No

Not Applicable?

No

Complete?

Yes

Comments

Cancel Save

| | | |
|---|--------------------|----------------------------|
| MSGP Stormwater Visual Assessments | No: EPC-CP-QP-2105 | Page 16 of 19 |
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Attachment 1: Screenshot Examples of EPC-CP-QP-2105 R0 Form 1, MSGP Visual Assessment in MC Express (cont.)



















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Work Order Tasks Page – Assessing Parameters (Section 4.2, Steps 1-9)

MC Express

WORK ORDER: MSGP-4344
Tasks

Parameters

| | | |
|---|--|---|
|  110 7 | Is sample colorless? If "Failed", describe. |  |
|  120 8 | Is sample odorless? If "Failed", provide description (e.g. musty, sewage, sulfur, sour, solvent, petroleum/gas) |  |
|  130 9 | Is sample clear? If "Failed", provide description (e.g., slightly cloudy, cloudy, opaque). |  |
|  140 10 | Is sample free of floating solids? If "Failed", describe if raw or waste material(s) in the comments of this line. |  |
|  150 11 | Is sample free of settled solids? If "Failed", provide description (e.g., fine, coarse). |  |
|  160 12 | Is sample free of suspended solids? If "Failed", provide description (e.g., fine, coarse). |  |
|  170 13 | Is sample foamless after gently shaking? If "Failed" describe foam color and location (e.g., 'on the surface' or 'in the sample'). |  |
|  180 14 | Is sample devoid of an oil sheen? If "Failed", describe color and thickness (e.g. flecks, globs). |  |
|  190 15 | Is sample free of other obvious indicators of pollution? If "Failed", describe. |  |

Refresh **List**

| | | |
|---|--------------------|----------------------------|
| MSGP Stormwater Visual Assessments | No: EPC-CP-QP-2105 | Page 17 of 19 |
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Attachment 1: Screenshot Examples of EPC-CP-QP-2105 R0 Form 1, MSGP Visual Assessment in MC Express (cont.)

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Work Order Status Update Page – Completing the Form (Section 4.3, Steps 4-7)

The screenshot shows the 'MC Express' mobile application interface for updating a work order status. The header bar is blue with a back arrow, the text 'MC Express', and a menu icon. Below the header, the text 'WORK ORDER: MSGP-4344' and 'Status Update' are displayed. The main form area contains several sections: 'Issued / Completed' with a clipboard icon; 'New Status' with a red box containing the number '16' and a dropdown menu showing 'Completed'; 'Date' with a calendar icon and a text field showing '6/19/2018 10:48 AM'; 'Percent Complete' with a slider set to 100%; and 'Labor Report Update' with a red box containing the number '17' and a dropdown menu showing 'Select Comments to Add.....'. At the bottom, there is a text field with 'Jane Admin' and a navigation bar with 'Cancel' and 'Save' buttons.

Work Order Status Update Page (Section 4.3, Step 7)

The screenshot shows the 'MC Express' mobile application interface for updating a work order status, specifically the signature section. The header bar is blue with a back arrow, the text 'MC Express', and a menu icon. Below the header, the text 'WORK ORDER: MSGP-4344' and 'Status Update' are displayed. The main form area contains a 'Signature' section with a red box containing the number '18' and a signature field showing a handwritten signature 'Jane Admin'. Below the signature field is a '(Remove)' link. At the bottom, there is a navigation bar with 'Cancel' and 'Save' buttons.

| | | |
|---|--------------------|----------------------------|
| MSGP Stormwater Visual Assessments | No: EPC-CP-QP-2105 | Page 18 of 19 |
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Attachment 2: EPC-CP-QP-2105 R0 Form 1, MSGP Visual Assessment Hard Copy Example
(Page 1 of 2)

Los Alamos National Laboratory

Work Order MSGP-4344

MSGP Monitoring Stations
Printed 6/19/2018 - 10:55 AM (Duplicate Copy)

Maintenance Details

| | | |
|---|---|--|
| Requested By: Admin, Jane on 6/7/2018 10:51:00 AM | Target: 12/31/2018 | MSGP Program RG121.9 TA-3-22 Power & Steam Plant Monitored Outfall (009) MSGP00901 |
| Procedure: MSGP Visual Assessment (EPC-CP-QP-2105 R0 Form 1) | Priority/Type: / Inspection | |
| Last PM: 5/5/2010 | Department: Utilities and Infrastructure | |
| Reason: EXAMPLE MSGP Visual Assessment Special Instructions: | | |

Contact: Admin, Jane
Phone: 123-4567

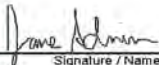
Tasks

| # | Description | Meas. | No | N/A | Yes |
|---|--|-------|--------------------------|--------------------------|--------------------------|
| The result of this VA applies to associated SIOs as defined in the SWPPP, where applicable. | | | | | |
| Sample Information | | | | | |
| 1 30 | Document the monitoring Period (e.g., Apr-May) | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 40 | Document the Date/Time Discharge began in the "Reading" field of this line (using mm/dd/yy hh:mm format). | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 50 | Document the Date/time sample collected in the "Reading" field of this line (using mm/dd/yy hh:mm format). | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4 60 | Document the Date/time sample visually assessed in the "Reading" field of this line (using mm/dd/yy hh:mm format). | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5 70 | Document the nature of discharge (e.g., rain, snowmelt). Document the TOTAL amount (in) in the "Reading" field of this line. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6 80 | Sample collected in first 30 minutes of discharge? If "Failed" or unknown, provide a reason. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Parameters | | | | | |
| 7 110 | Is sample colorless? If "Failed", describe. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8 120 | Is sample odorless? If "Failed", provide description (e.g. musty, sewage, sulfur, sour, solvent, petroleum/gas) | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9 130 | Is sample clear? If "Failed", provide description (e.g., slightly cloudy, cloudy, opaque). | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10 140 | Is sample free of floating solids? If "Failed", describe if raw or waste material(s) in the comments of this line. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11 150 | Is sample free of settled solids? If "Failed", provide description (e.g., fine, coarse). | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12 160 | Is sample foamless after gently shaking? If "Failed" describe foam color and location (e.g., 'on the surface' or 'in the sample'). | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13 170 | Is sample devoid of an oil sheen? If "Failed", describe color and thickness (e.g. flecks, globs). | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14 180 | Is sample free of other obvious indicators of pollution? If "Failed", describe. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Labor Report

16 **Completed:** 6/19/2018 10:48:00 AM

17 **Report:** Jane Admin

18  6/19/2018

Signature / Name Date Signature / Name Date

I confirm the information as recorded is true, accurate and complete.

| | | |
|---|--------------------|----------------------------|
| MSGP Stormwater Visual Assessments | No: EPC-CP-QP-2105 | Page 19 of 19 |
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Attachment 2: EPC-CP-QP-2105 R0 Form 1, MSGP Visual Assessment Hard Copy Example (cont.)

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CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations".


(Signatory must meet definition in Section B.11.A, eg. FOD, Ops Mgr, DESH Group Leader, EPC Group Leader)

19 Print name and title: _____

Signature: _____ Date: _____

EPC-CP-QP-2105 R0 Form 1

ATTACHMENT 19: EPC-CP-TP-2103, INSPECTING ISCO STORMWATER RUNOFF SAMPLERS AND RETRIEVING SAMPLES

| | | |
|----------------------------|------------------------------|---|
| EPC-CP-TP-2103 | Revision: 0 |  |
| Effective Date: 02/24/2020 | Next Review Date: 02/24/2023 | |

Environment, Safety, Health, Quality, Safeguards, and Security Directorate

Environment Protection and Compliance – Compliance Programs Group

Technical Procedure

Inspecting ISCO Stormwater Runoff Samplers and Retrieving Samples

Hazard Grading: ☐ Low ☒ Moderate ☐ High/Complex

Usage Level: ☒ Reference ☐ UET ☐ Mixed: UET Sections: _____

Status: ☐ New ☐ Major Revision ☐ Minor Revision

☐ Review w/No Changes ☒ Other: New EPC-CP format and numbering system

Safety Basis: ☒ N/A ☐ USQ ☐ USI Number: _____

Document Author/Subject Matter Expert:

| | | | |
|------------------|---------------|-------------------|------------|
| Name: | Organization: | Signature: | Date: |
| Holly L. Wheeler | EPC-CP | Signature on File | 02-20-2020 |

Derivative Classifier: ☒ **Unclassified** or ☐ _____

| | | | |
|------------------|---------------|-------------------|------------|
| Name: | Organization: | Signature: | Date: |
| Steven E. Wolfel | EPC-CP | Signature on File | 02-19-2020 |

Approval Signatures:

| | | | |
|-----------------------|---------------|-------------------|------------|
| EPC-CP Reviewer: | Organization: | Signature: | Date: |
| Terrill W. Lemke | EPC-CP | Signature on File | 02-19-2020 |
| EPC-CP RLM: | Organization: | Signature: | Date: |
| Taunia Van Valkenburg | EPC-CP | Signature on File | 02-24-2020 |

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To document a required read, Login to [UTrain](#), and go to the Advanced Search.

| | | |
|--|--------------------|----------------------------|
| Inspecting ISCO Stormwater Runoff Samplers & Retrieving Samples | No: EPC-CP-TP-2103 | Page 2 of 27 |
| | Revision: 0 | Effective Date: 02/24/2020 |

REVISION HISTORY

| Document Number and Revision <i>[Include revision number, beginning with Revision 0]</i> | Effective Date <i>[Document Control Coordinator inserts effective date]</i> | Description of Changes <i>[List specific changes made since the previous revision]</i> |
|--|---|---|
| ENV-RCRA-QP-047, Rev. 0 | 03/11 | New Document. |
| ENV-RCRA-QP-047, Rev. 1 | 02/13 | Annual Review and Revision |
| EPC-CP-QP-047, Rev. 2 | 09/06/2017 | Review and revision. Updated document to new template and new group name. Clarified steps. Modified inspection form EPC-CP-Form-1010. Added crosswalk to electronic form in MC Express. |
| EPC-CP-TP-2103 R0 | 02/24/2020 | Supersedes EPC-CP-QP-047 R2. Reformat to new EPC-CP template. Re-number procedure and forms to new EPC-CP procedure numbering system. Minor edits. |

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1.0 INTRODUCTION

Los Alamos National Laboratory (LANL) through Environmental Protection and Compliance-Compliance Programs (EPC-CP) conducts stormwater monitoring activities required pursuant to the National Pollutant Discharge Elimination System (NPDES), Multi-Sector General Permit (MSGP) at LANL. The MSGP requires LANL to monitor stormwater runoff from industrial sites relative to potential pollutants.

1.1 Purpose

This procedure describes the process for inspecting ISCO automated samplers and retrieving stormwater runoff samples from outfall locations where LANL conducts stormwater monitoring pursuant to NPDES MSGP requirements. This procedure may also be used for other Associate Laboratory Directorate of Environment, Safety, Health, Quality, Safeguards, and Security (ESHQSS) stormwater monitoring activities as needed.

1.2 Scope

The discharge of stormwater from specified industrial sites at LANL is regulated under the NPDES MSGP. The Laboratory's MSGP requires qualitative and quantitative stormwater monitoring (e.g., sample collection) to evaluate the effectiveness of control measures. Automated ISCO samplers coupled with liquid level actuators are used at MSGP monitoring stations and in support of other stormwater monitoring programs. Refrigerated (Avalanche®) and/or non-refrigerated (Model 3700) samplers are deployed and configured with multi-battery arrays, solar panels, and surge protectors.

Field personnel are required to inspect the sampling station while retrieving water samples during MSGP stormwater monitoring periods and at other intervals determined by the program or as directed by the MSGP Program Lead.

Inspections and sample retrieval conducted under this procedure should be documented using the Maintenance Connection Express™ (MC Express) web application on a tablet or notebook style computer. (In the event of electronic hardware or web application failure, personnel may use a printed hard copy to conduct inspection and sample retrieval.)

1.3 Applicability

This procedure applies to the EPC-CP technical staff and subcontractor personnel (as applicable) conducting activities at automated stormwater sampling stations used for monitoring industrial stormwater discharge under the MSGP or other stormwater monitoring programs.

The MSGP Program Lead is primarily responsible for this procedure. EPC-CP personnel are appointed responsibility for a subset of sampling stations. Other stormwater monitoring programs or projects utilizing this procedure will refer to program or project specific roles and responsibilities.

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2.0 PRECAUTIONS AND LIMITATIONS

2.1 Precautions

The hazard level of the activities in this procedure is **MODERATE**. Hazards in the work described in this procedure are controlled thorough a site specific Integrated Work Document (IWD) Part I. The IWD Part II (Form 2101) addresses site specific requirements and training by the Facility Operations Division (FOD).

Personnel performing steps in this procedure that involve electrical equipment **MUST** be trained to LANL electrical safety standards as prescribed in the IWD before performing those steps.

Personnel must wear appropriate clothing (e.g., boots, long pants, etc.) to perform work in the field.

Work may be discontinued during periods or conditions that make sites dangerous for worker safety or prevent personnel from safely accessing sites (e.g., weather-related events such as flash floods, flooding, lightning, wildfires, hail, icy roads, deep snow, or LANL operations such as firing shots or burns).

In the event of pest infestation (e.g., wasp or rat nests), do not attempt to remove the pest yourself. Call LANL Pest Control to coordinate the removal of the pest(s).

If conditions prevent field work, document the conditions in the Labor Report Update field on the form and notify the Program Lead or designee within 24 hours. Multiple attempts can be documented on the original form. If the target date cannot be met, the field personnel must contact the Program Lead no less than 24 hours before the target date for guidance.

2.2 Limitations

In MC Express, document responses to each question on a work order by clicking the expand arrow located on the right side of the task line and changing the "Complete" or "Failed" or "N/A" line to "Yes". When using a hard copy form, mark the appropriate check box.

Throughout this process, the field personnel will document comments and notations in the "Reading" field of the associated task line. Additional comments not documented in a "Reading" field can be entered in the "Comments" field of the same task line. If field personnel need more space, additional comments can be entered in the "Labor Report Update" field (see Section 4.10) when the work order is updated to "Complete" status. When using a hard copy form, document comments on the corresponding task line. If additional space is needed, comments can be entered in the "Labor Report" section at the bottom of the form.

Some terminology varies between the MC Express software and the Maintenance Connection desktop software.

- The "Reading" field in MC Express is the same field as "Reading Final" in Maintenance Connection desktop and "Meas." on a hard copy (printed) work order.

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- The “Complete” option in MC Express is the same as a “Yes” answer; the “Failed” option in MC Express is the same as a “No” answer. Maintenance Connection desktop and hard copy (printed) work orders use “Yes” and “No” terminology.

3.0 PREREQUISITE ACTIONS

3.1 Planning and Coordination

1. Ensure that field personnel have access to accurate time measurement at the Site. When at the site, the clock time on the ISCO sampler must be set to Mountain Standard Time (MST) at all times, with no daylight saving time adjustment.
2. Schedule work to be completed by the target date appearing on the work order(s) or as requested by the MSGP Program Lead if a form is not issued.
3. Obtain any necessary additional paperwork before conducting this work, including IWD's, and excavation permits (as necessary).
4. As specified in the IWD, inform (e.g., by e-mail) facility contacts and/or Deployed Environmental Professional of the schedule for sampler work and locations up to a week before (preferred), but no later than the day before (for minor changes) so work may be added to the appropriate plan of the day.

NOTE: For some FODs like the Utilities and Institutional Facilities FOD, MSGP stormwater monitoring activities are on a standing plan of the day. However, this must be requested each year at the beginning of the monitoring season.

5. Gather the required equipment (see Section 3.3) for the work to be done.
6. Using the Safari or Chrome web browser on a tablet or notebook style computer, navigate to <http://express.maintenanceconnection.com> and select English from the available dropdown menu.
7. Log into the MC Express application (<http://express.maintenanceconnection.com>) and confirm that the work order list displayed matches your sites. If the work order lists do not match, contact EPC-CP Data Management personnel for clarification.
8. In MC Express, click on the appropriate work order number to open the work order. The work order will open in the display to the Work Order Summary page.
9. Click on the “Tasks” bar to navigate to the work order Tasks page. See MC Express screen shot examples in Attachment 1.
10. Always log out of MC Express when you have finished work OR if work is interrupted.

3.2 Performance Documents

Personnel performing this procedure will be familiar with the most current versions of the following plans and operation manuals if this equipment is utilized. Copies of the following are not required to be on the job site.

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- EPC-CP MSGP Sampling and Analysis Plan (SAP) most recent revision for the current monitoring year OR project specific monitoring plan;
- ISCO 3700 Portable Samplers Installation and Operation Guide;
- ISCO Avalanche® Installation and Operation Guide; or
- ISCO 701 pH/Temperature Module Installation and Operation Guide (if equipped at a station).

3.3 Special Tools, Equipment, Parts, and Supplies

Ensure the following equipment is available.

- Safety glasses;
- Sturdy hiking boots or steel toed shoes (as needed) with soles that grip and other required facility specific Personal Protective Equipment;
- Nitrile gloves;
- Leather gloves;
- Cell phone (only government cell phones are allowed in secure areas). (See <https://int.lanl.gov/policy/documents/P217.pdf> for requirements for using portable electronic devices on Laboratory property);
- Copy of this procedure;
- Copy of the IWD;
- EPC-CP MSGP SAP most recent revision for the current monitoring year OR project specific monitoring plan;
- Site Map(s) (as needed);
- Current electronic or paper inspection form EPC-CP-TP-2103 Form 1, *MSGP ISCO Sampler Inspection and Sample Retrieval*;
- Government issued electronic tablet with Safari or Chrome web browser and Blackberry UEM™ app. (See <https://int.lanl.gov/policy/documents/P217.pdf> for requirements for using portable electronic devices on Laboratory property);
- Water Sample Collection and Processing Log/Field Chain of Custody (SCPL) (see EPC-CP-QP-2106);
- Access to accurate time measurement;
- Necessary access and station keys;
- Insulated hand tools;
- Charged spare battery(s);

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- Battery voltage tester;
- Clean spare tubing (pump, suction, discharge types, sampler specific);
- Certified clean replacement sample bottles (glass and poly);
- Spare/replacement sampler parts (liquid level actuator, distributor arm);
- Shovel;
- Wooden stakes;
- Plastic wire “zip” ties;
- Coolers with ice or Blue Ice®;
- Paper Towels;
- Marker pen (permanent, waterproof);
- Ball point pen;
- Re-sealable zipper storage bags (e.g., Ziploc®);
- Custody seals; and
- 0.45 micron filter (where applicable).

4.0 INSPECTING THE SAMPLER AND SAMPLE RETRIEVAL

Inspection of ISCO samplers is performed weekly during the sampling season. Samples retrieved are determined at a sampling station based on the current year SAP. See Attachment 1 for screen shot examples of EPC-CP-TP-2103 R0 Form 1, *ISCO Sampler Inspection and Sample Retrieval* in MC Express. See Attachment 2 for an example of the form in hard copy format.

NOTE: Each ITEM number listed in **red font** below corresponds to a **red numbered box** on both screenshots (Attachment 1) and hard copy format (Attachment 2).

4.1 Inspecting the Sampler

4.1.1 On Arrival

- [1] Remove the top cover from the sampler.
- [2] **ITEM 1:** Check and document the sampler is ON and its condition upon arrival. Explain any non-functional status.
 - [a] IF a sampler has been inactivated (e.g., sample collection completed) prior to this inspection but continues to appear on the inspection form, THEN answer this task line question “N/A.”
 - [b] Subsequent questions regarding the inactive sampler may be left unanswered in this section.

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- [3] **ITEM 2:** Check and document the ISCO programming displays the following.
 - [a] ISCO 3700 sampler display should indicate “Sampler Inhibited”
 - [b] Avalanche sampler display should indicate “Program Disabled”
 - [c] Document messages other than those in [a] and [b] (e.g., “Done X samples,” “sampler off,” etc.,).
- [4] IF there is no indication of flow and the sampler triggered due to a non-flow event, THEN describe why the sampler triggered (e.g., animal, tumbleweed, etc.,).
- [5] **ITEM 3:** Check and document the sampler is set to the correct MST +/- no more than 1 minute. Do **NOT** use Daylight Savings Time.
 - [a] IF the sampler is set incorrectly, THEN reprogram for the correct MST.
 - [b] Describe the work performed and correction applied (e.g., “ISCO clock was X minutes slow”).
- [6] If the location has more than one sampler, complete Steps 1 through 5 for each sampler.

4.1.2 Water Collection Information

- [1] Don nitrile gloves and safety glasses.
- [2] Remove the center section from the sampler.
- [3] **ITEM 4:** Document evidence of storm water flow at the sampling location by describing the evidence of flow (e.g., sediment or vegetation movement, erosion, standing water).
 - [a] IF the sampler did not trip but there is evidence of flow, THEN document the date and time storm water discharge began from the precipitation report.
 - [b] IF the sampler tripped or collected storm water, THEN document the date/time stamp from the sampler (or from the precipitation report if the sampler did not record a date/time stamp).
- [4] **ITEM 5:** Document that storm water is collected.
 - [a] Document if the water is taken by grab sample.
 - [b] Complete the Bottle Information (**ITEM 20**) in Section 4.1.7.
 - [c] Follow the steps in thru Section 4.2 Step 16 to retrieve samples.
- [5] **ITEM 6:** For Avalanche samplers only, record the current refrigerator temperature in degrees Celsius (°C) when water is collected.

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- [a] IF unable to review the temperature,
THEN check “No” and describe the condition (e.g., dead battery, electrical short).
- [6] **ITEM 7:** For Avalanche samplers equipped with an ISCO pH and Temp Module, check and document a pH measurement was taken on the collected water.
 - [a] Record the pH measurement taken at the time Bottle 1 was filled as “Average:Minimum:Maximum.”
 - [b] IF unable to review the pH,
THEN check “No” and describe the condition (e.g., damaged meter).

4.1.3 Water Retrieval Information

- [1] **ITEM 8:** Check and document whether a sample volume was retrieved from the sampler and taken off site.
 - [a] Record the estimated total volume in liters (L) or milliliters (ml) **taken off site**.
- [2] **ITEM 9:** Check and document whether a visual assessment of the water was performed (refer to EPC-CP-QP-2105).
 - [a] Do **NOT** conduct a visual assessment on a filtered sample. Record “Filtered sample.”

4.1.4 On Departure

WARNING

You **MUST** be trained to LANL electrical safety standards as prescribed in the IWD before performing Steps 2 and 3.

- [1] Prepare yourself in accordance with the IWD for electrical work (e.g. wear safety glasses and leather gloves, use insulated tools, no jewelry or anything metal hanging from body, etc.,).
- [2] **ITEM 10:** Check that all cable and electrical connections are attached and firmly tightened (not loose) upon departure.

NOTE: Connections may work loose over time due to temperature changes and if there are dis-similar metals at the connection points. The loose connections can introduce voltage spikes, which inherently cause current spikes that may result in blown fuses.

 - [a] IF the cables require replacement, connections require tightening, or other maintenance performed,
THEN describe the work performed (e.g., “tightened connectors on battery).
 - [b] IF maintenance cannot be completed at the time of inspection,

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THEN describe the condition (e.g. cables chewed through by animal) and follow-up work needed (e.g., replace cables).

- [3] **ITEM 11:** Use a voltage meter to check the power supply.
 - [a] Record the voltage of the battery(ies) in volts (V).
 - [b] Document if battery voltage is acceptable upon departure from the site (≥ 11.7 for non-floating charged batteries at ISCO 3700 samplers and ≥ 11.0 for floating-charged batteries at Avalanche samplers).
 - [c] Replace a battery with a charged battery when the voltage is not acceptable.
 - [d] Check the voltage of the solar panel if access can be gained to the weather protected terminal covers on the back of the panel.
- [4] Contact the program Electrical Safety Officer if any issues with wiring or batteries cannot be resolved on site.

4.1.5 Equipment Specific Tasks

- [1] **ITEM 12:** Check and document the sampler passes the diagnostic test. (Refer to EPC-CP-TP-2102 or sampler Operator's Guide for instructions on running a diagnostics test.)
 - [a] IF a sampler has been inactivated (e.g., sample collection completed) prior to this inspection but continues to appear on the inspection form, THEN answer this task line question as "N/A." Subsequent questions regarding this sampler may be left unanswered in this section.

CAUTION

Only reset the pump counts after replacing the internal pump tubing.

- [2] IF the internal pump tubing has reached or exceeded the preset pump counts (500,000 for ISCO 3700s, 1,000,000 for Avalanches), THEN replace the pump tubing and reset the pump counts.
- [3] **ITEM 13:** Check and document the sample tubing is free or clear of debris.
 - [a] Clear obstructions as needed and document maintenance performed.
- [4] Check the physical condition of sample tubing and vent tubing.
 - [a] Replace tubing as needed and document maintenance performed.
- [5] **ITEM 14:** Check and document the sample tubing has passed a suction test.
- [6] **ITEM 15:** Check and document the sampler is ON prior to departing the site.
- [7] **ITEM 16:** Check and document the liquid level actuator has been set to "Latch" prior to departing the site.

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- [a] IF the sampler tripped and requires reset of the sampling program,
THEN reset the actuator by toggling the switch to “Reset” and back to “Latch.”
- [8] **ITEM 17:** Check and document the ISCO programming displays the following.
 - [a] ISCO 3700 sampler display should indicate “Sampler Inhibited.”
 - [b] Avalanche sampler display should indicate “Program Disabled.”
 - [c] Reprogram the sampler as needed and document maintenance performed.
- [9] Replace and secure the sampler top cover and secure the sampler shelter (if sampler is in a shelter).
- [10] If the location has more than one sampler, complete Steps 1 through 11 for each sampler.

4.1.6 Maintenance Information

- [1] **ITEM 18:** Document maintenance completed while on site that is not documented elsewhere on the work order by describing the work performed.

NOTE: Maintenance items may include (but are not limited to) site clearing, installing new or additional equipment, removing equipment, animal/pest mitigation, problems with equipment location, etc.
- [2] IF a battery was replaced,
THEN record the voltage of the new battery and the battery identification number.
 - [a] IF the battery does not have an identification number,
THEN:
 - Contact the MSGP Program Lead to have one assigned.
 - Paint or write the number in a permanent manner on the battery.
- [3] **ITEM 19:** Document if maintenance is needed that was not completed while on site and that is not documented elsewhere on the work order.
 - [a] Describe on the work order the follow-up maintenance needed.
 - [b] When the maintenance has been complete, describe the actions taken to complete the work on the original work order.
 - [c] Record the maintenance completion date and time on the original work order.

4.1.7 Bottle Information

- [1] **ITEM 20:** Document water collected by recording the following information for each bottle by position number in the carousel.

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- Date (MM/DD/YY or MM-DD-YY) and time the ISCO collected water,
 - Volume (L or ml) of water in the bottle,
 - Type of bottle (e.g. G for glass, P for poly),
 - Specific ISCO displayed message, if present.
- [2] IF the sampler(s) did not trigger,
THEN answer the task line question as “N/A” for Bottle #1 of each sampler and leave the other Bottle task lines unanswered.
- [3] IF a sampler has been inactivated (e.g., sample collection completed) prior to this inspection but continues to appear on the inspection form,
THEN answer the task line question as “N/A”. Subsequent questions regarding this sampler may be left unanswered in this section.
- [4] Proceed to Section 4.4 if no water was collected.

4.2 Retrieving Samples

Refer to the flow diagram in Attachment 3 as an aid in determining sample retrieval.

- [1] Don nitrile gloves and safety glasses.
- [2] Add up the estimated volume of water collected in the sampler.
- [3] Check that the estimated total volume of water in glass and poly matches the required volume for the specific location identified in the MSGP SAP.
- NOTE 1:** The volume of water required to complete analytical may vary by monitored location.
- [a] IF the sample volume is sufficient to fulfill all analytical requirements,
THEN continue to Step 4.
- [b] IF the sample volume is sufficient to fulfill part of the analytical requirements,
THEN consult the prioritization order on the MSGP SAP to determine which analytical to fulfill,
OR contact the MSGP Data Manager. Continue to Step 4 but retrieve only the volume needed.
- [c] IF the collected sample will NOT fulfill the minimum required volume for any analytical,
THEN:
- Complete a Visual Assessment if the sample is not filtered (refer to EPC-CP-QP-2105),
 - Record estimated total volume (L or ml) retrieved as “0” in **ITEM 8**,

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- Return all water to the ground at the sampling location,
- Skip to Step 11.

CAUTION

ISCO Avalanche samplers are programmed to cool samples to 4°C. If water is collected and the refrigerator temperature reads higher than 6°C, **do not** retrieve samples that require ICE preservation. Samples do not meet preservation requirements.

- [4] Remove filled and partially filled bottles from the carousel one at a time.
- [5] For samples to be retrieved,
 - [a] Immediately place lids onto the sample bottles.
 - [b] Securely seal the lids.
 - [c] Place a custody seal on each bottle.
- [6] Write the following on each retrieved sample bottle.
 - Date and time collected (e.g., recorded by the ISCO sampler)
 - Sampler Location number
- [7] Conduct a Visual Assessment on a non-filtered sample (refer to EPC-CP-QP-2105).
- [8] Record estimated total volume (L or ml) retrieved in **ITEM 8**.
- [9] Place retrieved sample bottles in a cooler with blue ice (or equivalent).
- [10] Return any excess stormwater collected that exceeded the amount required to the ground at the location collected.
- [11] Install new certified clean sample bottles in the carousel to replace retrieved bottles.
 - [a] The number and type of bottles may vary. Ensure bottles match the configuration specified in the MSGP SAP.
- [12] Replace the 0.45-micron filter as needed.

NOTE 2: Consult the most current revision of the MSGP SAP for specifics.
- [13] IF the sampler is turned OFF for the quarter but new certified clean sample bottles and/or the filter have not been replaced,
THEN note this as follow-up maintenance required in **ITEM 19**.
- [14] Replace and secure the center section of the sampler.
- [15] If the location has more than one sampler, complete Section 4.1.7 thru Section 4.2 for each sampler.
- [16] Return to Section 4.1.2, Step 5.



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4.3 Removing Stormwater Samples from the field

- [1] Transport retrieved samples and corresponding SCPL (see EPC-CP-QP-2106) to the EPC-CP Stormwater Program Laboratory at TA-59-1.
- [2] Sign and date/time the SCPL and place it with the samples in the refrigerator.
- [3] Ensure custody seal is intact on each sample bottle.
- [4] Refer to EPC-CP-QP-2106, *Processing MSGP Stormwater Samples* for processing and submitting samples for shipping to the SMO.
- [5] Ensure the EPC-CP Stormwater Program Laboratory door is locked upon exit.

4.4 Completing the Inspection Form

See Attachment 1 for completing the form in MC Express and Attachment 2 for a hard copy example.

- [1] After all task lines have been completed, make sure you have clicked the “Save” bar at the bottom of the page.
- [2] Click the “Back” arrow button  in the upper left hand corner to exit the work order Tasks page and return to the Work Order Summary page.
- [3] Click the checkered flag  in the upper right corner of the Work Order Summary page to open the Work Order Status Update page. MC Express auto-populates the date and time fields.

CAUTION

MC Express automatically changes the work order status to “Closed.”

- [4] **ITEM 21:** Click on the expand arrow located on the right side of the “New Status” field and select “Completed” from the available dropdown menu.
 - [a] Ensure the date and time auto-populated are the date and time the **work was completed** and **not the date/time the form was filled out**.
 - [b] IF work is performed over multiple days, THEN note the date and time the work began in the Labor Report field.
 - [c] To update the date or time, click the “Date” field and make necessary adjustments using the available timestamp application. Click “Set” to apply changes.
 - [d] IF using a hard copy form, THEN write the date and time the work was completed.
- [5] **ITEM 22:** The field personnel must type or write his/her name in the “Labor Report Update” field.

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- [6] Additional notes, observations, or site conditions not documented in a task line “Reading” or “Comments” field can be documented in the “Labor Report Update” field.
- [7] Scroll down the page to the “Signature” bar and click the expand arrow on the left side of the bar to open the “Signature” field.
 - [a] **ITEM 23:** Capture an electronic signature by drawing with a finger on the tablet screen.
NOTE: The mouse must be used to sign electronically when using MC Express on a desktop screen (not a tablet).
 - [b] If using a hard copy form, the field personnel will sign his/her name and date when the form is signed.
 - [c] The field personnel is certifying that the information submitted is “true, accurate, and complete” by electronically signing work order.
- [8] Click on the “Save” bar at the bottom of the page to close the “Signature” field.
- [9] IF completing a hard copy,
THEN return the form to the MSGP Program Lead.

5.0 TRAINING

Personnel performing steps in this procedure that involve electrical equipment **MUST** be trained to LANL electrical safety standards as prescribed in the IWD before performing those steps.

All EPC-CP personnel that execute the activities specified in this procedure must meet the minimum qualification and training requirements for their position as identified EPC-CP-PIP-2101, NPDES Multi-Sector General Permit Program. This will include “self-study” (required reading) for this procedure as assigned and documented in accordance with ADESH-TPP-301, *ADESH Training Program Plan*. Other participating LANL groups may require training documentation pursuant to local procedures.

Contract personnel that execute the activities specified in this procedure will be qualified and trained as required by the Exhibit D and Exhibit F. In addition, contract personnel will be required to complete “self-study” (required reading) of this procedure.

6.0 RECORDS

EPC-CP is the Office of Record for this document and must be maintained in accordance with [PD1020](#), *Document Control and Records Management* and ADESH-AP-006, *Records Management Plan*. Records generated by this document will be submitted to the Records Management designated point of contact or document manager for document management.

Below are records generated as a result of implementing this procedure. Records generated are identified by title and type.

| | | |
|--|--------------------|----------------------------|
| Inspecting ISCO Stormwater Runoff Samplers & Retrieving Samples | No: EPC-CP-TP-2103 | Page 17 of 27 |
| | Revision: 0 | Effective Date: 02/24/2020 |

| Record Title | QA Record | Non-QA Record |
|---|-------------------------------------|--------------------------|
| EPC-CP-TP-2103 R0 Form 1, <i>ISCO Sampler Inspection and Sample Retrieval</i> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

7.0 DEFINITIONS AND ACRONYMS

7.1 Definitions

See LANL [Definition of Terms](#).

7.2 Acronyms

See LANL [Acronym Master List](#).

| | |
|------------|---|
| °C | Degrees in Celsius |
| EPC-CP | Environmental Protection and Compliance-Compliance Programs |
| FOD | Facility Operations Division |
| IWD | Integrated Work Document |
| L | Liter |
| LANL | Los Alamos National Laboratory |
| MC Express | Maintenance Connection MC Express web application |
| ml | Milliliter |
| MSGP | Multi-Sector General Permit |
| MST | Mountain Standard Time |
| NPDES | National Pollutant Discharge Elimination System |
| SAP | Sampling and Analysis Plan |
| SCPL | Sample Collection and Processing Log/Field Chain of Custody |
| V | Volts |

8.0 REFERENCES

EPC-CP-QP-2105, MSGP Stormwater Visual Assessments

EPC-CP-QP-2106, Processing MSGP Stormwater Samples

EPC-CP-TP-2102, Installing, Setting Up, and Operating ISCO Samplers

EPC-CP-PIP-2101, NPDES Multi-Sector General Permit Program Implementation Plan

ADESH-TPP-301, ADESH Training Program Plan

ADESH-AP-006, Records Management Plan

PD1020, Document Control and Records Management

| | | |
|--|--------------------|----------------------------|
| Inspecting ISCO Stormwater Runoff Samplers & Retrieving Samples | No: EPC-CP-TP-2103 | Page 18 of 27 |
| | Revision: 0 | Effective Date: 02/24/2020 |

9.0 ATTACHMENTS

Attachment 1: Screenshot Examples of EPC-CP-TP-2103 R0 Form 1, *ISCO Sampler Inspection and Sample Retrieval* in MC Express

Attachment 2: EPC-CP-TP-2103 R0 Form 1, *ISCO Sampler Inspection and Sample Retrieval* Hard Copy Example

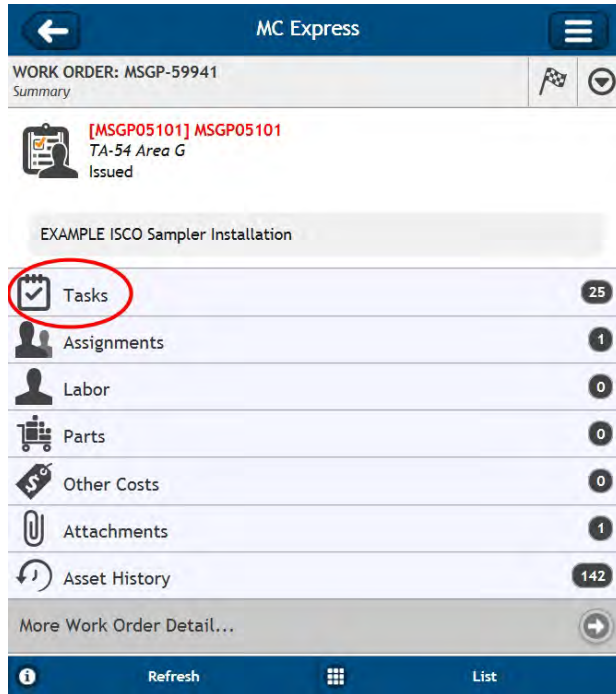
Attachment 3: Sample Retrieval Flow Diagram

| | | |
|---|--------------------|----------------------------|
| Inspecting ISCO Stormwater Runoff Samplers & Retrieving Samples | No: EPC-CP-TP-2103 | Page 19 of 27 |
| | Revision: 0 | Effective Date: 02/24/2020 |

Attachment 1: Screenshot Examples of EPC-CP-TP-2103 R0 Form 1, ISCO Sampler Inspection and Sample Retrieval in MC Express

(Page 1 of 6)

Work Order Summary Page (Section 3.1, Steps 8 and 9)



| | | |
|---|--------------------|----------------------------|
| Inspecting ISCO Stormwater Runoff Samplers & Retrieving Samples | No: EPC-CP-TP-2103 | Page 20 of 27 |
| | Revision: 0 | Effective Date: 02/24/2020 |

Attachment 1: Screenshot Examples of EPC-CP-TP-2103 R0 Form 1, *ISCO Sampler Inspection and Sample Retrieval* in MC Express (cont.)

(Page 2 of 6)

Work Order Tasks page - On Arrival (Section 4.1.1, Steps 2-5)

MC Express

WORK ORDER: MSGP-59941

Tasks

ON ARRIVAL

- 20** Is sampler ON and functioning properly upon arrival?
Asset: [210C01437] ISCO 3700 Sampler
- 30** Does the sampler display "Sampler Inhibited"? If No, record specific message(s).
Asset: [210C01437] ISCO 3700 Sampler
- 40** Is sampler time delta < 1 min (MST)? If No, record adjustment
Asset: [210C01437] ISCO 3700 Sampler
- 50** Is sampler ON and functioning properly upon arrival?
Asset: [210J01522] ISCO Avalanche Sampler
- 60** Does the Avalanche display "Program Disabled"? If No, record specific message(s).
Asset: [210J01522] ISCO Avalanche Sampler
- 70** Is sampler time delta < 1 min (MST)? If No, record adjustment
Asset: [210J01522] ISCO Avalanche Sampler

Refresh List

MC Express

WORK ORDER: MSGP-59941

Edit Task

20 Is sampler ON and functioning properly upon arrival?
[210C01437] ISCO 3700 Sampler

Reading

Sampler knocked over by bear, power disconnected

Initials

Failed?

Yes

Not Applicable?

No

Complete?

No

Comments

Cancel Save

| | | |
|--|--------------------|----------------------------|
| Inspecting ISCO Stormwater Runoff Samplers & Retrieving Samples | No: EPC-CP-TP-2103 | Page 21 of 27 |
| | Revision: 0 | Effective Date: 02/24/2020 |

Attachment 1: Screenshot Examples of EPC-CP-TP-2103 R0 Form 1, *ISCO Sampler Inspection and Sample Retrieval* in MC Express (cont.)

(Page 3 of 6)

Work Order Task Page – Water Collection Information and Water Retrieval Information (Sections 4.1.2, Steps 3-6 and 4.1.3, Steps 1 and 2)

The screenshot displays the MC Express app interface for Work Order MSGP-59941. The 'Tasks' section is active, showing a list of tasks under two main categories: 'Water Collection Information' and 'Water Retrieval Information'. Each task is represented by a flag icon, a number in a red box, and a description. The tasks are as follows:

- Water Collection Information:**
 - Task 90 (Flag 4):** Is there evidence of flow? If YES (but no water collected), describe and record date/time of discharge.
 - Task 100 (Flag 5):** Is any water collected? If YES, complete Bottle Information section.
 - Task 110 (Flag 6):** If water was collected, record current refrigerator temperature (C). Asset: [210J01522] ISCO Avalanche Sampler.
 - Task 120 (Flag 7):** If water was collected, record the pH measurement corresponding to the sample date/time: AVERAGE:.... Asset: [211C01137] ISCO pH and Temp Module.
- Water Retrieval Information:**
 - Task 140 (Flag 8):** Was sample volume RETRIEVED? If Yes, record total volume retrieved.
 - Task 150 (Flag 9):** Was a Visual Assessment performed? If Yes, complete the MSGP Visual Assessment form (EPC-CP-TP-064).

The bottom navigation bar includes a 'Refresh' button, a grid icon, and a 'List' button.

Work Order Task Page – On Departure (Sections 4.1.4, Steps 2 and 3)

The screenshot displays the MC Express app interface for Work Order MSGP-59941, specifically the 'ON DEPARTURE' section. The 'Tasks' section shows a list of tasks, each with a flag icon, a number in a red box, and a description:

- Task 170 (Flag 10):** Are electrical connections secure?
- Task 180 (Flag 11):** Record voltage of battery(ies) powering sampler. Voltage(s) >=11.7V?

The bottom navigation bar includes a 'Refresh' button, a grid icon, and a 'List' button.

| | | |
|--|--------------------|----------------------------|
| Inspecting ISCO Stormwater Runoff Samplers & Retrieving Samples | No: EPC-CP-TP-2103 | Page 22 of 27 |
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Attachment 1: Screenshot Examples of EPC-CP-TP-2103 R0 Form 1, *ISCO Sampler Inspection and Sample Retrieval* in MC Express (cont.)

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Work Order Task Page – Equipment Specific Tasks (Sections 4.1.5, Steps 1-8)

MC Express

WORK ORDER: MSGP-59941

Tasks

Equipment specific tasks

- 200**
Does the sampler pass the ISCO diagnostics test?
Asset: [210C01437] ISCO 3700 Sampler
- 210**
Is intake tubing free/clear of debris?
Asset: [210C01437] ISCO 3700 Sampler
- 220**
Does sample tubing pass suction test?
Asset: [210C01437] ISCO 3700 Sampler
- 230**
Is sampler on upon departure?
Asset: [210C01437] ISCO 3700 Sampler
- 240**
Has the actuator switch been reset to "Latch"?
Asset: [210C01437] ISCO 3700 Sampler
- 250**
Does ISCO display "Sampler Inhibited" on departure?
Asset: [210C01437] ISCO 3700 Sampler

Refresh List

Work Order Task Page – Maintenance Information (Sections 4.1.6, Steps 1-3)

MC Express

WORK ORDER: MSGP-59941

Tasks

Maintenance information

- 330**
Is any maintenance not described above completed during inspection? If Yes, describe.
- 340**
Is any follow-on maintenance not described above required? If Yes, describe.

Refresh List

| | | |
|---|--------------------|----------------------------|
| Inspecting ISCO Stormwater Runoff Samplers & Retrieving Samples | No: EPC-CP-TP-2103 | Page 23 of 27 |
| | Revision: 0 | Effective Date: 02/24/2020 |

Attachment 1: Screenshot Examples of EPC-CP-TP-2103 R0 Form 1, ISCO Sampler Inspection and Sample Retrieval in MC Express (cont.)

(Page 5 of 6)

Work Order Task Page – Bottle Information (Sections 4.1.7, Step 1)

MC Express

WORK ORDER: MSGP-59941

Tasks

Bottle information: IF bottle collected record bottle type (P or G), collection date & time, volume, and/or any ISCO messages

| | |
|---|---|
| 360 Bottle #1? Asset: [210C01437] ISCO 3700 Sampler | → |
| 370 Bottle #2? Asset: [210C01437] ISCO 3700 Sampler | → |
| 380 Bottle #3? Asset: [210C01437] ISCO 3700 Sampler | → |
| 390 Bottle #4? Asset: [210C01437] ISCO 3700 Sampler | → |

Refresh List

MC Express

WORK ORDER: MSGP-59941

Edit Task

360
Bottle #1?
[210C01437] ISCO 3700 Sampler

Reading

2/10/17 14:32: 1L poly; no more liquid detected

Initials

Failed?

No

Not Applicable?

No

Complete?

Yes

Comments

Cancel Save

| | | |
|--|--------------------|----------------------------|
| Inspecting ISCO Stormwater Runoff Samplers & Retrieving Samples | No: EPC-CP-TP-2103 | Page 24 of 27 |
| | Revision: 0 | Effective Date: 02/24/2020 |

Attachment 1: Screenshot Examples of EPC-CP-TP-2103 R0 Form 1, *ISCO Sampler Inspection and Sample Retrieval* in MC Express (cont.)

(Page 6 of 6)

Work Order Status Update Page (Section 4.4, Steps 4 and 5)

MC Express

WORK ORDER: MSGP-59941
Status Update

Issued

New Status **21**

Completed

Date

03/16/2017 12:03 PM

Percent Complete 100%

Labor Report Update **22**

Select Comments to Add.....

Jane Admin

Cancel Save

Work Order Status Update Page (Section 4.4, Step 7)

MC Express

WORK ORDER: MSGP-59941
Status Update

Signature **23**

(Remove)

Jane Admin

Cancel Save

Inspecting ISCO Stormwater Runoff Samplers & Retrieving Samples

No: EPC-CP-TP-2103

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Revision: 0

Effective Date: 02/24/2020

Attachment 2: EPC-CP-TP-2103 R0 Form 1, ISCO Sampler Inspection and Sample Retrieval Hard Copy Example

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Los Alamos National Lab - ADESH

Work Order MSGP-59941

MSGP Monitoring Stations
Printed 8/10/2017 - 11:25 AM (Duplicate Copy)

Maintenance Details

Requested By: Admin, Jane on 8/10/2019 11:23:00 AM
 Procedure: MSGP ISCO Sampler Inspection and Sample Retrieval (EPC-CP-TP-2103 R0 Form 1)
 Last PM: 7/20/2019
 Project:
 Reason: Example ISCO Sampler Inspection and Sample Retrieval

Target: 12/31/2019
 Priority/Type: / Inspection
 Department: Utilities and Infrastructure

MSGP Program
 RG121.9
 TA-3-38 Carpenter Shop
 Monitored Outfall (073)
 MSGP07302

Contact: Admin, Jane
 Phone: 123-4567

Tasks

| # | Description | Meas | No | N/A | Yes |
|------------------------------|---|------|--------------------------|--------------------------|--------------------------|
| ON ARRIVAL | | | | | |
| 1 20 | ISCO 3700 Sampler [210C01437] Is sampler ON and functioning properly upon arrival? | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 30 | ISCO 3700 Sampler [210C01437] Does the sampler display "Sampler Inhibited"? If No, record specific message(s). | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 40 | ISCO 3700 Sampler [210C01437] Is sampler time delta < 1 min (MST)? If No, record adjustment | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 50 | ISCO Avalanche Sampler [210J01522] Is sampler ON and functioning properly upon arrival? | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 60 | ISCO Avalanche Sampler [210J01522] Does the Avalanche display "Program Disabled"? If No, record specific message(s). | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 70 | ISCO Avalanche Sampler [210J01522] Is sampler time delta < 1 min (MST)? If No, record adjustment | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Water Collection information | | | | | |
| 4 90 | Is there evidence of flow? If YES (but no water collected), describe and record date/time of discharge. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5 100 | Is any water collected? If YES, complete Bottle Information section. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6 110 | ISCO Avalanche Sampler [210J01522] If water was collected, record current refrigerator temperature (C). | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7 120 | ISCO pH and Temp Module [211C01137] If water was collected, record the pH measurement corresponding to the sample date/time. AVERAGE. MINIMUM. MAXIMUM. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Water Retrieval information | | | | | |
| 8 140 | Was sample volume RETRIEVED? If Yes, record total volume retrieved. | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9 150 | Was a Visual Assessment performed? If Yes, complete the MSGP Visual Assessment form (EPC-CP-QP-2105). | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| ON DEPARTURE | | | | | |
| 10 170 | Are electrical connections secure? | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11 180 | Record voltage of battery(ies) powering sampler. Voltage(s) >= 11.7V? | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Equipment specific tasks | | | | | |
| 12 200 | ISCO 3700 Sampler [210C01437] Does the sampler pass the ISCO diagnostics test? | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13 210 | ISCO 3700 Sampler [210C01437] Is intake tubing free/clear of debris? | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14 220 | ISCO 3700 Sampler [210C01437] Does sample tubing pass suction test? | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15 230 | ISCO 3700 Sampler [210C01437] Is sampler on upon departure? | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 16 240 | ISCO 3700 Sampler [210C01437] Has the actuator switch been reset to "Latch"? | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17 250 | ISCO 3700 Sampler [210C01437] Does ISCO display "Sampler Inhibited" on departure? | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

EPC-CP-TP-2103 R0 Form 1

Inspecting ISCO Stormwater Runoff Samplers & Retrieving Samples

No: EPC-CP-TP-2103


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Revision: 0

Effective Date: 02/24/2020

Attachment 2: EPC-CP-TP-2103 R0 Form 1, ISCO Sampler Inspection and Sample Retrieval Hard Copy Example (cont.)

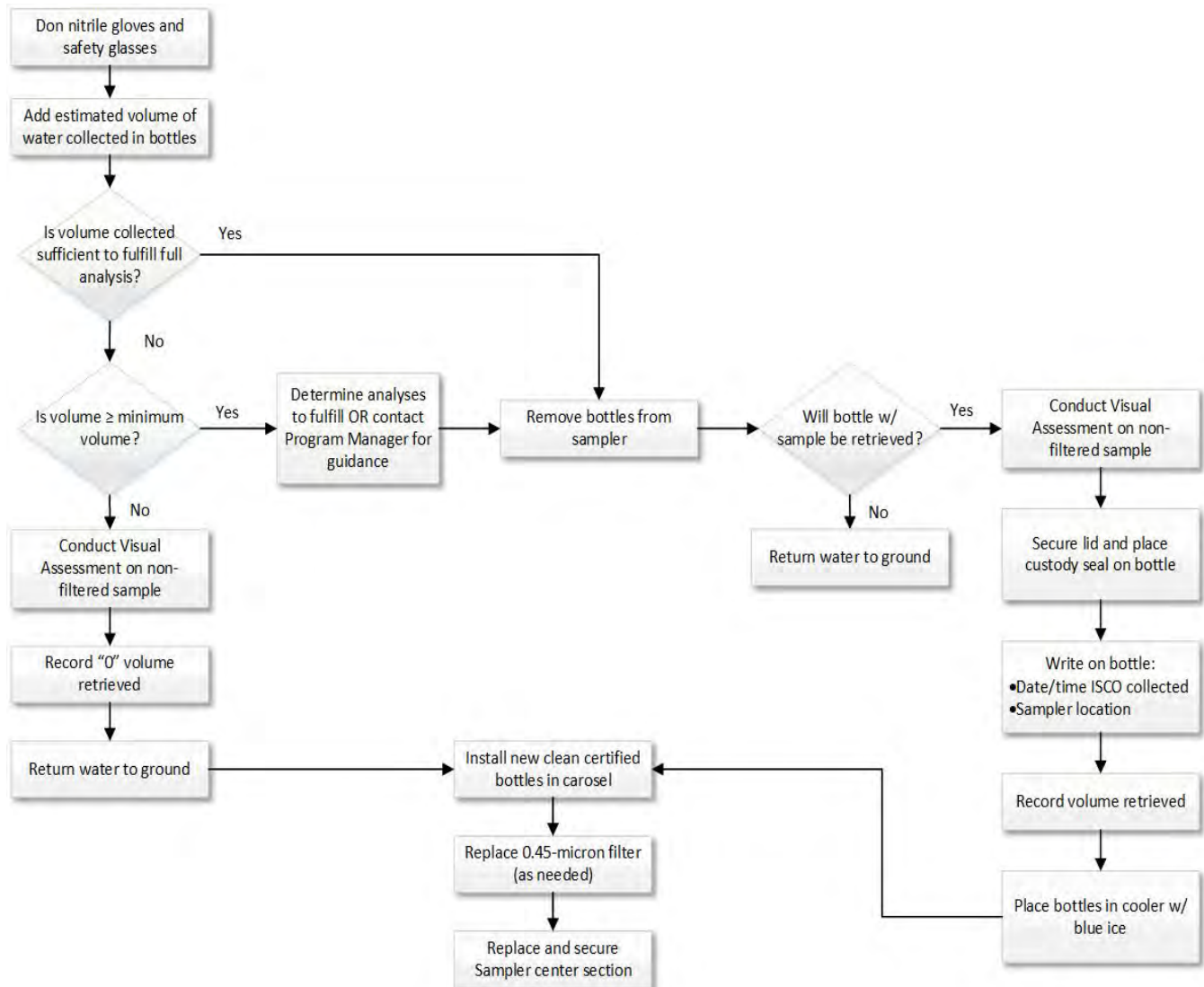
(Page 2 of 2)

| | | | | |
|--|---|--------------------------|--------------------------|--------------------------|
| 260 | ISCO Avalanche Sampler [210J01522] Does the sampler pass the ISCO diagnostics test? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 270 | ISCO Avalanche Sampler [210J01522] Is intake tubing free/clear of debris? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 280 | ISCO Avalanche Sampler [210J01522] Does sample tubing pass suction test? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 290 | ISCO Avalanche Sampler [210J01522] Is sampler on upon departure? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 300 | ISCO Avalanche Sampler [210J01522] Has the actuator switch been reset to "Latch"? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 310 | ISCO Avalanche Sampler [210J01522] Does Avalanche display "Program Disabled" on departure? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Maintenance Information | | | | |
| 18 | 330 Is any maintenance not described above completed during inspection? If Yes, describe. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 19 | 340 Is any follow-on maintenance not described above required? If Yes, describe. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Bottle Information: IF bottle collected record bottle type (P or G), collection date & time, volume, and/or any ISCO messages | | | | |
| 20 | 360 ISCO 3700 Sampler [210C01437] Bottle #1? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 370 ISCO 3700 Sampler [210C01437] Bottle #2? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 380 ISCO 3700 Sampler [210C01437] Bottle #3? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 390 ISCO 3700 Sampler [210C01437] Bottle #4? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 400 ISCO 3700 Sampler [210C01437] Bottle #5? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 410 ISCO 3700 Sampler [210C01437] Bottle #6? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 420 ISCO 3700 Sampler [210C01437] Bottle #7? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 430 ISCO 3700 Sampler [210C01437] Bottle #8? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 440 ISCO 3700 Sampler [210C01437] Bottle #9? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 450 ISCO 3700 Sampler [210C01437] Bottle #10? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 460 ISCO 3700 Sampler [210C01437] Bottle #11? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 470 ISCO 3700 Sampler [210C01437] Bottle #12? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 480 ISCO Avalanche Sampler [210J01522] Bottle #1? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 490 ISCO Avalanche Sampler [210J01522] Bottle #2? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 500 ISCO Avalanche Sampler [210J01522] Bottle #3? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | 510 ISCO Avalanche Sampler [210J01522] Bottle #4? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Labor Report | | | | |
| 21 | Completed: 5/30/2019 4:44:00 PM | | | |
| 22 | Report: Jane Admin | | | |
| 23 |  Signature / Name | 5/30/2019 Date | Signature / Name | Date |
| I confirm the information as recorded is true, accurate and complete. | | | | |


EPC-CP-TP-2103 R0 Form 1

Attachment 3: Sample Retrieval Flow Diagram

(Page 1 of 1)



ATTACHMENT 20: EPC-CP-QP-2106, PROCESSING MSGP STORMWATER SAMPLES

| | | |
|----------------------------|------------------------------|---|
| EPC-CP-QP-2106 | Revision: 0 |  |
| Effective Date: 10/18/2019 | Next Review Date: 10/18/2022 | |

Environment, Safety, Health, Quality, Safeguards, and Security Directorate

Environment Protection and Compliance – Compliance Programs Group

Quality Procedure

Processing MSGP Stormwater Samples

Hazard Grading: ☒ Low ☐ Moderate ☐ High/Complex

Usage Level: ☒ Reference ☐ UET ☐ Mixed: UET Sections: _____

Status: ☐ New ☐ Major Revision ☐ Minor Revision

☐ Review w/No Changes ☒ Other: New EPC-CP format and numbering system

Safety Basis: ☒ N/A ☐ USQ ☐ USI Number: _____

Document Author/Subject Matter Expert:

| | | | |
|------------------|---------------|-------------------|----------|
| Name: | Organization: | Signature: | Date: |
| Holly L. Wheeler | EPC-CP | Signature on File | 10-17-19 |

Derivative Classifier: ☒ **Unclassified** or ☐ _____

| | | | |
|------------------|---------------|-------------------|----------|
| Name: | Organization: | Signature: | Date: |
| Steven E. Wolfel | EPC-CP | Signature on File | 10-17-19 |

Approval Signatures:

| | | | |
|-----------------------|---------------------|-------------------|----------|
| EPC-CP Reviewer: | Organization: | Signature: | Date: |
| Terrill W. Lemke | EPC-CP Team Leader | Signature on File | 10-17-19 |
| EPC-CP RLM: | Organization: | Signature: | Date: |
| Taunia Van Valkenburg | EPC-CP Group Leader | Signature on File | 10-18-19 |

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| | | |
|---|--------------------|----------------------------|
| Processing MSGP Stormwater Samples | No: EPC-CP-QP-2106 | Page 2 of 19 |
| | Revision: 0 | Effective Date: 10/18/2019 |

REVISION HISTORY

| Document Number and Revision <i>[Include revision number, beginning with Revision 0]</i> | Effective Date <i>[Document Control Coordinator inserts effective date]</i> | Description of Changes <i>[List specific changes made since the previous revision]</i> |
|--|---|--|
| ENV-RCRA-QP-048, Rev. 0 | 07/2011 | New document |
| ENV-CP-QP-048, Rev. 1 | 09/2013 | Annual Review and Revision, new format, process change, and new organization name. |
| EPC-CP-QP-048, Rev. 2 | 06/05/2017 | Review and Revision, new format, and new organization name, clarified steps, updated attachments. |
| EPC-CP-QP-048 R3 | 10/05/2017 | Updated Sample Collection Log instructions, added a step describing evidence of flow, and added section for addressing excess stormwater material. |
| EPC-CP-QP-048 R4 | 01/31/2019 | Sample Collection Log form and associated text updated. Added text for collecting quality control samples. |
| EPC-CP-QP-2106 R0 | 10/18/2019 | Supersedes EPC-CP-QP-048 R4. New EPC-CP procedure format and numbering system. Minor editorial updates. |

| | | |
|---|--------------------|----------------------------|
| Processing MSGP Stormwater Samples | No: EPC-CP-QP-2106 | Page 3 of 19 |
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| Processing MSGP Stormwater Samples | No: EPC-CP-QP-2106 | Page 4 of 19 |
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1.0 INTRODUCTION

Triad LLC, the operator for Los Alamos National Laboratory (LANL or the Laboratory), conducts stormwater monitoring activities pursuant to the National Pollutant Discharge Elimination System (NPDES), Multi-Sector General Permit (MSGP). As part of this monitoring, Environmental Protection and Compliance, Compliance Programs (EPC-CP) personnel collect stormwater discharge samples from outfalls at industrial sites and prepare them for analysis.

1.1 Purpose

This procedure describes the process for filtering, preserving and preparing stormwater samples for shipment to an analytical laboratory from locations where EPC-CP conducts stormwater monitoring activities required pursuant to the NPDES MSGP. This procedure may also be used for other Associate Laboratory Directorate for Environment, Safety, Health, Quality, Safeguards, and Security (ALDESHQSS) stormwater monitoring activities as needed.

1.2 Scope

Stormwater samples are collected in the field with either a refrigerated Avalanche® or ISCO 3700 automated sampler, single stage sampler, or by hand. When in-line filtration is not possible, sample filtration, along with chemical preservation (as required) is conducted immediately following sample retrieval in the field or in the EPC-CP Stormwater Laboratory (TA-59-01).

Sample collection, submission, and analysis is conducted using Environmental Protection Agency (EPA) and New Mexico Water Quality Control Commission guidelines. MSGP monitoring samples are collected and analyzed according to test procedures approved under Title 40 of the Code of Federal Regulations Part 136 unless other test procedures have been specified in the MSGP. Quantitation limits associated with these test procedures are sufficiently sensitive to meet MSGP limits.

1.3 Applicability

This procedure applies to EPC-CP technical staff and subcontractor personnel (as applicable) who conduct processing and chemical preservation of stormwater samples either in the EPC-CP Stormwater Laboratory or in the field.

The MSGP Program Lead is the primary person responsible for this procedure. EPC-CP personnel are appointed responsibility for a subset of sampling stations. Other stormwater monitoring programs or projects utilizing this procedure will refer to program or project specific roles and responsibilities.

2.0 PRECAUTIONS AND LIMITATIONS

The hazard level for the activities in this procedure is **LOW**. An Integrated Work Document Part II (2101 Form) will address any site-specific requirements and training for Facility Operations Divisions (FOD) if required by the FOD.

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Use only sample containers that are documented to meet or exceed “US EPA Specification and Guidance for Contaminant-Free Sample Container” (Publication 9240.05A, EPA/540/R-93/051, December 1992). Never clean or re-use sample containers. Keep containers in a clean, dry place until a sample is ready for processing and transfer to the appropriate container(s).

3.0 PREREQUISITE ACTIONS

3.1 Planning and Coordination

Refer to the most current revision of the MSGP or program/project specific Sampling and Analysis Plan (SAP) to determine the need for collecting quality control samples. Collect the types and quantities of quality control samples at the locations specified.

Schedule and complete stormwater processing to meet the analytical holding time requirements identified in the MSGP SAP or as requested by the MSGP Program Lead. Other stormwater monitoring programs or projects utilizing this procedure will refer to their program or project specific SAP.

The MSGP Data Manager will generate Water Sample Collection and Processing Log/Field Chain of Custody (SCPL) form(s) at the beginning of the MSGP monitoring season and/or the beginning of each MSGP monitoring quarter. The MSGP Data Manager will generate Chain of Custody/Analysis Request(s) from the Environmental Information Management (EIM) database as stormwater is collected. If the MSGP Data Manager is not available, forms will be obtained from the EPC-CP Sample Management Office (SMO).

3.2 Performance Documents

Personnel performing this procedure will be familiar with the most current versions of the following documents if the equipment or chemicals are utilized.

- Peristaltic Pump User Manual (e.g., GeoTech)
- Material Safety Data Sheet or Safety Data Sheet for preservation chemicals

3.3 Special Tools, Equipment, Parts and Supplies

Ensure the following equipment is available:

- Safety glasses with side shields
- Nitrile gloves
- Lab coat
- Eyewash in Stormwater Lab (or portable eyewash in the field)
- Water SCPL form
- Chain of Custody/Analysis Request
- EPC-CP MSGP SAP most recent revision for the current monitoring year OR project specific monitoring plan

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- Sample containers (glass and poly bottles)
- Sample container lids
- Acid and base preservatives
- Clean silicon (e.g., Tygon) tubing
- Portable peristaltic pump (e.g., Geopump or equivalent)
- 0.45 micron (µm) and/or 0.10 µm cartridge filters (where applicable)
- Deionized water (where applicable)
- Paper towels
- Coolers with ice, Blue Ice®, or equivalent
- Ball point pen
- Permanent marker
- Chain-of-custody seals/tape
- Copy of this procedure
- Cell phone (only government cell phones are allowed in secure areas) (See <https://int.lanl.gov/policy/documents/P217.pdf> for requirements for using portable electronic devices on Laboratory property.

4.0 PROCESSING SAMPLES

In this procedure, sample collection bottles are the bottles in which the sample was collected in the field. Sample containers are containers into which the original sample is transferred (as necessary) during processing and shipped to the analytical laboratory.

NOTE: Prior to performing any of the steps in the following sub-sections, ensure that you are wearing the proper clothing. Don nitrile gloves, safety glasses with side shields, and a lab coat. Confirm that the eyewash station is operational prior to processing samples.

4.1 Preparation for Processing Samples

Sample Retriever

- [1] Arrange sample collection bottles on the workbench in order by MSGP sampling location, ensuring to distinguish bottles collected via in-line filtration from non-filtered bottles, where applicable.

CAUTION

Process only one sample set (i.e., samples listed on one SCPL form or samples from one location) at a time to ensure stormwater from different locations is not co-mingled.

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- [2] Cross-check the Location ID (e.g., MSGP00201) on the sample bottles with the LOCATION ID on the SCPL form (see example in Attachment 1).
- [3] Ensure the pre-populated information on the SCPL form is correct. Document any changes [e.g., change FIELD MATRIX code from rain (WT) to snowmelt (WM)].
- [4] Write the following information on the SCPL.
 - [a] Sampler Inspection and Sample Retrieval form (refer to EPC-CP-QP-2103) identification number (e.g., Work Order: MSGP-xxxx);
 - [b] Date/time the sample was collected in the field (e.g., date/time automated sampler filled sample bottles or a grab sample was taken);
 - [c] Date/time the sample was retrieved from the field;
 - [d] “Not Applicable” (N/A) in the LOCATION SYNONYM(S) field unless the information is required by the SAP;
 - [e] N/A in the PRIORITY box if box is not pre-populated;
 - [f] Any pertinent information regarding sample collection and/or retrieval in the SAMPLE COMMENTS field (e.g., grab sample collected by hand, recent erosion observed up-gradient of sampler) or N/A;
 - [g] N/A for FIELD PARAMETER Sample Time (this is documented at the top of the form as COLLECTION TIME);
 - [h] pH measurement taken at the time the sample was collected in the field (if applicable) or N/A;
 - [i] Indicate if a visual assessment was performed.
 - IF a visual assessment **WAS NOT** performed, THEN write N or No in the Visual Inspection space.
 - IF a visual assessment **WAS** performed, THEN write Y or Yes in the Visual Inspection space and the identification number from the MSGP Visual Assessment form (refer to EPC-CP-QP-2105) (e.g., MSGP-xxxx).
 - [j] The printed name and signature of the person who retrieved the sample in the COLLECTED BY box and date/time the sample was retrieved from field
- [5] IF the person who retrieved the sample is processing, THEN write N/A in the first RELINQUISHED BY and RECEIVED BY boxes.
- [6] IF the person who retrieved the sample is NOT processing, THEN
 - [a] He/she will print and sign his/her name and the date/time samples are relinquished to the processor in the RELINQUISHED BY box.

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- [b] The processor will print and sign his/her name and the date/time samples are received in the first RECEIVED BY box.

Sample Processor

- [7] Ensure the following information is correct for the analysis requested on the SCPL.
 - [a] Sample container volume and type [e.g., 500 milliliter (mL) POLY].
 - [b] Preservation type (e.g., ICE, HNO₃).
 - [c] Note any deviation from the planned sample container volume, type, or preservation on the SCPL.
- [8] Determine which samples require filtration and chemical preservation as requested on the SCPL.
 - [a] Mark each container lid with the 3-digit outfall ID, required analysis, filtration requirement, and preservative requirement.

NOTE 2: Requirements are also identified in the most current SAP revision.
- [9] For split samples, follow these steps:
 - [a] Turn the sample collection bottle upside down multiple times to ensure sediment is loose from the bottom of the bottle.
 - [b] Pour sample into sample containers ensuring the sample remains homogenized throughout the transfer.
- [10] Refer to Section 4.2 Filtering Samples, Section 4.3 Preserving Unfiltered and Filtered Samples, and Section 4.4 Quality Control Samples as needed.
- [11] Indicate if each sample on the SCL was collected by writing Y for Yes or N for No in the COLLECTED Y/N box.
- [12] IF the SPECIAL INSTRUCTIONS box is not pre-populated, THEN write N/A in the box.
- [13] Document any other deviations from the planned sample processing on the SCPL (e.g., turbid sample required extra filtration step, used standard deionized water in lieu of ultrapure water for field blank) under PROCESSING COMMENTS or SAMPLING COMMENTS,

OR write N/A.
- [14] IF no further processing is required (e.g., chemical preservation), THEN apply a chain-of-custody seal/tape around the bottle and lid and sign and date the seal/tape.
- [15] The person processing the sample will print and sign his/her name and indicate the date/time samples were processed in the PROCESSED BY box.
- [16] Proceed to Section 4.5.

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4.2 Filtering Samples

Filter samples if specified on the SCPL or if an in-line filter was not used during sample collection.

- [1] Select the appropriate sized cartridge filter (e.g., 0.10µm or 0.45µm).
- [2] Set up the filter assembly.
 - [a] Attach an appropriate amount of silicone tubing to both ends of the cartridge filter.
 - [b] Place the filter upstream of the peristaltic pump to prevent over-pressurization.
 - [c] IF the sample contains a significant amount of sediment, THEN a pre-filter of the same size or larger micron capacity may be used.
- [3] For split filtered samples, follow these steps:
 - [a] Move the intake tube up and down through the sample during filtration.

NOTE 1: A sample collected solely for filtration can be filtered without being homogenized by gently shaking.
- [4] Replace the filter if any of the following conditions occur:
 - flow diminishes,
 - the pump begins to make a grinding sound, or
 - the tubing is forced off the filter by backpressure.
- [5] Place the lid on the container.
 - [a] Ensure the lid is securely affixed to the container.
 - [b] Add a check mark next to the filtered requirement previously marked on the lid to indicate that filtration has been completed.
 - [c] Clean and dry the exterior of sample container.
 - [d] Check sample container for leakage and breakage.
- [6] Remove and dispose of filter and tubing when filtration of one sample set (location) has been completed.

NOTE 2: A new filter must be used with each new sample set.
- [7] Return to Section 4.1, Step 11.

4.3 Preserving Unfiltered and Filtered Samples

Preservation entails the addition of acid or base to a sample. Acids currently used include hydrochloric acid (HCl), nitric acid (HNO₃), and sulfuric acid (H₂SO₄). Bases currently used in preservation include sodium hydroxide (NaOH). Review the appropriate Material Safety Data Sheet or Safety Data Sheet for specific guidelines prior to preserving samples. Specific acids/bases used

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depend on the required monitored parameters and are subject to change (e.g., biennial Clean Water Act §303(d)/305(b) Integrated Report updates).

WARNING

Preservatives are strong acids and bases that can cause severe burns. Take extreme care when using these acids and bases.

- [1] Review the analysis requested on the SCPL or SAP.
- [2] Select the pre-measured preservative type and size that matches the sample container size.
 - [a] IF you only have one size pre-measured preservative that does not match the sample container size, THEN you will use more than one. For example, if you have a 1-liter sample container and 500 mL pre-measured preservative vial, you will need to add two preservative vials to the sample container.

NOTE: Never "split" a larger volume pre-measured vial to preserve a smaller volume container (e.g., do not pipette from a 1-liter, pre-measured preservative vial to preserve a 500 mL sample). Error in measurement precision may lead to a risk of violating Department of Transportation shipping requirements.
- [3] Add the preservative (acid or base) to the sample.
 - [a] Securely affix the lid to the container.
 - [b] Agitate the preserved sample by turning the container upside down two to three times.
- [4] Add a check mark next to the preservation type previously marked on the lid to indicate that preservation has been completed.
 - [a] Clean and dry the exterior of sample container.
 - [b] Check sample container for leakage and breakage.
- [5] Return to Section 4.1, Step 11.

4.4 Quality Control Samples

Refer to the SCPL or the program specific SAP for the types and quantities of quality control samples and the locations where these samples will be collected.

4.4.1 Field Blank Samples

- [1] Review the analysis requested on the SCPL or SAP.
 - [a] Ensure the sample container volume, type, and preservation type is correct for the analysis requested (e.g., 500 mL POLY, HNO₃).

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- [b] Note any deviation from the planned sample container volume or type on the SCPL.

CAUTION

DO NOT use tap, distilled, or drinking water purchased from a local store. These sources may not meet the water quality standards specified in the New Mexico Administrative Code (Title 20, Chapter 6, Part 4).

- [2] Obtain analyte free water (e.g., High Performance Liquid Chromatography grade ultrapure in amber glass) in sealed bottle(s) in sufficient quantity to fulfill the analysis requested.
- [3] Select another empty sample container(s) of the same type and volume for the analysis requested.
- [4] Mark the bottle and container lids with the 3-digit outfall ID and "Field Blank".
- [5] Transport both the field blank bottle(s) and container(s) to the sampling location.
- [6] During retrieval of samples, open the field blank bottle(s) and pour the analyte free water into the field blank sample container(s).
- [7] Securely affix the lid(s) to the container(s).
- [8] Replace the lid on the analyte free water bottle.
 - [a] IF 500 mL or greater remain in the bottle, THEN replace lid and mark the bottle with the date it was opened and "For Decon Use Only".
 - [b] IF less than 500 mL remain in the bottle, THEN dispose of water in the EPC-CP Stormwater Laboratory sink and dispose of the bottle.
- [9] Return the field blank containers with retrieved samples to the EPC-CP Stormwater Laboratory (TA-59-01) for any further required processing.
- [10] Return to Section 4.1, Step 11 to complete sample processing.

4.4.2 Field Duplicate Samples

- [1] Review the analysis requested on the SCPL or SAP.
 - [a] Ensure the sample container volume, type, and preservation type is correct for the analysis requested (e.g., 500 mL POLY, HNO₃).
 - [b] Note any deviation from the planned sample container volume, type, or preservation on the SCPL.
- [2] Field duplicate samples must be samples collected from the same location, at the same time, and in the same manner:

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- Select two sample collection bottles next to each other in the automated sampler carousel.

OR

- Select one sample collection bottle to split into separate sample containers

[3] For split samples, follow these steps:

- [a] Turn the sample collection bottle upside down multiple times to ensure sediment is loose from the bottom of the bottle.
- [b] Pour sample into sample containers ensuring the sample remains homogenized throughout the transfer.

[4] Return to Section 4.1, Step 11 to complete sample processing.

4.5 Handling Excess Stormwater

Minimize the amount of stormwater sample brought into the EPC-CP Stormwater Laboratory. Field personnel will attempt to retrieve only the volumes needed to fulfill the requested analyses from the current MSGP SAP or program/project specific SAP.

- [1] IF any excess stormwater sample exists after processing has been completed, THEN perform the following steps.

Sample Processor

- [a] Ensure the container is labeled with the site of origin, date and time sample was collected, and "Return to Site."
- [b] Place the container in the designated storage location in the EPC-CP Stormwater Laboratory.

EPC-CP technical staff

- [c] Return the sample to the site of origin as soon as possible.
- [d] Discharge at the sampler location.
- [2] IF the excess stormwater has been altered (e.g., tap water or preservative added), THEN contact the TA-59-0001 Waste Management Coordinator for further instruction.

4.6 Submit Samples for Shipping to Offsite Analytical Laboratory

Sample Processor

- [1] Deliver completed SCPL(s) to the MSGP Data Manager.

MSGP Data Manager

- [2] Process the sample information in the EIM system.

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- [a] Capture any documented deviations from planned conditions (as noted on the SCPLs).
- [b] Generate Chain of Custody/Analysis Request (COC) form(s) and sample container labels to reflect the processed samples (see examples in Attachments 2 and 3).

Sample Processor

- [3] Ensure the sample containers are securely sealed and wiped dry.
- [4] Cross-check to ensure the Sample ID on the SCPL matches the Field Sample ID on the COC.
- [5] Compare the information from the SCPL and lid of each container and apply the correct labels to the sample containers.
- [6] IF the person who processed the sample is NOT submitting the samples to the SMO, THEN
 - [a] He/she will print and sign his/her name and the date/time samples are relinquished to the submitter in the second RELINQUISHED BY box.
 - [b] The submitter will print and sign his/her name and the date/time samples are received in the second RECEIVED BY box.

EPC-CP technical staff

- [7] Place the sample(s) in a cooler with sufficient Blue Ice® (or equivalent) to maintain the required preservation temperature ($\leq 4^{\circ}\text{C}$).
NOTE: Cushioning material (e.g., bubble wrap) may be used to separate containers to avoid breakage during transport
- [8] Place the SCPL(s) and COC(s) in a zip lock type bag, seal, and place in the cooler with samples.
- [9] Transport samples to the SMO.
 - [a] Deliver samples during SMO business hours by 2pm for same day shipping.
 - [b] Coordinate with the SMO for delivery during other times or for delivery of samples that have limited holding times.
 - [c] If delivery of samples to the SMO will be delayed, place sample containers with SCPL(s) in the EPC-CP Stormwater Laboratory refrigerator and ensure the refrigerator is locked.
- [10] Complete the COC form as follows:
 - [a] On the Relinquished By line, the person submitting the sample(s) will sign and print his/her name and date/time samples are relinquished to the SMO.

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- [b] The SMO personnel accepts the sample(s) by signing and printing his/her name and recording the date/time on the Received By line.
- [11] Complete the SCPL form as follows:
 - [a] Ensure all fields are filled out with sample information or N/A. Do not leave blank fields.
 - [b] In the RELINQUISHED BY box, the person submitting the sample(s) will sign and print his/her name. Sign and print your name on the SCPL in the "Relinquished By" box.
 - [c] Record the date/time that matches the data and time RELINQUISHED BY on the COC.
 - [d] Record the COC number (e.g., 2017-xxxx) in the RECEIVED BY box.
- [12] Ensure the following steps are taken:
 - [a] SMO makes a copy of the SCPL(s) to accompany the COC and samples.
 - [b] Keep the original SCPL(s) for the MSGP program.
 - [c] Make a copy of the signed Chain of Custody/Analysis Request.
- [13] Deliver the copy of the signed COC and original SCPL(s) to the MSGP Data Manager for record keeping.

5.0 TRAINING

All EPC-CP personnel that execute the activities specified in this procedure must meet the minimum qualification and training requirements for their position as identified EPC-CP-PIP-2101, NPDES Multi-Sector General Permit Program. This will include “self-study” (required reading) for this procedure as assigned and documented in accordance with ENV-DO-QP-115, *Personnel Training*. Other participating LANL groups may require training documentation pursuant to local procedures.

Contract personnel that execute the activities specified in this procedure will be qualified and trained as required by the Exhibit D and Exhibit F. In addition, contract personnel will be required to complete “self-study” (required reading) of this procedure.

Personnel performing this procedure will be familiar with the most current versions of the following procedures and operation manuals:

- EPC-CP MSGP SAP for the current monitoring year
- EPC-CP-QP-2103 Inspecting Stormwater Runoff Samplers and Retrieving Samples for the MSGP

6.0 RECORDS

EPC-CP is the Office of Record for this document and must be maintained in accordance with [PD1020](#), *Document Control and Records Management* and ADESH-AP-006, *Records Management*

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Plan. Records generated by this document will be submitted to the Records Management designated point of contact or document manager for document management.

Below are records generated as a result of implementing this procedure. Records generated are identified by title and type.

| Record Title | QA Record | Non-QA Record |
|---|-------------------------------------|--------------------------|
| *Water Sample Collection and Processing Log/Field Chain of Custody | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| *Chain of Custody/Analysis Request | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Copy of log book entry(s) (if a log book is used) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Other pertinent field or lab notes (if additional notes are required) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

*The original document is part of the data package QA records for the SMO. MSGP retains a copy for tracking purposes only.

7.0 DEFINITIONS AND ACRONYMS

7.1 Definitions

See LANL [Definition of Terms](#).

7.2 Acronyms

See LANL [Acronym Master List](#).

| | |
|--------|---|
| COC | Chain of Custody/Analysis Request |
| EIM | Environmental Information Management |
| EPA | Environmental Protection Agency |
| EPC-CP | Environmental Protection and Compliance – Compliance Programs |
| LANL | Los Alamos National Laboratory |
| µm | Micron |
| mL | Milliliter |
| MSGP | Multi-Sector General Permit |
| N/A | Not Applicable |
| NPDES | National Pollutant Discharge Elimination System |
| SAP | Sample Analysis Plan |
| SCPL | Water Sample Collection and Processing Log/Field Chain of Custody |
| SMO | Sample Management Office |

8.0 REFERENCES

None.

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9.0 ATTACHMENTS

Attachment 1: *Water Sample Collection and Processing Log/Field Chain of Custody Example*

Attachment 2: *Sample Container Labels Example*

Attachment 3: *Chain of Custody/Analysis Request Example*

| | | |
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Attachment 1: Water Sample Collection and Processing Log/Field Chain of Custody Example

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Los Alamos National Laboratory

WATER SAMPLE COLLECTION AND PROCESSING LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11743 **EVENT NAME:** MSGP 2018
SAMPLE ID: MSGP-18-153015 **WORK ORDER:** MSGP-12345
COLLECTION DATE/TIME: 07/01/18 16:03 **RETRIEVAL DATE/TIME:** 07/03/18 09:25
LOCATION ID: MSGP04301 **SAMPLER TYPE:** APS-R
LOCATION TYPE: WCS **SAMPLE PREP:** UF
LOCATION SYNONYM(S): N/A **FIELD QC TYPE:** REG
FIELD MATRIX: WT **SAMPLE USAGE:** COMP

| PRIORITY | ORDER | CONTAINER | # | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS | PROCESSING COMMENTS |
|----------|----------|---------------------------------|---|--------------|---------------|----------------------|---------------------|
| N/A | MSGP-TSS | 250 500 ML POLY to 7/1/18 | 1 | ICE | X | N/A | N/A |

SAMPLE COMMENTS: N/A

FIELD PARAMETERS:

Sample Time N/A HH:MM pH 6.2 SU Visual Inspection Y SU
 Visual Inspection WO# MSGP-67890

| | | | |
|---|--|---|--|
| COLLECTED BY (Printed Name) <u>Jane Doe</u> (Signature) <u>[Signature]</u> | Date/Time <u>07/03/18</u> <u>09:25</u> | | |
| RELINQUISHED BY (Printed Name) <u>Jane Doe</u> (Signature) <u>[Signature]</u> | Date/Time <u>07/03/18</u> <u>10:05</u> | RECEIVED BY (Printed Name) <u>John Smith</u> (Signature) <u>[Signature]</u> | Date/Time <u>07/03/18</u> <u>10:05</u> |
| PROCESSED BY (Printed Name) <u>John Smith</u> (Signature) <u>[Signature]</u> | Date/Time <u>07/03/18</u> <u>13:00</u> | | |
| RELINQUISHED BY (Printed Name) <u>John Smith</u> (Signature) <u>[Signature]</u> | Date/Time <u>07/04/18</u> <u>08:35</u> | RECEIVED BY (Printed Name) <u>See COC #</u> (Signature) <u>2017-1326</u> | Date/Time |
| RELINQUISHED BY (Printed Name) <u>N/A</u> (Signature) | Date/Time | RECEIVED BY (Printed Name) <u>N/A</u> (Signature) | Date/Time |

Report Date: 08/01/2018

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Attachment 2: Sample Container Labels Example

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| Los Alamos National Laboratory | |
|--------------------------------------|-------------|
| Sample ID: MSGP-17-131786 | |
| Container: 500 ML POLY | 1 of 1 |
| Preservative: HNO3 ICE | |
| Analysis: NPDES-AI-Total Recoverable | |
| Date: 04/01/2017 | Time: 16:03 |

| Los Alamos National Laboratory | |
|--------------------------------------|-------------|
| Sample ID: MSGP-17-131787 | |
| Container: 500 ML POLY | 1 of 1 |
| Preservative: HNO3 ICE | |
| Analysis: NPDES-AI-Total Recoverable | |
| Date: 04/01/2017 | Time: 16:03 |

| | | |
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Attachment 3: Chain of Custody/Analysis Request Example

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[illegible]

**ATTACHMENT 21: EPC-DO-QP-101, ENVIRONMENTAL REPORTING
REQUIREMENTS FOR RELEASES OR EVENTS**

EPC-DO-QP-101Revision: **3**

Effective Date: 08/07/2017

Next Review Date: 08/07/2020

Environment, Safety, and Health Directorate**Environmental Protection and Compliance Division – Compliance Programs****Quality Procedure****Environmental Reporting Requirements for Releases or Events****Document Owner/Subject Matter Expert:**

| | | | |
|--------------|---------------|-------------------|---------|
| Name: | Organization: | Signature: | Date: |
| Brian Iacona | EPC-CP | Signature on File | 4-27-17 |

Derivative Classifier: ☒ **Unclassified** or ☐ **DUSA ENVPRO**

| | | | |
|---------------|---------------|-------------------|--------|
| Name: | Organization: | Signature: | Date: |
| Jacob Meadows | EPC-CP | Signature on File | 5-2-17 |

Approval Signatures:

| | | | |
|---------------------------|-------------------------|-------------------|---------|
| Subject Matter Expert: | Organization: | Signature: | Date: |
| Brian Iacona | EPC-CP | Signature on File | 4-27-17 |
| Responsible Line Manager: | Organization: | Signature: | Date: |
| Michael Saladen | EPC-CP, Team Leader | Signature on File | 7-21-17 |
| Responsible Line Manager: | Organization: | Signature: | Date: |
| | EPC-CP, Group Leader | Signature on File | 8-3-17 |
| Responsible Line Manager | Organization | Signature: | Date: |
| | EPC-DO, Division Leader | Signature on File | 8-7-17 |

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REVISION HISTORY

| Document Number and Revision <i>[Include revision number, beginning with Revision 0]</i> | Effective Date <i>[Document Control Coordinator inserts effective date]</i> | Description of Changes <i>[List specific changes made since the previous revision]</i> |
|--|---|--|
| 0 | 02/09 | New document |
| 1 | 4/10 | Revision and update |
| ENV-DO-QP-101 R2 | 6/12 | Biennial Review/Revision, new template implemented. |
| EPC-DO-QP-101 R3 | 08/07/17 | Revision and update. This document replaces ENV-DO-QP-101 R2. New document number reflects organizational name change. |

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1.0 INTRODUCTION

This Environmental Protection and Compliance Division (EPC-DO) procedure describes how to determine whether an unplanned release, spill, fire, or other event needs to be reported under environmental regulations and how to fulfill all immediate reporting requirements (within the first 24 hours). Emergency and abnormal event notification requirements for reporting to Laboratory and DOE management are specified in [PD1200, *Emergency Management*](#), and [P322-4, *Performance Improvement from Abnormal Events*](#). Environmental reporting requirements regarding releases or other events are included in this procedure.

1.1 Purpose

This procedure describes the actions that must be performed within the first 24 hours of the release. This procedure does **not** cover the response procedures for “continuous releases” under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Emergency Planning and Community Right-to-Know Act (EPCRA) (see definitions) nor the follow-up notifications and reports.

1.2 Applicability

This procedure applies to EPC-DO on-call representatives and subject matter experts (SMEs) who must respond to any release, spill, or event at the Laboratory that may require immediate notification to local, state or federal regulatory agencies. For notifications to Pueblo Environmental Departments refer to [ENV-DO-QP-111, *Reporting Environmental Releases to Pueblo Governments*](#).

2.0 PRECAUTIONS AND LIMITATIONS

The work described in this procedure includes field work that does not require an Integrated Work Document (IWD) and is rated as having a **LOW hazard** level.

3.0 RESPONSIBILITIES

The following personnel require training before implementing this procedure:

- EPC managers, designated on-call representatives, and SMEs who may be asked to fulfill immediate reporting requirements during release-related exercises or during actual releases

Annual retraining to this procedure is required. This procedure will be reviewed biennially by all affected personnel and updated as necessary.

Training to this procedure will be by “self-study” (reading) and is documented in accordance with the trainee’s organization’s procedure for training.

Actions specified within this procedure, unless preceded with “should” or “may”, are to be considered mandatory (i.e., “shall”, “will”, “must”).

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4.0 WORK PROCESSES

Events covered by this procedure include detonation or burns of unstable material, leaking or compromised gas cylinders, puncturing of bulging containers, fires, explosions, chemical or radiological spills, wastewater spills, potable water discharges, and other unplanned releases at the Laboratory.

On a semi-annual basis, EPC-DO will prepare a list of individuals designated as on-call representatives and will designate the week each will be on-call. This list will be distributed to on-call representatives and Laboratory managers including Principal Associate Directorate for Operations (PADOPS), Associate Directorate for Environment, Safety, and Health (ADESH), Associate Directorate for Environmental Management (ADEM), Emergency Operations (SEO-DO), EPC-DO, Environmental Protection and Compliance Division Compliance Programs Group (EPC-CP), and Environmental Protection and Compliance Division Environmental Stewardship Group (EPC-ES). The on-call representative can be reached by pager at 505-664-7722.

4.1 Responsibility of On-Call Representative

The EPC on-call representative is the party primarily responsible for:

- determining if the incident will require immediate notification to external agencies in accordance with LANL, state, and federal regulatory reporting requirements
- notifying EPC Division management of immediate reporting requirements
- if needed, coordinating with other on-call SMEs and the Emergency Operations Center (EOC) to ensure the required notifications for environmental reporting and abnormal events are being addressed for the Laboratory

The EPC on-call representative is not responsible for the following and EOC will make these determinations:

- determining if the Resource Conservation Recovery Act (RCRA) Contingency Plan must be implemented
- if a shock-sensitive material or leaking or compromised gas cylinder constitutes an emergency

However, in order to ensure that the appropriate expertise is available for the affected media, the EPC on-call representative may immediately confer with an SME of the EPC group that has programmatic responsibility. If an SME from the responsible group is able to respond to the event, the remaining steps in this procedure may be passed to that person.

A list of contact numbers for on-call representatives and SMEs for EPC-CP and EPC-ES groups is available in the EPC-CP group office. The EPC-DO and SEO-DO may also be contacted to determine the on-call representative for each group.

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4.2 Follow-Up Reporting

This procedure describes the initial external notifications (within the first 24 hours) to regulatory agencies. After completion of the steps in this procedure, the EPC group specifically responsible for compliance with the relevant regulations will complete the required notifications and reports, as applicable under the appropriate regulations, according to established procedures.

4.3 Summary of Policy Reporting

The EPC on-call representative and spill response SMEs have the authority and responsibility for deciding when to report an event and for making notifications to regulatory agencies within the applicable regulatory deadlines.

LANL management and Department of Energy Los Alamos Field Office (DOE LAFO) must be informed as soon as possible that a report was or will be made, but their approval is not required prior to the report being made to the regulatory agency. LANL management, with input from EPC SMEs, will determine if an ORPS (Occurrence Reporting Processing System) report or other type of Lessons Learned will be necessary.

NOTE: SEO-DO maintains a current list of on-call LANL managers.

4.4 Using this Procedure

This procedure has seven separate paths (and corresponding sections) to follow for determining if a release or event is reportable. Follow each of these paths to determine if one or more are applicable:

- Resource Conservation and Recovery Act (RCRA)
- Toxic Substances Control Act (TSCA)
- Clean Water Act (CWA), New Mexico Water Quality Act (NMWQA), and New Mexico Water Quality Control Commission (NMWQCC) Regulations
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Emergency Planning and Community Right-to-Know Act (EPCRA)
- Clean Air Act
- Endangered Species Act
- Bald and Golden Eagle Protection Act
- Migratory Bird Treaty Act
- New Mexico Wildlife Conservation Act
- National Environmental Policy Act
- National Historic Preservation Act
- Native American Graves Protection and Repatriation Act

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- Archaeological Resources Protection Act

Each release needs to be evaluated for all potential reporting requirements. For example, a Reportable Quantity (RQ), defined under CERCLA or EPCRA may not be met, **but the release may be reportable** under RCRA, New Mexico Water Quality Control Commission (NMWQCC), and/or Clean Water Act (CWA) requirements.

NOTE: The 24-hour deadline (immediate in some cases) applies regardless of whether it occurs during business hours, after business hours or on non-business days.

4.5 Determining if a Release is Reportable under RCRA

Follow the flow chart in Attachment 1 to determine if an event is reportable under RCRA regulations.

Under the RCRA permit requirements, the SEO-DO manager determines if the “RCRA Contingency Plan” provisions should be implemented. The EPC on-call representative or an EPC-CP SME performs notifications that may be required.

The SEO-DO Manager will normally attempt to contact the EPC-CP SME for guidance in making this decision. If the EPC-CP SME is successfully contacted, the completion of the remainder of this procedure may be passed on to this individual.

The EPC on-call representative makes the determination that one or more of these conditions occurred through consultation with EPC-CP and appropriate SMEs. 24-hour notification can be made by the EPC on-call representative or by an EPC SME.

The Emergency Operations Center (EOC) manager makes the determination that unstable chemicals, leaking or compromised gas cylinders represent an emergency situation and, typically with EPC-CP, how best to respond. 24-hour notification can be made by the on-call representative or EPC-CP SME.

If a release/event is reportable under RCRA rules, determine if the release/event is reportable under other rules and proceed to the Section 4.10 *Reporting a Release or Event*.

4.6 Determining if a Release is Reportable under TSCA

In practice, only spills of Polychlorinated Biphenyls (PCBs) or PCB-suspect untested mineral oil to the environment (generally outdoors or with the potential to reach the outdoors) are reportable. Spills that are contained indoors are generally not reported.

A discharge of PCBs is reportable to the Environmental Protection Agency (EPA) under TSCA if 1 pound of PCBs by weight is released [40 Code of Federal Regulations (CFR) 761.125(a)(1)]. Notify the EPA regional office and proceed with the immediate clean up requirements noted in 40 CFR 761.125(a)(1) in the shortest possible time after discovery, but in no case later than 24 hours after discovery. Additionally, reporting requirements are triggered if over 270 gallons of untested mineral oil suspected of containing PCBs has been spilled.

Follow the steps in *Determining if a Release is Reportable under CERCLA, EPCRA, or Other Regulations* to determine if the RQ for PCBs has also been exceeded.

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There are six items containing PCBs that are out of service at the Chemistry and Metallurgy Research (CMR) Building. All other known PCB equipment at the Laboratory has been taken out of service and disposed of in accordance with TSCA regulations.

If a release is reportable under TSCA, continue through the next sections to determine if the release/event is reportable under other rules and proceed to *Reporting a Release or Event* and determine if additional reporting is necessary.

| If the spill is ... | Then... |
|--|--|
| equal to or over 1 pound by weight of PCBs (TSCA) or greater than 270 gallons of untested mineral oil suspected of containing PCBs | Report to the National Response Center (1-800-242-8802) immediately (within 15 minutes of discovery). Additionally, contact EPA Region 6 (Office of Prevention, Pesticides and Toxic Substances Branch) through EPA's 24-hour spill response number 866-372-7745 as soon as possible after discovery but no later than 24 hours after discovery. |

4.7 Determining if a Release is Reportable under the NM Water Quality Act or the CWA

20.6.2.1203 New Mexico Administrative Code (NMAC) Reporting

The NM Water Quality Act (NMWQA) does not use Reportable Quantities (as described in the next section). Instead the NM Water Quality Control Commission (NMWQCC) regulations state: *"With respect to any discharge from any facility of oil or other water contaminant, in such quantity as may with reasonable probability injure or be detrimental to human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property, notifications (to the New Mexico Environment Department (NMED)) and corrective actions are required."*

The above rule requires the use of professional judgment to determine if reporting is required. No quantifiable metric is available to assist in making this determination. The EPC on-call representative or SME has the authority and responsibility to make this determination.

Additionally, unplanned releases of potable water or steam condensate require reporting pursuant to 20.6.2.1203 NMAC if the release is greater than 5,000 gallons, reaches a watercourse, or if the release adversely impacts a Solid Waste Management Unit (SWMU) or Area of Concern (AOC) as directed in the LANL Liquid Discharge Reporting Guidance (Decision Tree), dated March 10, 2009. Contact ADEM to confirm the location and potential impacts to SWMUs or AOCs from any releases that may occur.

Groundwater Discharge Permit Reporting

The Laboratory has four current Groundwater Discharge Permits (DPs) that include notification and reporting requirements in the event of an unpermitted discharge. Spills of **any volume** associated with any of the Groundwater DPs require reporting to NMED pursuant to 20.6.2.1203 NMAC.

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1. DP-857: Sanitary Waste Water System (SWWS) Plant, Sanitary Effluent Reclamation Facility (SERF), and Sigma Mesa Evaporation Basins. Permit Condition No. 44.

The unauthorized release of untreated and treated sanitary wastewater, reuse wastewater, blended wastewater, and reject wastewater would be subject to reporting under Condition No. 44.

2. DP-1589: Septic Tank/Disposal Systems. Permit Condition No. 23.

The unauthorized release of untreated wastewater, septage, treated wastewater surfacing from failing disposal systems (leach fields), and treated wastewater surfacing from overflowing septic tanks would be subject to reporting under Condition No. 23.

3. DP-1793: Land Application of Treated Groundwater. Permit Condition No. 17.

The unauthorized release of untreated or treated groundwater that does not constitute land application, as defined in [EPC-CP-QP-010: Land Application of Groundwater](#), would be subject to reporting under Condition No. 17.

4. DP-1835: Injection of Treated Groundwater to Class V Underground Injection Control (UIC) Wells. Permit Condition No. 22.

The unauthorized release of treated or untreated groundwater that does not constitute injection into a Class V UIC well, as defined in Discharge Permit DP-1835, would be subject to reporting under Condition No. 22.

Clean Water Act Reporting

Oil discharges (film/sheen/discoloration) to water in stream channels must also be reported to the National Response Center (NRC) immediately (within 15 minutes of discovery) pursuant to 40 CFR §110.6.

National Pollutant Discharge Elimination System (NPDES) Outfall Reporting

The EPC-DO on-call SME must provide notification to the NPDES Outfall Permit Program Lead and/or the EPC-CP Water Quality Team Leader in the event of a leak or unplanned release from an NPDES permitted outfall upon discovery in order to meet applicable reporting requirements.

4.7.1 Reporting Requirement for Petroleum Storage Tanks

As defined in 20.5.7 NMAC, the NMED requires verbal reporting within 24 hours of a petroleum product release from regulated tanks to the NMED Petroleum Storage Tank Bureau (PSTB) when there is:

- any suspected or confirmed release of regulated substances
- evidence of release of regulated substances
- unusual operational conditions (that would cause concern about a release)
- monitoring results that show loss from the system

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Regulated tanks include those with a capacity between 1,320 gallons and 55,000 gallons. Regulated substances for Aboveground Storage Tanks includes, but is not limited to petroleum and petroleum-based substances comprised of a complex blend of hydrocarbons derived from crude oil through processes of separation, conversion, upgrading and finishing, such as motor fuels (including ethanol-based motor fuels), jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

Notice of any suspected or confirmed release from a storage tank system needs to be completed within 24 hours. Contact the EPC-CP Aboveground Storage Tank (AST) Program Lead and/or the EPC-CP Water Quality Team Leader prior to completing any external notifications. The PSTB can be reached at 476-4397 during business hours and 827-9329 (NMED Emergency Spill Hotline) during non-business hours. A written report describing the spill, release or suspected release and any investigation or follow-up action needs to be submitted to the PSTB within 14 days of the incident.

4.7.2 Additional Reporting Requirements under the NPDES Pesticide General Permit

Adverse incidents require reporting to the EPA under the NPDES Pesticide General Permit (PGP). An adverse incident is defined as an unusual or unexpected incident resulting from pesticide applications that an Operator has observed upon inspection or of which the Operator otherwise becomes aware, in which:

1. There is evidence that a person or non-target organism has likely been exposed to a pesticide residue, and
2. The person or non-target organism suffered a toxic or adverse effect.

The phrase toxic or adverse effect includes effects that occur within Waters of the United States on non-target plants, fish, or wildlife that are unusual or unexpected (e.g., effects are to organisms not otherwise described on the pesticide product label or otherwise not expected to be present) as a result of exposure to a pesticide residue, and may include:

- Distressed or dead juvenile and small fishes
- Washed up or floating fish
- Fish swimming abnormally or erratically
- Fish lying lethargically at water surface or in shallow water
- Fish that are listless or nonresponsive to disturbance
- Stunting, wilting, or desiccation of non-target submerged or emergent aquatic plants
- Other dead or visibly distressed non-target aquatic organisms (amphibians, turtles, invertebrates, etc.)

The phrase toxic or adverse effects also includes any adverse effects to humans (e.g. skin rashes) or domesticated animals that occur either from direct contact with or as a secondary effect from a discharge (e.g., sickness from consumption of plants or animals containing pesticides) to Waters of the United States that are temporally and spatially related to exposure to a pesticide residue (e.g. vomiting, lethargy).

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If an Operator observes or otherwise becomes aware of an adverse incident due to pesticide application, the Operator must notify the EPA Incident Reporting contact within 24 hours of the Operator becoming aware of the adverse incident. EPA Incident Reporting Contacts are listed at <https://www.epa.gov/npdes/pesticide-permitting>.

If an Operator becomes aware of an adverse incident affecting a federally listed threatened or endangered species or its federally designated critical habitat, which may have resulted from a discharge from the Operator's pesticide application, the Operator must immediately (within 15 minutes of discovery) notify the U. S Fish and Wildlife Service. This notification must be made by phone to the contact listed on the EPA's website (<https://www.epa.gov/npdes/pesticide-permitting>).

4.8 Determining if a Release is Reportable under CERCLA or EPCRA

Under CERCLA or EPCRA, an RQ is the threshold which requires regulatory notification of a release. An RQ is based on the quantity of chemical released within any 24-hour period. CERCLA RQs of hazardous substances are listed in 40 CFR § 302.4. If an RQ is met or exceeded, an immediate (within 15 minutes of discovery) notification must be made to the NRC (1-800-424-8802) pursuant to 40 CFR §302.6. If a release of an airborne radioactive material exceeds an RQ, the EPA Region 6 Health Physicist (Office-(214) 665-8541; Mobile-(214) 755-1530; Home-(972) 937-1900) must also be verbally notified after the NRC notifications have been completed.

A release is reportable under EPCRA if a release of a hazardous or extremely hazardous substance listed in 40 CFR Part 355 Appendices A and B occurs. The chemicals that have not been assigned RQs by the EPA have been given statutory RQs of one pound by Congress. If an RQ established under EPCRA is met or exceeded, an immediate (within 15 minutes of discovery) notification must be made to the Local Emergency Planning Committee (LEPC) community emergency coordinator and to the State Emergency Response Commission (SERC) (see Attachment 2).

The lists of CERCLA hazardous substances and EPCRA extremely hazardous substances are two separate lists that include a number of common substances. However, not all extremely hazardous substances are listed hazardous substances. In some instances, a release of an extremely hazardous substance may be reportable under EPCRA but not reportable under CERCLA.

Releases that occur within a closed space with no emissions to the ambient environment are exempt from EPCRA and CERCLA reporting requirements.

NOTE: Response procedures for "Continuous Releases" are not covered in this procedure.

4.8.1 Regulatory Classification of the Released Material

The on-call EPC SME will determine the regulatory classification of the substance released with respect to the hazard classifications:

- Extremely Hazardous Substance (EHS) and/or Hazardous Substance (HS)

Often during the course of an emergency, complete information will not be available regarding type and amount of material released. In this case, best professional judgment must be used to establish the level of confidence associated with the estimates. If the uncertainty is high enough that future

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estimates may require reporting, it is best to be conservative and report the release following the reporting requirements detailed in Section 4.10 *Reporting a Release or Event*.

After determining the RQ of a released material, the EPC on-call representative or SME will perform the following steps to determine if an RQ has been released.

| Step | Action | | | | | | |
|-------------------------------------|---|-------------------------------------|----------------|------------------------------------|---|---------------------|---|
| 1 | Obtain an estimate of the quantity and type of material released (e.g. 4 pounds of chlorine gas or 150 curies of tritium). | | | | | | |
| 2 | Compare this quantity against the RQs provided in 40 CFR Table 302.4 and 40 CFR §355, Appendices A and B. | | | | | | |
| 3 | <p>If this is an airborne release of radioactive materials, immediate (within 15 minutes of discovery) reporting to the NRC and the EPA Region 6, Regional Health Physicist is required if the RQ has been exceeded. Note that for radioactive materials, the RQ is provided in activity units (curies or becquerels). Also note that some materials have an RQ value for both chemical exposure (Table 302.4) and for radiological exposure (Appendix B to §302.4). In these cases, the RQ applying to the smallest quantity of material will apply.</p> <p>For all radioactive material releases, a radiological dose assessment must also be performed within 24 hours of the release. This dose assessment should be made by an environmental health physicist in EPC-CP or EPC-ES. The on-call individual should contact an EPC health physicist for this evaluation.</p> <p>Immediate evaluation – RQ comparison (of a radioactive material release)</p> <table> <tr> <td>If the release...</td><td>Then...</td></tr> <tr> <td>Is equal to or greater than the RQ</td><td>Proceed to section 4.10 <i>Reporting a Release or Event</i>.</td></tr> <tr> <td>Is less than the RQ</td><td>No immediate reporting is required; contact EPC environmental health physicist to complete follow-up dose assessment.</td></tr> </table> | If the release... | Then... | Is equal to or greater than the RQ | Proceed to section 4.10 <i>Reporting a Release or Event</i> . | Is less than the RQ | No immediate reporting is required; contact EPC environmental health physicist to complete follow-up dose assessment. |
| If the release... | Then... | | | | | | |
| Is equal to or greater than the RQ | Proceed to section 4.10 <i>Reporting a Release or Event</i> . | | | | | | |
| Is less than the RQ | No immediate reporting is required; contact EPC environmental health physicist to complete follow-up dose assessment. | | | | | | |
| 4 | <p>If this is a release of non-rad material, it is reportable if the RQ is exceeded.</p> <table> <tr> <td>If the amount released is..,</td><td>Then...</td></tr> <tr> <td>Equal to or greater than the RQ</td><td>Proceed to Section 4.10 <i>Reporting a Release or Event</i>.</td></tr> <tr> <td>Less than the RQ</td><td>Proceed to Step 5</td></tr> </table> | If the amount released is.., | Then... | Equal to or greater than the RQ | Proceed to Section 4.10 <i>Reporting a Release or Event</i> . | Less than the RQ | Proceed to Step 5 |
| If the amount released is.., | Then... | | | | | | |
| Equal to or greater than the RQ | Proceed to Section 4.10 <i>Reporting a Release or Event</i> . | | | | | | |
| Less than the RQ | Proceed to Step 5 | | | | | | |
| 5 | Continue to re-evaluate the release as new data becomes available. Perform Steps 1 through 4 as necessary. | | | | | | |

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4.9 Determining Release Impacts to Biological or Cultural Resources

There are laws and regulations related to protection of biological and cultural resources which are applicable to the Laboratory. These laws and regulations include:

- National Environmental Policy Act
- Endangered Species Act
- Bald and Golden Eagle Protection Act
- Migratory Bird Treaty Act
- New Mexico Wildlife Conservation Act
- New Mexico Endangered Species Act
- National Historic Preservation Act
- Native American Graves Protection and Repatriation Act
- Archaeological Resources Protection Act

Reporting of impacts to biological or cultural resources under the preceding federal laws is not specifically defined. However, the EPC on-call SME should utilize the Decision Support Application (DSA) to determine if the release impacted a Biological or Cultural Site. The DSA layer 'Federally Listed Species Habitat' contains Endangered Species habitat boundaries. The DSA 'Cultural Resources-Buffered Sites' layer contains the boundaries of the Cultural Sites (Please note- information contained in these layers is Official Use Only). Notify the respective Biological or Cultural SME within one business day if the release impacted either of these areas. The Biological or Cultural SMEs will handle any additional reporting requirements.

Additionally, if there is a release of contaminants to a wetland or destruction of a wetland, OR if the event could result in the "take" of a threatened or endangered species (i.e., a wildfire), the EPC on-call representative or SME will notify the Biological SME within one business day of the event. The Biological SME will complete any additional reporting requirements.

4.10 Reporting a Release or Event

If a release or event is reportable (as determined by one or more of the previous sections), the Laboratory is required to meet certain reporting requirements. The emergency notification requirements must be followed upon determination that a release or event is reportable.

For informational purposes, a Summary of Emergency Release or Event Reporting Requirements is provided in Attachment 2. This document summarizes the primary statutes and the associated reporting requirements.

Maintain a notebook to record pertinent information about the release and to document the actions taken (see Section 5.0 *Records*).

Any release to the environment that has been determined to be reportable by the EPC on-call representative or SME shall be reported through the LANL management chain in accordance with [PD1200, Emergency Management](#) and [P322-4, Performance Improvement from Abnormal Events](#).

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Los Alamos National Security (LANS) management and DOE shall be notified if a release notification to state or federal regulatory agencies is required. Management approval is not required prior to completing environmental notifications to the regulatory agencies in order to assure that the deadline for reporting is not exceeded.

Perform the following steps immediately after establishing that reporting is required:

| Step | Action |
|-------------|---|
| 1 | Compile release information including : <ul style="list-style-type: none"> • The source, cause, type and quantity of the release • Time and duration of the release • Extent of any protective and corrective actions taken • Name, address, and telephone number of the person to contact for further information • Whether the substance is an HS or EHS • Associated health risks and medical attention necessary for exposed individuals • If available, information concerning the release of any hazardous and/or mixed waste which may endanger public or private drinking water supplies • Assessment of actual or potential hazards to human health or the environment outside the facility • If available, estimated quantity and disposition of recovered material that resulted from the incident • Precautions to take due to the release/event, including, in the case of fire, those associated with special hazards due to hazardous and/or mixed waste • Any other information which may help emergency personnel responding to the incident • Environmental media impacted from the release |
| 2 | Notify LANL management, DOE, and the respective Facilities Operations Division (FOD). Note: Management approval is not required prior to completing environmental notifications to the regulatory agencies in order to assure that the deadline for reporting is not exceeded. |
| 3 | Provide notification to the regulatory agency as required by the applicable regulation(s) detailed in Sections 4.5 - 4.9. Reference Attachment 2 for a summary of the applicable reporting requirements. |
| 4 | Notify programmatic SMEs that may be impacted or required to complete follow up reporting. |

4.10.1 Steps to Notify LANL Management and DOE

The EPC on-call representative will complete the following steps to provide notification to LANL Management and DOE.

| Step | Action |
|-------------|---|
| 1 | Determine that a release to the environment is reportable to state or federal entities as |

| | | |
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| | required under applicable regulations. NOTE: Occurrence Reporting and Procession System (ORPS) reporting is a FOD and Responsible Associate Director (RAD) responsibility and commonly they will seek advisement from EPC SMEs. |
| 2 | Provide notification to the EPC-CP Water Quality Team Leader, the EPC-CP Group Leader, the EPC-DO Division Leader, and DOE LAFO program contact of the release and the required external notifications. |
| 3 | Complete environmental reporting to state and federal agencies in accordance with all applicable regulations. |
| 4 | Notify the appropriate program SME that may be impacted or be required to complete following up release reporting. |

After all the above notifications have been made, or when requested, the EPC on-call representative or SME will hand off responsibility for additional actions and follow-up to the affected environmental group. (The group that will be responsible will depend on the type and location of the release and the governing regulations or statutes.)

In order to communicate events at LANL which may impact the public and or the environment, EPC staff may provide a courtesy notification to New Mexico Environment Department of events that may not require formal regulatory notification. Examples of such events in the past have been small wild land fires.

5.0 RECORDS

The following records are generated as a result of this procedure and are maintained in accordance with ADESH-AP-006 Records Management Plan and [P1020-1, Laboratory Records Management:](#)

- Field documentation of the release, including:
 - Time and date of the release
 - Time, date, and description of notifications
 - Location and source of the release
 - Type of material released
 - Quantity of material released
 - Impacted media
 - Time release was stopped
 - Any immediate mitigation actions taken to contain or control the release
 - Documentation of any verbal notifications
 - Samples taken
- Copies of any written notifications generated

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- Documentation of any analytical results, and quality assurance of results
- Contingency and / or emergency plan documentation
- Documentation of any RCRA permit non-compliance that threatens human health and environment
- Documentation of treatment of any RCRA unstable chemicals, leaking or compromised gas cylinders

6.0 DEFINITIONS AND ACRONYMS

6.1 Definitions

ADESH – Associate Directorate for Environment, Safety, and Health

ADEM – Associate Directorate for Environmental Management

AOC – Area of Concern

AST – Aboveground Storage Tank

CAA – Clean Air Act

CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act

CMR – Chemistry and Metallurgy Research

CFR – Code of Federal Regulations

Continuous Release – A release is continuous if it “occurs without interruption or abatement or if it is routine, anticipated, intermittent, and incidental to normal operations or treatment processes.” The release must also be “stable in quantity and rate,” which means that it must be predictable and regular in the amount and rate of emission. The response procedures for continuous releases are not covered by this document. See guidance in Reporting Continuous Releases of Hazardous and Extremely Hazardous Substances under CERCLA and EPCRA.

CWA – Clean Water Act

DOE LAFO – Department of Energy Los Alamos Field Office

DSA – Decision Support Application

Environment – Includes "water, air, land, and the interrelationship which exists among and between water, air, land, and all living things." (40 CFR 355.20)

EOC – Emergency Operations Center

EPA – Environmental Protection Agency

EPC-DO – Environmental Protection and Compliance Division

EPCRA – Emergency Planning and Community Right-to-Know Act

EPC-CP – Environmental Protection and Compliance Division Compliance Programs Group

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EPC-ES – Environmental Protection and Compliance Division Environmental Stewardship Group

Extremely Hazardous Substance (EHS) – EPCRA establishes emergency reporting requirements for extremely hazardous substances in 40 CFR 355, Appendix A. All of these substances are also CWA and CERCLA “hazardous” substances.

FOD – Facility Operations Director

GWDP-Ground Water Discharge Permit

Hazardous Substance (HS) – These substances are summarized in 40 CFR Part 302. As used in this context, refers to: (1) any elements, compounds, mixtures, solutions, or substances specially designated by EPA under Section 311 of the Clean Water Act (CWA) (40 CFR 116.4); (2) any toxic pollutants listed under Section 307(a) of the CWA; (3) any hazardous substances regulated under Section 311 (b)(2)(A) of the CWA; (4) any listed or characteristic RCRA hazardous waste (40 CFR 261), (5) any hazardous air pollutants listed under Section 112 of the Clean Air Act (CAA); or (6) any imminently hazardous chemical substances or mixtures regulated under Section 7 of the Toxic Substances Control Act (TSCA).

IWD – Integrated Work Document

LANL – Los Alamos National Laboratory

LANS – Los Alamos National Security

LEPC – Local Emergency Planning Committee

NMAC – New Mexico Administrative Code

NMED – New Mexico Environment Department

NMWQA – New Mexico Water Quality Act

NMWQCC – New Mexico Water Quality Control Commission

NPDES – National Pollutant Discharge Elimination System

NRC – National Response Center

ORPS – Occurrence Reporting and Processing System

OSC – On-Scene Commander

PADOPS – Principal Associate Directorate Operations

PCBs – Polychlorinated Biphenyls

PGP – Pesticide General Permit

PST – Petroleum Storage Tank

PSTB – Petroleum Storage Tank Bureau

RAD – Responsible Associate Director

RCRA – Resource Conservation and Recovery Act

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Release – Any unpermitted spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing of contaminants into the environment, excluding: (1) emissions from the engine exhaust of any vehicle, (2) certain releases of source, byproduct, or special nuclear material from a nuclear incident, or (3) normal application of fertilizer.

RQ – Reportable Quantity

SARA – Superfund Amendments and Reauthorization Act

SDS – Safety Data Sheet

SERC – State Emergency Response Commission

SERF – Sanitary Effluent Reclamation Facility

SEO-DO –Security and Emergency Operations Division

SME – Subject Matter Expert

SWMU – Solid Waste Management Unit

SWWS - Sanitary Waste Water System

TSCA – Toxic Substances Control Act

UIC – Underground Injection Control

7.0 REFERENCES

The following documents are referenced in this procedure:

- 40 CFR 302, Designation, Reportable Quantities, and Notification
- 40 CFR 261, 264 Subpart D 270.30
- DOE guidance document PCB Spill Response and Notification Requirements
- (EH-231-059/1294), available on the EPC-CP web page
- DOE – Office of Environmental Guidance, CERCLA Information Brief, EH-231-001-0490 (April 1990)
- EPA Web Site: <http://www.epa.gov/>
- EPCRA Information Web Site: <http://www.chemicalspill.org/EPCRA-facilities/spill.html>
- Federal Register, Volume 67, No. 47, Notices FRL-7172-4, Guidance on the CERCLA Section 101(10)H, Federally Permitted Release Definition for Certain Air Emissions
- [PD1200, Emergency Management](#)
- P322-3, Performance Improvement from Abnormal Events
- LANL RCRA Permit No. NM0890010515-1
- LANL NPDES Permit No. NM0028355

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- National Response Center (NRC) Web Site: <http://www.nrc.uscg.mil/>
- NMWQCC Regulations, 20.6.2 NMAC, dated December 1, 2001
- P407, Water Quality
- P1020-1, Laboratory Records Management
- ADESH-AP-006, Records Management Plan

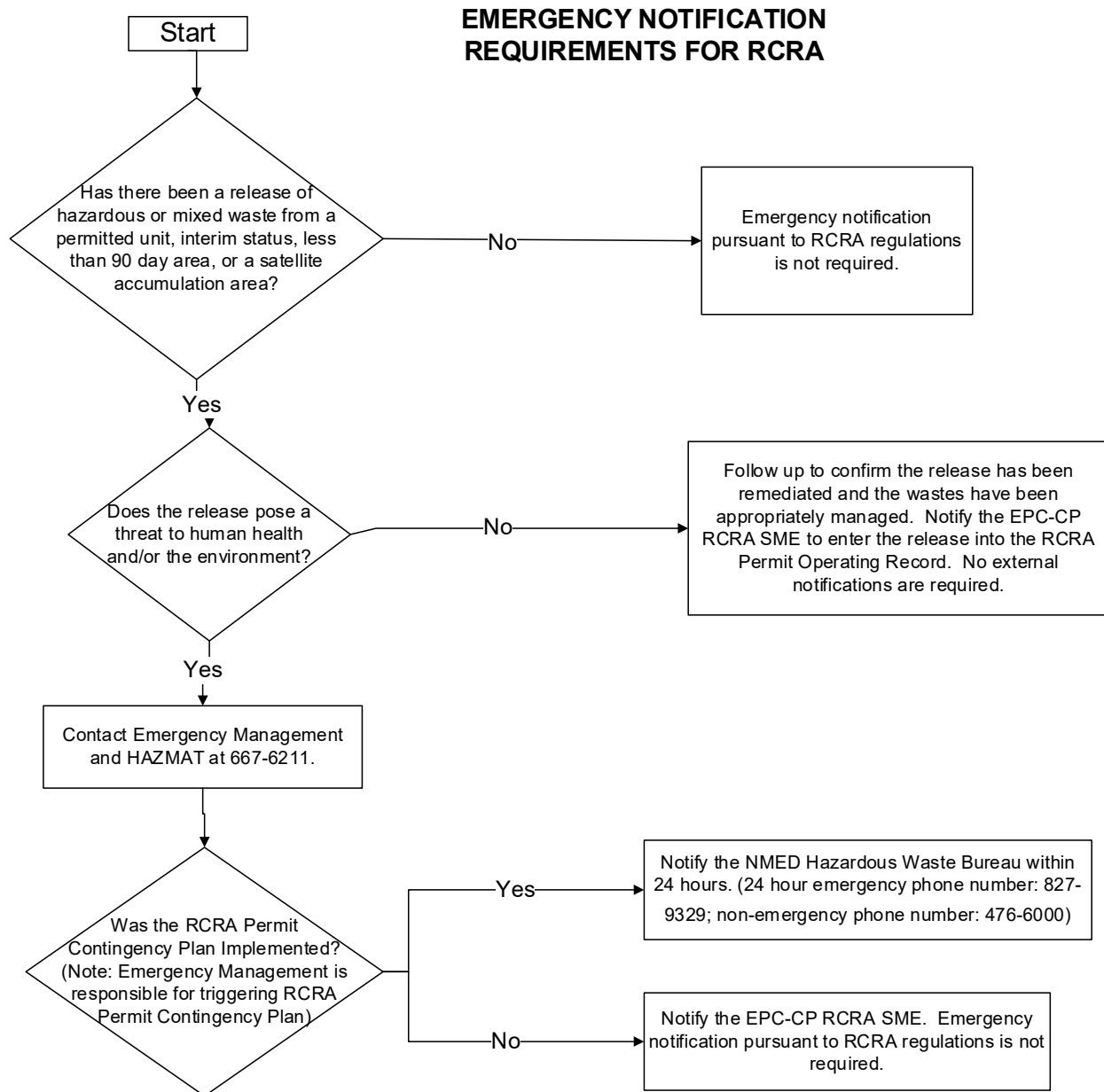
8.0 ATTACHMENTS OR APPENDICES

Attachment 1: Emergency Notification Requirements for RCRA

Attachment 2: Summary of Emergency Release or Event Reporting Requirements

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Attachment 1: Emergency Notification Requirements for RCRA



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Attachment 2: Summary of Emergency Release or Event Reporting Requirements

NOTE: This is only a guide and does not cover all federal, state, or permit reporting requirements. Refer to the Code of Federal Regulations and the RCRA Permit for more details regarding these regulations.

| STATUTE | REGULATIONS | INCIDENT | Immediate Reporting Requirements | Follow Up Reporting Requirements |
|--|--|---|--|---|
| Clean Water Act | 40 CFR §110.6 | Oil discharge (film/sheen/discoloration) to water surface or shoreline, or violation of water quality standards. | Immediately (within 15 minutes of discovery) notify the National Response Center. | Follow-up not required. |
| Clean Water Act | Part III of NPDES Permit No. NM0028355 | Leak or unplanned release from an NPDES permitted outfall. | Notify the NPDES Outfall Permit Program Lead and EPC-CP Water Quality Team Leader upon discovery. The program lead or the EPC-CP Water Quality Team Leader will complete initial reporting requirements as required. | Required follow up reporting will be completed by the NPDES Outfall Permit Program Lead and EPC-CP Water Quality Team Leader. |
| Clean Water Act (CWA)-NPDES Pesticide General Permit | 40 CFR §122.28 | Adverse incident which includes evidence that a person or non-target organism has been exposed to a pesticide residue or the person or non-target organism suffered a toxic or adverse effect. | Notify the EPA Region 6 Pesticide Permitting contact (214)665-7500 within 24 hours. | Submit a 30 Day Adverse Incident Written Report to the EPA Regional Office. |
| New Mexico Water Quality Control Commission Regulations (NMWQCC Regulations) | 20.6.2.1203 NMAC | Discharge from any facility of oil or other water contaminant, in such quantity as may with reasonable probability injure or be detrimental to human health, animal or plant life, or property, or unreasonably interfere with the public welfare or use of the property. | Notify the New Mexico Environment Department 505-827-9329 within 24 hours. | Submit 7 and 15 Day written follow up Corrective Action Reports (Copy EPA Region 6 on the 7 and 15 Day Reports). |


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| STATUTE | REGULATIONS | INCIDENT | Immediate Reporting Requirements | Follow Up Reporting Requirements |
|---|--------------------|--|---|---|
| New Mexico Water Quality Control Commission Regulations (NMWQCC Regulations) | 20.6.2.3104 NMAC | Unplanned release of any volume from an activity or facility covered under an active Groundwater DP: DP-857: SWWS Plant, SERF, and Sigma Mesa Evaporation Basins DP-1589: Septic Tank/Disposal Systems DP-1793: Land Application of Treated Groundwater DP-1835: Injection of Treated Groundwater to Class V UIC Wells | Notify the New Mexico Environment Department 505-827-9329 within 24 hours. | Submit 7 and 15 Day written follow up Corrective Action Reports (Copy EPA Region 6 on the 7 and 15 Day Reports) |
| New Mexico Environmental Improvement Board Regulation | 20.5.7 NMAC | A release of a petroleum product from regulated aboveground storage tank. | Contact the EPC-CP AST Program Lead and/or the EPC-CP Water Quality Team Leader prior to completing any external notifications. If required, the Petroleum Storage Tank Bureau (476-4397) or NMED Emergency Spill Hotline (827-9329) must be contacted within 24 hours. | A written report describing the spill, release or suspected release and any investigation or follow-up action needs to be submitted to the PSTB within 14 days of the incident. |
| Comprehensive Environmental, Response, Compensation, and Liability Act (CERCLA) | 40 CFR §302.6(a) | Hazardous substance (listed in 40 CFR Table 302.4) release (Equal to or greater than an RQ). | Immediately (within 15 minutes of discovery) notify the National Response Center 1-800-424-8802. | Follow-up not required. |
| Emergency Planning and Community Right-to-Know Act (EPCRA) | 40 CFR§ 355.40 | Release of an extremely hazardous substance (listed in 40 CFR Part 355 Appendices A and B) or CERCLA hazardous substance (listed in 40 CFR Table 302.4) equal to or greater than RQ. | Immediately (within 15 minutes of discovery) notify the LEPC (505-662-8283) the SERC (505-476-9635). Immediately notify the 911 operator for a release that occurs during transportation or from storage incident to transportation. | A written follow-up emergency notice must be submitted to the LEPC and SERC as soon as practicable after the release. |

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| STATUTE | REGULATIONS | INCIDENT | Immediate Reporting Requirements | Follow Up Reporting Requirements |
|---|--|---|--|--|
| Resource Conservation and Recovery Act (RCRA) | 40 CFR 262.34, 263.30, 264.51, 264.56 & .196, 265.51, .56 & .196, 270.14, & .30, 273.17, .37 & .54, 279.43 & .53, 280.50, .52, .53, .60, & .61 | Release of hazardous or mixed waste from a permitted unit, interim status, less than 90 day area or a satellite accumulation area which the RCRA Permit Contingency Plan was triggered. | Notify NMED Hazardous Waste Bureau within 24 hours (24 hour emergency phone number: 827-9329; Non-emergency phone number: 476-6000) See Attachment 1 for additional details. | Submit written report to NMED HWB within 5 days. |
| Clean Air Act/ Radionuclide NESHAP | 40 CFR 61, Subpart H | Airborne release of radioactive material in excess of an RQ. | Notify the EPA Region 6 Health Physicist (Office- (214) 665-8541; Mobile- (214) 755-1530; Home – (972) 937-1900) immediately after providing notification to the NRC. | Follow-up not required. |
| Toxic Substance Control Act (TSCA) | 40 CFR 761.120, 761.125 | Over 1 pound by weight of PCBs (TSCA) or greater than 270 gallons of untested mineral oil suspected of containing PCBs. | Contact the National Response Center (1-800-242-8802) and the EPA Region 6 Office of Prevention, Pesticides, and Toxic Substances Branch (1-866-372-7745) as soon as possible after discovery, but no later than 24 hours after discovery. | Within 24 hours. Follow-up: as required by agency. |

ATTACHMENT 22: EPC-CP-QP-1007, SPILL INVESTIGATIONS

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| EPC-CP-QP-1007 | Revision: 0 |  |
| Effective Date: 06/03/2020 | Next Review Date: 06/03/2023 | |

Environment, Safety, Health, Quality, Safeguards, and Security Directorate

Environment Protection and Compliance – Compliance Programs Group

Quality Procedure

Spill Investigations

Hazard Grading: ☒ Low ☐ Moderate ☐ High/Complex

Usage Level: ☒ Reference ☐ UET ☐ Mixed: UET Sections: _____

Status: ☐ New ☒ Major Revision ☐ Minor Revision

☐ Review w/No Changes ☐ Other: _____

Safety Basis: ☒ N/A ☐ USQ ☐ USI Number: _____

Document Author/Subject Matter Expert:

| | | | |
|---------------|---------------|-------------------|----------|
| Name: | Organization: | Signature: | Date: |
| Steve Pearson | EPC-CP | Signature on File | 05-21-20 |

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| | | | |
|--------------|---------------|-------------------|----------|
| Name: | Organization: | Signature: | Date: |
| Steve Wolfel | EPC-CP | Signature on File | 05-27-20 |

Approval Signatures:

| | | | |
|-----------------------|---------------|-------------------|----------|
| EPC-CP Reviewer: | Organization: | Signature: | Date: |
| Michael Saladen | EPC-CP | Signature on File | 05-27-20 |
| EPC-CP RLM: | Organization: | Signature: | Date: |
| Taunia Van Valkenburg | EPC-CP | Signature on File | 06-03-20 |

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REVISION HISTORY

| Document Number and Revision <i>[Include revision number, beginning with Revision 0]</i> | Effective Date <i>[Document Control Coordinator inserts effective date]</i> | Description of Changes <i>[List specific changes made since the previous revision]</i> |
|--|---|--|
| 0 | 12/98 | New Document. |
| 1 | 06/00 | Annual review, added Cerro Grande fire hazards |
| 2 | 07/01 | Annual review. |
| 3 | 06/03 | Annual review. |
| 4 | 04/04 | Annual review, changes to HCPs. |
| 5 | 02/07 | Annual review, changes to reflect organizational restructure. |
| 6 | 07/08 | Annual review. |
| 7 | 09/10 | Biennial Review and revision. |
| 8 | 04/11 | Removed prerequisites, added note re: on-call spill reporting. |
| 9 | 07/13 | Biennial review and revision, implemented new procedure format. |
| 10 | 09/30/15 | Biennial review and revision, implemented new procedure format. Controlled the updated LANL ENV-CP Unplanned Release Report. |
| EPC-CP-QP-1007, Rev. 0 | 06/03/2020 | Format document into new template and update content. This document was formerly ENV-CP-QP-007 R10. |
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1.0 INTRODUCTION

All spills and unplanned releases that occur at Los Alamos National Laboratory (LANL) must be evaluated, remediated, and documented to ensure corrective actions are completed and reporting requirements are fulfilled. The investigation of spills and coordination of corrective actions are delegated to the Environmental Protection and Compliance Division's Compliance Programs Group (EPC-CP).

1.1 Purpose

This EPC-CP procedure describes the steps for performing spill investigations throughout LANL.

1.2 Scope

The scope of this procedure is limited to the performance of spill and unplanned release response by EPC-CP personnel and/or authorized subcontractors. Activities include frequent and unscheduled site visits to any area of the Laboratory upon discovery of a spill or unplanned release as support staff for the on-scene Incident Response Commander, deployed environmental staff, or Facility Operations Directorate (FOD) designated facility representative. Support activities include evaluation and documentation of the spill/unplanned release; guidance regarding remediation; and reporting to regulatory agencies.

1.3 Applicability

This procedure applies to all EPC-CP personnel and after hours on-call personnel responsible for conducting spill investigations.

1.4 Authority

The EPC-CP Group Leader is the issuing authority for this document.

2.0 PRECAUTIONS AND LIMITATIONS

A Hazard Analysis was performed for the tasks associated with this procedure. The hazard rating for the activities described in this procedure is **LOW** and does not require an Integrated Work Document.

2.1 Precautions

Precautions apply to abnormal conditions or hazards to personnel or equipment that can be encountered while performing this procedure. The following precautions shall be taken when performing work using this quality technical procedure:

- Personnel shall wear appropriate clothing (e.g., boots, long pants, gloves, etc.) to perform spill investigations in the field. This may also include safety glasses, a hardhat, a safety vest, and/or safety shoes/boots as required by the location of the tank, equipment, and area to be inspected.

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- Work may be paused or discontinued due to conditions that make a location dangerous for worker safety or prevent personnel from safely accessing a site (i.e., flash floods, lightning, wildfires, hail, icy roads, deep snow, extreme temperatures, or hazardous LANL Operations such as firing shots, burns, or security).

2.2 Limitations

Limitations are defined boundaries (i.e., training, hold points) that are NOT to be exceeded while performing the activities defined in this procedure. The following limitations are applicable to performing work using this technical procedure:

- Perform field activities in accordance with EPC-DO-QP-100, General Field Safety, and/or be escorted by Emergency Management Division – Emergency Operations Group (EMD-EO) or site personnel at all times.
- Spills or unplanned releases that occur on Department of Energy property due to activities performed by an organization not associated with Triad National Security, LLC (e.g., Los Alamos County, Newport News Nuclear BWXT Los Alamos (N3B), etc.) are the responsibility of that organization. The respective organization is responsible for site remediation, completion of corrective actions, and fulfillment any external reporting requirements.
- Some spills or unplanned releases have 15-minute and 24-hour notification requirements. Personnel using this procedure must be familiar with the reporting requirements of [EPC-CP-QP-0903, Environmental Reporting Requirements for Releases](#).

3.0 PREREQUISITE ACTIONS

3.1 Planning and Coordination

The response to spills and/or unplanned releases requires frequent and unscheduled site visits to any area of the Laboratory. Certain facilities and Laboratory locations require additional training and have specific access requirements that must be followed. Specific activities may include one or more of the following:

- Site-Specific Training (e.g., burn grounds).
- Coordination with Access Control and/or Security for escort, keys, safety (e.g., explosives areas, burn grounds, between security fences).
- Security Clearance (i.e., TA-3-66, TA-55, TA-16).

Site access for spill/unplanned release response will require that the Spill Investigator maintain multiple site-specific training requirements. It will also require that the Spill Investigator coordinate with the Emergency Operations Center (EOC), designated FOD representative, and/or Deployed Environmental Professional (DEP).

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3.2 Performance Documents

The following documents are required to perform this procedure:

- EPC-CP-QP-1007 Form 1, Unplanned Release Report.
- EPC-CP-QP-1007 Form 2, 7/15 Day Release Report.
- [EPC-CP-QP-0903, Environmental Reporting Requirements for Releases.](#)

3.3 Special Tools, Equipment, Parts, and Supplies

Ensure the following are available for spill investigations and field visits:

- Personal protective equipment (PPE) as required by each specific site location (e.g., hardhat, safety vest, safety glasses, safety shoes, etc.)
- Cell phone (only government cell phones are allowed in secure areas.) See <https://int.lanl.gov/policy/documents/P217.pdf> for requirements for using portable electronic devices on Laboratory property.
- EPC-CP Spills Pager – ***Note:** Spills Pager can be configured to forward notifications to a government cell phone and email address.
- External dosimeter (as required by site or facility).
- Field Logbook (maintained to record pertinent information about the spill, i.e., time and date of release, location and source of release, type of material released, quantity of material released, impacted media, time release was stopped, any immediate mitigation actions taken to contain or control the release, time, date and description of notifications, etc.).
- Physical or electronic maps (e.g., utility line locations, Solid Waste Management Unit (SWMU) / Area of Concern (AOC) boundaries, land ownership boundaries).

4.0 PERFORMING SPILL INVESTIGATIONS

4.1 Notification of a Spill or Unplanned Release

The EPC-CP personnel that conduct spill investigations ensure the immediate mitigation of spills and timely notification to appropriate regulatory organizations in the event of a spill or unplanned discharge that has or may adversely affect the environment. Spills/unplanned releases are typically reported by a designated FOD representative (i.e., operations, maintenance) or DEP. If the spill/unplanned release is an emergency (i.e., unknown chemical, toxic chemical, flammable chemical, large volume), it will be reported to the EOC at 667-2400 and the EOC will contact the spill investigator using the EPC Spill pager. If the spill/unplanned release is not an emergency, (potable water, small volume, non-toxic), it will be reported via the EPC Spill pager (664-7722) or by phone call from the DEP or other designated FOD representative (i.e., operations, maintenance, security, health and safety). The EPC-CP Spill Program maintains an on-call schedule for after-hours support

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for incidents and unplanned releases. This listing is updated every three months with contact information for trained EPC-CP personnel (see Attachment 1). This schedule is submitted electronically to update the Primary On-Call List available through the Laboratory's EMD-EO Organizations.

Spill Investigator/On Call

- [1] Receive notification of a spill or unplanned release from one of the following:
 - Spill Pager (664-7722) or forwarded cell phone.
 - Emergency Operations Center (667-2400).
 - Phone call from the DEP or other designated FOD representative (i.e., operations, maintenance, security, health and safety).
- [2] Document the following information, at a minimum, in the Spill Logbook:
 - Time, Date, and Location of the spill/unplanned release
 - Owner of Spill and Site Contact
 - Material Spilled
 - Approximate Volume of the Spill/Unplanned Release
 - Source of the Spill
- [3] Request that the EOC identify a safe route to the site/location of the spill or unplanned release.

CAUTION

Spills or unplanned releases that occur on Department of Energy property from an organization not associated with Triad National Security, LLC (e.g., Los Alamos County, N3B etc.) are the responsibility of that organization. The respective organization is responsible for site remediation, corrective actions, and external reporting requirements.

- [4] If the owner of the spill is not associated with Triad National Security, LLC, refer the caller to one of the following, as appropriate:
 - Los Alamos County (LAC) Department of Public Utilities at 662-8333 for releases discovered during normal work hours from LAC owned equipment or infrastructure.
 - After Hours LAC – Call Police Dispatch at 662-8222 for releases outside of normal work hours from LAC owned equipment or infrastructure.
 - N3B Operations Center at 551-2954 for releases from N3B owned equipment or infrastructure.
- [5] If the owner of the spill is associated with Triad National Security, LLC, prepare for a site visit as follows:

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- [a] Based upon location of the spill/unplanned release, determine what access requirements are applicable (i.e., Q/L Clearance, Site Specific Training) (see Section 3.1).
- [b] Based upon the location and material spilled, determine the appropriate PPE for the site visit (e.g., boots, safety glasses, long pants/shirt, hardhat, safety vest).
- [6] If the spill is de Minimis (low volume); of a known material (potable water, sanitary waste; and personnel have the appropriate knowledge/training, instruct the following:
 - [a] The delegated FOD representative, DEP and/or Waste Management Coordinator (WMC) may remediate the spill without the Spill Investigator being present.
 - [b] The designated FOD representative, DEP, and/or WMC must complete an Unplanned Release Report (Attachment 2) and submit a copy of the report to the Spill Investigator for recordkeeping.

4.2 Emergency Spill/Unplanned Release - Responding with EMD-EO

The Spill Investigator will respond to emergency spills/unplanned releases when notified. Emergency spills/unplanned releases typically include unknown materials leaking from bins, drums, and containers, hazardous materials (i.e., acid, caustic, fuel), or large volumes of petroleum products (i.e., leaking tanks, tanker truck accidents). Emergency spills/unplanned releases are managed by the EOC. The following provides the steps a Spill Investigator will follow when responding to support the EOC for an emergency spill/unplanned release.

Spill Investigator/On Call Spill Responder

- [1] Travel to the location of the spill or unplanned release.
- [2] Report to designated Incident Response Coordinator and receive site-specific safety and security briefing.
- [3] Assess and evaluate nature and extent of the release.
- [4] Provide support and guidance to EMD-DO, Hazmat, and Facility personnel on release mitigation measures and requirements. Examples of the types of support and guidance are:
 - [a] Provide the final inspection of the site to ensure that corrective actions were adequate and are complete.
 - [b] Recommend corrective actions.
 - [c] Inspect the site to ensure that the extent of the spill/unplanned release is adequately defined.

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- [d] Recommend how to stabilize the site for further remediation (i.e., secure the site from storm water).
 - [e] Identify watercourse boundaries near the spill/unplanned release.
 - [f] Determine if samples need to be collected.
 - [g] Recommend sample types and analysis.
 - [h] Recommend sample locations and the number of samples to determine extent of condition.
- [5] If sample collection is required, have the DEP/WMC contact the waste management organization and complete a Request for Analysis (RFA), <http://int.lanl.gov/environment/waste/sampling.shtml>, to schedule sampling. Specify the analytical suite and turn-around time needed for the sample in the RFA.
- [6] Document the following information regarding the spill or unplanned release in the Logbook:
- Timeline of spill/unplanned release response as it occurs.
 - Nature and extent of the spill/unplanned release (i.e., inside a building, on asphalt, nearest watercourse/drainage area, proximity to SWMU/AOC and/or outfalls).
 - Steps taken to contain the spill.
 - Samples collected, if any. Include number, type, location, and analysis.
 - Spill and control equipment used to remediate the spill.
 - Corrective actions completed and the amount of waste material.

4.2 Non-Emergency Spill or Unplanned Release

The Spill Investigator will respond to non-emergency spills/unplanned releases when notified. Non-emergency spills/unplanned releases typically include potable water leaks; sanitary wastewater leaks, spills, overflows; and small volumes of known chemicals (e.g., hydraulic fluid leaks, vehicle oil leaks). Non-Emergency Spills/Unplanned Releases are typically handled by a designated FOD representative (i.e., operations, maintenance), DEP, or WMC assigned to the area. The following provides the steps a Spill Investigator will follow when responding a non-emergency spill/unplanned release.

Spill Investigator/On Call

- [1] Coordinate with the FOD designee and/or waste management coordinator to visit the location of the spill/unplanned release.
- [2] Travel to the location of the spill/unplanned release.

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CAUTION

The Spill Investigator may respond to the spill or unplanned release and determine whether the containment and remediation is beyond the capability of the designated FOD representative, DEP, and/or WMC to respond. The EOC should be contacted if additional technical expertise or materials are needed to remediate the release.

- [3] Assess and evaluate the nature and extent of the release as follows:
 - [a] If the spill/release is a small volume or known material (e.g., sanitary waste, potable water, small hydraulic leak), proceed to step 4.
 - [b] If the spill/release is an unknown (e.g., leaking fluid from a metal recycling bin, drum, battery, or other container), stop work and notify the EOC at 667-2400.
 - [c] If the spill/release is a hazardous material or large volume of petroleum product (i.e., battery acid, chemical tank, fuel, hydraulic fluid, oil), stop work and notify the EOC at 667-2400.
 - [d] If the spill/release appears to be beyond the capability of the designated FOD representative, DEP, and/or WMC to contain and/or remediate, the Spill Investigator shall stop work and notify the EOC at 667-2400 to obtain the appropriate resources.
- [4] Provide guidance to the FOD designee and/or waste management coordinator regarding the containment and/or cleanup of the release. Examples of the types of guidance provided include the following:
 - [a] Provide the final inspection of the site to ensure that corrective actions were adequate and are complete.
 - [b] Recommend corrective actions.
 - [c] Inspect the site to ensure that the extent of the spill/unplanned release is adequately defined.
 - [d] Recommend how to stabilize the site for further remediation (i.e., secure the site from storm water).
 - [e] Identify watercourse boundaries near the spill/unplanned release.
 - [f] Determine if samples need to be collected.
 - [g] Recommend sample types and analysis.
 - [h] Recommend sample locations and the number of samples to determine extent of condition.
- [5] If sample collection is required, have the DEP/WMC contact WM-SVS and complete a RFA, <http://int.lanl.gov/environment/waste/sampling.shtml>, to schedule sampling. Specify the analytical suite and turn-around time needed for the sample in the RFA.

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- [6] Document the following information regarding the spill or unplanned release in the Logbook:
 - Timeline of spill/unplanned release response as it occurs.
 - Nature and extent of the spill/unplanned release (i.e., inside a building, on asphalt, nearest watercourse/drainage area, proximity to SWMU/AOC and/or outfalls).
 - Steps taken to contain the spill.
 - Samples collected, if any. Include number, type, location, and analysis.
 - Spill and control equipment used to remediate the spill.
 - Corrective actions completed and the amount of waste material.
- [7] Coordinate and document all required follow up corrective actions with the FOD designees, DEP, and/or WMC.
- [8] Determine the applicable internal and external reporting requirements as outlined in Section 4.3.

4.3 Reporting Spills and/or Unplanned Releases

This section describes how to determine whether an unplanned release, spill, or other event needs to be reported under environmental regulations and how to fulfill all immediate reporting requirements (within the first 24-hours).

4.3.1 Immediate Notification

Spill Investigator/On Call Spill Responder

- [1] Identify which of the following internal stakeholders that should receive a report of the spill/unplanned release:
 - EPC-CP Group and Division Management
 - Compliance Subject Matter Experts (SME). This includes Resource Conservation and Recovery Act, National Pollution Discharge Elimination System, Storm water, Groundwater, and/or Waste Management compliance personnel that potentially have permit specific reporting requirements.
 - FOD where the spill/unplanned release occurred.
 - Designated FOD Representative (i.e., DEP, Operations, and Maintenance).

CAUTION

Spills/unplanned releases may have EXTERNAL reporting requirements that must be completed within 15 minutes or 24-hours of discovery based upon EPC-CP-QP-0903, Environmental Reporting Requirements for Releases.

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- [2] Identify the verbal and written EXTERNAL reporting requirements in accordance with [EPC-CP-QP-0903, Environmental Reporting Requirements for Releases](#).

4.3.2 Non-Reportable Spills/Unplanned Releases

Spill Investigator/On Call Spill Responder

- [1] Notify the internal stakeholders (i.e., EPC-CP, SME, FOD, and designated FOD Representative) by phone and/or email (Attachment 1). Include the following pertinent facts as recorded in the logbook:
- Date, Time, Location of the release.
 - Quantity and type of material.
 - Status of corrective actions.
- [2] Document the spill/unplanned release in the spills database.
- [3] Document spills/unplanned releases that are NOT reportable to an external regulatory agency on EPC-CP-QP-1007-Form 1, Unplanned Release Report (Attachment 2).
- [a] If the Form 1 is completed by a DEP or other designated FOD representative, request a copy of the signed form.
- [b] Attach completed EPC-CP-QP-1007-Form 1 to the spill database record.
- [4] Submit copies of the accumulated EPC-CP-QP-1007-Form 1's, (annually), to records in accordance with [ADESH-AP-006, Records Management](#).

4.3.3 Reportable Spills/Unplanned Releases

Spill Investigator/On Call Spill Responder

- [1] Notify the internal stakeholders (i.e., EPC-CP, SME, FOD, and designated FOD Representative) by phone and/or email (Attachment 1). Include the following pertinent facts as recorded in the logbook:
- [a] Date, Time, Location of the release.
 - [b] Quantity and type of material.
 - [c] Status of corrective actions.
- [2] Notify National Nuclear Safety Administration (NNSA)/Los Alamos Site Office (LASO).
- [3] Perform the required EXTERNAL verbal notifications to the appropriate regulatory agencies (i.e., New Mexico Environment Department [NMED], Environmental Protection Agency [EPA]) in accordance with [EPC-CP-QP-0903, Environmental Reporting Requirements for Releases](#).

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- [4] Document spills/unplanned release on EPC-CP-QP-1007-Form 2, *7/15 Day Release Report* (Attachment 3).
 - [a] Ensure that the EPC-CP-QP-1007-Form 2 is reviewed and assigned an LA-UR document release number.
 - [b] Attach the final EPC-CP-QP-1007-Form 2 to the spill database record.
 - [c] Submit the final EPC-CP-QP-1007-Form 2 as an e-mail attachment to the appropriate regulatory agency.
 - [d] Submit a copy of the EPC-CP-QP-1007-Form 2 to the internal stakeholders and NNSA/LASO.
- [5] Document the spill/unplanned release in the spills database.
- [6] Attach completed EPC-CP-QP-1007-Form 2 to the spill data base record.
- [7] Electronically file a copy of the EPC-CP-QP-1007-Form 2 in Spills folder located at ENV(\\dcstorage.lanl.gov):\\CP\\WQ\\WQCC COMP PROG.
- [8] Submit copies of the accumulated EPC-CP-QP-1007-Form 2's, (annually), to records in accordance with [ADESH-AP-006, Records Management](#).

5.0 TRAINING

All EPC-CP personnel that execute the activities specified in this procedure must meet the minimum qualification and training requirements for their position as identified in [EPC-CP-PIP-1001, New Mexico Water Quality Control Commission \(WQCC\) Program Implementation Plan \(PIP\)](#). This will include "self-study" (required reading) for this procedure as assigned and documented in accordance with [ADESH-TPP-301, ADESH Training Program Plan \(TPP\)](#).

6.0 RECORDS

EPC-CP is the Office of Record for this document and must be maintained in accordance with [PD1020, Document Control and Records Management](#) and [ADESH-AP-006, Records Management Plan](#). Records generated by this document will be submitted to the Records Management designated point of contact or document manager for document management. The following records are generated by this procedure.

| Record Title | QA Record | Non-QA Record |
|---|-------------------------------------|-------------------------------------|
| EPC-CP-QP-1007 Form 1, <i>EPC-CP Unplanned Release Report</i> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| EPC-CP-QP-1007 Form 2, <i>EPC-CP 7/15 Day Release Report</i> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Correspondence (i.e., E-mail Notifications to LANL Management, DOE, and other EPC-CP permit subject matter experts) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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| Correspondence - E-mail Submittals of 7/15 Day Release Reports to NMED | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Logbook | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

7.0 DEFINITIONS AND ACRONYMS

7.1 Definitions

See LANL [Definition of Terms](#).

Release – Any unpermitted spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing of contaminants into the environment, excluding: (1) emissions from the engine exhaust of any vehicle, (2) certain releases of source, byproduct, or special nuclear material from a nuclear incident, or (3) normal application of fertilizer.

7.2 Acronyms

See LANL [Acronym Master List](#).

| | |
|------------------------|---|
| AOC | Area of Concern |
| DEP | Deployed Environmental Professional |
| EMD-EO | Emergency Management Division -Emergency Operations Group |
| EOC | Emergency Operations Center |
| EPC-CP | Environmental Protection and Compliance Group |
| FOD | Facility Operations Directorate |
| LAC | Los Alamos County |
| LANL or the Laboratory | Los Alamos National Laboratory |
| LASO | Los Alamos Site Office (LASO). |
| N3B | Newport News Nuclear BWXT Los Alamos |
| NMED | New Mexico Environment Department |
| NNSA | National Nuclear Safety Administration |
| PIP | Program Implementation Plan |
| PPE | Personal Protective Equipment |
| SWMU | Solid Waste Management Unit |
| TPP | Training Program Plan |
| WMC | Waste Management Coordinator |
| WQCC | Water Quality Control Commission |
| SME | Subject Matter Expert |

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8.0 REFERENCES

ADESH-AP-006, Records Management Plan

ADESH-TPP-301, ADESH Training Program Plan (TPP)

EPC-CP-PIP-1001, New Mexico Water Quality Control Commission (WQCC) Program Implementation Plan

EPC-CP-QP-0903, Environmental Reporting Requirements for Releases

EPC-DO-QP-100, General Field Safety

P217, Controlled Portable Electronic Devices

9.0 ATTACHMENTS

Attachment 1: Release Notification Phone List

Attachment 2: EPC-CP-QP-1007-Form 1, *Unplanned Release Report*

Attachment 3: EPC-CP-QP-1007-Form 2, *7/15 Day Release Report*

| | | |
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Attachment 1: Release Notification Phone List

Los Alamos National Laboratory

- | | |
|---|----------------|
| (1) Emergency Operations Support Center | (505) 667-2400 |
| (2) EPC-ES Group Office | (505) 665-8855 |
| (3) EPC-CP Group Office | (505) 667-0666 |
| (4) EPC-DO | (505) 667-2211 |
| (5) EPC-CP Spills Pager | (505) 664-7722 |

New Mexico Environment Department

- | | |
|--|------------------|
| (1) NMED Emergency Hotline (24 hours a day) | (505) 827-9329 |
| (2) NMED Non-Emergency Hotline (Voicemail; 24 hours a day) | 1 (866) 428-6535 |
| (3) NMED Surface Water Quality Bureau | (505) 827-0187 |
| Jennifer Foote | (505) 827-0596 |
| (4) NMED Ground Water Quality Bureau | (505) 827-2900 |
| Gerald (Jake) Knutson | (505) 827-2996 |
| Steve Pullen | (505) 827-2962 |
| (5) NMED Hazardous Waste Bureau | (505) 476-6000 |
| Stephen Connolly | (505) 476-6025 |

U.S Environmental Protection Agency

- | | |
|---|------------------|
| (1) US EPA Region 6 Spill Reporting (During business hours) | 1 (800) 887-6063 |
| Emergencies- Contact the NRC | 1 (800) 424-8802 |
| (2) Nancy Williams | 1 (214) 665-7179 |

Los Alamos Fire Department

(505) 662-8301

U.S. Department of Energy

- | | |
|------------------|----------------|
| (1) Karen Armijo | (505) 665-7314 |
|------------------|----------------|

Newport News Nuclear BWXT Los Alamos (N3B)

- | | |
|---------------------------|----------------|
| (1) N3B Operations Center | (505) 551-2954 |
|---------------------------|----------------|

New Mexico State Police

- | | |
|-------------------------|----------------|
| New Mexico State Police | (505) 827-9604 |
|-------------------------|----------------|

EPC-CP On-Call Environmental Representative for Release Assessment and Notifications to External Agencies

- | | |
|-------------------|-------------------------|
| (1) Terrill Lemke | (505) 665-2397 (Office) |
| | (505) 699-0725 (Cell) |
| (2) Steve Pearson | (505) 667-3005 (Office) |
| | (505) 699-3684 (Cell) |
| (3) Mike Saladen | (505) 665-6085 (Office) |
| | (505) 699-1284 (Cell) |
| (4) Tim Zimmerly | (505) 664-0105 (Office) |
| | (505) 699-7621 (Cell) |

| | | |
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Attachment 2: Unplanned Release Report, EPC-CP-QP-1007-Form 1

| Los Alamos National Laboratory Environmental Compliance Program (EPC-CP) Unplanned Release Report | | |
|--|--|---|
| Form Completed By: | | Telephone: |
| Spill Owner Details (Specify): | | Group: |
| <input type="checkbox"/> TRIAD, LLC | <input type="checkbox"/> Subcontractor: | <input type="checkbox"/> Other: |
| Date of Spill/Date Spill Discovered: | | |
| Location: | | |
| Material Spilled: | | |
| <input type="checkbox"/> Hydraulic Fluid | <input type="checkbox"/> Anti-freeze/coolant | <input type="checkbox"/> Refrigerant Oil |
| <input type="checkbox"/> Potable Water | <input type="checkbox"/> Steam Condensate | <input type="checkbox"/> Gasoline |
| <input type="checkbox"/> Diesel | <input type="checkbox"/> Lubricants/Oils | <input type="checkbox"/> Other: |
| Volume Spilled: | Waste Volume Generated: | |
| Source of Spill: | <input type="checkbox"/> Potable Water Line | <input type="checkbox"/> Radiator |
| Vehicle ID: | <input type="checkbox"/> Fire Suppression System | <input type="checkbox"/> Condensate Line |
| Equipment ID: | <input type="checkbox"/> Fuel Tank | <input type="checkbox"/> Other: |
| Describe the spill response in chronological order. Include response personnel, steps taken to contain the spill, and steps/spill control equipment used to clean it up. Please indicate if corrective actions have been completed and describe actions taken to prevent spill recurrence: | | |
| | | |
| Date Corrective Actions Completed: | | |
| Did the spill enter or impact any of the following? (Check as many as apply) | | <input type="checkbox"/> Floor Drain, if so please indicate affected facility |
| <input type="checkbox"/> RCRA Treatment Storage Disposal Facility | | <input type="checkbox"/> Watercourse/drainage area, if so please indicate |
| <input type="checkbox"/> RCRA Satellite Accumulation Area | | <input type="checkbox"/> Solid Waste Management Unit/Area of Concern, if so please indicate |
| <input type="checkbox"/> RCRA <90 Day Storage Area | | <input type="checkbox"/> None |
| <input type="checkbox"/> NPDES MSGP Facility | | |
| Did the spill occur inside or outside a building? <input type="checkbox"/> Inside <input type="checkbox"/> Outside | | |
| Did the spill occur on: (Check as many as apply) | | |
| <input type="checkbox"/> Concrete | <input type="checkbox"/> Asphalt | |
| <input type="checkbox"/> Carpeted Floor | <input type="checkbox"/> Graveled/Rocky Area | |
| <input type="checkbox"/> Tile | <input type="checkbox"/> Soil/Vegetated Area | |
| <input type="checkbox"/> Wooden Floor/Deck | <input type="checkbox"/> Other: | |
| Samples Collected: | | |
| <input type="checkbox"/> None | <input type="checkbox"/> Soil | If samples were collected, indicate analytical suite: |
| <input type="checkbox"/> Water | <input type="checkbox"/> Air | |
| <input type="checkbox"/> Other: | | |
| Certification | | |
| I certify that I am knowledgeable about the information on this form. The information, to my knowledge, is true, accurate, and complete. | | |
| Name of Certifying Official: | Organization: | Date: |
| Certification: | | |
| Completed by EPC-CP Personnel | | <input type="checkbox"/> Non-Reportable |
| Date Received: | Severity Index: | <input type="checkbox"/> Reportable |
| Causal Analysis: | | |

EPC-CP-QP-1007 Form 1
 Return Completed Form to EPC-CP (spearsen@lanl.gov)
11/2019

| | | |
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Attachment 3: 7/15 Day Release Report, EPC-CP-QP-1007-Form 2

| | | |
|---|--|---|
| RELEASE / DISCHARGE NOTIFICATION LOS ALAMOS NATIONAL LABORATORY LA-UR- | | Calendar Year <div style="border: 1px solid black; padding: 5px; font-size: 24px; width: 80px; margin: 0 auto;">2020</div> |
| Permit Number: NM0028355 | | |

| | | |
|---|---|---|
| NPDES or Operational Spill/Release <input checked="" type="checkbox"/> ER Spill/Release <input type="checkbox"/> Other Spill/Release <input type="checkbox"/> | } Indicate with "X" in appropriate box. | Release ID Number: <div style="border: 1px solid black; height: 20px; width: 100%;"></div> |
|---|---|---|

Responsible Facility/User Group:

Contact Person: Pager #:

Phone #: Cell Phone #:

Release/Discharge Location:

TA:

Building:

If the release/discharge is associated with a NPDES Outfall, Potential Release Site (PRS) or Solid Waste Management Unit (SWMU), indicate the site/unit number and its relationship to the release/discharge:

NPDES Outfall: ☐ PRS: ☐ SWMU: ☐ PRS/SWMU Number:

Indicate with "X" in appropriate box(es).

Relationship of the Discharge to a SWMU or PRS:

| | | |
|--|--|---|
| Discharge Occurred: | Discharge Discovered: | Discharge Stopped: |
| Date & Time | Date & Time | Date & Time |

| | |
|---|---|
| Cleanup Started: | Cleanup Completed: |
| Date & Time | Date & Time |

Material(s) Released / Discharged:

| | | |
|-----------------------------|--------------------|----------------------------|
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Release/Discharge Mitigation Method:

Weather Conditions:

Duration of Release/
Discharge, in HOURS:

Est. Volume released, in
gallons:

Est. Volume Recovered,
in gallons.

Corrective Actions Taken (ie, type of BMPs, etc):

Nearest Watercourse (Canyon Name)

If the release/discharge reached a watercourse, describe the estimated surface area affected, presence of release/discharge now in the watercourse, and the media the release/discharge was detected in:

Depth to Groundwater, in FT, if known:

Distance to Nearest Drinking Water Well, in FT, if known:

Well ID#

24-HOUR RELEASE / DISCHARGE NOTIFICATIONS

| | Contact Person | Phone | Fax | Date & Time (or Comment) |
|--------------|----------------------|----------------------|----------------------|--------------------------|
| EPA: | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| NMED/SWQB: | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| NMED/GWQB: | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| NMED/HRMB: | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| NMED/DOE-OB: | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| EPC-CP: | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| DOE: | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| OTHER: | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| OTHER: | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |

Comments:

Form Completed By:

| | | |
|-----------------------------|--------------------|----------------------------|
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7 DAY RELEASE / DISCHARGE ACTIONS

7 Day Notice ☐

7 Day Notice Date:

7 Day Notice By:

Mark "X" when done.

Comments:

15 DAY RELEASE / DISCHARGE ACTIONS

15 day Follow-up Due:

15-day Follow-Up By:

Comments:

NMED 30 DAY APPROVAL / DISAPPROVAL


NMED 30 Day Response Date:

Comments:

Peter Maggiore, Acting Assistant Manager
National Security Missions
Los Alamos Field Office
3747 West Jemez Road MS-A316
Los Alamos, New Mexico 87544
(505) 606-0397

Jennifer Payne, EPC Division Director
Triad National Security, LLC.
Los Alamos National Laboratory
P.O. Box 1663, MS K404
Los Alamos, New Mexico 87544
(505) 667-2211

ATTACHMENT 23: EPC-CP-QP-2110, MSGP STORMWATER POLLUTION PREVENTION PLAN PREPARATION AND MAINTENANCE

| | | |
|----------------------------|------------------------------|---|
| EPC-CP-QP-2110 | Revision: 0 |  |
| Effective Date: 01/07/2020 | Next Review Date: 01/07/2023 | |

Environment, Safety, Health, Quality, Safeguards, and Security Directorate
Environment Protection and Compliance – Compliance Programs Group
Quality Procedure

MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance

Hazard Grading: ☒ Low ☐ Moderate ☐ High/Complex

Usage Level: ☒ Reference ☐ UET ☐ Mixed: UET Sections: _____

Status: ☒ New ☐ Major Revision ☐ Minor Revision

☐ Review w/No Changes ☐ Other: _____

Safety Basis: ☒ N/A ☐ USQ ☐ USI Number: _____

Document Author/Subject Matter Expert:

| | | | |
|------------------|---------------|-------------------|----------|
| Name: | Organization: | Signature: | Date: |
| Holly L. Wheeler | EPC-CP | Signature on File | 1-6-2020 |

Derivative Classifier: ☒ **Unclassified** or ☐ _____

| | | | |
|------------------|---------------|-------------------|----------|
| Name: | Organization: | Signature: | Date: |
| Steven E. Wolfel | EPC-CP | Signature on File | 1-6-2020 |

Approval Signatures:

| | | | |
|-------------------------------------|---------------|-------------------|----------|
| EPC-CP Reviewer: | Organization: | Signature: | Date: |
| Terrill W. Lemke, Team Leader | EPC-CP | Signature on File | 1-7-2020 |
| EPC-CP RLM: | Organization: | Signature: | Date: |
| Taunia Van Valkenburg, Group Leader | EPC-CP | Signature on File | 1-7-2020 |

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To document a required read, Login to [UTrain](#), and go to the Advanced Search.

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 2 of 72 |
| | Revision: 0 | Effective Date: 01/07/2020 |

REVISION HISTORY

| Document Number and Revision <i>[Include revision number, beginning with Revision 0]</i> | Effective Date <i>[Document Control Coordinator inserts effective date]</i> | Description of Changes <i>[List specific changes made since the previous revision]</i> |
|--|---|--|
| EPC-CP-QP-2110, Rev. 0 | 01/07/2020 | New document |

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1.0 INTRODUCTION

The Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit (MSGP), also referred to as the Permit, contains specific requirements for industrial activities of Los Alamos National Laboratory (LANL) covered by the permit. One requirement is the preparation, maintenance, and routine revision of a Stormwater Pollution Prevention Plan (SWPPP).

1.1 Purpose

Active MSGP facilities must be included in a SWPPP. The SWPPP is intended to document the selection, design, and installation of control measures to meet permit effluent limits. Additional documentation required by the Permit is to be kept with the SWPPP (including inspection maintenance, monitoring, and corrective action) and is intended to document the implementation of permit requirements.

1.2 Scope

This procedure contains information and specific steps for preparing a SWPPP, and identifying and documenting conditions in order to meet Permit requirements. Part 5 of the Permit contains specific requirements for developing, maintaining, and revising a SWPPP for facilities with stormwater discharge associated with industrial activities permitted under an MSGP. Part 5.5 describes the additional documentation required to be kept with the SWPPP.

1.3 Applicability

This procedure applies to Environmental Protection and Compliance-Compliance Programs (EPC-CP) technical staff, Deployed Environmental Professionals (DEPs), and subcontractor personnel (as applicable) who develop and maintain SWPPPs at MSGP regulated LANL facilities operated by Triad, LLC.

2.0 PRECAUTIONS AND LIMITATIONS

The hazard rating for the activities described in this procedure is **LOW** and does not require an Integrated Work Document.

3.0 PREPARING AN MSGP STORMWATER POLLUTION PREVENTION PLAN

Part 5 of the Permit contains the specific requirements for developing, maintaining, and revising a SWPPP. At a minimum, the SWPPP must contain the following elements:

- Stormwater pollution prevention team (Stormwater PPT);
- Site description (including a site map);
- Summary of potential pollutant sources;
- Description of control measures;

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- Schedules and procedures;
- Documentation to support eligibility considerations under other federal laws; and
- Signature requirements.

Where the SWPPP refers to procedures in other facility documents, such as a Spill Prevention, Control and Countermeasure Plan or an Environmental Management System, copies of the relevant portions of those documents must be kept with the SWPPP.

The template provided in Attachment 1, EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* contains the elements required in a LANL MSGP SWPPP. Contact the MSGP Program Lead for questions regarding content.

3.1 Gathering Information for the SWPPP

SWPPP Preparer

- [1] Contact the MSGP Program Lead for a copy of the most current SWPPP template.
- [2] Obtain a copy of the previous year's SWPPP for reference (if one is available).
- [3] Review the SWPPP template.
 - [a] Identify information that will need to be included in the SWPPP (e.g., MSGP sector, operational areas, Pollution Prevention Team member names, etc.).
 - [b] Identify documents that will need to be attached to the SWPPP (e.g., certifications, memorandums, maps, data summaries, endangered species reports, etc.).
- [4] Identify documents and/or reports that are provided by EPC-CP.
 - [a] Contact the MSGP Program Lead with a request for needed information.
- [5] Obtain maps as specified in the SWPPP template.
 - [a] Request a new map or update to existing map from the MSGP Program Lead.
 - [b] Provide a draft or map markup with information as required in the Permit.

3.2 Preparing the SWPPP

SWPPP Preparer

- [1] Use a copy of the most current SWPPP template.
- [2] Add information to the relevant sections.
- [3] Text highlighted in yellow indicate areas to be replaced with facility specific information.

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- [a] IF text is part of an instruction (e.g., **Insert site description text here.**)
THEN delete the entire line and replace with the appropriate information.
 - [b] IF text is embedded as part of the line,
THEN replace just the yellow highlighted text with appropriate information (e.g., delete **Sector XX-(Insert Sector Title)** and replace with *Sector P – Land Transportation & Warehousing*).
 - [4] Delete attachments that are not applicable to the active facility specific SWPPP.
 - [5] Attach other documentation (e.g., Spill Prevention, Control and Countermeasure Plan, Environmental Management System, copies of relevant portions of documents) as necessary.
 - [6] Send the draft SWPPP to the EPC-CP MSGP Program Lead and request a review.
- NOTE 1:** The EPC-CP MSGP Program Lead may delegate the review to personnel in the Storm Water Permitting/Compliance Team.

MSGP Program Lead or Designee

- [7] Review the SWPPP to ensure information required by the Permit is included.
 - [a] Encourage the use of the *MSGP SWPPP Review Guidance Checklist* as a best management practice to cross-check SWPPP content with the Permit. See checklist example in Attachment 2.
 - [b] Provide comments to the SWPPP Preparer.

SWPPP Preparer

- [8] The Preparer must resolve review comments with the MSGP Program Lead.
 - [9] Obtain the signature of a duly authorized representative (refer to Appendix B, Subsection 11 of the Permit) on the certification statements associated with the SWPPP and attachments (refer to Attachment 9 of the *MSGP SWPPP Template Example*).
- NOTE 2:** The Review & Approval System for Scientific and Technical Information (RASSTI) system requires upload of only PDF documents. It is highly recommended that all final certifications obtained contain a written signature rather than electronic signature. The RASSTI system adds a cover page to the document containing the LA-UR number, which obviates all electronic signatures due to the document change.

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4.0 MAINTAINING THE MSGP SWPPP

4.1 Availability of the MSGP SWPPP

A complete copy of the current SWPPP is required to be kept at the active facility in an accessible format. The SWPPP must be immediately available to facility employees, EPA, and other entities identified in the Permit. The SWPPP must also be made available to the public. LANL meets this requirement by posting SWPPPs to the Public Reading Room internet web page. Refer to Part 5.4 of the Permit for more information.

SWPPP Preparer

- [1] Submit the final certified SWPPP in PDF format to the RASSTI system at *rassti.lanl.gov*.
 - [a] The SWPPP must be identified as Los Alamos Unlimited Release, or LA-UR, to be posted to the Public Reading Room.
 - [b] Identify a derivative classifier to review the document.
 - [c] Identify the document for a **full classification review**. The Designated Unclassified Subject Area, or DUSA, system may **NOT** be used.
 - [d] Identify a line manager for an approval signature.
 - [e] Identify the document for release to Public Reading Room.
- [2] Add the cover page containing the LA-UR number generated by the RASSTI system to the SWPPP.
- [3] Contact the RASSTI staff for questions and assistance using this system.

4.2 Additional Documentation Requirements

The Permit requires additional documentation to be kept with the SWPPP that together keep records complete and up-to-date, and demonstrate full compliance with the conditions of the Permit. Some documents may be generated when a SWPPP is first written (e.g., copy of the permit). Other documents may be generated on an ongoing basis throughout a calendar year (e.g., inspections). Refer to Part 5.5 of the Permit for additional information.

SWPPP Preparer or Owner

- [1] IF any of the following documents are generated, THEN add the document to the facility SWPPP as soon as the document is generated and finalized (i.e., all signatures have been obtained).
 - A copy of the Notice of Intent to Discharge (NOI) submitted to EPA and correspondence exchanged between Triad, LLC and EPA specific to coverage under the permit;

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NOTE: There may be several modifications to the NOI during a permit term. Ensure you coordinate with the MSGP Program Lead to confirm all modifications are included in the SWPPP.

- A copy of the acknowledgement received from the EPA assigning the NPDES permit identification number
- A copy of the permit;
- Documentation of maintenance and repairs of control measures (refer to Part 2.1.2.3 of the Permit);
- All inspections, including Routine Facility Inspections and Quarterly Visual Assessments (refer to Parts 3.1.2 and 3.2.2 of the Permit);
- Description of any deviations from the schedule for visual assessments and/or monitoring, and the reason for the deviations (refer to Parts 3.2.3 and 6.1.5 of the Permit);
- Corrective action documentation (refer to Part 4.4 of the Permit);
- Documentation of any benchmark exceedances and the type of response to the exceedance employed;
- Documentation to support any determination that pollutants of concern are not expected to be present above natural background levels if stormwater is discharged directly to impaired waters; and
- Documentation to support any claim that the facility has changed its status from active to inactive and unstaffed.

5.0 REVISING THE MSGP SWPPP

The Permit specifies conditions that trigger a SWPPP review to ensure numeric and non-numeric effluent limits are met and to determine if modifications to stormwater controls are necessary (refer to Parts 4.1 and 4.2 of the Permit).

The SWPPP must also be modified based on corrective actions and deadlines required under Part 4.3 of the Permit, and documented in accordance with Part 4.4 of the Permit.

At a minimum, the SWPPP must be reviewed and revised once per calendar year, and no later than 45 days after conducting the final routine facility inspection for the year.

SWPPP Preparer or Owner

- [1] The Stormwater PPT will review the SWPPP for the following at a minimum.
- The selection, design, installation, and implementation of control measures.
 - Sources of pollution.

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- Spill and leak procedures.
 - Non-stormwater discharges (as applicable).
- [2] IF any of the following conditions occur or are detected during an inspection, monitoring or other means,
THEN the Stormwater PPT must **immediately** review the SWPPP as specified above.
- Unauthorized release or discharge (e.g., spill, leak, discharge of non-stormwater not authorized by the permit);
 - A discharge violates a numeric effluent limit (refer to Table 2-1 of the Permit);
 - Controls measures are not stringent enough for discharge to meet applicable water quality standards or the non-numeric effluent limits in the permit;
 - A required control measure was never installed, installed incorrectly, or not in accordance with Parts 2 and/or 8, or is not properly operated or maintained;
 - Whenever a visual assessment shows evidence of stormwater pollution (e.g., foam, oil sheen, etc.).
 - Construction or a change in design, operation, or maintenance at the facility that significantly changes the nature of pollutants discharged in stormwater from the facility , or significantly increases the quantity of pollutants discharged;
- NOTE 1:** Changes include building removal or replacement, BMP removal or installation, outfall removal or creating a new outfall, changing drainage pathways or the path of stormwater flow.
- The average of four quarterly sampling results exceeds an applicable benchmark.
- NOTE 2:** If less than four benchmark samples have been taken, but the results are such that an exceedance of the four quarter average is mathematically certain this is considered a benchmark exceedance.
- [3] The Stormwater PPT must determine the modification(s) to be made to implement or maintain control measures and/or take corrective action.
- [4] The revision/modification(s) will be implemented at the facility.
- [5] The SWPPP will be revised/modified within 14 days of completion of a modification or corrective action to reflect the modification(s) made.
- [6] Obtain a signature and date from a duly authorized representative on all SWPPP revisions/modifications in accordance with Appendix B, Subsection 11 of the Permit.

6.0 TRAINING

The following personnel require training before implementing this procedure.

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- Deployed Environment, Safety, and Health Group and Team Leaders
- EPC-CP MSGP stormwater compliance personnel
- DEPs
- Other LANL or subcontract personnel identified as being required to prepare and maintain MSGP SWPPPs as part of their job duties

All EPC-CP personnel that execute the activities specified in this procedure must meet the minimum qualification and training requirements for their position as identified EPC-CP-PIP-2101, NPDES Multi-Sector General Permit Program. This will include “self-study” (required reading) for this procedure as assigned and documented in accordance with ADOSH-TPP-301, *ADESH Training Program Plan*. Other participating LANL groups may require training documentation pursuant to local procedures.

Contract personnel that execute the activities specified in this procedure will be qualified and trained as required by the Exhibit D and Exhibit F. In addition, contract personnel will be required to complete “self-study” (required reading) of this procedure.

7.0 RECORDS

MSGP SWPPPs are signed and certified by a duly authorized representative of the individual facilities. These completed documents are maintained at the permitted facility, managed by the facility’s Records Management designated point-of-contact or document manager, and posted to the LANL public reading room. The MSGP team may retain a copy for reference purposes.

Below, are records generated as a result of implementing this procedure. Records generated are identified by title and type.

| Record Title | QA Record | Non-QA Record |
|--------------------------------------|-------------------------------------|--------------------------|
| Stormwater Pollution Prevention Plan | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| MSGP SWPPP Review Guidance Checklist | N/A | N/A |

8.0 DEFINITIONS AND ACRONYMS

8.1 Definitions

See LANL [Definition of Terms](#).

Best Management Practice (BMP) – Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of “waters of the United States.” BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage (*40 CFR Part 122.2*).

Control Measure – Any BMP or other method (including effluent limitations) used to prevent or reduce the discharge of pollutants to waters of the United States.

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8.2 Acronyms

See LANL [Acronym Master List](#).

| | |
|------------------------|---|
| EPA | Environmental Protection Agency |
| EPC-CP | Environmental Protection and Compliance-Compliance Programs |
| DEP | Deployed Environmental Professional |
| DUSA | Designated Unclassified Subject Area |
| LANL or the Laboratory | Los Alamos National Laboratory |
| LA UR | Los Alamos Unlimited Release |
| MSGP or Permit | Multi-Sector General Permit |
| NPDES | National Pollutant Discharge Elimination System |
| NOI | Notice of Intent to Discharge |
| SWPPP | Stormwater Pollution Prevention Plan |
| PDF | Portable Document Format |
| PPT | Pollution Prevention Team |

9.0 REFERENCES

Unites States Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit for Stormwater Discharges Associated With Industrial Activity (MSGP)

Federal Register, Final National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Industrial Activities. Federal Register: June 16, 2015, Volume 80, Number 115

Clean Water Act, Title 33 U.S.C. 1251

10.0 ATTACHMENTS

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template* Example

Attachment 2: *MSGP SWPPP Review Guidance Checklist* Example

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MSGP Stormwater Pollution Prevention Plan

Insert Facility Name

Triad National Security, LLC
Los Alamos National Laboratory

XX/XX/XXXX

Revision X

EXAMPLE

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STORMWATER POLLUTION PREVENTION PLAN

PREFACE

This Stormwater Pollution Prevention Plan (SWPPP) was developed in accordance with the provisions of the Clean Water Act (33 U.S.C. §§1251 et seq., as amended), and the *United States Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP)* (U.S. EPA, June 2015) issued by EPA. The SWPPP uses the industry specific permit requirements for **Sector XX-(Insert Sector Title)** as a guide. The applicable stormwater discharge permit is EPA General Permit Identification Tracking Number NMR050013 [Triad National Security, LLC (Triad)]. Click here to view contents of the [2015 Multi-Sector General Permit](#).

This SWPPP applies to discharges of stormwater from the operational areas of **(List the operational areas)** at Los Alamos National Laboratory. Los Alamos National Laboratory (also referred to as LANL or the "Laboratory") is owned by the Department of Energy (DOE), and is operated by Triad. Throughout this document, the term "facility" refers to **(Insert facility name)**. The current MSGP expires at midnight on June 4, 2020.

1.0 FACILITY DESCRIPTION

1.1 Facility Information

| | | |
|--|-----------|-----------------|
| Name of Facility: (Insert facility name e.g., TA-3-22 Power and Steam Plant) | | |
| Street: P.O. Box 1663 | | |
| City: Los Alamos | State: NM | ZIP Code: 87545 |
| County: Los Alamos | | |
| NPDES ID (i.e., permit tracking number): NMR050013 | | |
| Primary Industrial Activity SIC code, and Sector and Subsector (2015 MSGP, Appendix D and Part 8): SIC XXXX, Sector X, Subsector XX | | |
| Estimated area of industrial activity at site exposed to stormwater: XX acres | | |
| Discharge Information | | |
| Name(s) of surface water(s)/segment that receives stormwater from your facility: Sandia Canyon (Sigma Canyon to NPDES outfall 001). Note: For Roads and Grounds also add "and Mortandad Canyon (within LANL)". Note: For Asphalt Batch Plant alone, delete Sandia Canyon information and insert only "Mortandad Canyon (within LANL)." | | |
| Does this facility discharge industrial stormwater directly into any segment of an "impaired water" (see definition in 2015 MSGP, Appendix A)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| Pollutants causing the impairment: (Insert pollutants: list can be found in the Triad Notice of Intent (NOI)) | | |

| | | |
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| |
|---|
| Pollutants causing the impairment (see above) that may be present in industrial stormwater discharges from this Facility: |
| Are any of your stormwater discharges subject to effluent limitation guidelines (ELGs) (2015 MSGP Table 1-1)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| If Yes, which guidelines apply? (Note: Asphalt Batch Plant is subject to ELGs) Not applicable. |

1.2 Stormwater Pollution Prevention Team (PPT)

Insert a description of the team

The specific duties of individual team members of the PPT are listed in the table below.

| Staff Names | Individual Responsibilities |
|---|--|
| Group Leader: Name Title, Organization | Responsible for the management of all environmental, safety, health, and quality programs for the yards, buildings and facilities within this Plan. This includes performing oversight and periodic walk downs to ensure implementation of the requirements of the MSGP and this SWPPP including overseeing the assigned duties of other PPT members. The Group Leader is responsible for ensuring problems noted during inspections are corrected. The Group Leader must also ensure adequate resources are obtained to ensure compliance requirements of the MSGP and this SWPPP are met. |
| Deployed Environmental Professional (DEP): Name Title, Organization | Responsible for the management of all environmental programs and issues for the yards, buildings and facilities listed within this Plan. The DEP is responsible for training, recordkeeping, and SWPPP revision. The DEP ensures documentation of inspections and other required MSGP records relative to the SWPPP are managed in accordance with the Permit and established document control procedures and that the SWPPP is kept current. The DEP provides technical and regulatory support to facility and operations personnel regarding implementation of the MSGP and this SWPPP. Lastly, the DEP conducts routine facility inspections and if necessary, visual assessments, in accordance with the Permit. Identified conditions requiring corrective actions from routine facility inspections are entered into the Environmental Protection and Compliance-Compliance Programs (EPC-CP) Corrective Action Report (CAR) database. The DEP is responsible for tracking and updating the status of corrective actions that cannot be implemented immediately. |
| Facility Operations Division (FOD) Manager: Name Title, Organization | Responsible for managing the maintenance and operation of all aspects of the yards, buildings and facilities listed within this Plan. The manager shall provide review and ensure coordination with core personnel and the PPT, as appropriate, when tenants within |

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| | the FOD propose new processes, operations, features, or a new site that may be subject to the MSGP. |
| EPC Core: Name Title, Organization | The MSGP Program Lead is responsible for managing and administering the MSGP Program for all industrial facilities operated by Triad within Los Alamos National Laboratory. The MSGP Program Lead advises and provides guidance to facility or operations personnel on NPDES MSGP regulations/requirements. The Program Lead also acts as the institutional point of contact for all interactions with the regulatory authority (EPA) and supervises personnel implementing stormwater monitoring requirements for the facility. |
| Operations Manager(s): Name Title, Organization | Responsible for day-to-day operations at the facility. Assists the DEP and EPC with inspections; spill reporting; implementing, installing and maintaining storm water controls (also known as Best Management Practices) (BMPs); and providing documentation as requested by other team members. The Operations Manager is key to ensuring adequate communication and coordination of issues regarding implementation of the MSGP and this Plan. Operations Managers also assist the DEP/EPC with SWPPP training and/or briefings, as requested. |

1.3 Site Description

Insert text with site description. Include information on type of operation(s), industrial operating equipment (associated with the Asphalt Batch Plant and the TA-3-22 Power and Steam Plant), main structures, activities, outfalls, and substantially identical outfalls.

1.4 General Location Map

The general location map for the facility can be found in Figure A. Figure B-X (if you have more than one site map, list them all here) contains all site maps and identifies all receiving waters associated with stormwater discharges from the facility. X percent of the site flows to (Insert canyon name). The canyon at this location is a (Insert stream type e.g., perennial, ephemeral, intermittent) and eventually flows to the Rio Grande approximately X miles southeast of the site.

1.5 Site Map

The site map is provided as Figure B-X (if you have more than one site map, list them all here) and illustrates the facility's activities: including facility boundary, structures, impervious surfaces, industrial activity areas, spills, operational areas, drainage patterns, stormwater controls, monitoring locations, outfalls and nearby receiving streams.

As required by the 2015 MSGP, the following information specific to the facility is either shown on the site map or contained with additional information provided in this SWPPP.

- **Site boundaries and acreage.** The site covers approximately X acres.
- **Significant structures and impervious surfaces.** The site is X percent impervious, primarily structures and paved lots.

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- **Direction of stormwater flow and site drainage.** Direction of flow is indicated with arrows.
- **Locations of stormwater control measures.**
- **Locations of all receiving waters.** In the immediate vicinity of the facility, (Indicate if any of the waters are Impaired and, if so, whether the waters have TMDLs established for them. See paragraph below this list). Also, indicate if the receiving water includes a wetland. A map of nearby receiving waters is provided as Figure B-X.
- **Locations of all stormwater conveyances.** This includes all ditches, pipes, and swales.
- **Locations of potential pollutant sources.**
- **Locations of significant spills or leaks.**
- **Locations of all stormwater monitoring points.**
- **Locations of stormwater inlets and outfalls.** Of which each will require a unique identification code for each outfall (e.g., Outfall 005, etc.), indicating if you are treating one or more outfalls as "substantially identical" and an approximate outline of the areas draining to each outfall.
- This facility is not associated with a municipal separate storm sewer system (MS4).
- **Areas of designated critical habitat for endangered or threatened species.** There are (Insert "no areas" or a number of areas) in the direct vicinity of the facility. However, a map for threatened and endangered species within LANL property is included as Figure B-X.
- **Locations of the following activities where such activities are exposed to precipitation:**
 - Insert all facility activities exposed to stormwater (e.g., fueling locations; loading/unloading areas; locations used for the treatment, storage, or disposal of wastes; liquid storage tanks; processing and storage areas; machinery; location and sources of run-on to the site; transfer areas for substances in bulk; immediate access roads used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; and vehicle and equipment maintenance and/or cleaning areas. Only include the activity areas specific to the facility (for example, if you do not refuel within the active facility boundary, do not include "fueling locations" in this bulleted list). Use a secondary bullet list level in this section.

2.0 POTENTIAL POLLUTANT SOURCES

Industrial activities that could potentially result in releases to the environment are summarized in 2.1 below. The site map for the facility is provided in Figure B-1.

Insert text describing structures and industrial activities that could potentially result in a release to the environment. Include information on location (e.g. inside, outside), associated containment, protection (e.g., roofed areas or coverings), and other devices or practices to prevent or contain spills, prevent run-on and run-off.

2.1 Potential Pollutants Associated with Industrial Activity

List specific areas and activities that could potentially result in a release to the environment and the constituents that may be released. Include a list of any Solid Waste Management Units and Areas of Concern (also known as Consent Order Sites or Potential Release Sites) with a description of each and associated potential pollutants/contaminants.

2.2 Spills and Leaks

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Insert information on spill and leak history at the facility, if any. Text may be in table format as shown below.

| Date | Description | Outfall(s) Affected |
|------|-------------|---------------------|
| | | |
| | | |

Insert information on areas where spills and leaks could occur at the facility. Text may be in table format as shown below.

| Specific Equipment/Industrial Activity Areas and Location | Outfall(s) Affected |
|---|---------------------|
| | |
| | |

In the event of any future spill or leak at any of the facility areas, a spill report, documenting the occurrence and the nature of the spill or leak, will be completed. The spill report will be filed promptly upon completion and documentation of the spill clean-up, and will be summarized in this section of the SWPPP. In addition, spills within MSGP facility boundaries will be entered as conditions requiring corrective action in the MSGP CAR database and will be updated as corrective action occurs, in accordance with EPC-CP-QP-022, *MSGP Corrective Actions*.

The probability of spills or releases at the facility is minimized by (Insert information on how the facility will minimize spills and leaks).

2.3 Unauthorized Non-Stormwater Discharges

Insert information describing any NPDES permitted non-stormwater discharges, unpermitted outfalls, or unauthorized discharges associated with the facility. Describe any potential sources of non-stormwater discharges (e.g., testing of fire hydrants) and where wastewater drains to. Include a reference to the "Non-Stormwater Discharge Assessment and Certification" and indicate that it is provided in Attachment 3.

2.4 Salt Storage

Insert text describing salt storage areas at the facility, if present. If none exists, state salt is not stored at the facility.

2.5 Historical Data Summary

The following tables provide monitoring data at the facility for the past X years.

Permitted Facility: (insert facility name)

Calendar Year XXXX

Contact MSGP Program Lead to obtain this information formatted for insertion.

Note: This information will be updated every year during the annual SWPPP update, to include the 3 most current years of monitoring data.

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3.0 STORMWATER CONTROL MEASURES

Control measures at the facility are designed to minimize the potential release of pollutants that could adversely affect water quality. Insert text with stormwater control measure information.

3.1 Non-Numeric Technology-Based Effluent Limits

Insert text with non-numeric technology-based effluent limits information. Note: This is specific to Sectors A, AA, N, O and P.

3.1.1 Minimize Exposure

Insert text describing all structural controls (structures or covers) or practices used to minimize the exposure of industrial activities to precipitation. The SWPPP must describe where the controls or practices are being implemented at the facility. Examples of exposure-minimizing control measures include: location and extent of grading, berms, curbs used to contain contaminated stormwater or divert it around areas of industrial activity, materials stored within secondary containment, location of spill cleanup kits, schedule for employee spill abatement and cleanup training, procedure or practices for storage of leaky vehicles and equipment.

3.1.2 Good Housekeeping

Good housekeeping practices specifically applicable to the prevention of stormwater contamination include the following measures: Insert text describing any practices implemented to keep exposed areas at the facility clean. Describe where each practice is being implemented at the facility. Examples of good housekeeping control measures include how workspaces are maintained; routine inspections of heavy equipment, other equipment and waste containers; inspections of material storage areas; identifying specific personnel/positions responsible for emptying drip pans, etc. Refer to Section 4.1 of this document for specific schedules for waste and recyclable material pickup and sweeping.

All site areas exposed to precipitation are walked down during daily operations and monthly routine facility inspections to ensure that the grounds are kept in an orderly condition. The outdoor metal storage areas are inspected to ensure all piping and metal raw material is off the ground on storage racks and covered, or stored inside buildings, sheds or transportable containers. Vehicle and forklift parking areas are inspected for leaks or spills as well as storage areas containing oil-filled equipment. The entire site, including loading areas and outfalls, are inspected for floatable debris, garbage, waste and all other potential pollutants. All dumpsters and roll-off bins are inspected to ensure they are closed.

3.1.3 Maintenance

Control measures at the facility will be kept in effective operating condition by the implementation of scheduled preventive maintenance, standard operating procedures (SOPs), engineering guidance, and manufacturer's specifications as applicable. If control measures need to be replaced or repaired to maintain compliance with the 2015 MSGP, necessary modifications will be made according to the timelines specified in the *Corrective Action and Deadlines* requirements of Section 6.0 of this SWPPP.

Deficient items identified during routine facility inspections, walk-downs, or by any other means of identification, will be documented on the routine facility inspection forms and entered into the MSGP CAR database. The condition requiring corrective action will remain open until proper maintenance or

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corrective action has been completed. CAR information, along with documentation of maintenance/repair of control measures, is in Attachment 9 of the SWPPP.

Insert text identifying how industrial equipment is maintained to avoid leaks or other releases. Also, include information on how site-specific control measures are maintained to ensure effective operating condition.

3.1.4 Spill Prevention and Response

Spills, leaks, or other releases will be prevented and minimized by (insert information on how the facility prevents and minimizes unauthorized releases).

Insert text describing the general facility approach to spill cleanup.

All spills or releases are reported to EPC-CP by using the spills pager (505) 664-7722. Although incidental spills may be cleaned up by facility personnel, all emergency spills or releases are reported to Emergency Management Division-Emergency Response (EMD-ER) and/or the Facility Duty Officer by calling 667-2400. If fire or explosion is present, or if the potential for such exists, the situation must be reported by dialing 911 from a non-cellular phone or by activating a fire pull box. In the event of a spill, EMD-ER will coordinate appropriate cleanup procedures and EPC-CP will notify the individuals or organizations responsible for completing spill reports and providing information needed to fulfill regulatory reporting requirements.

Unauthorized releases or discharges within industrial facility boundaries are entered into the MSGP Corrective Action Reporting database in accordance with EPC-CP-QP-022, *MSGP Corrective Actions*. In addition, the completion of an Unplanned Release Report is required in the event of a spill. The report will be submitted to EPC-CP personnel and handled according to internal spill record keeping procedures. Spills may be "reportable" (requiring external agency notification) depending on the nature of the spilled material and the location of the release. External agency notification may consist of verbal and/or written notification to the National Response Center, Environmental Protection Agency Region VI, or the New Mexico Environment Department (NMED). EMD-ER, the FOD and EPC-CP, in accordance with Laboratory and DOE policies and federal and state regulatory reporting requirements, will make the determination for the type of reporting required. EPC-DO-QP-101, *Environmental Reporting Requirements for Releases or Events* is used for this purpose (see Attachment 21).

Copies of internal spill reports are maintained by the responsible organization and in the EPC-CP database. The EPC-CP procedure for spill reporting and response, ENV-CP-QP-007, *Spill Investigations*, can be found in Attachment 22 of this SWPPP.

3.1.5 Erosion and Sediment Control

Insert text describing how erosion at the facility and sediment transport off the facility is prevented/minimized. Erosion control measures that prevent soil or sediment from becoming mobilized should be used as the primary line of defense. Sediment control measures that trap, infiltrate, or settle out mobilized sediments, should be used to back-up the erosion control measures.

3.1.6 Management of Runoff

Insert text describing how the facility manages stormwater runoff. This will include a description of controls used to divert, infiltrate, reuse, contain, or otherwise reduce stormwater runoff. Installed or utilized control measures may be listed with a description of their function at the facility.

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3.1.7 Salt Storage Piles or Piles Containing Salt

Insert text describing how the facility manages salt storage piles or piles containing salt. Offloading operations should occur within contained areas with appropriate measures in place to prevent off-site migration or track out of salt from the contained area. Installed or utilized control measures may be listed with a description of their function at the facility. If none exists, state salt is not stored at the facility.

3.1.8 Dust Generation and Vehicle Tracking of Industrial Materials

Insert text describing how the facility manages dust generation and vehicle tracking.

3.2 Numeric Effluent Limitations Based on Effluent Limitations Guidelines

Insert information identifying the facility as meeting or not meeting the industrial category requirements for effluent monitoring as listed in Part 2.1.3 (*Table 2-1 Applicable Effluent Limitation Guidelines*) of the 2015 MSGP and if benchmark monitoring is or is not required.

If the permit does identify sector-specific requirements for the facility, insert a description of specific controls implemented at the facility to ensure numeric effluent limits are met.

3.3 Water Quality-Based Effluent Limitations and Water Quality Standards

Impaired waters monitoring is performed annually at the facility as listed in Section 4.7 of this SWPPP. The pollutants monitored can change yearly based on the requirements of the MSGP. The table in Section 4.7 lists the current year monitoring requirements and standards.

Stormwater from (insert facility name) discharges to (insert canyon name). Insert information on canyon reaches identified as impaired waters, pollutants causing the impairment, and approved or established TMDLs for the canyon. Also, insert specific information relative to the controls measures used to ensure discharges from industrial activities meet the water quality standards.

Refer to Section 4.7 for specific actions that will be taken when a water quality standard is exceeded.

4.0 SCHEDULES AND PROCEDURES

Preventative maintenance of control measures used to comply with the Permit effluent limits can avoid situations that result in discharges to the environment. Part 5.2.5 of the 2015 MSGP specifies control measures will have a schedule or frequency for maintenance and procedures specifying how maintenance is conducted. Part 5.5 requires documentation of maintenance and repairs including the date(s) of regular maintenance. See Attachment 10 for the Scheduled Maintenance Log.

4.1 Good Housekeeping

Insert a schedule for housekeeping activities such as waste and recyclable material (scrap metal, wood tires) pickup, street sweeping, etc. and identify any procedures used to ensure this occurs.

4.2 Maintenance

Insert a discussion of and schedule for preventative or regular maintenance of equipment such as oil/water separators, culvert clean outs, other control measures, etc. Note: Industrial equipment will be

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maintained so that leaks and other releases are avoided. All control measures will be maintained in effective operation condition.

4.3 Spill Prevention and Response

Insert a discussion of and schedule for preventing and responding to spills and leaks such as regular maintenance of equipment, placing pans under heavy equipment, and maintaining spill kits. Also, specify cleanup equipment, procedures and spill logs, and identify how often employees are trained in spill response procedures, as appropriate.

4.4 Erosion and Sediment Control

Insert a discussion of and schedule for preventative or regular maintenance of erosion, sediment and velocity control measures. If polymers and/or other chemical treatments are used as erosion or sediment control measures, identify them and include a regular schedule for reapplication. Also, include a schedule for restocking these materials to ensure the facility does not run out.

4.5 Employee Training

Employee training is essential for effective implementation of the SWPPP and MSGP requirements. The goals for the training program are to ensure that employees: (1) are aware of what happens when pollutants come in contact with stormwater; (2) are familiar with and will implement the requirements of this SWPPP; (3) are capable of preventing spills; (4) respond safely and effectively to an accident when one occurs; (5) recognize when there is an issue with a control measure; (6) recognize when additional control measure are necessary; and (7) identify situations that could lead to stormwater contamination.

Per Part 2.1.2.8 of the 2015 MSGP, training relevant to the SWPPP and MSGP is required for all workers at the facility that work in areas where industrial materials or activities are exposed to stormwater (MSGP sites); workers, managers, and supervisors who are responsible for implementing activities necessary to meet the conditions of this permit (e.g., inspectors, maintenance personnel); and all members of the PPT. Training is designed to ensure these personnel understand the MSGP and SWPPP requirements, as well as their specific responsibilities regarding these requirements.

Training provided and assigned to these personnel cover both the specific control measures used at the facility; along with monitoring, inspection, planning, reporting, and documentation requirements described in this SWPPP. Training will be conducted at least annually. The DEP, Deployed Environment Safety and Health (DESH) Group Leader and Pollution Prevention Team members are responsible for ensuring all appropriate personnel receive this training. It is suggested to add a list of job titles per facility that require training (e.g., Mechanics, Heavy Equipment Operators, PPT members, Operations Manager(s), etc.).

Training activities are documented in accordance with LANL's Training Standards. In cases where training is formalized enough to require specific curricula and reoccurrence, the training activity will be recorded in LANL's official U-TRAIN database. Informal briefings, such as those included in-group safety meetings are not typically recorded in U-TRAIN. Sign-in sheets are used to document attendance and will be kept on file in Attachment 11 of this SWPPP.

The topics in this SWPPP that are covered in the latest version of the facility-specific annual MSGP training (see Attachment 11) include the following:

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- Overview of the SWPPP contents;
- Spill response and cleanup procedures, good housekeeping, maintenance requirements, and material management practices to prevent stormwater pollution;
- The location of all controls on the site required by this permit and how they are maintained;
- The proper procedures to follow with respect to the permit's pollution prevention requirements; and
- When and how to conduct inspections, record applicable findings, and take corrective actions.

4.6 Routine Facility Inspections and Quarterly Visual Assessments

Routine inspections at this facility are conducted and documented monthly in accordance with EPC-CP-QP-023, *MSGP Routine Facility Inspections* (Attachment 16).

Visual assessments are conducted in accordance with EPC-CP-QP-064, *MSGP Stormwater Visual Assessments* (Attachment 18).

4.6.1 Routine Facility Inspections

At least once each calendar year, the routine facility inspection is conducted during a period when a stormwater discharge is occurring. A qualified member of the PPT (typically the DEP, a representative from the EPC-CP Storm Water Permitting/Compliance Team or EPC-CP Program Lead) performs the inspection. The 2015 MSGP consolidates the different and separate documentation requirements in the Comprehensive Site Inspection Procedures and Routine Facility Inspection Procedures from the 2008 MSGP. EPC-CP will perform at least one routine inspection per year in order to evaluate corrective action status for the Annual Report requirements.

Routine inspections will evaluate the following areas, at a minimum:

- Areas where industrial materials or activities are exposed to stormwater;
- Areas identified in the SWPPP and those that are potential pollutant sources;
- Areas where spills and leaks have occurred in the last three years;
- Discharge points(outfalls/Substantially Identical Outfalls (SIOs); and
- Control measures used to comply with the effluent limits contained in this permit.
- Specific areas of the facility to be inspected are described in Section 2.1.

During routine inspections, the following must be examined and looked for:

- Industrial materials, residue or trash that may have or could come into contact with stormwater;
- Leaks or spills from industrial equipment, drums, tanks and other containers;
- Offsite tracking of industrial or waste materials, or sediment where vehicles enter or exit the site;
- Tracking or blowing of raw, final or waste materials from areas of no exposure to exposed areas; and
- Control measures needing maintenance, repairs or replacement.

Inspections performed by the PPT member are documented by completing the routine facility inspection form, which identifies all conditions requiring corrective action and other potential stormwater pollution issues that were encountered. All conditions requiring corrective actions identified during the inspection are addressed in accordance with Section 6.0 *Corrective Actions and Deadlines* of this plan. Facility personnel or the DEP may also perform daily, weekly, or other periodic facility surveys (walk downs)

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between monthly routine inspections to ensure compliance with the SWPPP and MSGP. Completed routine facility inspection forms are provided in Attachment 7 of this SWPPP and meet the requirements listed in the 2015 MSGP (Part 3.1.2.).

4.6.2 Quarterly Visual Assessments

Once each quarter, (April 1-May 31, June 1-July 31, August 1-September 30, October 1-November 30) a stormwater sample is obtained and visual assessment performed at each outfall, if a measureable storm event occurred. A qualified member of the PPT (DEP, EPC-CP field team member or MSGP Program Lead) conducts the visual assessment. The visual assessment will be:

- Of a sample in a clean, clear colorless glass or plastic container and examined in a well-lit area;
- On samples collected within the first 30 minutes of an actual discharge from a storm event or as soon as practicable thereafter. Alternatively, document why it was not possible to collect the sample within the first 30 minutes (i.e. adverse conditions, not enough flow, etc.); and
- Conducted at least 72 hours since the last storm event; or document that the 72-hour period is representative of local storm events during the sampling period.

Note: Snowmelt samples need only be collected during a period of measurable discharge.

The visual assessment will inspect for the following water quality characteristics: color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of stormwater pollution.

Exceptions to visual assessments:

- Document rationale if a visual assessment is unable to be collected in a quarter (no precipitation event or adverse conditions, etc.);
- Perform an additional assessment during the next qualifying storm event if unable to perform in a particular quarter; and
- Perform one quarterly assessment during snowmelt discharge (taken during a measurable discharge from the site).

For facilities with substantially identical outfalls, quarterly visual assessments may be performed at only one of the outfalls, provided that you perform visual inspections on a rotating basis at each substantially identical outfall.

The PPT member performing the visual assessment documents potential stormwater pollution problems that were observed during the assessment on the quarterly visual assessment form. Any required corrective actions identified during the assessment are addressed in accordance with Section 6.0 *Corrective Actions and Deadlines* of this plan. Completed quarterly visual assessments are provided in Attachment 8 of this SWPPP and meet the requirements listed in the 2015 MSGP (Part 3.2.2).

4.7 Monitoring

Analytical monitoring comprised of Impaired Waters [insert Effluent Limitation Guideline monitoring for industrial activity identified in Tables 1-1 and 6-1 of the 2015 MSGP (for example the Asphalt Batch Plant)] monitoring is performed annually on stormwater discharges from the site. Benchmark constituents are monitored quarterly. Monitoring occurs when storm events result in an actual discharge from the site and follow the preceding measurable storm event by at least 72 hours (3 days), unless documented that the storm event is representative of local storm events during the sampling

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period. For runoff from snowmelt, the monitoring is performed at a time when a measurable discharge from the site occurs.

Monitoring is conducted according to test procedures approved under 40 CFR Part 136. Runoff samples are collected by taking a minimum of one grab sample from a discharge, collected within the first 30 minutes of a measurable storm event. If it is not possible to collect the sample within the first 30 minutes of a measurable storm event, the sample is collected as soon as practicable after the first 30 minutes and documentation is kept with the SWPPP explaining why it was not possible.

LANL is located in a high elevation, semi-arid climate where the majority of rainfall occurs during a period between July and September. Freezing conditions that would prevent runoff from occurring for extended periods may also occur during the winter months. If adverse weather conditions prevent the collection of a sample according to the relevant monitoring schedule, a sample will be collected during the next qualifying storm event or as soon as practicable.

Monitoring occurs at automated sampling station [insert automated sampler identifier (e.g., MSGP07501)] as identified in Section 1.5. Discharge from the facility is (insert cardinal direction) to (insert canyon name) (impaired waters), which is a tributary of the Rio Grande located approximately X miles east of the facility.

Outfall (insert substantially identical outfall identification number) is "substantially identical" to Outfall (insert monitored outfall identification number) based on (insert the following information: industrial activities conducted in the drainage area, description of control measures implemented in the drainage area of each outfall, description of exposed material located in the drainage area of each outfall that are likely to be significant contributors of pollutants to stormwater discharges, and an estimate of the runoff coefficient of the drainage areas). Outfall locations are shown on the site map provided in Figure B-1. Note: Delete this paragraph if the facility has no substantially identical outfalls. If the facility has multiple maps, reference them all.

Monitoring will continue annually for constituents associated with impaired waters until a constituent is no longer detected in stormwater samples.

If the impaired water or benchmark constituent value exceeds the New Mexico Water Quality criterion (insert or ELG value is exceeded, if applicable), the Pollution Prevention Team will:

- Review the selection, design, installation, and implementation of control measures to determine if modifications are necessary to meet the effluent limits;
- Implement the necessary modifications within the timeframe specified for corrective action; and
- Continue benchmark or annual monitoring of the constituent (as required by Part 6.2 of the 2015 MSGP);
- If an ELG is exceeded, follow-up monitoring within 30 calendar days (or during the next qualifying runoff event) of implementing corrective action(s) is required. When follow-up monitoring exceeds the applicable effluent limitation, an exceedance report is submitted to EPA and monitoring continues at least quarterly, until the discharge complies with the effluent limit.

For each monitoring event, except snowmelt monitoring, the following information will be recorded and maintained through work orders, LANL database systems, and Discharge Monitoring Records:

- The date, exact place, and time of sampling or measurements;
- The date and duration (in hours) of the rainfall event
- Rainfall total (in inches) for that rainfall event

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 29 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, MSGP SWPPP Template Example (cont.)
(Page 18 of 50)

Insert Facility Name
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- The individual(s) who performed the sampling or measurements;
- The date(s) analyses were performed
- The individual(s) who performed the analyses;
- The analytical techniques or methods used; and
- The results of such analyses.

All records of monitoring information, including all calibration and maintenance records are maintained for a minimum period of at least three years from the date the permit expires.

Insert information on quarterly benchmark and annual Impaired Waters or Effluent Limitation Guideline monitoring required for facility and benchmark pollutants to be sampled.

LANL's applicable stormwater monitoring procedures can be found in the following Attachments:

- EPC-CP-QP-047, *Inspecting Stormwater Runoff Samplers and Retrieving Samples for the MSGP* (Attachment 19)
- EPC-CP-QP-2106, *Processing MSGP Stormwater Samples* (Attachment 20).

The table on the following page lists the current Summary of Monitoring Requirements. The monitoring values have been modified to reflect New Mexico water quality standards and are based on the most protective water quality standards from the Standards for Interstate and Intrastate Surface Waters (effective on February 28, 2018), 20.6.4.900 NMAC; and as set forth in Part 9.6.2.1 of the 2015 MSGP.

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 30 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)
(Page 19 of 50)

Summary of Monitoring Requirements

Outfalls: (insert outfall numbers)

Contact MSGP Program Lead to obtain this information formatted for insertion.

Insert Facility Name
 MSGP Stormwater Pollution Prevention Plan
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EXAMPLE

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 31 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, MSGP SWPPP Template Example (cont.)
(Page 20 of 50)

Insert Facility Name
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5.0 DOCUMENTATION FOR ELIGIBILITY CONSIDERATIONS UNDER OTHER FEDERAL LAWS

5.1 Endangered Species

The Final Site-Wide Environmental Impact Statement (EIS) for the Operation of Los Alamos National Laboratory (DOE/EIS-0380) was issued in May 2008, and a Record of Decision in September 2008. Stormwater issues and associated pollution prevention requirements and activities at LANL are analyzed in Chapters 4 and 5 of the 2008 Site-Wide EIS. These activities are integrated into environmental reviews on a project-specific level through LANL's Integrated Review Tool (IRT), which incorporates both the Excavation Permit (EX-ID) and Permit Requirements Identification (PR-ID) process. Stormwater issues are identified and pollution prevention activities are implemented during the design and construction phases of all LANL projects, and as part of facility operations, including routine maintenance. LANL staff monitors stormwater pollution prevention compliance at MSGP sites in accordance with Section 4.7 *Monitoring* of this plan. Corrective actions are taken as necessary as described in Section 6.0 *Corrective Actions and Deadlines* of this plan.

Part 5.2.2 of the 2015 MSGP requires areas of designated critical habitat for endangered or threatened species, as applicable, be included in the SWPPP. The *Threatened and Endangered Species Habitat Management Plan for Los Alamos National Laboratory* (LA-UR-17-29454) was last updated in October 2017 (see Attachment 13). This document provides a management strategy for the protection of threatened and endangered species and their habitats on LANL property. The MSGP IPaC Trust Resource Report (see Attachment 14) is also attached for informational purposes.

5.2 Historic Properties

In August, 2015 and December 2008, the Cultural Resources Team (using GPS spatial data as well as conducting visual inspections), reviewed the Laboratory industrial sites (see list below) and their associated outfalls and monitoring stations subject to the 2015 Multi-Sector General Permit (Permit #NMR050000) for effects on historic properties. All of these sites were found to be undertakings of no effect and in compliance with Section 106 of the National Historic Preservation Act (i.e., Criterion B).

- TA-3-22 Power and Steam Plant
- TA-3-38 Metals Fabrication Shop
- TA-3-38 Wood Shop
- TA-3-39 and 102 Metal Shop
- TA-3-66 Sigma Complex
- TA-60 Asphalt Batch Plant
- TA-60-1 Heavy Equipment Yard
- TA-60 Material Recycle Facility
- TA-60 Roads and Grounds
- TA-60-2 Warehouse
- TA-54 RANT

6.0 CORRECTIVE ACTIONS AND DEADLINES

When any of the following conditions occur or are detected during an inspection, monitoring or any other means, this SWPPP (e.g., sources of pollution; spill and leak procedures; non-stormwater discharges; the selection, design, installation and implementation of control measures) is reviewed and

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 32 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, MSGP SWPPP Template Example (cont.)
(Page 21 of 50)

Insert Facility Name
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revised (as appropriate). The purpose is to ensure effluent limits of the 2015 MSGP permit are met and pollutant discharges are minimized:

- An unauthorized release or discharge (e.g., spill, leak, or discharge of non-stormwater not authorized by this or another NPDES permit to a water of the U.S.) occurs at the facility;
- A discharge violates a numeric effluent limit;
- Control measures are not stringent enough for the discharge to meet applicable water quality standards or non-numeric effluent limits;
- An inspection identifies that a required control measure was never installed, was installed incorrectly or is not being properly operated or maintained; and
- Whenever a visual assessment shows evidence of stormwater pollution.

When any of the following conditions occur, a review of the selection, design, installation, and implementation of control measures is performed to determine if modifications are necessary to meet the effluent limits in this permit:

- Construction or a change in design, operation, or maintenance at the facility significantly changes the nature of pollutants discharged in stormwater from the facility, or significantly increases the quantity of pollutants discharged; or
- The average of 4 quarterly sampling results exceeds an applicable benchmark. If less than 4 benchmark samples have been taken, but the results are such that an exceedance of the 4 quarter average is mathematically certain (i.e., if the sum of quarterly sample results to date is more than 4 times the benchmark level) this is considered a benchmark exceedance, triggering this review (see Section 4.7); or
- If an impaired water constituent exceeds the NM Water Quality criterion (see Section 4.7).

When the review identifies the need to modify the SWPPP, it will be revised within 14 calendar days of completion of the associated condition requiring corrective action.

6.1 Immediate Actions

When a condition requiring corrective action is identified, all reasonable steps necessary to minimize or prevent the discharge of pollutants are immediately taken (i.e. spill clean-up, scheduling repairs) until a permanent solution (if needed) can be implemented. Immediate action means all reasonable steps are taken the same workday or no later than the following workday (when it is too late in the day to take corrective action).

6.2 Subsequent Actions

When additional corrective actions are required (e.g. installing or making operational a new or modified control, completing repairs, ordering BMPs) they will be completed by the next storm event, if possible, or within 14 calendar days (from initial discovery). When it is determined that it is infeasible to complete corrective actions within 14 days, documentation of infeasibility and a schedule for completion of the work is documented in the CAR database, which will be completed no later than 45 days (from initial discovery). When it is determined that corrective actions will exceed 45 days, EPA is notified and provided justification of why actions will exceed the timeframe; and a minimal amount of additional time to complete the work may be approved.

6.3 Corrective Action Documentation

| | | |
|--|--------------------|----------------------------|
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, MSGP SWPPP Template Example (cont.)

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Insert Facility Name
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Upon discovery, conditions requiring corrective action are documented by the DEP or EPC-CP on a Routine Facility Inspection Form and/or entered into the CAR database. The action will be kept open in the database until the issue has been resolved. Documentation of maintenance and repairs of stormwater control measures (BMPs) will be kept in Attachment 10 of this SWPPP. Where corrective actions result in changes to procedures or controls documented in this SWPPP, modifications to the SWPPP are made accordingly within 14 calendar days of completing the corrective action(s). LANL procedure EPC-CP-QP-022, *MSGP Corrective Actions* can be found in Attachment 17.

7.0 ACRONYMS

| | |
|------------------------|---|
| BMP | Best Management Practice |
| CAR | Corrective Action Report |
| DEP | Deployed Environmental Professional |
| DESH | Deployed Environmental Safety and Health |
| DOE | Department of Energy |
| EIS | Environmental Impact Statement |
| ELG | Effluent Limitation Guidelines |
| EMD-ER | Emergency Management Division-Emergency Response |
| EPA | Environmental Protection Agency |
| EPC-CP | Environmental Protection and Compliance – Compliance Programs |
| FOD | Facility Operations Division |
| IPaC | Information for Planning and Consultation |
| LANL or the Laboratory | Los Alamos National Laboratory |
| MSGP or Permit | Multi-Sector General Permit |
| NOI | Notice of Intent |
| NPDES | National Pollutant Discharge Elimination System |
| PPT | Pollution Prevention Team |
| SWPPP | Stormwater Pollution Prevention Plan |
| URL | Uniform Resource Locator |

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 34 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, MSGP SWPPP Template Example (cont.)
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Insert Facility Name
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8.0 SWPPP CERTIFICATION

STORMWATER POLLUTION PREVENTION PLAN
 (Insert Facility Name)
 Los Alamos National Laboratory

CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

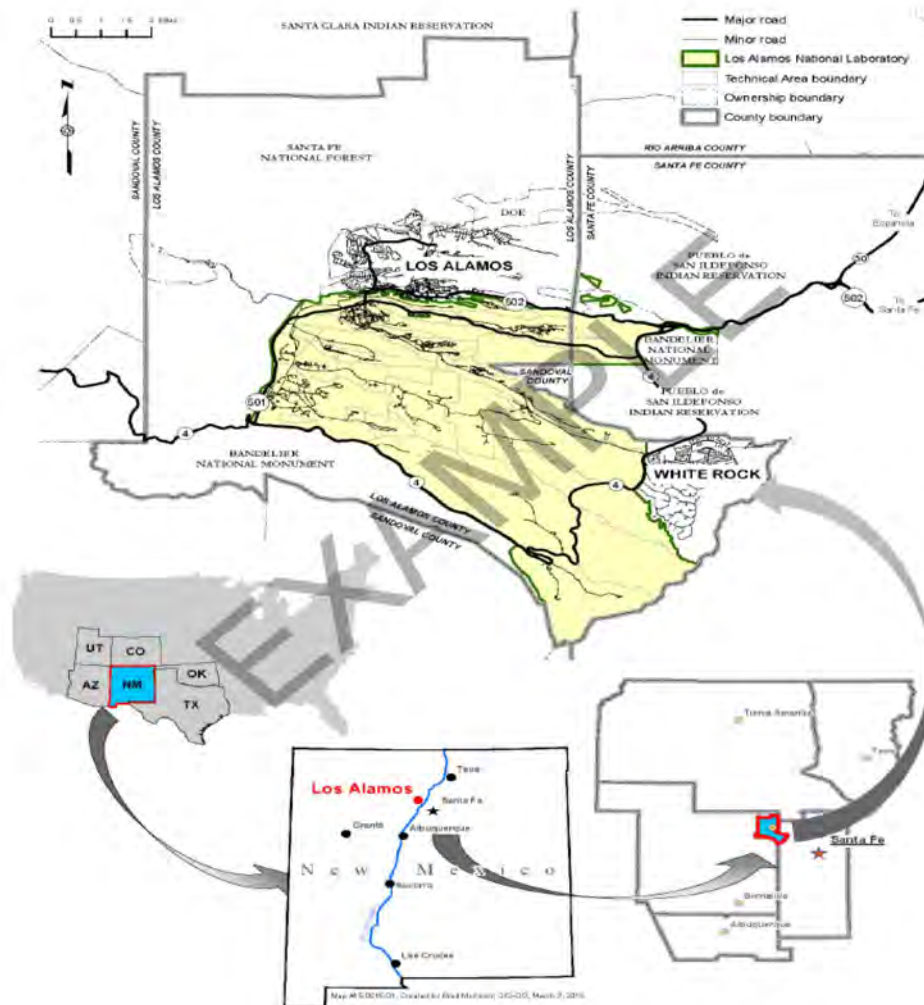
Signature _____ Date _____
 (Insert Printed Name)
 (Insert Title)

| | | |
|---|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 35 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, MSGP SWPPP Template Example (cont.)
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FIGURE A: GENERAL LOCATION MAP



| | | |
|--|--------------------|----------------------------|
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)
(Page 25 of 50)

Insert Facility Name
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FIGURE B: MAP(S)

Label the figures as Figure B-1, Figure B-2, etc.

Insert maps in the following order:

- Facility specific site map(s),
- Receiving waters maps, and
- Threatened Endangered Species Map.

EXAMPLE

| | | |
|--|--------------------|----------------------------|
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, MSGP SWPPP Template Example (cont.)
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Insert Facility Name
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ATTACHMENT 1: NOTICE OF INTENT, SUPPORTING DOCUMENTATION, AND UPDATES

Insert the appropriate attachment. Note: There may be several "Change NOIs" submitted to EPA within a permit term. Contact the MSGP Program Lead to ensure all are included in this attachment.

EXAMPLE

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 38 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, MSGP SWPPP Template Example (cont.)
(Page 27 of 50)

Insert Facility Name
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ATTACHMENT 2: SWPPP AMENDMENTS

Insert text documenting all changes or updates made to the SWPPP. Text may be in table format as shown below.

| Date | Plan Section | Reason for Amendment | Amendment |
|------|--------------|----------------------|-----------|
| | | | |
| | | | |

EXAMPLE

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 39 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)
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Insert Facility Name
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ATTACHMENT 3: CERTIFICATION OF NO UNAUTHORIZED STORMWATER DISCHARGES

Insert the appropriate attachment.

EXAMPLE

| | | |
|--|--------------------|----------------------------|
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)
(Page 29 of 50)

Insert Facility Name
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ATTACHMENT 4: DULY AUTHORIZED SIGNATORY MEMORANDUM

Insert the appropriate attachment.

EXAMPLE

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 41 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)
(Page 30 of 50)

Insert Facility Name
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ATTACHMENT 5: DISCHARGE MONITORING REPORTS

Insert the discharge monitoring reports.

EXAMPLE

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 42 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)
(Page 31 of 50)

Insert Facility Name
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ATTACHMENT 6: ANNUAL REPORTS

Insert the annual reports. The MSGP Program Lead provides these.

EXAMPLE

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 43 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)
(Page 32 of 50)

Insert Facility Name
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ATTACHMENT 7: ROUTINE FACILITY INSPECTIONS

Insert completed Routine Facility Inspection forms.

EXAMPLE

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 44 of 72 |
| | Revision: 0 | Effective Date: 01/07/2020 |

Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)
(Page 33 of 50)

Insert Facility Name
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ATTACHMENT 8: QUARTERLY VISUAL ASSESSMENTS

Insert completed Quarterly Visual Assessment forms. EPC-CP provides these by memorandum as they are produced.

EXAMPLE

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 45 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)
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Insert Facility Name
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ATTACHMENT 9: CORRECTIVE ACTION DOCUMENTATION AND CERTIFICATION

Contact the EPC-CP MSGP Program Lead for an excel spreadsheet of all corrective actions and a certification statement for signature.

EXAMPLE

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 47 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)
(Page 36 of 50)

Insert Facility Name
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ATTACHMENT 11: TRAINING DOCUMENTATION

Insert the appropriate documentation.

EXAMPLE

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 48 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, MSGP SWPPP Template Example (cont.)
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Insert Facility Name
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ATTACHMENT 12: MSGP (OR ACTIVE URL)

Either insert a copy of the most current Permit, or insert the URL address (see example below):

A copy of the 2015 MSGP is kept on file with the SWPPP in hard copy.

The active URL for the permit is <https://www.epa.gov/npdes/final-2015-msgp-documents>

EXAMPLE

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 49 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, MSGP SWPPP Template Example (cont.)
(Page 38 of 50)

Insert Facility Name
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ATTACHMENT 13: THREATENED AND ENDANGERED SPECIES HABITAT MANAGEMENT PLAN FOR
LOS ALAMOS NATIONAL LABORATORY

Insert the most current revision of the management plan for LANL.

EXAMPLE

| | | |
|--|--------------------|----------------------------|
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, MSGP SWPPP Template Example (cont.)
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Insert Facility Name
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ATTACHMENT 14: MSGP IPAC TRUST RESOURCES REPORT

Contact the EPC-CP MSGP Program Lead for this information formatted for insertion.

NOTE: The Permit requires this information. However, LANL EPC-ES has completed consultation with U.S. Fish and Wildlife Service. Letters of Consultation are contained in the NOI (see Attachment 1). Refer to Attachment 13 for the species habitat management plan.

EXAMPLE

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 51 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)
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Insert Facility Name
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ATTACHMENT 15: EPC-CP-PIP-2101, *NPDES MULTI-SECTOR GENERAL PERMIT*

Insert the appropriate plan into this SWPPP. Ensure the most current revision of this plan is inserted.

EXAMPLE

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 52 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, MSGP SWPPP Template Example (cont.)
(Page 41 of 50)

Insert Facility Name
 MSGP Stormwater Pollution Prevention Plan
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ATTACHMENT 16: EPC-CP-QP-023, MSGP ROUTINE FACILITY INSPECTIONS

Insert the appropriate procedure or parts of the procedure that pertain to this SWPPP. Ensure the most current revision of this procedure is inserted.

EXAMPLE

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 53 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, MSGP SWPPP Template Example (cont.)
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Insert Facility Name
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ATTACHMENT 17: EPC-CP-QP-022, *MSGP CORRECTIVE ACTIONS*

Insert the appropriate procedure or parts of the procedure that pertain to this SWPPP. Ensure the most current revision of this procedure is inserted.

EXAMPLE

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 54 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, MSGP SWPPP Template Example (cont.)
(Page 43 of 50)

Insert Facility Name
 MSGP Stormwater Pollution Prevention Plan
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ATTACHMENT 18: EPC-CP-QP-064, MSGP STORMWATER VISUAL ASSESSMENTS

Insert the appropriate procedure or parts of the procedure that pertain to this SWPPP. Ensure the most current revision of this procedure is inserted.

EXAMPLE

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 55 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, MSGP SWPPP Template Example (cont.)
(Page 44 of 50)

Insert Facility Name
 MSGP Stormwater Pollution Prevention Plan
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ATTACHMENT 19: EPC-CP-QP-047, INSPECTING STORMWATER RUNOFF SAMPLERS AND RETRIEVING SAMPLES FOR THE MSGP

Insert the appropriate procedure or parts of the procedure that pertain to this SWPPP. Ensure the most current revision of this procedure is inserted.

EXAMPLE

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 56 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, MSGP SWPPP Template Example (cont.)
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Insert Facility Name
 MSGP Stormwater Pollution Prevention Plan
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ATTACHMENT 20: EPC-CP-QP-2106, PROCESSING MSGP STORMWATER SAMPLES

Insert the appropriate procedure or parts of the procedure that pertain to this SWPPP. Ensure the most current revision of this procedure is inserted.

EXAMPLE

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 57 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, MSGP SWPPP Template Example (cont.)
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Insert Facility Name
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ATTACHMENT 21: EPC-DO-QP-101, ENVIRONMENTAL REPORTING REQUIREMENTS FOR RELEASES OR EVENTS

Insert the appropriate procedure or parts of the procedure that pertain to this SWPPP. Ensure the most current revision of this procedure is inserted.

EXAMPLE

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 58 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, *MSGP SWPPP Template Example* (cont.)
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Insert Facility Name
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ATTACHMENT 22: EPC-CP-QP-007, *SPILL INVESTIGATIONS*

Insert the appropriate procedure or parts of the procedure that pertain to this SWPPP. Ensure the most current revision of this procedure is inserted.

EXAMPLE

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 59 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, MSGP SWPPP Template Example (cont.)
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Insert Facility Name
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ATTACHMENT 23: EPC-CP-QP-2110, *MSGP STORMWATER POLLUTION PREVENTION PLAN PREPARATION AND MAINTENANCE*

Insert the appropriate procedure or parts of the procedure that pertain to this SWPPP. Ensure the most current revision of this procedure is inserted.

EXAMPLE

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 60 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, MSGP SWPPP Template Example (cont.)
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Insert Facility Name
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 Revision X, Date

ATTACHMENT 24: LOCAL PROCEDURE

Insert the appropriate procedure or parts of the procedure that pertain to this SWPPP. If this section is used, ensure the most current revision of the attached procedure is inserted. Delete section if not needed.

EXAMPLE

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 61 of 72 |
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Attachment 1: EPC-CP-QP-2110 R0 Form 1, MSGP SWPPP Template Example (cont.)
(Page 50 of 50)

Insert Facility Name
 MSGP Stormwater Pollution Prevention Plan
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 Revision X, Date

ATTACHMENT 25: LOCAL PROCEDURE

Insert the appropriate procedure or parts of the procedure that pertain to this SWPPP. If this section is used, ensure the most current revision of the attached procedure is inserted. Delete section if not needed.

EXAMPLE

| | | |
|--|--------------------|----------------------------|
| MSGP Stormwater Pollution Prevention Plan Preparation and Maintenance | No: EPC-CP-QP-2110 | Page 62 of 72 |
| | Revision: 0 | Effective Date: 01/07/2020 |

Attachment 2: MSGP SWPPP Review Guidance Checklist Example
(Page 1 of 11)

MSGP SWPPP Review Guidance Checklist

SWPPP Title _____

| REQUIREMENT | YES/NO | NOTES |
|---|--------|-------|
| Stormwater Pollution Prevention Team | | |
| Is the SWPPP being developed or updated by a qualified person? | | |
| Does the SWPPP list Stormwater Pollution Prevention Team members (by name or title) and each individual's responsibilities? | | |
| Is a copy of the SWPPP immediately available at the site and on-line? | | |
| Contents of the SWPPP | | |
| If the SWPPP refers to procedures or other documents, are copies of the relevant portions of these procedures or documents present in the SWPPP? | | |
| Site Description | | |
| Does the SWPPP include the following information? | | |
| • Identify a description of the nature of the industrial activities at the site | | |
| Provide a general location map (e.g., U.S. Geological Survey (USGS) quadrangle map) with enough detail to identify the location of the site and all receiving waters for industrial stormwater discharges. | | |
| Site map showing the following: | | |
| • Boundaries of the property and size of the property in acres | | |
| • Location and extent of significant structures and impervious surfaces | | |
| • Direction(s) of stormwater flow (using arrows) | | |
| • Locations of all stormwater control measures | | |
| • Locations of all receiving waters, including wetlands, in the immediate vicinity of the site. Indicate which water bodies are listed as impaired and which are identified as Tier 2, Tier 2.5, or Tier 3 waters (for LANL, none) | | |
| • Locations of all stormwater conveyances including ditches, pipes, and swales | | |
| • Locations of potential pollutant sources associated with each industrial activity (see Part 5.2.3.2) that could be exposed to rainfall or snowmelt and could be discharged from the site. | | |
| • Locations where significant spills or leaks have occurred (see Part 5.2.3.3) | | |
| • Location(s) of all stormwater monitoring points | | |
| • Location of each stormwater inlet and outfall, with a unique identification code for each outfall (i.e., 001, 002, 003, etc.), indicating if you are treating one or more outfalls as "substantially identical" (see Parts 3.2.3, 5.2.5.3, and 6.1.1) | | |
| • If applicable, location of the MS4 and where your stormwater discharges to it. NOTE: Although LANL does not currently have an MS4, EPA has published a draft permit. | | |
| • Areas of designated critical habitat for endangered or threatened species | | |
| • Locations of the following activities where such activities are exposed to precipitation: | | |

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MSGP SWPPP Review Guidance Checklist

| REQUIREMENT | YES/NO | NOTES |
|--|--------|-------|
| - Fueling station(s) | | |
| - Vehicle and equipment maintenance and/or cleaning area | | |
| - Loading/unloading areas | | |
| - Locations used for the treatment, storage, or disposal of wastes | | |
| - Liquid storage tanks | | |
| - Processing and storage areas | | |
| - Immediate access roads used by carriers of raw materials, manufactured products, waste material, or by-products used or created by the site | | |
| - Transfer areas for substances in bulk | | |
| - Machinery | | |
| - Locations and sources of run-on to the site from adjacent property that contains significant quantities of pollutants | | |
| Potential Pollutant Sources | | |
| Are areas described in the SWPPP where industrial material or activities are exposed to stormwater or from which allowable non-stormwater discharges originate? <i>NOTE 1: Industrial material or activities include material handling equipment or activities; industrial machinery; raw material; industrial production and processes; and intermediate products; by-products; final products, and waste products. Material handling activities include the storage, loading and unloading, transportation, disposal or conveyance of any raw material, intermediate product, final product or waste product.</i> | | |
| Are all pollutants or pollutant constituents (e.g., zinc, sulfuric acid, cleaning solvents, motor oil, diesel, gasoline, brake fluid, etc.) associated with each activity identified? <i>NOTE 2: The list must include all pollutants/materials that have been handled, treated, stored, or disposed and that have been exposed to stormwater in the three years prior to the date the SWPPP is prepared or amended.</i> | | |
| Are areas where potential spills and leaks could occur that could contribute pollutants to stormwater discharges and the corresponding outfall(s) that would be affected by such spills and leaks identified in the SWPPP? | | |
| Are all significant spills and leaks of oil or toxic or hazardous substances identified that actually occurred at exposed areas, or that drained to a stormwater conveyance, in the three years prior to the date the SWPPP was prepared or amended? | | |
| Has an evaluation for the presence of unauthorized non-stormwater discharges (see Part 1.1.3) been done and does it include the following information? | | |
| • Date of the evaluation | | |
| • A description of the evaluation criteria used | | |
| • A list of the outfall or onsite drainages points that were directly observed during the evaluation | | |

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MSGP SWPPP Review Guidance Checklist

| REQUIREMENT | YES/NO | NOTES |
|---|--------|-------|
| <ul style="list-style-type: none"> The action(s) taken, such as a list of control measures used to eliminate unauthorized discharge(s), or documentation that a floor drain was sealed, re-routed to sanitary, or an NPDES permit application was submitted for an unauthorized cooling water discharge. | | |
| Is there documentation of the location of any salt storage piles used for deicing or other commercial or industrial purposes? | | |
| Is all stormwater discharge sampling data collected at the site during the previous permit term summarized in a narrative description? This may include data tables and figures. | | |
| Control Measures to Meet Effluent Limits | | |
| Does the SWPPP indicate whether the following control measure selection and design criteria were considered? | | |
| <ul style="list-style-type: none"> Preventing stormwater from coming into contact with polluting materials is generally more effective, and less costly, than trying to remove pollutants from stormwater | | |
| <ul style="list-style-type: none"> Using control measures in combination which may be more effective than using control measures in isolation for minimizing pollutants in stormwater discharge | | |
| <ul style="list-style-type: none"> Assessing the type and quantity of pollutants, including their potential to impact receiving water quality, is critical to designing effective control measures that will achieve the limits in this permit | | |
| <ul style="list-style-type: none"> Minimizing impervious areas at the facility and infiltrating runoff onsite (including bio-retention cells, green roofs, and impervious pavement, among other approaches) can reduce runoff and improve ground water recharge and stream base flows in local streams, although care must be taken to avoid ground water contamination | | |
| <ul style="list-style-type: none"> Attenuating flow using open vegetated swales and natural depressions can reduce in-stream impacts of erosive flows | | |
| <ul style="list-style-type: none"> Conserving and/or restoring riparian buffers will help protect streams from stormwater runoff and improve water quality | | |
| <ul style="list-style-type: none"> Using treatment interceptors (e.g., swirl separators and sand filters) may be appropriate in some instances to minimize the discharge of pollutants. | | |
| Does the SWPPP indicate how the control measure addresses the potential pollutant sources? | | |
| Are the selection and design considerations for control measures to meet the following non-numeric technology-based effluent limits (see Part 2.1.2) identified in the SWPPP? | | |
| <ul style="list-style-type: none"> Minimize Exposure: All manufacturing, processing and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) must have controls that minimize exposure to pollutant discharges by either locating these industrial materials and activities inside or protecting them with storm resistant coverings. | | |
| <ul style="list-style-type: none"> Use grading, berming or curbing to prevent runoff of contaminated flows and divert run-on away from these areas; | | |

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MSGP SWPPP Review Guidance Checklist

| REQUIREMENT | YES/NO | NOTES |
|--|--------|-------|
| - Locate materials, equipment, and activities so that potential leaks and spills are contained or able to be contained or diverted before discharge; | | |
| - Clean up spills and leaks promptly using dry methods (e.g., absorbents) to prevent the discharge of pollutants; | | |
| - Store leaky vehicles and equipment indoors or, if stored outdoors, use drip pans and absorbents; | | |
| - Use spill overflow protection equipment; | | |
| - Perform all vehicle and/or equipment cleaning operations indoors, under cover, or in bermed areas that prevent runoff and run-on and also that capture any overspray; and | | |
| - Drain fluids from equipment and vehicles that will be decommissioned, and, for any equipment and vehicles that will remain unused for extended periods of time, inspect at least monthly for leaks. | | |
| • Good housekeeping (all areas where potential pollutants are exposed to stormwater must be kept clean). | | |
| - Sweep or vacuum at regular intervals or wash down the area and collect and/or treat and properly dispose of the wash down water. | | |
| - Store materials in appropriate containers. | | |
| - Keep all dumpster lids closed when not in use. For dumpsters and roll off boxes that do not have lids and could leak, ensure that discharges have a control (e.g., secondary containment). Part 1.1.3 of the permit does not authorize dry weather discharges from dumpsters or roll off boxes.* | | |
| * You may include extra information, or you may just "cut-and-paste" the effluent limits verbatim into the SWPPP w/out providing additional documentation. | | |
| - Minimize the potential for waste, garbage, and floatable debris to be discharged by keeping exposed areas free of such materials. | | |
| • Maintenance (All industrial equipment, systems and control measures must be maintained in effective operating condition in order to minimize pollutant discharges). | | |
| Perform inspections and preventive maintenance of stormwater drainage, source controls, treatment systems, and plant equipment and systems that could fail and result in contamination of stormwater. | | |
| - Diligently maintain non-structural control measures (e.g., keep spill response supplies available, and personnel appropriately trained). | | |
| - Inspect and maintain baghouses at least quarterly to prevent the escape of dust from the system and immediately removing any accumulated dust at the base of the exterior baghouse.* | | |
| - Cleaning catch basins when the depth of debris reached two thirds (2/3) of the sump depth and keeping the debris surface at least six inches below the lowest outlet pipe.* | | |
| Does the SWPPP contain language indicating immediate action must be taken to minimize pollutant discharges if control measures need routine maintenance? | | |
| Is there language in the SWPPP indicating in instances where control measures need repair or replacement that the facility (or associated representatives thereof) must immediately take all | | |

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MSGP SWPPP Review Guidance Checklist

| REQUIREMENT | YES/NO | NOTES |
|---|--------|-------|
| reasonable steps (see Part 4.3.1 for definition) to prevent or minimize the discharge of pollutants until the final repair or replacement is implemented, including cleaning up any contaminated surfaces so that the material will not be discharged during subsequent storm events. Final repairs/replacement of stormwater controls should be completed as soon as feasible but must be no later than the timeframes established in Part 4.3 for corrective actions, i.e., within 14 days or, if that is infeasible, within 45 days. | | |
| Is there language in the SWPPP indicating corrective action must be taken (in accordance with Part 4.0) if a control measure was never installed, was installed incorrectly or not in accordance with Parts 2 and/or 8, or isn't being properly operated or maintained? | | |
| <ul style="list-style-type: none"> • Spill Prevention and Response - The potential for leaks, spills, and other release must be minimized by the development of plans for effective response to such spills if or when they occur in order to minimize pollutant discharges. | | |
| - Plainly label containers (e.g., "Used Oil," "Spent Solvents," "Fertilizers and Pesticides") that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur:* | | |
| - Implement procedures for material storage and handling including use of secondary containment and barriers between material storage and traffic areas. | | |
| - Develop training on the procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases as soon as possible. | | |
| - Keep spill kits on-site, located near areas where spills may occur or where a rapid response can be made | | |
| - Notify appropriate facility personnel when a leak, spill, or other release occurs. Where a leak, spill or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR part 302, occurs during a 24-hour period, you must notify the National Response Center (NRC) at (800) 424-8802 in accordance with the above referenced requirements as soon as you have knowledge of the discharge. | | |
| - In the event of a spill, does the SWPPP indicate where the contact information is so that it is readily accessible and available? | | |
| <ul style="list-style-type: none"> • Erosion and Sediment Controls | | |
| - Does the SWPPP identify how exposed soils will be stabilized to minimize pollutant discharges? | | |
| - Does the SWPPP identify flow velocity dissipation devices placed at discharge locations to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points? | | |
| - Does the SWPPP identify structural and non-structural control measure to minimize the discharge of sediment? | | |

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MSGP SWPPP Review Guidance Checklist

| REQUIREMENT | YES/NO | NOTES |
|---|--------|-------|
| - If polymers and/or other chemical treatments are used for dust control or stabilization, does the SWPPP must identify the polymers and/or chemicals used and the purpose? | | |
| • Management of Runoff - Does the SWPPP identify how stormwater runoff is diverted, infiltrated, reused, contained, or otherwise reduced to minimize pollutants in the discharge? | | |
| • Salt Storage Piles or Piles Containing Salt - Does the SWPPP identify how salt piles are enclosed or covered? | | |
| - Are controls in place to minimize exposure to stormwater resulting from adding to or removing materials from the salt pile? | | |
| • Non-Stormwater Discharges - Does the SWPPP indicate that personnel will evaluate the site for non-stormwater discharges not explicitly authorized in Part 1.1.3 or covered by another NPDES permit and eliminate the discharge?) | | |
| • Dust Generation and Vehicle Tracking of Industrial Materials - Does the SWPPP indicate dust generation and off-site tracking of raw, final, or waste materials must be minimized in order to minimize pollutant discharges?) | | |
| Control Measures to Meet Numeric Effluent Limitations Guidelines-Based Limits (see Part 2.1.3 and Part 8) | | |
| Are effluent limitations identified for the Sector D facility (Asphalt Paving) (see Part 8.D.4)? | | |
| Are effluent limitations identified for the Sector A facility (Timber Products) (see Part 8.A.7)? | | |
| Control Measures to Meet Water Quality Based Effluent Limits (see Part 2.2 and Part 9.6.2) | | |
| Are the benchmark values (i.e., the Lowest New Mexico Water Quality Standard) listed in MSGP Section 9.6.2.1 identified in the SWPPP? | | |
| Schedules and Procedures - Control Measures | | |
| Does the SWPPP contain a schedule or convention used for determining when pickup or disposal of waste materials occurs? | | |
| Are preventative maintenance procedures (including regular inspections, testing, maintenance and repair) for all control measures included in the SWPPP to avoid situations that may result in leaks, spills, and other releases? | | |
| Are backup practices in place should a runoff event occur while a control measure is off line? | | |
| Is there a schedule or frequency for maintaining all control measures? | | |
| Are procedures included in the SWPPP for preventing and responding to spills and leaks, including notification procedures? | | |
| Are control measures for material handling and storage identified? | | |
| Are clean-up equipment, procedures and spill logs (i.e., reportable and non-reportable spill reports and the MSGP Corrective Action Reporting database) identified? | | |
| Schedules and Procedures - Employee Training | | |
| Are the following employees identified as requiring training? | | |

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MSGP SWPPP Review Guidance Checklist

| REQUIREMENT | YES/NO | NOTES |
|---|--------|-------|
| • Personnel who are responsible for the design, installation, maintenance and/or repair of controls (including pollution prevention measures) | | |
| • Personnel responsible for the storage and handling of chemicals and materials that could become contaminants in stormwater discharges | | |
| • Personnel who are responsible for conducting and documenting monitoring and inspections | | |
| • Personnel who are responsible for taking and documenting corrective actions. | | |
| Are the following identified as elements of required training? | | |
| • An overview of what is in the SWPPP | | |
| • Spill response procedures, good housekeeping, maintenance requirements, and material management practices | | |
| • The location of all controls on the site required by this permit and how they are to be maintained | | |
| • The proper procedures to follow with respect to the permit's pollution prevention requirements | | |
| • When and how to conduct inspections, record applicable findings, and take corrective actions | | |
| Are the following elements of the training plan documented in the SWPPP? | | |
| • Content of the training | | |
| • Frequency/schedule of training | | |
| Are records of completed training kept in the SWPPP? | | |
| Schedules and Procedures - Inspections and Assessments | | |
| Is the procedure identified for conducting routine facility inspections? | | |
| Is the procedure identified for conducting visual assessments? | | |
| For each type of inspection performed (i.e., routine inspection and visual assessments) does the SWPPP identify the person (s) or positions of person(s) responsible for the inspection? | | |
| Does the SWPPP contain an alternative schedule for conducting visual assessments in climates with irregular stormwater runoff discharges (see Part 3.2.3)? | | |
| Are specific items to be covered by the inspection, including schedules for specific outfalls identified in the SWPPP? | | |
| Is the facility claiming an exception as an inactive and unstaffed site? If yes, the facility must include information in the SWPPP that supports this claim as required by Parts 3.1.1, 3.2.3, 6.2.1.3 and 6.2.4.2. That is, the SWPPP must contain a signed certification indicating that there are no industrial materials or activities exposed to precipitation at the site and the NOI must be modified and re-certified. | | |
| Schedules and Procedures - Monitoring | | |
| Does the SWPPP contain documentation of procedures used to conduct benchmark, effluent limitations guidelines and impaired waters monitoring? | | |
| Are locations where samples are collected, including any determination that two or more outfalls are substantially identical, in the SWPPP? | | |
| Are parameters for sampling and the frequency of sampling for each parameter listed? | | |

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MSGP SWPPP Review Guidance Checklist

| REQUIREMENT | YES/NO | NOTES |
|--|--------|-------|
| Does the SWPPP contain schedules for monitoring at the facility, including a schedule for alternate monitoring periods for climates with irregular stormwater runoff (see Part 6.1.6)? | | |
| Are numeric control values (benchmark, effluent limitations guidelines, water quality standards) applicable to discharges from each outfall identified? | | |
| Does the SWPPP list procedures for gathering storm event data (see Part 6.1)? | | |
| Schedules and Procedures - Substantially Identical Outfalls (SIOs) | | |
| Does the SWPPP contain the following relative to SIOs? | | |
| • Location of each of the substantially identical outfalls | | |
| • Description of the general industrial activities conducted in the drainage area of each outfall | | |
| • Description of the control measures implemented in the drainage area of each outfall | | |
| • Description of the exposed material located in the drainage area of each outfall that are likely to be significant contributors of pollutants to stormwater discharges | | |
| • An estimate of the runoff coefficient of the drainage areas (low = under 40%, medium = 40% to 65%, high = above 65%) | | |
| • Justification as to why the outfalls are expected to discharge substantially identical effluents | | |
| Do Substantially Identical Outfalls identified on the SWPPP map match those identified in MDMRs? | | |
| Is there language indicating quarterly visual assessments of substantially identical outfalls will be performed on a rotating basis throughout the permit term? | | |
| Is there language indicating quarterly visual assessment of the discharge at one SIO will also apply to the other SIOs? | | |
| Corrective Action Documentation - If an event triggering corrective action is associated with an SIO, did the review of the need for action encompass all related substantially identical outfalls? | | |
| Documentation | | |
| Does the SWPPP contain the following up-to-date and complete inspection, monitoring, and certification records? | | |
| • Copy of NOI submitted to EPA along with any correspondence exchanged between the facility and EPA specific to coverage under this permit. | | |
| • Copy of the acknowledgement you receive from the EPA assigning your NPDES ID. | | |
| • Copy of the MSGP Permit (an electronic copy easily available to SWPPP personnel is also acceptable). | | |
| • Documentation of maintenance and repairs of control measures, including the date(s) of regular maintenance, date(s) of discovery of areas in need of repair/replacement, and for repairs, date(s) that the control measure(s) returned to full function, and the justification for any extended maintenance/repair schedules (See Part 2.1.2.3). | | |
| • All inspection reports, including the Routine Facility Inspection Reports (see Part 3.1.2) and Quarterly Visual Assessment Reports (see Part 3.2.2). | | |

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MSGP SWPPP Review Guidance Checklist

| REQUIREMENT | YES/NO | NOTES |
|--|--------|-------|
| • Description of any deviations from the schedule for visual assessments and/or monitoring, and the reason for the deviations (e.g., adverse weather or it was impracticable to collect samples within the first 30 minutes of a measurable storm event) (see Parts 3.2.3 and 6.1.5) | | |
| • Corrective action documentation (see Part 4.4) | | |
| • Documentation of any benchmark exceedances and the type of response to the exceedance employed including the following: | | |
| - The corrective action taken; | | |
| - A finding that the exceedance was due to natural background pollutant levels; | | |
| - A determination from EPA that benchmark monitoring can be discontinued because the exceedance was due to run-on; OR | | |
| - A finding that no further pollutant reductions were technologically available and economically practicable and achievable in light of best industry practice consistent with Part 6.2.1.2 | | |
| • Documentation to support any determination that pollutants of concern are not expected to be present above natural background levels if you discharge directly to impaired waters and that such pollutants were not detected in your discharge or were solely attributable to natural background sources. (see Part 6.2.4.1) | | |
| • Documentation supporting that stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities are not likely to adversely affect any species that are federally listed as endangered or threatened ("listed") and are not likely to adversely affect habitat that is designated as "critical habitat" under the Endangered Species Act (see Part 1.1.4.5). | | |
| • Documentation supporting the determination that stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities meet one of the eligibility criteria for historic property preservation (Criterion A, B, C or D) (see Part 1.1.4.6). | | |
| • All Discharge Monitoring Reports and Annual Reports | | |
| • Support for claim that facility has changed its status from active to inactive and is unstaffed with respect to the requirements to conduct routine facility inspections, quarterly visual assessments, benchmark monitoring, and/or impaired waters monitoring. | | |
| Is the SWPPP signed and dated by a duly authorized representative (per Part B.11)? | | |
| Is the Annual Report signed by a duly authorized representative (per Part B.11)? | | |
| SWPPP Modifications | | |
| Where a corrective action triggers a change in any of the control measures or procedures, has the SWPPP been updated within 14 calendar days of completing the corrective action (see Part 4.4)? | | |
| Are SWPPP modifications signed and dated by a duly authorized representative? | | |
| Has the SWPPP been reviewed and does documentation exist as to the modifications made or why none were needed under the following circumstances? | | |

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MSGP SWPPP Review Guidance Checklist

| REQUIREMENT | YES/NO | NOTES |
|--|--------|-------|
| • An unauthorized release or discharge (e.g., spill leak, or discharge of non-stormwater not authorized by this or another NPDES permit to a water of the U.S.) occurs at your facility. | | |
| • A discharge violates a numeric effluent limit listed in Table 2-1 and in the sector specific requirements. | | |
| • The control measures are not stringent enough for the discharge to meet applicable water quality standards or the non-numeric effluent limits in this permit. | | |
| • A required control measure was never installed, was installed incorrectly, or not in accordance with Parts 2 and/or 8, or is not being properly operated or maintained. | | |
| • Whenever a visual assessment shows evidence of stormwater pollution (e.g., color, odor, floating solids, settled solids, suspended solids, foam). | | |
| • Construction or a change in design, operation, or maintenance at your facility that significantly changes the nature of pollutants discharged in stormwater from the facility, or significantly increases the quantity of pollutants discharged. | | |
| • The average of four quarterly sampling results exceeds an applicable benchmark (see Part 6.2.1.2). If less than four benchmark samples have been taken, but the results are such that an exceedance of the four quarter average is mathematically certain (i.e., the sum of quarterly sample results to date is more than four times the benchmark level) this is considered a benchmark exceedance. | | |
| Public Accessibility of SWPPP | | |
| Is your SWPPP uploaded to the URL provided in the NOI? | | |
| Are subsequent SWPPP modifications (updates), records and all other reporting elements required for the previous year updated no later than 45 days after conducting the final routine facility inspection for the year? | | |
| If you did not upload your SWPPPs to a URL, was the following information provided in the NOI and documented in the SWPPP? | | |
| • Onsite industrial activities exposed to stormwater, including potential spill and leak areas (see Parts 5., 2.3.1, 5.2.3.3 and 5.2.3.5); | | |
| • Pollutants or pollutant constituents associated with each industrial activity exposed to stormwater that could be discharged in stormwater and/or any authorized non-stormwater discharges listed in Part 1.1.3 (see Part 5.2.3.2) | | |
| • Stormwater control measures employed to comply with the non-numeric technology-based effluent limits required in Part 2.1.2 and Part 8, and any other measures taken to comply with the requirements in Part 2.2, Water Quality Based Effluent Limitations. If polymers and/or other chemical treatments are used as controls, these must be identified and the purpose explained. | | |
| • The schedule for good housekeeping, maintenance, and schedule for all inspections required in Part 3. | | |

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MSGP SWPPP Review Guidance Checklist

| REQUIREMENT | YES/NO | NOTES |
|---|--------|-------|
| Are modifications to the SWPPP information required in the four bullets above submitted on a "Change NOI" form no later than 45 days after conducting the final routine facility inspection for the year? | | |
| Corrective Actions | | |
| Are corrective actions documented within 24 hours of becoming aware of such condition? | | |
| Is the condition triggering the need for the corrective action identified? | | |
| Is the date the corrective action was identified captured? | | |
| Was immediate action taken to minimize or prevent the discharge of pollutants? | | |
| In the case of leaks and spills, were response actions, date/time of clean up, notification, etc. documented? | | |

ATTACHMENT 24: SPILL LOGS

SPILLS AND LEAKS (2021)

ATTACHMENT 25: LOCAL PROCEDURES

.



UI-PROC-70-10-006-R3

Utilities & Institutional Facilities Operations Procedure

Clean Fill Acceptance and Reuse

Review frequency 1 yr ☐ 2 yr ☐ 3 yr ☒

Issue date 10/29/20 Next review 10/29/23

Process Owner

| | |
|------------------------------|---|
| Leonard F. Sandoval | EPC-CP DEP |
| LEONARD SANDOVAL (Affiliate) | Digitally signed by LEONARD SANDOVAL (Affiliate) Date: 2020.10.28 10:37:04 -06'00' |
| Z# 114326 | |

Reviewed by

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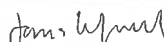
ESH Review

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| UI-PROC-70-10-006-R3 | | Review and reissue with changes. |
| UI-PROC-70-10-006-R2 | 11/13/18 | Review and reissue with changes. |
| UI-PROC-70-10-006-R1 | 09/14/15 | Review and reissue. Minor changes. |
| UI-PROC-70-10-006-R0 | 10/15/12 | New procedure. |

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Utilities & Institutional Facilities Operations Procedure Clean Fill Acceptance and Reuse

1 Purpose

The purpose of this procedure is to describe Utilities & Institutional Facilities (UI, UI-DO) processes for –

- a. Accepting transfer of material from a LANL technical area to the LANL Clean Fill Yard
- AND
- b. Requesting transfer of material from Clean Fill Yard for use at a LANL technical area.

2 Scope/Applicability

1. This procedure does not replace or supersede ADESH-AP-TOOL-704.0, Construction and Demolition Debris. It provides additional details, including documentation required if material is to be accepted at Clean Fill Yard.
2. Persons or organizations generating material and requesting acceptance for its use as clean fill (Acceptance Material Generator) should first refer to the ENV-RCRA Tool 704.0.
3. Affected personnel: EPC-CP DEP; OSH-DS Manager and Superintendent; other OSH-DS personnel; clean fill generators; clean fill requestors.

3 Prerequisites

1. Required training and qualifications:
 - a. Understanding of Utilities & Institutional Facilities (UI-DO) procedures and work processes
 - b. Current on required training
 - c. Understanding of this procedure

4 Precautions and Limitations

Not applicable

5 Equipment, Supplies, etc.

Not applicable

6 Responsibilities

1. Persons performing this procedure are responsible for –
 - Complying with its requirements

- Notifying appropriate supervisory personnel of equipment damage or other conditions that could require corrective action
- Issuing a PAUSE/STOP Work Order whenever warranted by conditions related to health or safety in accordance with P101-18, Procedure for Pause/Stop Work

2. Managers are responsible for ensuring procedure compliance.

7 Work Steps

OSH-DS maintains the LANL Clean Fill Yard for receipt, storage, and distribution of clean fill. This section sets forth the requirements (a) for accepting material at the facility and (b) for accepting requests to use the material.

7.1 Clean Fill Criteria

1. Clean fill may contain the following materials only:
 - a. Soil, including top soil
 - b. Soil and gravel
 - c. Sand
 - d. Tufa (a soft mixture of silica, calcium carbonate, and/or volcanic ash)
2. Clean fill may NOT contain:
 - a. Pieces larger than 12 inches in diameter
 - b. Material that has been subjected to a spill or release of chemical contaminants, e.g., petroleum products
 - c. Material that has received prior treatment to remediate contaminationAND/OR
 - d. Material containing land-clearing debris, construction and demolition debris, municipal solid waste, radioactive waste, hazardous waste, New Mexico special waste, or any other solid waste not meeting clean fill criteria

For more information on clean fill, click on Definition of Clean Fill under Resources at the UI Clean Fill Management website:

http://int.lanl.gov/environment/p2/clean_fill.shtml

7.2 Acceptance of Material

7.2.1 Acceptance Criteria

1. There must be a need for the material offered.
2. Material must meet Clean Fill Criteria specified in Section 7.1.

3. Material may contain no contaminants that would cause it to be considered waste.
4. The following documentation must be provided:
 - a. Analytical Report containing sample analysis or (if requested by EPC-CP DEP) results of material sampling
AND EITHER
 - b. Acceptable Knowledge (AK) Documentation, provided by Material Generator
OR (IF AK DOCUMENTATION IS NOT AVAILABLE)
 - c. Database Verification, performed by EPC-CP DEP/Verifier, equivalent to acceptable AK Documentation
5. Material $\geq 75 \text{ yd}^3$ may incur equipment and operator charges.
6. Materials found to contain contaminants after receipt may incur reloading and cleanup charges.

7.2.2 Process for Acceptance

Request Acceptance: Material Generator

1. Access Clean Fill Yard Acceptance Form (Attachment A).
 - a. An electronic version of this form is available by clicking on Clean Fill Management web application on the UI Clean Fill Management website:
http://int.lanl.gov/environment/p2/clean_fill.shtml
2. Complete Request portion of form.
3. Obtain and attach:
 - a. Analytical Report.
 - b. Sampling results if requested by EPC-CP DEP.
 - c. Acceptable Knowledge (AK) documentation if available.EPC-CP DEP can assist Material Generator with the form and attachments.
4. Submit completed form and documentation to EPC-CP DEP.
Form may be submitted by hardcopy in person or electronically.

Characterization/Verification: EPC-CP DEP

1. Complete Characterization/Verification portion of Clean Fill Yard Acceptance Form.
2. Review Analytical Report data as follows:
 - a. Levels presented in NMED Soil Screen Levels June 2006 R4. Also levels presented in Inorganic and Radionuclide Background Data for Soils, Canyon Sediments, and Bandelier Tuff at Los Alamos National Laboratory, Sept 22, 1998.
 - b. If TCLP analytical data provided, compare to regulatory TCLP levels.

- c. Ensure that petroleum analytical results meet the following requirements:
 - i. Benzene concentration ≤ 10 mg/kg.
 - ii. Total benzene, toluene, ethyl benzene, and xylene isomer (BTEX) concentration ≤ 50 mg/kg.
 - iii. Total petroleum hydrocarbon (TRPH) concentration ≤ 100 mg/kg
(i.e., is below New Mexico Special Waste levels)
3. If necessary, perform review of applicable databases (EX-ID, GIS, PRS, PR-ID, and Stack Emission).
4. If you have concerns based on these analytical results, refer Material Generator to internal Waste Management Coordinator (WMC) for resolution.
 - Do not proceed until all concerns are resolved.
5. Perform field inspection of material for size, etc. (See Section 7.1, Clean Fill Criteria.)
6. If material is not acceptable (i.e., reusable), reject it.
7. If you find that clean fill acceptance criteria are met:
 - a. Sign and date verification.
 - b. Transmit form to OSH-DS ESH Manager (or designee).

Approval: ESH Manager (or designee)

1. Determine if you concur that clean fill acceptance criteria have been met.
 - Base your determination on the AK documentation, applicable databases, and your knowledge of the operation that generated the material.
2. Indicate concurrence/approval by signing and dating certification on form.
 - If not approved, explain why.
3. Return form to EPC-CP DEP.

Transfer of Material: EPC-CP DEP

1. On approval by ESH Manager, advise Material Generator that transfer of material has been approved.
 2. Assist with arrangements for transfer of material to Clean Fill Yard.
 3. Confirm transfer of material.
 4. Complete last section of Clean Fill Yard Acceptance Form.
 - a. If material was rejected, explain why.
 - b. Sign and date.
 5. Send copy of form to Material Generator.
 6. Update Clean Fill Database and Log.
 7. File documentation in Clean Fill Yard Log folder.
-

7.3 Requesting Clean Fill

Soil Requestor

1. Access Soil Reuse Request Form (Attachment B).
 - a. An electronic version of this form is available by clicking on Clean Fill Management web application on the UI-DO Clean Fill Management website:

http://int.lanl.gov/environment/p2/clean_fill.shtml

2. Fill out the top portion of the form and submit to EPC-CP DEP.

Form may be transmitted by hardcopy in person or electronically.

EPC-CP DEP

1. On receipt of Soil Reuse Request Form, determine if requested material is available.
2. If the material is available, arrange for safe transfer to Soil Requestor's site.
3. Confirm transfer of material.
4. Complete bottom section of Soil Reuse Request Form.
 - a. If material was not transferred, explain under Comments.
 - b. Sign and date.
5. Send copy of form to Soil Requestor.
6. Update Clean Fill Database and Log.
7. File documentation in Clean Fill Yard Log folder.

8 Records

Records generated as a result of implementing this procedure are maintained in accordance with the UI records program.

9 Abbreviations, Acronyms, and Terms

| Abbreviation, Acronym, or Term | Definition |
|--------------------------------------|--------------------------------------|
| AK | Acceptable Knowledge (Documentation) |
| DEP | Deployed Environmental Professional |
| ESH | Environment, Safety & Health |

| Abbreviation, Acronym, or Term | Definition |
|---|---|
| LO/TO | Lockout/Tagout |
| OSH-DS | Occupational Safety & Health Deployed Services |
| UI, UI-DO | Utilities & Institutional Facilities |
| UI DEP | UI-DO Deployed Environmental Professional (Deployed ESH Services) |
| WMC | Waste Management Coordinator |

10 References

ADESH-AP-TOOL-704.0, Construction and Demolition Debris
New Mexico Solid Waste Rules 20.9.2 – 20.9.10 NMAC

11 Appendices and Attachments

Attachment A. Form 70-10-006.1. Clean Fill Yard Acceptance Form
Attachment B. Form 70-10-006.2. Soil Reuse Request Form

Attachment A. Form 70-10-006.1. Clean Fill Yard Acceptance Form

| | | | |
|---|--------------------------|---|------------|
| 1. Soil Acceptance Request. Material Generator to fill in this section, then transmit to UI DEP. | | | |
| Type of soil [e.g. top soil, soil/gravel, sand, tufa] | | Location of soil | |
| Volume [e.g. 55 yd ³] | PR-ID # if known | Excavation ID (EXID) # | |
| Generator/Requestor | Print name | Z-number | Cost codes |
| Title | | Phone | Date |
| Subcontractor Technical Representative (STR) if applicable | | Name | Phone |
| 2. Characterization/Verification. UI DEP/Verifier to fill in this section, then transmit to UI ESH Manager. | | | |
| Analytical Report attached? Yes <input type="checkbox"/> No <input type="checkbox"/> | | If not, why not? | |
| Compare Analytical Report to NMED Soil Screening Levels June 2006 R4. <i>Inorganic and Radionuclide Background Data for Soils, Canyon Sediments, and Bandelier Tuff at Los Alamos National Laboratory, Sept 22, 1998:</i> | | OK? Yes <input type="checkbox"/> N/A <input type="checkbox"/> | |
| Sampling required? Yes <input type="checkbox"/> N/A <input type="checkbox"/> | If yes, sample for what? | | |
| Acceptable Knowledge (AK) Documentation attached? Yes <input type="checkbox"/> No <input type="checkbox"/> | | If not, why not? | |
| Database verification. Required if AK Documentation is not attached. | | Concerns | |
| EX-ID database No concerns <input type="checkbox"/> | | | |
| GIS database No concerns <input type="checkbox"/> | | | |
| PRS database No concerns <input type="checkbox"/> | | | |
| PR-ID database No concerns <input type="checkbox"/> | | | |
| Stack emission d/base No concerns <input type="checkbox"/> | | | |
| Field verification (size) No concerns <input type="checkbox"/> | | | |
| If there are concerns (e.g., Haz, Rad, Asbestos), refer Material Generator to internal Waste Management Coordinator (WMC). | | | |
| UI DEP verifies that all material acceptance criteria have been satisfied. | | Signature | Date |
| 3. Approval. UI ESH Manager (or designee) to fill in this section, then transmit to UI DEP. | | | |
| Approved: Yes <input type="checkbox"/> No <input type="checkbox"/> | | If not approved, why not? | |
| I certify under penalty of law that I am familiar with the operation that generated the material through personal knowledge as well as AK information provided by Material Generator and verified in applicable databases and that to the best of my knowledge and belief the material contains no constituents that would cause it to be considered a waste. | | | |
| UI ESH Manager (or designee) | Signature | | Date |
| 4. Receipt. UI DEP to fill in this section, then transmit to ESH Manager. | | | |
| RECEIVED | REJECTED | If rejected, why? | |
| UI DEP | Signature | | Date |

Attachment B. Form 70-10-006.2. Soil Reuse Request Form

| | | | | |
|---|--|----------|--|--|
| Soil Requestor to fill in this section | | | | |
| Type of soil requested [e.g. top soil, soil/gravel, sand, tufa] | Soil will be transferred to TA- | | | |
| Volume [e.g. 1 yd ³ , 5 yds ³] | Excavation ID # | | | |
| Comments | | | | |
| | | | | |
| Your name | Title | Z-number | | |
| Signature | Phone | Date | | |

Submit to UI DEP in person or by email.

| | | |
|---|-------|----------|
| UI DEP to fill in this section | | |
| Volume [e.g. 1 yd ³ , 5 yds ³] | | |
| Comments | | |
| | | |
| Released by UI DEP | | |
| Your name | Title | Z-number |
| Signature | Phone | Date |

Provide signed copy to Soil Requestor and to ESH Manager in person or by email.

No: P409

Revision: 5

Issued: 07/30/15

Effective Date: 07/30/15

LANL Waste Management

1.0 PURPOSE

This document describes Los Alamos National Laboratory (LANL or the Laboratory) requirements for waste generated and managed by Waste Generators and Treatment Storage Facilities (TSFs) to ensure compliance with legal mandates and Laboratory requirements as necessary to protect human health, safety, and the environment. This document has been revised as part of a process in which the Laboratory systematically plans, documents, executes, and evaluates its management of regulated waste streams.

This document addresses LANL's waste management requirements for Waste Generators and TSFs as necessary to safely manage, store, and treat wastes. The Waste Generator must know and document what is in the waste, and TSFs must meet waste analysis requirements under the [LANL Hazardous Waste Facility Permit](#). This document also addresses LANL's Waste Certification and Self-Assessment Programs, to ensure there is a systematic, documented approach for compliance with requirements in this document.

All Waste Generators, including subcontractors, who generate a regulated waste, must work with Waste Management (WM) to meet the requirements in this and other required documents to ensure that the following are met:

- the waste is properly characterized, managed, stored, and transported, and
- the waste certification program is implemented at the waste generating site before the waste is shipped off-site from LANL.

The Environmental Protection Agency (EPA) and the New Mexico Environment Department (NMED) have established requirements, which are addressed in this document, for Waste Generators and TSFs to ensure regulated waste is characterized, managed, stored, treated, and transported compliantly. To ensure compliance with legal mandates, the requirements in this and other requirements documents (i.e., [P930-1](#), *LANL Waste Acceptance Criteria*, Associate Director for Environment, Safety, and Health [ADESH], and Functional Series Documents [FSDs]) are established to be consistent with Department of Energy (DOE) Orders, federal and state laws and regulations, the [LANL Hazardous Waste Facility Permit](#), and reporting requirements.

2.0 AUTHORITY AND APPLICABILITY

2.1 Authority

This document is issued under the authority of the Laboratory Director to direct the management and operation of the Laboratory, as delegated to ADESH as provided in the [Prime Contract](#). This document derives from the Laboratory [Governing Policies](#), particularly the section on Environment, and implements requirements in the [Prime Contract](#), particularly Department of Energy Acquisition Regulation (DEAR) 970.5223-1, *Integration of Environment, Safety, and Health into Work Planning and Execution* (Dec. 2000); Part III, Section J, Appendix B 4.2 and Part III, Section J, Appendix G; [DOE Order \(O\) 435.1](#), *Radioactive Waste Management*; [DOE Manual \(M\) 435.1-1](#); *Radioactive Waste Management Manual*; the [Resource Conservation and Recovery Act \(RCRA\)](#); the [Toxic Substances Control Act \(TSCA\)](#); [New Mexico Special Waste Act](#); [74-9-1 NMSA 1978](#), *Solid Waste Act*, and the [74-4-1 NMSA 1978](#), *Hazardous Waste Act*.

- Issuing Authority (IA): Associate Director for Environment, Safety, and Health (ADESH)
- Responsible Manager (RM): Waste Management (WM) Division Leader
- Responsible Office (RO): Waste Management-Division Office (WM-DO)

2.2 Applicability

This document applies to all workers, including subcontractors, who generate, manage, treat, or store regulated waste at the Laboratory as a Waste Generator or at a TSF. Regulated waste, as used in this document, refers to all types of waste including office waste, solid waste, universal waste, hazardous waste, mixed radioactive waste, and radioactive-only waste. Waste Generators include workers who generate regulated waste and store the waste in staging areas, accumulation areas, or less-than 90 day storage areas. TSFs include workers who manage, treat, or store regulated waste under the [LANL Hazardous Waste Facility Permit](#). All other persons working at the Laboratory must follow the requirements as set forth in their contractual agreements or subcontracts.

3.0 PROCEDURE DESCRIPTION

3.1 Overview

There are two main aspects to this document. First, it establishes specific responsibilities for Waste Generators and TSFs to manage and store regulated wastes to ensure the protection of human health, safety, and the environment (Sections 3.2 through 3.7). Second, it describes LANL's Waste Certification Program, which requires a documented approach to ensure that waste management (treatment, storage and disposal) of waste streams complies with applicable requirements (Section 3.8) prior to off-site shipment.



Fig. 1. LANL Waste Management Components

Waste Generators and TSF workers will find more detailed information on waste compliance in the ADESH FSDs. These FSDs may consist of non-mandatory information, such as aids and guidance (ADESH-TOOLS) or mandatory requirements, regarding waste type and compliance factors. These FSDs are issued by ADESH in accordance with [PD311, Requirements System and Hierarchy](#) and [ADESH-AP-007, Document Control](#).

If a Facility Operations Director (FOD), the Facility Responsible Line Manager (RLM), a Facility Point of Contact and/or a Waste Generator chooses to specify additional local-level procedures for waste management activities, those local procedures and changes thereto must be reviewed and approved through WM-DO before they are issued and implemented. Such procedures, including ADESH Administrative Procedures (ADESH-APs) and ADESH Technical Procedures (ADESH-TPs), may be subject to review in accordance with Safety Basis Procedure (SBP) [SBP-112-3-R1.2, Unreviewed Safety Question \(USQ\) Process](#), and [P315, Conduct of Operations Manual](#). WM-DO confirms that Waste Generators are compliant with potential waste streams through oversight requirements for their waste streams and that waste requirements are met in the planning stage for all waste and potential waste streams.

Before waste generating projects (remediation, Demolition and Decontamination, Footprint Reduction, etc.) begin, WM-DO must review (1) all characterization methodologies that were part of the planning stage and the preparation for waste disposition and (2) all requests for use of a DOE or LANL subcontractor that was not procured through [WM-DO](#) via e-mail.

Before generating regulated waste or commencing waste characterization activities, a Waste Generator must consult with their [Waste Management Coordinator \(WMC\)](#). TSFs must comply with their local-level procedures and the [LANL Hazardous Waste Facility Permit](#).

Waste Generators and TSFs must also meet the requirements of the LANL Pollution Prevention Program, which implements pollution minimization goals through Pollution Prevention Opportunity Assessments and other tools. The LANL Pollution Prevention Program requires Waste Generators and TSFs to identify potential alternatives to the generation of waste including use of less toxic materials, alternative processes, waste minimization techniques, and following the requirements [DOE O/M 435.1](#), *Radioactive Waste Management/Manual* and [DOE O 436.1](#), *Departmental Sustainability*. In addition, TSFs must meet waste minimization requirements of the [LANL Hazardous Waste Facility Permit](#).

The Waste Certification Official (WCO) must be notified by the originating organization when a Nonconformance Report (NCR) or a Performance Feedback and Improvement Tracking System (PFITS) issue is entered into the system regarding regulated waste. WCO concurrence for corrective actions must be obtained by e-mail prior to closure.

3.2 Identifying Waste

Waste Generators must correctly identify their waste through waste characterization as specified below. If a Waste Generator needs assistance with and/or cannot identify the waste type, the worker must contact their WMC. In addition, if a LANL worker or subcontractor discovers a waste stream with no identifiable Waste Generator, the worker must contact their WMC. See [ADESH-TOOL-213](#), *No Owner Waste*.

“Office waste” refers to wastes generated in an office environment and can include solid waste (e.g., office paper, food waste, trash), recyclables (e.g., paper, cardboard, plastics), universal waste (e.g., batteries and fluorescent light bulbs) and hazardous waste (e.g., aerosol cans). [ADESH-TOOL-114](#), *Office Waste Tool*, [ADESH-TOOL-111](#), *Waste Characterization*, and [ADESH-TOOL-314](#), *Radioactive Characterization*, help Waste Generators quickly identify their regulated waste types and describe additional tools with requirements for their regulated waste types.

Project Management (PM) projects, Environmental Remediation (ER) or decontaminated and decommissioned must notify WM-DO via e-mail of upcoming waste generation projects and provide all pertinent planning documentation and characterization documentation for evaluation. Use of the Permits and Requirements Identification (PRID) system is required (see [PD400](#), *Environmental Protection*).

3.2.1 Waste Characterization

Waste Generators and TSFs are required to ensure that waste characterization is accurate, complete and up-to-date. Waste Generators must make a waste determination and characterize regulated waste by appropriate analytical testing or use of acceptable knowledge e.g., Material Safety Data Sheets (MSDSs), product labels, and historical data. TSFs must meet waste analysis plan requirements under the [LANL Hazardous Waste Facility Permit](#) prior to acceptance of the generator’s waste for treatment or storage. If a Waste Generator does not supply complete and adequate waste characterization information, the TSF or off-site Treatment Storage and Disposal Facility (TSDF) may not accept the waste. Waste Generators and TSFs must ensure that waste characterization documentation is maintained, protected, controlled, and available for internal and/or any third party reviews.

Note: TSF workers become “Waste Generators” when activities at the TSF (e.g., repackaging, sorting, and segregation) lead to the generation of regulated waste or trigger re-characterization of the waste stream as described within this section.

Waste Generators must consult with their WMCs to start the waste characterization process, when working with a new process that may create a new regulated waste stream, or when waste processing has been modified. [ADESH-TOOL-111](#), *Waste Characterization* and [ADESH-TOOL-314](#), *Radioactive Characterization*, help Waste Generators document and characterize regulated wastes, and describe additional tools with requirements for their regulated waste types. The Waste Generator must sign a Waste Stream Profile (WSP) Certification Statement in the [Waste Compliance and Tracking System \(WCATS\)](#), assuring that waste characterization is correct and meets applicable waste acceptance criteria. This certification attests to the accountability and legal defensibility of the waste characterization for internal or external third party reviews.

As part of the requirement to characterize regulated waste, the Waste Generator must

- submit a waste stream profile in WCATS for each waste stream;
- upload all waste characterization documentation into WCATS and ensure that all valid documentation is referenced in WCATS with a unique identifier;
- sign the WSP Certification Statement assuring accurate and complete characterization of the waste; and
- annually re-evaluate waste characterization for each WSP to verify accuracy of the waste characterization. For compliance purposes, this annual period is defined as less than one year since the original waste characterization or the last recharacterization.

After waste has been identified and entered into WCATS, the waste characterization will be reviewed by the WM-DO prior to a new waste stream identification number being activated. WM-DO screens documentation for LANL facilities that characterize waste streams by acceptable knowledge, process knowledge (or knowledge of process), historical knowledge, etc.

Note: If waste with no disposal path must be generated, the Waste Generator must contact [WM-DO](#) via e-mail for prior authorization.

TSFs must meet waste characterization requirements of the [LANL Hazardous Waste Facility Permit](#), including specifically the Waste Analysis Plan (WAP).

3.2.1.a Waste Generator Recharacterization

Waste Generators must recharacterize and update waste characterization based on the following conditions if

- after an annual re-evaluation, there is any change to waste characterization information, including changes to the waste-generating process or operations;
- there is a change to the waste-generating processes or operations;
- analytical results indicate a change in the waste stream;
- new characterization information becomes available;
- a waste container is opened and secondary material is added to the container;
- waste is repackaged and secondary material is added during this process;
- there is a change in the ownership of a WSP; or
- the Waste Generator is notified that waste received at an off-site facility does not match a pre-approved waste analysis certification or accompanying shipping documentation.

Note: TSF workers may become Waste Generators when waste processing includes one of the activities described above.

The Waste Generators must contact the WM-DO in the event it is required to update waste characterization information described above. WM-DO will work through appropriate subject matter experts to assess the identified changes in the waste characterization and recommend actions.

3.2.1.b *Recharacterization at Treatment and Storage Facilities (TSFs)*

Under the [LANL Hazardous Waste Facility Permit](#), TSFs must update their waste characterization when the following occurs:

- a Waste Generator determines one or more of the above conditions in Section 3.2.1.a has occurred;
- TSF workers have reason to believe that the process or operation generating the waste has changed;
- waste is repackaged and secondary material is added during this process;
- waste received at an off-site facility does not match a pre-approved waste analysis certification or accompanying shipping documentation; or
- an inspection reveals that the waste does not match the identity of the waste specified by the Waste Generator or a manifest on a shipping paper.

3.2.2 **Waste Containing Potential Radioactive Contamination**

Potentially radioactive wastes (e.g., the waste or waste item was generated in a radiologically contaminated area) are summarized in [ADESH-TOOL-306](#), *Potentially Radioactive or Mixed Investigation-Derived Waste*. The Waste Generator is required to meet the actions specified in the tool.

If radioactive contamination is reasonably suspected to be present at a site (e.g., in wastes from potential release sites or poorly documented decontaminated and decommissioned sites), the waste must be characterized. See [ADESH-TOOL-314](#), *Radioactive Characterization*. The Authorized Release Limits Process is defined in [P411](#), *Authorized Release Limits Proposal Process* and is applicable only to materials that

- have residual radioactivity below the dose limits specified in [DOE O 458.1](#), *Radiation Protection of the Public and the Environment*, and
- do not contain [74-4-1 NMSA 1978](#), *Hazardous Waste Act* and [Resource Conservation and Recovery Act \[RCRA\]](#) constituents.

Note: For release of potentially activated metals previously stored in Radiation Control areas, see [RP-SOP-077.004](#), *LANSCE Metals Clearance Process* and [RP-SVS-RIC-TBD-03](#), *Technical Basis Documentation Regarding Health Physics Measurements for the Unrestricted Release of Metals from LANSCE*.

3.2.3 Waste Verification

To ensure compliance with DOE Directives, federal and state laws and regulations, [P930-1](#), *LANL Waste Acceptance Criteria*, and reporting requirements, WM-DO completes a verification checklist in accordance with [WM-PROG-QP-236](#), *Waste Certification Program Waste Verification*, and must verify accurate and thorough waste characterization. This includes the random or selected waste stream and can include the following (if applicable):

- a review of radiological assay;
- a visual examination of the waste;
- a sampling and chemical analysis of the waste;
- a verification that the waste has been properly characterized in accordance with applicable procedures, acceptable knowledge documentation, non-destructive assay records, chemical analysis documentation, and, if applicable, documentation of past visual examinations of the waste;
- a review of past verification results to determine the nature of any pre-existing problems; and
- a review of facility waste processes and procedures to verify operations meet waste certification requirements.

Note: The [LANL Hazardous Waste Facility Permit](#) requires an annual verification of the waste characterization of one percent of the total number of hazardous waste streams characterized solely by acceptable knowledge and managed at TA-54 in the previous calendar year.

3.3 Packaging Waste

Low-Level Waste (LLW) and Mixed Low-Level Waste (MLLW) must meet waste package certification requirements before the waste is disposed. Waste Generators of LLW and MLLW must make a request via e-mail to [WM-DO](#) to arrange for waste package certification. If there are specific waste issues regarding LLW and MLLW, the Waste Generator must contact the [WCO](#). To ensure compliance with federal and state laws, regulations and reporting requirements, the WCO will rely on established waste disposition requirements that are consistent with Waste Acceptance Criteria (WAC) requirements from the Nevada National Security Site (NNSS).

To prepare for waste disposition, the Waste Generator must refer to the [600 Series](#) FSDs, (*Transport of Waste*). All waste information regarding waste disposition must be documented in WCATS and a disposal request must be submitted through the WCATS system by the WMC. This will prompt WM-DO to initiate a waste shipment. WM-DO must be consulted on all specific waste issues as WM-DO is responsible for compliance with safe packaging and transportation requirements to off-site receiving facilities.

3.4 Storing Waste

Waste Generators and TSFs will store their waste in accordance with the requirements listed below.

3.4.1 Waste Areas

Waste Generators are responsible for ensuring that on-site waste accumulation and temporary storage (e.g., less-than 90-day storage areas) are conducted in [Registered Waste Areas](#). For more detailed instruction see the following:

- [ADESH-TOOL-206](#), *Hazardous Waste*;

- [300 Series Tools](#), (*Radioactive Waste*);
- [400 Series Tools](#), (*Universal Waste*);
- [500 Series Tools](#), (*NM Special Waste*);
- [ADESH-TOOL-712](#), *Polychlorinated Biphenyl (PCB) Waste*; and
- [ADESH-TOOL-716](#), *Used Oil for Recycle*.

TSFs can meet the requirements in the [LANL Hazardous Waste Facility Permit](#) by operating to the [800 Series Tools](#), (*Treatment, Storage, and Disposal Facilities*).

The WMC must also certify waste protection and storage by evaluating the waste and using [ADESH-TOOL-300](#), *General Radioactive Waste Management*, and [P930-1](#), *LANL Waste Acceptance Criteria*.

3.4.2 Site Treatment Plan (STP) for Mixed Transuranic (MTRU) and Mixed Low-Level Waste (MLLW) at TSFs

In accordance with the Site Treatment Plan (STP), LANL must report to NMED all MTRU waste and MLLW that will be stored at the Laboratory after 1-year of its accumulation start date. For STP waste containers, the start date refers to the date of receipt for storage at the LANL TSF. The STP summarizes the status of the current inventory, describes the progress being made to dispose of the waste, identifies treatment and disposal options for addressing the STP inventory, and provides overall schedules for management and disposition of mixed waste to demonstrate compliance with Land Disposal Requirement storage prohibitions under the RCRA and demonstrates compliance with the Federal Facility Compliance Order issued by NMED under the New Mexico Hazardous Waste Act.

To meet these compliance requirements, Waste Generators must notify the [STP Manager](#) via e-mail at least three months prior to the waste exceeding its 1-year accumulation start date that their waste must be added to the STP. The Waste Generators must provide the following:

- for MLLW and MTRU waste, an explanation as to why the waste will exceed its 1-year accumulation start date; and
- for MLLW only, compliance milestone dates when waste will be shipped off-site for treatment and disposal.

3.4.3 Radioactive Waste Management Basis

For Radioactive Waste, the FOD or RLM must submit [Form 2107](#), *Radioactive Waste Management Basis Report Form* (RWMB) to WM-DO. The Waste Generator must submit an updated [RWMB](#) to WM when there are changes in facility operations or waste status. For assistance in completing the [RWMB](#), contact WM-DO. The LANL [RWMB](#) consists of

- identification of the generating process owner;
- identification of every area where radioactive waste is generated;
- identification of waste management activities;
- reference to documents that support the [RWMB](#);
- institutional documents applicable to waste management;
- waste authorization basis documents pertinent to the waste generating facility;
- waste management processes within the facility and their locations;

- waste matrix (solid or liquid);
- waste categories generated, i.e., LLW, MLLW, TRU, and MTRU;
- volumes of generated waste by matrix, category, and annual estimates;
- characterization methods for each waste stream;
- how waste certification is protected when waste is transported;
- how waste certification is protected during waste storage;
- how the waste management quality assurance program protects waste certification; and
- proposed disposition for each waste stream (reported under “Life-Cycle Waste Management”).

WM-DO then reviews, edits, and forwards the RWMB to the DOE Field Element Manager for review and approval. WM-DO monitors compliance and is responsible for reporting the status of compliance to the DOE Field Element Manager. If WM-DO detects radioactive waste activities that were not included in the RWMB, WM-DO will notify the FOD or RLM to submit an updated [RWMB](#) with a description of the newly identified activities. DOE will not approve radioactive waste management activities that were not included in the RWMB, and may terminate the activities if not reported.

WM-DO may allow facilities to generate radioactive waste without continuous updates to the RWMB, e.g., remedial projects, superfund projects, etc., so long as

- the facilities (1) are performing work in accordance with [EP-DIR-SOP-10021](#), *Characterization and Management of Environmental Programs Waste* and (2) have provided WM-DO a completed and signed Waste Characterization Strategy Form (WCSF); and
- WM-DO has approved the work being performed at the facility and DOE concurrence has been obtained by WM-DO.

3.4.3.a Storage Extension Requests

If a determination is made that radioactive waste cannot be shipped for final disposition within one year of waste generation, the FOD or RLM (or Facility Point of Contact) must submit a request for storage extension to WM-DO at least three months before exceeding the one year expiration of the date the container was sealed. The storage extension request must be submitted by e-mail an updated RWMB that contains

- a checked box, “Extension Request;”
- a specific description of the waste;
- a specific description of the location of the waste;
- the specific length of time it will take to dispose of the waste; and
- the reason the extension is needed.

After reviewing the request, WM-DO will send a letter to the DOE Field Element Manager at least 60 days prior to the storage expiration requesting DOE approval for continued storage. If DOE approval has not been received and the waste is nearing the storage expiration, the Waste Generator must notify [WM-DO](#) via e-mail at least three days prior to the expiration date that DOE approval has not been received. If approval for extension is not granted, DOE will provide direction back to WM-DO.

Note: If WM-DO discovers that an extension request was never submitted, WM-DO will initiate a PFITS issue in accordance with [P322-4](#), *Laboratory Performance Feedback and Improvement Process*.

3.4.4 Processing Waste at Treatment and Storage Facilities (TSFs)

Waste processing at TSFs is conducted within storage units and includes all activities that require opening of a container after it has been characterized and sealed, including but not limited to sorting, segregating, repacking, and resizing of waste. TSFs cannot engage in any sorting, segregating, repackaging, or resizing activities that involve the addition of any new material (e.g., sorbents, inert materials, secondary waste) or an activity that could potentially change the chemical or physical composition of the waste (i.e., that could constitute “waste treatment”). These activities at TSFs must be described in the [LANL Hazardous Waste Facility Permit](#) or a permit modification is required. If processing will require a change to the physical, chemical or biological character or composition of the waste, or any secondary material will be added to the waste, a permit modification may be required and Environmental Protection-Compliance Programs ([ENV-CP](#)) must be contacted via e-mail. Waste processing activities are conducted in the areas outlined in [ADESH-TOOL-810](#), *Waste Processing at Permitted Units*.

3.4.5 Treating Waste

Waste Generators and TSFs cannot engage in waste “treatment” activities unless one of two conditions exist

- the waste treatment is authorized under the [LANL Hazardous Waste Facility Permit](#); or
- the waste treatment is exempt from permitting requirements.

Waste treatment, as broadly defined, includes “any method ... or process ... designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste nonhazardous; less hazardous; (or) safer to transport, store, or dispose of” ([40 CFR Section 260.10](#), *Hazardous Waste Management System: General, Definitions*). Waste treatment may be conducted under the [LANL Hazardous Waste Facility Permit](#) or interim status documents as outlined in the following:

- [ADESH-TOOL-903](#), *TA-55 Storage in Tanks and Treatment by Stabilization*;
- [ADESH-TOOL-904](#), *Treatment by Open Burning*; and
- [ADESH-TOOL-905](#), *Treatment by Open Detonation*.

All LANL workers and subcontractors must contact ENV-CP prior to engaging in an activity that may constitute waste treatment (e.g., addition of sorbents or evaporation). Requirements for other permit exempted treatment that do not have specific location requirements (i.e., Waste Generator areas or TSFs), are found in [ADESH-TOOL-901](#), *Elementary Neutralization* and [ADESH-TOOL-902](#), *Absorption without a Permit*.

3.5 Shipping Waste

Once the waste is ready for shipment, the Waste Generator must contact the [WCO](#), who serves as the LANL Point of Contact for the off-site receiving facility and the Los Alamos Field Office. The WCO reviews the appropriate documentation pertaining to the off-site receiving facility and/or the Los Alamos Field Office, such as the TSDF waste profiles, DOE profiles, subcontracts, etc.

3.5.1 **Shipments of Radioactive Waste to Non-Department of Energy (DOE) Treatment, Storage, and/or Disposal Facilities (TSDFs)**

If a Waste Generator would like to send waste to a facility that is not owned or operated by DOE, the Laboratory must obtain an “exemption request for direct off-site shipment of Radioactive Waste to Non-DOE and TSDFs” (DOE O 435.1 Exemption Request). To obtain this exemption, the Waste Generator must send an e-mail to [WM-DO](#) identifying

- the specific waste stream with background description (including radioactivity);
- the exact location and volume of waste to be generated or placed in a container; and
- the length of time needed to complete the project’s waste disposition.

WM-DO reviews the e-mail and coordinates the shipment with appropriate LANL workers, organizations and subcontractors. WM-DO and LANL’s shipping subcontractor prepare the DOE O 435.1 Exemption Request, which includes a cost analysis and description of the Waste Generator’s request. WM-DO then submits the final DOE O 435.1 Exemption Request to the DOE Los Alamos Field Office.

The DOE Los Alamos Field Office will review WM-DO’s submittal and evaluate the request. If approved, the DOE Los Alamos Field Office will forward the request to DOE Headquarters. WM-DO will be notified if the request has been approved by DOE. If notification is not received within 15 working days from WM-DO’s submittal to the DOE Los Alamos Field Office, WM-DO will contact the DOE Los Alamos Field Office for a documented response.

3.6 **Disposing Waste**

LANL does not have on-site disposal capacity for RCRA, TRU, or MLLW wastes. LANL retains limited capacity for on-site disposal for LLW under special circumstances and with prior approval from [WM-DO](#). WM-DO will determine the optimal disposal path for each waste stream in consultation with its disposal subcontractor(s) and DOE and based on a cost benefit analysis of available options. Primary consideration will be given to off-site DOE TSDFs, commercial TSDFs approved by DOE, and on-site disposal respectively.

All waste shipments (on-site and off-site) must be coordinated through [WM-DO](#). This process supports waste certification to final TSDF destination.

3.7 **LANL’s Oversight of Waste Management**

Compliance oversight at LANL occurs throughout the life-cycle of waste planning, minimization, generation, characterization, accumulation, packaging, management and disposition. ENV-CP provides guidance on DOE Directives and State Regulatory requirements. Waste management operations, including waste certification, are conducted by WM-DO to meet additional requirements from DOE Directives. Internal assessments and external inspections are performed to ensure institutional waste management compliance is met and waste certification is maintained.

3.7.1 **Certification Assessments for All Waste Types**

To certify that facility waste operations are in accordance with [WM-PROG-QP-250](#), *Radioactive Waste Facility Certification*, and [ADESH-TOOL-300](#), *General Radioactive Waste Management*, WM-DO performs compliance assessments at a facility level against [DOE O 435.1](#), *Radioactive Waste Management*, [DOE M 435.1](#), *Radioactive Waste Management Manual*, RCRA regulations, and this document. These assessments are documented in an Independent Assessment report in

accordance with [P328-2](#), *Independent Assessment*, and distributed to the FOD, RLM and participants after the assessment has been completed.

Assessments include, but are not limited to

- an effectiveness evaluation to determine the nature of any pre-existing problems. When pre-existing problems are found, the assessment team reviews corrective actions that have been taken and determines whether the corrective actions are effective for continuous quality improvement;
- an evaluation of registered waste areas for waste certification compliance. RCRA corrective actions and opportunities for improvement must be reported to Environmental ENV-CP;
- an inspection of the registered waste area and review of the inspection records;
- a tracking and review of past corrective actions resulting from independent assessments conducted by other LANL organizations, DOE, or their contractors, if possible and;
- a review of nonconformance and corrective action documentation and, when appropriate, an action plan to periodically monitor facilities to ensure appropriate corrective actions are being taken.

WM-DO must notify the FOD and RLM in advance of upcoming site visits and assessments. Registered waste area information will be recorded and tracked in a database managed by ADESH.

3.7.2 LANL Self-Assessment

DOE and NMED expect LANL to assess compliance of the Waste Generator's waste management activities and TSF permit compliance. Waste Generator assessments include but are not limited to, accumulation and registered waste areas, LANL inspection forms, containers or tanks, labels, time limits, worker health and safety practices, and the Waste Generator's records and training records. Compliance evaluations routinely include sites outside registered areas (see the ADESH-FSD for requirements on various registered waste areas including TSF requirements). Assessments of registered waste areas are performed by WM-DO and ENV-CP in addition to periodic Independent Assessments (see [P328-2](#), *Independent Assessment*) and Management Assessments (see [P328-3](#), *Management Assessment*).

Waste Generators and TSFs must retain waste documents and records in accordance with [PD1020](#), *Document Control and Records Management*.

3.8 Waste Certification

The LANL Waste Certification Program was developed, documented and implemented to ensure that the waste acceptance requirements of off-site facilities receiving waste for storage, treatment, and disposal are met. LANL waste management components that are provided complex wide support waste certification.

Waste certification is a process by which a Waste Generator affirms that waste meets the waste acceptance criteria of the off-site facility to which the Waste Generator intends to transfer the waste for treatment, storage, and disposal. As such, LANL's Waste Certification Program includes the waste certifying process from generation to disposition (cradle-to-grave) for all regulated wastes. Identifying, characterizing and recharacterizing waste with consideration for associated hazards and signing the WSP certification statement is conducted by the Waste Generator and WMC. Assuring compliance performance includes waste verification, storage certification, packaging certification, data management, and STP and RWMB reporting. Finally, preparing waste for shipment, disposal acceptance, final disposition and on-going assessments completes LANL's Waste Certification Program.

Waste certification includes WM-DO providing oversight of Waste Generator activities to meet the requirements of this document and the waste acceptance criteria of the receiving TSDF. LANL's Waste Certification Program includes compliance for all waste types. Fig. 2 illustrates key components of LANL's Waste Certification Program.



Fig. 2. Key components of the LANL Waste Certification Program

4.0 RESPONSIBILITIES

4.1 Facility Operations Director (FOD)

- If needed, issues local-level procedures for waste management activities in accordance with Section 3.1.
- Routes local level procedures through review and approval process adopted by WM-DO.
- Ensures completion and management of their facility's *Radioactive Waste Management Basis Report* (RWMB [Form 2107](#), *Radioactive Waste Management Basis Report Form*).

4.2 Responsible Line Manager (RLM)

- Participates and encourages others' participation in WM-DO's assessment for facility certification.
- Assists in the management and implementation of corrective actions, findings and opportunities for improvement regarding their facilities.
- Ensures waste management compliance at their facilities.

4.3 Waste Management Division Leader

- Ensures waste management compliance processes are implemented across the Laboratory.
- Ensures waste management oversight processes are implemented.

- Acknowledges the process by which local waste management procedures are reviewed and approved before they are issued or implemented.
- Initiates the review of waste characterization documentation by subject matter experts when new information or discrepancies in waste characterization are discovered.
- Monitors work in progress and conducts effectiveness evaluations (i.e., through facility assessment and waste verification).
- Documents compliance or noncompliance with characterization/certification requirements.
- Identifies the facility's waste management quality assurance program and how it protects waste certification and the proposed disposition for each waste stream.
- Performs re-evaluation and verification of characterization information for facilities' waste generation operations.
- Evaluates corrective actions regarding waste management as timely or untimely.
- Reports corrective action regarding waste management adequacy to management.
- Provides notification to facility RLMs of the status and performance of activities under assessment.
- Documents facility waste certification reviews resulting from internal (e.g., Authorization Authority) or external (e.g., DOE) audits and assessments, tracking corrective actions and reporting observations to management.
- Determines whether waste management staging/storage facilities and systems are adequate to certify waste and to maintain waste certification until shipment.
- Ensures LLW/MLLW waste containers are certified by a qualified Waste Package Certifier (WPC).
- Completes receiving facility documentation and notifications for LANL.
- Maintains LANL facility operations certification and off-site receiving facility certification.
- Provides WCO disposition approval for final TSDF destination.
- Performs LANL Self Assessments of radioactive waste staging and storage areas in accordance with Section 3.7.2.
- Ensures that the WCO and designees certify waste for disposition to off-site TSDFs.
- Performs annual verification of the waste characterization of one percent of the total number of hazardous waste streams characterized solely by acceptable knowledge and managed at TA-54 in the previous calendar year.
- Provides notification and reporting to regulatory oversight bodies.
- Provides WMC qualification training.

4.4 Waste Management Coordinators (WMCs)

- Certify waste for storage in LANL's registered storage areas.
- Verify waste containers or tanks meet the requirements for transfer into storage at their facility or verify waste can be transferred to a TSF or TSDF.

- Ensure waste characterization and acceptable knowledge documentation is accurate, defensible, and complete.
- Ensure waste meets accepting facility WAC and follows the ADESH-FSD processes.
- Ensure the WSP is completed and submitted in WCATS.
- Support Waste Generators in internal assessments and external inspections.
- Ensure waste containers are closed in accordance with manufacturer's instructions prior to shipment.
- Ensure waste container or tank is adequate to protect the waste against external sources of contamination, and ensure waste management integrity and compatibility.

4.5 Environmental Protection - Compliance Programs (ENV-CP) Group Leader

- Directs the waste management compliance process.
- Coordinates information and compliance requests and activities with regulators.
- Manages the ADESH-FSD collection.
- Receives information on RCRA corrective actions and opportunities for improvement from WM-DO's assessment of facility certification.
- Ensures that LANL Self Assessments in accordance with Section 3.7.2 are performed.
- Assists WM-DO by providing regulatory information and institutional guidance on waste management requirements.
- Maintains the [LANL Hazardous Waste Facility Permit](#) and is responsible for developing permit modification requests.

4.6 Waste Generators

- Comply with the requirements in this document and other requirements documents referenced herein.
- Characterize waste pursuant to the requirements in this document and the ADESH-FSDs.
- Before waste is generated and/or packaged, conduct waste avoidance or minimization analysis in consultation with the WMC.
- Ensure adequacy of the documentation used for waste characterization (acceptable knowledge and physical/chemical analysis).
- Maintain registered waste areas within their span of control.
- Manage on-site storage as required in this document.
- Initiate the WSP.
- Notify the [STP Manager](#) via e-mail, at least three months prior to the waste exceeding its 1-year accumulation start date that their waste must be added to the STP.

5.0 IMPLEMENTATION

The requirements in this document are effective on the issue date. All ADESH FSDs that are referenced in this document will be reviewed and updated by December 31, 2015, in accordance with [ADESH-AP-007](#), *Document Control* and [PD311](#), *Requirements System and Hierarchy*. The FSDs will be reviewed and updated on a three year schedule beginning with the issue date of P409, Rev.5.

6.0 TRAINING

The training courses listed in this section are required for all workers who generate waste (except office trash) and workers who manage waste or work at TSFs. Workers must notify their managers of expired training. Unless specified, there is no grace period for the training requirements below; this training must be completed and kept current.

Note: Site-specific training may be required and directed by RLMs.

6.1 Waste Generators and WMCs must complete:

- [Course #23263](#), *Waste Generation Overview Live*; and
- [Course #21464](#), *Waste Generation Overview Refresher SS*, every three years.

6.2 Persons who work in, or are owners of, less-than-90-day waste accumulation areas must complete:

- [Course #7488](#), *RCRA Personnel Training*, and
- [Course #28582](#), *RCRA Refresher (Self-Study)*, every twelve months.

Note: The RCRA-related training listed above must be completed within six months of employment or new assignment; during this period, workers must work under the supervision of a trained worker.

6.3 Persons who work in TSFs must complete:

- [Course #7488](#), *RCRA Personnel Training*;
- [Course #28582](#), *RCRA Refresher (Self-Study)*, every twelve months; and
- [Course #23263](#), *Waste Generation Overview Live*.

Note: The RCRA-related training listed above must be completed within six months of employment; during this period, workers must work under the supervision of a trained worker.

6.4 Remediation Workers must complete:

- [Course #23263](#), *Waste Generation Overview Live*;
 - [Course #4464](#), *HAZWOPER: General Site Worker*, or [Course #4465](#), *HAZWOPER: Limited Site Worker*;
 - [Course #28652](#), *HAZWOPER: Refresher*, every twelve months;
 - [Course #7488](#), *RCRA Personnel Training*;
 - [Course #28582](#), *RCRA Refresher (Self-Study)*, every twelve months; and
- or other courses as assigned by the supervisor.

7.0 EXCEPTION OR VARIANCE

Changes in the processes conducted at the TSF or changes to the TSF structure must be reviewed by ENV-CP for necessary permit modifications. Hazardous waste treatment activities that are not authorized by the [LANL Hazardous Waste Facility Permit](#) or interim status documents must be reviewed by ENV-CP for regulatory compliance.

8.0 DOCUMENTS AND RECORDS

8.1 Office of Record

The Policy Office is the Laboratory Office of Record for this Institutional Document and maintains the administrative record.

8.2 Waste Management Records

WM-DO and ENV-CP work with Waste Generators, FODs and RLMs to ensure that the following records and documentation are kept in accordance with [PD1020](#), *Document Control and Records Management*:

- WCATS for waste characterization
- [Form 2107](#), *Radioactive Waste Management Basis Report Form*
- *RWMB Storage Extension Request*
- DOE O 435.1, *Exemption Request*
- STP plan and correspondence to and from NMED
- Independent Assessment Reports
- Trend analysis on waste management data
- ADESH database containing [Registered Waste Area](#) information
- Inspection Forms

9.0 DEFINITIONS AND ACRONYMS

9.1 Definitions

See LANL [Definition of Terms](#) and [ADESH-TOOL-101](#), *Waste Management Glossary*.

9.2 Acronyms

See LANL [Acronym Master List](#).

| | |
|--------|--|
| ADESH | Associate Director for Environment, Safety, and Health |
| AP | Administrative Procedures |
| DEAR | Department of Energy Acquisition Regulation |
| DOE | Department of Energy |
| DOT | Department of Transportation |
| ENV-CP | Environmental Protection-Compliance Programs |
| EPA | Environmental Protection Agency |
| ER | Environmental Restoration |
| FOD | Facility Operations Director |
| FSD | Functional Series Documents |
| IA | Issuing Authority |
| LANL | Los Alamos National Laboratory |
| LLW | Low-Level Waste |
| M | Manual |
| MLLW | Mixed Low-Level Waste |

| | |
|-------|--|
| MSDSs | Material Safety Data Sheets |
| MTRU | Mixed Transuranic |
| NCR | Nonconformance Report |
| NMED | New Mexico Environment Department |
| NNSS | Nevada National Security Site |
| O | Order |
| OP | Operating Tools |
| PFITS | Performance Feedback and Improvement Tracking System |
| PRID | Permits and Requirements Identification |
| PM | Project Management |
| RCRA | Resource Conservation and Recovery Act |
| RLM | Responsible Line Manager |
| RM | Responsible Manager |
| RO | Responsible Office |
| RWMB | Radioactive Waste Management Basis |
| SBP | Safety Basis Procedure |
| SOP | Standard Operating Procedure |
| STP | Site Treatment Plan |
| TP | Technical Procedure |
| TRU | Transuranic |
| TSCA | Toxic Substances Control Act |
| TSDF | Treatment, Storage, and/or Disposal Facility |
| TSFs | Treatment Storage Facilities |
| WAC | Waste Acceptance Criteria |
| WAP | Waste Analysis Plan |
| WCATS | Waste Compliance and Tracking System |
| WCO | Waste Certification Official |
| WCSF | Waste Characterization Strategy Form |
| WSP | Waste Stream Profile |
| WM | Waste Management |
| WMC | Waste Management Coordinator |
| WM-DO | Waste Management-Division Office |

10.0 HISTORY

| Revision History | | |
|------------------|--------------|--|
| 03/27/08 | P409, Rev. 0 | <p>Initial Issue.</p> <p>This document and its linked Waste Management Tools replaces and cancels the Laboratory Implementation Requirements (LIRs) and Laboratory Implementation Guidance (LIG) listed below. The LIRs will remain in force and effect for each nuclear facility until that facility completes the Unreviewed Safety Question (USQ) or Unreviewed Safety Issue (USI) review determinations.</p> <ul style="list-style-type: none"> ▪ LIG 404-00-02, <i>Acceptable Knowledge Guidance</i> |

| Revision History | | |
|------------------|--------------|---|
| | | <ul style="list-style-type: none"> ▪ LIR 404-00-02, <i>General Waste Management Requirements</i> ▪ LIR 404-00-03, <i>Hazardous and Mixed Waste Requirements</i> ▪ LIR 404-00-04, <i>Managing Solid Waste</i> ▪ LIR 404-00-05, <i>Managing Radioactive Waste</i> ▪ LIR 404-00-06, <i>Managing Polychlorinated Biphenyls</i> |
| 05/22/08 | P409, Rev. 1 | Section 6.0 Training: Changed Waste Profile Form Signers to Waste Generators and removed Waste Documentation Forms from the Waste Generators list. |
| 06/04/10 | P409, Rev. 2 | Extensive revision: Clarified training requirements and responsibilities, corrected links to tools, clarified tool creation process, and simplified the document. |
| 03/19/12 | P409, Rev. 3 | <p>This document cancels RN0808, <i>Requirements for Recycling Metal from Areas posted for Radiological Hazards</i>.</p> <p>Section 6.0: Separated the third bullet into two bullets, reflecting the separate training requirements for persons who work in Treatment, Storage, and/or Disposal Facilities (TSDFs) and Remediation Workers, to align with the Laboratory's Hazardous Waste Permit. Added Course #23263, <i>Waste Generation Overview Live</i>, as a training requirement for persons who work in TSDFs and Remediation Workers.</p> |
| 04/10/13 | P409, Rev. 4 | <p>Removed references to cancelled Form 1346, <i>Waste Profile Form</i>, which has been replaced by the Waste Stream Profile (found in the Waste Compliance and Tracking System (WCATS)).</p> <p>Section 5.0: Updated to reflect effective date of May 28, 2013 for applicable nuclear, high- and moderate-hazard facilities and accelerators.</p> <p>Performed three year review in accordance with PD311, <i>Requirements System and Hierarchy</i>.</p> <p>Updated links, titles, and acronyms.</p> |
| 07/30/15 | P409, Rev. 5 | <p>Performed three-year review in accordance with PD311, <i>Requirements System and Hierarchy</i>.</p> <p>This document cancels P930-2, <i>Radioactive Waste Certification Program</i> and P930-3, <i>Off-Site Shipment of Chemical, Hazardous, or Radioactive Waste</i>. Although this is not “a new document,” it is a complete re-write of P409, Rev. 4 as the requirements from P930-2 have been merged with this document. P409 title has also changed to “LANL Waste Management.”</p> |

11.0 REFERENCES

[Prime Contract:](#)

- DEAR 970.5223-1, Integration of Environment, Safety, and Health into Work Planning and Execution (Dec. 2000)
- Part II, Section H-83 (DEAR 5223-1)
- Part III, Section J, Appendix B 4.2

LANL

P409, Rev. 5

Effective Date: 07/30/15

- Part III, Section J, Appendix G
- Appendix B, Statement of Work: §1.0 General
- [DOE O 435.1](#), *Radioactive Waste Management*
- [DOE M 435.1-1](#), *Radioactive Waste Management Manual*
- [DOE O 436.1](#), *Departmental Sustainability*
- [40 CFR Section 260.10](#), *Hazardous Waste Management System: General, Definitions*
- [DOE O 458.1](#), *Radiation Protection of the Public and the Environment*

11.1 Other References

- [LANL Hazardous Waste Facility Permit](#)
- [P930-1](#), *LANL Waste Acceptance Criteria*
- [Resource Conservation and Recovery Act \(RCRA\)](#)
- [Toxic Substances Control Act \(TSCA\)](#)
- [New Mexico Special Waste Act](#)
- [74-9-1 NMSA 1978](#), *Solid Waste Act*
- [74-4-1 NMSA 1978](#), *Hazardous Waste Act*
- [PD311](#), *Requirements System and Hierarchy*
- [ADESH-AP-007](#), *Document Control*
- [SBP-112-3-R1.2](#), *Unreviewed Safety Question (USQ) Process*
- [P315](#), *Conduct of Operations Manual*
- [ADESH-TOOL-213](#), *No Owner Waste*
- [ADESH-TOOL-114](#), *Office Waste Tool*
- [ADESH-TOOL-111](#), *Waste Characterization*
- [ADESH-TOOL-314](#), *Radioactive Characterization*
- [PD400](#), *Environmental Protection*
- [Waste Compliance and Tracking System \(WCATS\)](#)
- [ADESH-TOOL-306](#), *Potentially Radioactive or Mixed Investigation-Derived Waste*
- [P411](#), *Authorized Release Limits Proposal Process*
- [RP-SOP-077.004](#), *LANSCE Metals Clearance Process*
- [RP-SVS-RIC-TBD-03](#), *Technical Basis Documentation Regarding Health Physics Measurements for the Unrestricted Release of Metals from LANSCE*
- [WM-PROG-QP-236](#), *Waste Certification Program Waste Verification*

- [ADESH-TOOL-600](#), Certification, Documentation, Shipment of ChemHaz
- [ADESH-TOOL-206](#), Hazardous Waste
- [300 Series Tools](#), (Radioactive Waste)
- [400 Series Tools](#), (Universal Waste)
- [500 Series Tools](#), (NM Special Waste)
- [ADESH-TOOL-712](#), Polychlorinated Biphenyl (PCB) Waste
- [ADESH-TOOL-716](#), Used Oil for Recycle
- [800 Series Tools](#), (Treatment, Storage and Disposal Facilities)
- [ADESH-TOOL-300](#), General Radioactive Waste Management
- [EP-DIR-SOP-10021](#), Characterization and Management of Environmental Programs Waste
- [P322-4](#), Laboratory Performance Feedback and Improvement Process
- [ADESH-TOOL-810](#), Waste Processing at Permitted Units
- [ADESH-TOOL-903](#), TA-55 Storage in Tanks and Treatment by Stabilization
- [ADESH-TOOL-904](#), Treatment by Open Burning
- [ADESH-TOOL-905](#), Treatment by Open Detonation
- [ADESH-TOOL-901](#), Elementary Neutralization
- [ADESH-TOOL-902](#), Absorption without a Permit
- [WM-PROG-QP-250](#), Radioactive Waste Facility Certification
- [P328-2](#), Independent Assessment
- [P328-3](#), Management Assessment
- [PD1020](#), Document Control and Records Management
- [PD311](#), Requirements System and Hierarchy
- [ADESH-TOOL-101](#), Waste Management Glossary

12.0 FORMS

[Form 2107](#), Radioactive Waste Management Basis Report Form

13.0 ATTACHMENTS

There are no attachments associated with this document.

14.0 CONTACT

Waste Management Division Office

Telephone: (505) 667-2211

Fax: (505) 667-1945

Website: <http://int.lanl.gov/org/padops/adesh/waste-management/index.shtml>

IMPORTANT

If you wish to receive credit for the preceding document you **must** enter the course through [UTrain](#) **not** the Policy Office website.

Material Safety Data Sheet



Zep Inc.
1310 Seaboard Industrial Blvd.
Atlanta, GA 30318
1-877-I-BUY-ZEP (428-9937)
www.zep.com

Section 1. Chemical Product and Company Identification

Product name E2008 ASPHALT RELEASE (XT-3199)
Product use Asphalt Release Agent
Product code F464
Date of issue 02/13/09 **Supersedes** 06/17/99

Emergency Telephone Numbers

For MSDS Information:

Compliance Services 1-877-I-BUY-ZEP (428-9937)

For Medical Emergency

(877) 541-2016 Toll Free - All Calls Recorded

For Transportation Emergency

CHEMTREC: (800) 424-9300 - All Calls Recorded
In the District of Columbia (202) 483-7616

Prepared By

Compliance Services
1420 Seaboard Industrial Blvd.
Atlanta, GA 30318

Printing date: 02/13/09

Section 2. Hazards Identification

Emergency overview

CAUTION !

MAY CAUSE EYE IRRITATION.

*Hazard Determination System (HDS): Health, Flammability, Reactivity



NOTE: MSDS data pertains to the product as delivered in the original shipping container(s). Risk of adverse effects are lessened by following all prescribed safety precautions, including the use of proper personal protective equipment.

Acute Effects

Routes of Entry

Eye contact.

Eyes May cause eye irritation. Inflammation of the eye is characterized by redness, watering and itching.

Skin No known acute effects of this product resulting from skin contact. Prolonged or repeated contact may dry skin and cause irritation.

Inhalation No known acute effects of this product resulting from inhalation.

Ingestion No data on acute toxicity of the product when ingested. May irritate digestive tract.

Chronic effects

There is no known chronic effect after exposure to this product.

Carcinogenicity Ingredients: Not listed as carcinogen by OSHA, NTP or IARC.

Additional Information: See Toxicological Information (Section 11)

Section 3. Composition/Information on Ingredients

OSHA's Hazard Communication Standard (29 CFR 1910.1200) does not require the listing of any ingredient for this product.

Section 4. First Aid Measures

Eye Contact Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

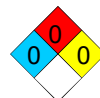
Skin Contact Rinse with plenty of running water. If irritation persists, get medical attention.

Inhalation Inhalation not likely under normal use conditions.

Ingestion Do not induce vomiting unless directed to do so by medical personnel. If swallowed, seek medical advice immediately and show this container or label.

Section 5. Fire Fighting Measures

National Fire Protection Association (U.S.A.)



Flash Point Not applicable

Flammable Limits Not applicable

Flammability Non-combustible.

Fire hazard Not applicable.

Fire-Fighting Procedures Not applicable.

Section 6. Accidental Release Measures

Spill Clean up Hazard of slipping on spilled product. Absorb with an inert material and place in an appropriate waste disposal container. Finish cleaning the spill area with running water.

Section 7. Handling and Storage

Handling Avoid contact with eyes. Do not ingest. Wash thoroughly after handling.

Storage Keep container tightly closed. Store between the following temperatures: 40°F - 120°F (4.4°C - 49°C). Keep out of the reach of children. Protect from freezing.

Section 8. Exposure Controls/Personal Protection**Product name****Exposure limits**

No exposure limit value known.

Personal Protective Equipment (PPE)

Eyes Recommended: Safety glasses.



Body No special protective clothing is required. For prolonged or repeated handling, use gloves.

Respiratory No special measures required.

Section 9. Physical and Chemical Properties

Physical State Thin liquid

Color Clear. Colorless.

pH 7.5 - 8.5

Odor Mild.

Boiling Point 104.44°C (220°F)

Vapor Pressure Not determined.

Specific Gravity 1

Vapor Density Not determined.

Solubility Miscible in water.

Evaporation Rate 1 compared with Water

VOC (Consumer) 0 (g/l).

Section 10. Stability and Reactivity

Stability and Reactivity The product is stable.

Incompatibility None known.

Hazardous Polymerization Will not occur.

Hazardous Decomposition Products None identified.

Section 11. Toxicological Information**Acute Toxicity**

Not available.

Section 12. Ecological Information

Environmental Effects No known significant effects or critical hazards.

Aquatic Ecotoxicity

Not available.

Section 13. Disposal Considerations**Waste Information**

Waste must be disposed of in accordance with federal, state and local environmental control regulations. Consult your local or regional authorities for additional information.

Waste Stream Non-hazardous waste

Section 14. Transport Information

| Regulatory information | UN number | Proper shipping name | Classes | PG* | Label |
|---------------------------|----------------|----------------------|----------------|-----|-------|
| DOT Classification | Not regulated. | None. | - | - | |
| IMDG Class | Not available. | Not available. | Not available. | - | |

NOTE: DOT classification applies to most package sizes. For specific container size classifications or for size exceptions, refer to the Bill of Lading with your shipment.

PG* : Packing group

Section 15. Regulatory Information**U.S. Federal Regulations**

SARA 313 toxic chemical notification and release reporting:

No products were found.

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: No products were found.

Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

All Components of this product are listed or exempt from listing on TSCA Inventory.

State Regulations

California Prop 65 No products were found.

Section 16. Other Information

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

*NOTE: Hazard Determination System (HDS) ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although these ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HDS ratings are to be used with a fully implemented program to relay the meanings of this scale.

No: P101-14

Revision: 7

Issued: 08/06/15
Effective Date: 08/06/15

Chemical Management

1.0 PURPOSE

The purpose of this document is to:

- define the chemical management requirements for the Los Alamos National Laboratory (LANL or the Laboratory) Chemical Lifecycle Management Program,
- define processes to ensure protection of workers from health hazards associated with hazardous chemicals, and to keep exposures below Occupational Exposure Limits (OELs),
- provide direction to ensure that work with hazardous chemicals is conducted in a safe and responsible manner that protects workers, the public, and the environment, in accordance with Laboratory Integrated Work Management (IWM) and Environmental Management Systems,
- provide direction in the development and application of the hierarchy of controls (i.e., elimination, substitution, engineering, administrative, and Personal Protective Equipment [PPE]) that will protect workers and the environment, and
- promote consistency in hazardous-materials-related Integrated Work Documents (IWDs) and other procedures across the Laboratory.

2.0 AUTHORITY AND APPLICABILITY

2.1 Authority

This document is issued under the authority of the Laboratory Director to direct the management and operation of the Laboratory, as delegated to the Associate Director for Nuclear and High Hazard Operations (ADNHHO) as provided in the [Prime Contract](#). This document derives from the Laboratory [Governing Policies](#), particularly the section on Safety.

- Issuing Authority (IA): Associate Director for Nuclear and High Hazard Operations (ADNHHO)
- Responsible Manager (RM): Operations Support (OS) Division Leader
- Responsible Office (RO): Operations Support-Division Office (OS-DO)

2.2 Applicability

This document applies to all Laboratory workers. Subcontract workers are expected to follow the requirements set forth in their contractual agreements (i.e., Exhibit F) with the Laboratory.

This document applies to all work areas where chemicals including gases (compressed and cryogenic fluids) are procured, acquired, manufactured, machined, handled, received, distributed, transported, used, stored, or disposed. Activities that are subject to the requirements contained in this document are maintenance, construction, facility categorization, Research and Development (R&D), emergency planning, environmental restoration, and Decontamination and Decommissioning (D&D). This document applies to Laboratory facilities and equipment that involve current or past use of hazardous chemicals. Offsite work by LANL workers, where chemicals are used, should follow the specific guidelines and protocols of the host facility within

the context of the guidelines provided herein. Minimum requirements are adherence to the Federal Regulations cited in this document.

3.0 PROCEDURE DESCRIPTION

This document sets forth practices for managing industrial hygiene, safety, and environmental concerns associated with hazardous chemicals.

Note: Every Laboratory organization that procures, acquires, manufactures, machines, handles, receives, distributes, transports, uses, stores, or disposes of hazardous chemicals is required to follow the safety plan found in Attachment A, *LANL Hazard Communication and Chemical Hygiene Plan*. Requirements identified in Attachment A are specific to [29 Code of Federal Regulations \(CFR\) 1910.1200](#), *Labor, Occupational Safety and Health Standards, Hazard Communication (e)*, [29 CFR 1910.1450](#), *Labor, Occupational Safety and Health Standards, Occupational Exposure to Hazardous Chemicals in Laboratories (e)*, and [29 CFR 1926.59](#), *Labor, Safety and Health Regulations for Construction, Hazard Communication (e)* (identical to .1200). The processes found in Attachment A, and any associated IWDs and organization-specific procedures that address hazardous chemicals, must be communicated to the workers in the organization. The plan is applicable to all activities whether chemicals are used in industrial applications (Hazard Communication [HAZCOM]) or small-scale laboratory R&D (Chemical Hygiene Plan [CHP]). Where it is mutually beneficial, the plan is applicable to all activities. Where procedures are specific to HAZCOM or CHP, the delineation is made in the text of the plan.

Note: Engineered nanomaterials are addressed in [P101-29](#), *Working with Nanotechnology Materials and Processes*. Biological materials are addressed in [P101-15](#), *Biological Safety*. Explosives are addressed in [P101-8](#), *Explosives Safety*. Radiological materials are addressed in [P121](#), *Radiation Protection*. Chemical disposition is addressed in [P409](#), *LANL Waste Management*.

3.1 Chemical Management and Chemical Safety Program Elements

| Table 1. Chemical Management Program Elements | | |
|---|-----------------------|----------------------|
| Chemical Management Program Element | Main Document Section | Attachment A Section |
| A list of the hazardous chemicals known to be present, i.e., an inventory | 3.3 | 1.3 |
| Hazard identification and analysis | Attachment A | All |
| Acquisition | 3.2 | NA |
| Chemical inventory management and tracking, including management of extremely hazardous chemicals, and Material Safety Data Sheets/Safety Data Sheets (MSDS/SDSs) | 3.3 | 1.4 (MSDS/SDS only) |
| Chemical transportation | 3.8 | NA |
| Chemical storage | 3.7 | NA |
| Hazard control | 3.6 | 1.6 |
| Pollution prevention and waste minimization | 3.4 | NA |
| Chemical emergency management | 3.9 | NA |
| Chemical disposition | 3.7 | NA |
| Training | 6.0 | 1.15 |

The LANL chemical management program addresses elements from both [29 CFR 1910.1200](#), *Labor, Occupational Safety and Health Standards, Hazard Communication*, and [29 CFR 1910.1450](#), *Labor, Occupational Safety and Health Standards, Occupational Exposure to Hazardous Chemicals in Laboratories*.

| Table 2. Chemical Safety Program Elements | | |
|---|------------------------------|-----------------------------|
| Chemical Safety Program Element | Main Document Section | Attachment A Section |
| A list of the hazardous chemicals known to be present, i.e., an inventory | 3.3 | 1.3 |
| Access to MSDS/SDSs for procured or acquired hazardous chemicals | 3.3 | 1.4 |
| Container labeling and other forms of warning | NA | 1.5 |
| Employee information and training | 6.0 | 1.15 |
| Methods used to inform employees of hazards of non-routine tasks or chemicals in unlabeled piping, precautionary measures for protection of employees during normal operating conditions and foreseeable emergencies, and the circumstances under which a particular laboratory operation, procedure or activity will require prior approval from the employer or the employer's designee before implementation | NA | 1.6 |
| Standard operating procedures relevant to safety and health considerations to be followed when laboratory work involves the use of hazardous chemicals | NA | 1.6 |
| Criteria that the employer will use to determine and implement control measures to reduce employee exposure to hazardous chemicals including engineering controls, the use of Personal Protective Equipment (PPE) and hygiene practices; particular attention will be given to the selection of control measures for chemicals that are known to be extremely hazardous | 3.7 | 1.6 |
| A requirement that fume hoods and other protective equipment are functioning properly and specific measures will be taken to ensure proper and adequate performance of such equipment | NA | 1.8 |
| Designation of personnel responsible for implementation of the Chemical Hygiene Plan (CHP) including the assignment of a Chemical Hygiene Officer (CHO), and, if appropriate, establishment of a Chemical Hygiene Committee | 4.2 | 1.9 |
| Provisions for additional employee protection for work with particularly hazardous substances, i.e., carcinogens, reproductive toxins, and substances that have a high degree of acute toxicity, including as appropriate: establishment of a designated area, use of containment devices such as fume hoods or glove boxes, procedures for safe removal of contaminated waste; and decontamination procedures | 4.2 | 1.11 |
| Compliance with 29 Code of Federal Regulations (CFR) 1910.119 , <i>Labor, Occupational Safety and Health Standards, Process Safety Management of Highly Hazardous Chemicals (Occupational Safety and Health Administration [OSHA] PSM Rule)</i> , Appendix A | 4.7 | NA |
| Hazardous chemical spill response | 3.9 | NA |

3.2 Chemical Acquisition

Acquisition includes procurement, onsite synthesis, blending of chemicals, individuals or organizations bringing chemicals onsite, and other mechanisms. Chemicals are purchased by trained and authorized chemical workers.

Before a decision is made to purchase a chemical through LANL procurement, chemical owners will determine whether:

- The proposed quantity of the chemical is within the evaluated safety basis limits, fire protection limits, and fire hazard analysts limits for the facility. **Note:** The FOD is responsible for providing this information.
- There is a less hazardous or non-hazardous chemical available.
- There is a suitable surplus chemical available from another chemical owner.
- There is a current need for the chemical.
- There are unique hazards of the chemical that would require special assessment and controls.
- The quantity is limited to a specific project or maintenance need.
- There are stability or shelf life issues that need to be tracked.
- Storage facilities are suitable.
- There is an appropriate safe and environmentally acceptable means for the final disposition of environmentally sensitive chemicals, products, and byproducts.
- The required safety documentation MSDS/SDS is uploaded to the LANL [MSDS/SDS electronic binder](#). Contact Occupational Safety and Health-Industrial Safety and Hygiene (OSH-ISH) for a listing of MSDS Online administrators who can add SDS/MSDSs to the LANL Electronic Binder.

All gas will be procured from the Gas Facility for those maintained as stock items, or as a LANL iProcurement Non Catalog request choosing Compressed Gas as the category. Gases cannot be purchased on a Pcard. All chemical/gases transported as a Hazard Class 2 material must be delivered to the Gas Facility at TA-3, Building 170. The SM-30 warehouse is not allowed to accept the delivery of gas.

Note: Non-gas chemical requests for purchase by purchase card must be submitted for approval via email to ChemDB@lanl.gov. Include the TA, building, and room where the chemical will be stored, the Z# and name of the chemical requestor, the chemical or product name, total amounts requested, the manufacturer and catalog number, and an SDS/MSDS for the chemical or product.

3.3 Chemical Inventory Management and Tracking

- LANL is required to maintain a list of the hazardous chemicals known to be present using an identity that is referenced on the appropriate MSDS/SDS. The listing of hazardous chemicals is maintained in the [LANL institutional chemical inventory](#) database application. This inventory is overseen by ADNHHO Operations Support (OS) Division. For [LANL institutional chemical inventory](#) database requirements, contact the help desk at 667-9242, or e-mail ChemDB@lanl.gov.
- Primary hazardous chemical containers are barcoded, entered, and tracked in the [LANL institutional chemical inventory](#) database in accordance with guidance documents found under the "Support and Resources" tab in the [LANL institutional chemical inventory](#) database application.

- The [LANL institutional chemical inventory](#) database will be updated when a primary hazardous chemical container is acquired; is transferred to a new owner and/or a new location; or is disposed.
- Physical inventories of primary hazards chemical containers will be performed annually to verify the accuracy of the [LANL institutional chemical inventory](#) database. Workers must have access to the MSDS/SDS for all procured hazardous chemicals. See [29 CFR 1910.1200](#), *Labor, Occupational Safety and Health Standards, Hazard Communication* (g) (6) (iii) and (8) and [29 CFR 1910.1450](#), *Labor, Occupational Safety and Health Standards, Occupational Exposure to Hazardous Chemicals in Laboratories* (f) (3) (v). MSDS/SDSs must be maintained as stated in Attachment A, *LANL Hazard Communication and Chemical Hygiene Plan*, Section 1.4.

3.4 Chemical Elimination, Substitution, Pollution Prevention, and Waste Minimization

Elimination of a hazardous chemical or substitution of a hazardous chemical with a less hazardous chemical is the preferred method to control hazards in accordance with the IWM process. Process change to a system for pollution prevention or waste minimization is another recognized control for chemical usage. Whenever possible, chemical workers will consider eliminating hazardous chemical usage or substituting less hazardous chemicals for highly hazardous chemicals, according to [29 CFR 1910.1450](#), *Labor, Occupational Safety and Health Standards, Occupational Exposure to Hazardous Chemicals in Laboratories*, and [10 CFR 1021](#), *Energy, National Environmental Policy Act Implementing Procedures*. In addition, upstream chemical minimization processes and waste reduction techniques to minimize the quantity of chemical used in an activity will be considered.

Note: The Environmental Protection-Environmental Stewardship Services Group (ENV-ES) may be contacted for assistance in chemical substitution, pollution prevention, and waste minimization. See the Laboratory [Chemical Safety Webpage](#) for assistance with surplus chemicals. Transportation of surplus chemicals must comply with requirements in Section 3.8.

Avoid introducing excess chemicals into radiologically controlled areas, to minimize the potential to create a mixed waste. The need for legacy chemicals should be evaluated on at least an annual basis.

3.5 Management of Extremely Hazardous Substances

An extremely hazardous substance present at the Laboratory in an amount greater than or equal to its threshold planning quantity triggers emergency planning requirements as required by [40 CFR 355](#), *Protection of Environment, Emergency Planning and Notification*. Contact Security and Emergency Operations-Emergency Management Group (SEO-EM) at 667-6211 for assistance in emergency planning and release reporting requirements.

3.6 Hazard Control

Identification, evaluation, and control of hazards associated with chemical use are managed through IWM (see [P300](#), *Integrated Work Management*), and worker exposure assessments (see [P101-32](#), *Worker Exposure Assessments*).

3.7 Hazardous Chemical Storage

Storage includes all physical phases and all types of containers including, but not limited to, tanks, piping, cylinders, and containers of solid, liquid, or gaseous chemicals. Storage includes all chemicals or chemical products, including used and unused chemicals, sealed, opened, or partially filled containers, working solutions, day-use containers, and chemical “residues” left

within tanks, piping, or other containers. Storage in this document excludes storage of solid waste or hazardous waste.

Chemical storage will be limited to the quantity necessary to perform the work, and within safety basis and fire protection limits. Liquid hazardous chemicals should be stored so that a spill will not exceed 20 L (5 gallons), as required by the National Fire Protection Association (NFPA 45, *Standard on Fire Protection for Laboratories Using Chemicals* and NFPA 400, *Hazardous Materials Code*. Flammable and combustible liquids will be limited to less than the maximum quantities allowed in Tables 10.1.1(a), 10.1.1(b) and 10.1.2 of NFPA 45. Both documents are available to Laboratory workers through the [Research Library](#).

Storage of gas must follow the requirements of NFPA 55, *Compressed Gases and Cryogenic Fluids Code*, and the Compressed Gas Association and be grouped together by type (e.g., flammable, oxidizer, corrosive, toxic and highly toxic gases); segregated from potential hazards; and separated by 20 feet, or a half hour fire barrier in accordance with [P101-34](#), *Pressure Safety*.

Containers of materials that might become hazardous (i.e., peroxidizable chemicals) during prolonged storage will be dated when first opened. At the end of six months after opening, the material will be evaluated or tested for continued safe use. Material that is found to be safe or that can be stabilized to be made safe will be permitted to be re-dated and retained for an additional 6-month period, or according to manufacturer's instructions, whichever is more stringent. All other material will be safely and compliantly discarded.

To protect the environment and the safety and health of all people, hazardous waste will be disposed of properly. See [P409](#), *LANL Waste Management*, for requirements.

Note: See [Tool #4](#), *Chemical Storage Schemes*, and [Tool #8](#), *Minimum Requirements for Peroxidizables*, on the [Chemical Safety Tools webpage](#) for additional information about storage requirements for materials that might become hazardous.

Note: The NFPA standards 30, 45, and 55, and the International Building Code define Maximum Allowable Quantities (MAQs) of different categories of chemicals that may be within open and closed systems in facilities. These criteria apply to LANL facilities (via the [Prime Contract](#)). The Fire Protection-Division Office (FP-DO) can assist in defining MAQs for specific facilities where those limits are not clearly defined.

3.8 Hazardous Chemical Transportation

Transportation refers to vehicular movement of chemicals, including movement subject to Department of Transportation (DOT) regulations for public roads, site transportation on nonpublic roads, and movement of chemicals within and between buildings. Off-site and on-site hazardous chemical transportation will be done in accordance with [P151-1](#), *LANL Packaging and Transportation Program Procedure*.

Transportation of gases (DOT Hazardous Class 2 Material) must be performed by the Gas Facility in accordance with [49 CFR 100–185](#), *Transportation, Pipeline and Hazardous Materials Safety Administration, Department of Transportation*.

3.8.1 Off-Site Shipping

Any chemical that meets the definition of a hazardous material, or is suspected to be hazardous material according to [49 CFR 171.8](#), *Transportation, General Information, Regulations, and Definitions, Definitions and Abbreviations*, and can be classified as a hazardous material in

accordance with [49 CFR 173](#), *Transportation, Shippers—General Requirements for Shipments and Packagings, Parts 115–141 and Parts 403–436*, will be packaged, marked, labeled, and shipped with prepared shipping papers in accordance with [49 CFR 100–185](#), *Transportation, Pipeline and Hazardous Materials Safety Administration, Department of Transportation*, and applicable Department of Energy (DOE) Orders by DOT trained personnel. Contact Operations Support-Packaging and Transportation (OS-PT) for assistance.

Any chemical being shipped by air that meets the definition of dangerous goods according to the International Civil Aviation Organization will be packaged, marked, labeled, and shipped, with an accompanying properly prepared dangerous goods declaration, in accordance with the International Civil Aviation Organization technical instructions. Contact OS-PT for assistance.

Wastes containing chemicals that are also New Mexico special wastes or hazardous wastes have additional shipping, placarding, manifesting, and training requirements. Contact your Waste Management Coordinator (WMC).

3.8.2 On-Site Transfers of Chemicals

The on-site transfer of hazardous chemicals will follow [P151-1](#), *LANL Packaging and Transportation Program Procedure*. OS-PT has jurisdiction over the requirements for packaging, marking, and documenting on-site transfers.

On-site shipping of analytical-scale samples of hazardous chemicals (DOT small quantities) is permissible, as long as it meets Laboratory and DOT requirements for such samples. An example procedure that meets the Laboratory and DOT requirements for such on-site shipping, including training requirements, is SOP-C-DO-003, *On-Site Shipping of Analytical-Scale Samples of Hazardous or Radioactive Materials (DOT Small Quantities)*.

All hazardous chemical transport will be done in a government vehicle. Hand carrying of hazardous chemical containers will be done using secondary containment and laboratory carts for heavy or multiple containers. Exception: Gas must be transferred by Gas Facility personnel in accordance with [49 CFR 100–185](#), *Transportation, Pipeline and Hazardous Materials Safety Administration, Department of Transportation*.

3.8.3 Hazardous Chemical Spills

Workers must be authorized, provided the necessary training, understand required spill response procedures before working with a hazardous chemical, and ensure that containment and cleanup of a spill is permitted by the IWD.

- Contact SEO-EM Group at 667-6211 then the FOD or the FOD's on-call designee for the building (or the Operations Center if a facility is so equipped), in the event of a large hazardous chemical spill (i.e., a spill that cannot be safely contained by an authorized chemical worker). The FOD or on-call designee must ensure involvement of deployed support as necessary. SEO-EM provides the Incident Commander to manage cleanup of all spills outside the scope of IWDs.
- When safe to do so, authorized chemical workers will determine the extent of the area affected, and demarcate it with barricade tape or use another reliable means to restrict entry into the area.
- Properly briefed, authorized chemical workers may cleanup smaller spills, following spill control, mitigation, cleanup, and reporting procedures listed in the IWD associated with the activity in progress at the time of the spill.

- Workers and their supervisors are required to go to Occupational Medicine for a work-related injury or illness, including exposure to hazardous chemical spills, unless transported directly to Los Alamos Medical Center (LAMC). Prior to return to work, workers must go to Occupational Medicine for follow up.
- Manage all debris and waste resulting from the cleanup of a spill as though it contains the hazardous chemical, according to WMC instruction.

Note: Incidental spill guidance is available on the [Chemical Safety webpage](#) under Resources, Systems & Tools.

3.9 Chemical Safety Tools

Chemical safety tools, found on the [Chemical Safety webpage](#), contain safety and health considerations to be followed when using hazardous chemicals. These tools will be supplemented and updated as needed.

4.0 RESPONSIBILITIES

4.1 Associate Director for Nuclear and High Hazard Operations-Operations Support (OS) Division

- Overall accountability for the proper management of the Chemical Management Program.
- Chemical Management Program Manager provides overall coordination of LANL's Chemical Management Program.
- Oversees the [LANL institutional chemical inventory](#) database application.

4.2 Associate Director for Environment, Safety, Health (ADESH)

- Maintains a site-wide MSDS/SDS program (OSH-ISH).
- Maintains a site-wide hazard assessment and exposure monitoring database and Comprehensive Tracking System (CTS) (OSH-ISH).
- Consults with the Laboratory community on the development and implementation of chemical hygiene and safety policies and practices (OSH-ISH).
- Annually reviews and updates as necessary per the Hazard Communication and Chemical Hygiene Plan (OSH-ISH).
- Provides medical consultation and examinations for individuals who are exposed or potentially exposed to hazardous materials, including OSHA regulated carcinogens (OSH-OM).
- Provides consultation with respect to reproductive toxicants (OSH-OM, Deployed Services Environment, Safety, and Health [DSESH]).
- Provides assistance in researching less hazardous chemical substitutes (ENV-ES).
- Provides the LANL CHO (OSH-ISH)/Chemical Safety SME.

4.3 Security and Emergency Response Division

- Provides specialized expertise and equipment in response to hazardous materials emergencies at LANL and within the surrounding communities.

4.4 Division Leaders

- Ensure that Division activities involving chemicals are conducted within the safety envelope and the scope of work identified in Division and Facility documents.
- Ensure that adequate resources are provided to Responsible Line Managers (RLMs) to identify, evaluate, and control chemical hazards associated with existing and proposed work performed within their Divisions so that chemical management can be integrated into day-to-day operations.
- Ensure that a chemical safety plan is written for their Division, or provide written documentation that references Attachment A, *LANL Hazard Communication and Chemical Hygiene Plan*, as their Hazard Communication and Chemical Hygiene Plan. Ensure that the written program governs all hazardous chemical work in the group or facility (HAZCOM or CHP), and is referenced in IWDs and other relevant documents.
- Ensure that violations of codes and safety standards identified by reviews or inspections are corrected or that compensatory measures or action plans are developed.
- In CHP areas only, assign a Division Chemical Hygiene Officer (CHO) Group CHOs may be assigned as necessary. Ensure that CHOs have the experience and training as noted in Attachment A, *LANL Hazard Communication and Chemical Hygiene Plan*, Section 1.9.

4.5 Program Directors, Program Managers, and Project Leaders

- Negotiate with RLMs to provide adequate resources for the requirements in this document.

4.6 Responsible Line Managers (RLMs) in Coordination with the Person in Charge (PIC)

- Ensure that primary hazardous chemical containers in their organization are barcoded, and entered and tracked in the [LANL institutional chemical inventory](#) database.
- Ensure that workers keep the [LANL institutional chemical inventory](#) database current and accurate for their chemicals.
- Ensure that a physical chemical inventory of primary hazardous chemical containers is performed in their organization annually and reconciled in the [LANL institutional chemical inventory](#) database.
- Ensure that for any new activity (i.e., an activity that requires a new IWD) a hazard review is completed for hazards that can be encountered or generated during the course of the work. The evaluation must include the hazards associated with the properties and the reactivity of the materials used, any intermediate and end products that can be formed, hazards associated with the operation of the equipment at the operating conditions, and hazards associated with the proposed reactions.
- Ensure that all required training is completed by workers before the work is authorized.
- Integrate chemical life cycle management (purchase through disposition) into resource planning, funding, prioritizing, planning, scheduling, and implementation of work conducted under their supervision.
- Specify the written program governing all chemical work in the group (HAZCOM or CHP) and reference in IWDs and other safety documents.
- Ensure that IWDs are completed and approved for work with Occupational Safety and Health Administration (OSHA) carcinogens and LANL Category 1 (LANL Cat 1) chemicals in CHP areas. See the [Chemical Safety webpage](#).
- Provide job-specific briefings and/or information on the chemical hazards and safety precautions related to each authorized chemical worker's assigned work, before beginning

work. **Note:** Never assume that a worker has knowledge of the chemical, its hazards, and the controls. Job-specific information must include:

- chemical inventory, relevant to the employee's assigned work, specific chemicals used, and the location of activities where hazardous chemicals are present;
- specific methods and observations, if applicable, that are used to detect the presence or release of a hazardous chemical;
- the location of the associated MSDS/SDS(s), and how to obtain an MSDS/SDS. For hazardous chemicals used, the following information from each MSDS/SDS must be discussed within a job-specific briefing, or as part of a pre-job briefing:
 - hazards identification;
 - fire protection/incompatibilities;
 - accidental release measures, handling and storage;
 - exposure controls/personal protection;
 - physical and chemical properties; and
 - chemical stability and reactivity information, particularly instability conditions and incompatible chemicals.
- the applicable details of the written Hazard Communication and Chemical Hygiene Plan (see Attachment A, *LANL Hazard Communication and Chemical Hygiene Plan*) and any facility-specific HAZCOM Plan or written CHP;
- secondary container labeling requirements (see Attachment A, Section 1.5.);
- specific building signs and postings for hazardous chemicals;
- Building Emergency Plans;
- locations of eyewashes and safety showers;
- spill response requirements, including mitigation, cleanup, and reporting requirements, and
- specific chemical storage requirements.
- Monitor through Management Observation and Verification (MOV) or other means that equipment and chemical containers are labeled with the name of the contents and that work areas are posted with signs or placards that depict the chemical hazards in the area.
- Monitor through MOV or other means that MSDS/SDSs are accessible to all workers who may have potential exposure to chemicals.
- When authorizing IWDs, ensure that elimination of hazardous chemicals, or substitution of a less hazardous material when practical, has been addressed by the preparer.
- When authorizing IWDs, ensure identification of operations where the following are used: LANL Cat 1 chemicals (CHP), known and suspect human carcinogens, reproductive toxicants, and highly acute toxicity/highly chronic toxicity chemicals (HAZCOM). Ensure that deployed personnel are notified to conduct worker exposure assessments, and that proper controls are established. See the [Chemical Safety Webpage](#).
- Ensure that workers adhere to the requirements in this document.
- Authorize workers to perform chemical work and purchase chemicals.
- Investigate accidents and near misses involving chemicals, and ensure that corrective actions identified from chemical accident investigations and inspections are implemented.

- Ensure that all chemical hazards are removed when vacating space. When an area is being vacated, all chemicals will be moved, transferred to new ownership, or properly disposed. The work area will be cleaned and restored to its original condition or a condition acceptable to the next occupant before transfer of ownership.
- Ensure that resource planning, funding, prioritizing, scheduling, and implementation of chemical work conducted under their supervision addresses the necessary environmental, safety, and health evaluation and controls.
- Inform visitors about the Laboratory's chemical safety policies and procedures and ensure that they are aware of the existence and availability of chemical hazard information and resources.
- Notify DSESH deployed staff of new or modified work activities that require exposure assessments.
- Negotiate with Program Directors, Program Managers, and Project Leaders to provide adequate resources to meet the requirements in this document.
- Ensure that hazards of chemicals and chemical reactions are evaluated before laboratory activities or chemical reactions are begun. See Attachment A, Section 1.11.3.

4.7 Facility Operations Directors (FODs)

- Ensure that new work involving hazardous chemicals is reviewed by appropriate Subject Matter Experts (SMEs).
- Communicate Safety Basis levels to RLMs and maximum chemical quantities allowed to tenants.
- Maintain a proactive preventive maintenance program to ensure that laboratory engineering controls and emergency equipment (e.g., ventilation systems, detectors, shutoff devices, and emergency eyewash and safety showers) are in proper operating condition.
- Inform on-site construction/equipment subcontractors of the presence and identity of hazardous chemicals in their immediate work areas.
- Notify building occupants of testing, demolition, construction, and renovation activities and their related chemical hazards before initiation.
- Work with the Subcontract Technical Representative (STR) to ensure that subcontractors comply with Exhibit F and other subcontractor requirements.
- Working with Acquisition Services Management-Project Management and the STR, ensure that subcontractors provide an inventory and the MSDS/SDS for hazardous chemicals brought on-site to the Environment, Safety, Health (ESH) manager or designee, SEO Division personnel.
- Ensure that chemical incidents are reported and investigated and that corrective action is taken to prevent recurrence.
- Provide facility-specific information so tenants are aware of bounding chemical thresholds.
- Ensure that facilities maintain quantities (by weight) of highly hazardous chemicals below threshold quantities (see [Process Safety Management \(PSM\) List \[use Firefox\]](#)).

4.8 Deployed Services Environment, Safety, and Health (DSESH) Deployed Personnel

- Assist line managers in performing and documenting hazard assessments and risks for existing and planned operations, including laboratory moves and decommissioning.
- Provide guidance for establishing administrative, work practice, PPE, and engineering controls. Assist in determining labeling requirements for equipment, piping, containers, and facilities.
- Perform and document worker exposure assessments and exposure monitoring to determine employee exposures to hazardous materials and to evaluate the adequacy of controls in accordance with [P101-32](#), *Worker Exposure Assessments*.

4.9 Authorized Chemical Owners

- Ensure that all their primary hazardous chemical containers are barcoded and entered into the [LANL institutional chemical inventory](#) database.
- Ensure that the [LANL institutional chemical inventory](#) database is updated when one of their primary hazardous chemical containers is transferred to a new owner and/or a new location; or is disposed.
- Complete the training requirements for an authorized chemical worker. Individuals with appointments of less than one year, visitors, undergraduate and high school students will not be chemical owners. The immediate supervisor for visitors, undergraduates and high school students will be the chemical owner.
- Post work areas with signs or placards that depict the current chemical hazards in the area. Labels, signs, and placards will be consistent with the group's written plan (HAZCOM or CHP).
- Label chemical containers with required information. See Attachment A, *LANL Hazard Communication and Chemical Hygiene Plan*, Section 1.5.
- Working with the WMC, establish whether the chemical or its end product will require disposal as a hazardous waste, New Mexico Special Waste, or has other disposal requirements.
- To the greatest extent possible, purchase chemicals on an as-needed basis and limit the purchase quantity to an amount that will be used in six months or less, to minimize inventory and chemicals in storage. If possible purchase reagents in polyethylene bottles or plastic-coated glass bottles to minimize breakage, corrosion, and rust. Ensure that the amount purchased does not exceed safety basis or flammable or combustible liquid storage limits.
- Be aware of chemical incompatibilities and store chemicals accordingly.

4.10 Authorized Chemical Workers

- Work safely by observing safety standards, guidelines, and procedures.
- Implement all controls required by work authorization documentation.
- Stop work that may pose an imminent danger to workers.
- Work with DSESH deployed personnel in workplace monitoring and sample collection.
- Report unsafe conditions, chemical incidents, or injuries to line managers immediately.
- Call 911 immediately if a chemical-related illness or injury occurs.
- Be familiar with and follow chemical and emergency procedures as directed in work authorization documentation.

- Label chemical containers with required information. See Attachment A, *LANL Hazard Communication and Chemical Hygiene Plan*, Section 1.5.
- Complete required training and ensure receipt and understanding of job-specific information on the chemical hazards and safety precautions related to assigned work, before beginning work. (See Section 6.0.)

5.0 IMPLEMENTATION

The requirements in this document are effective on the issue date.

6.0 TRAINING

Job-specific and site-specific information provided will be documented in the activity specific IWD. Training and briefings will use a graded approach so that each increasing level of risk associated with the safe use of chemicals is addressed. Job-specific information will include other topics such as MSDS/SDSs, labeling, emergency equipment, chemical spill control/mitigation/cleanup, process chemistry, process control, chemical storage, hazardous material regulations for chemical packaging, waste identification and disposal, pollution prevention, and waste minimization. Training and briefings will include methods that will be used to detect the presence or release of chemicals and measures workers can implement to protect themselves from chemical hazards.

RLMs will work with FOD personnel to ensure that workers are informed of the hazards when non-routine tasks are performed in the work area by maintenance or subcontract workers, and work with FOD personnel to inform subcontractors and visitors of the hazards in the building.

Required training for chemical workers, along with the regulatory reference is as follows:

- [Course #21464](#) or equivalent, which includes how to detect hazards, how to interpret an MSDS/SDS, and labeling requirements, in accordance with [29 CFR 1910.1200](#), *Labor, Occupational Safety and Health Standards, Hazard Communication* (h) (2-3) and [29 CFR 1910.1450](#), *Labor, Occupational Safety and Health Standards, Occupational Exposure to Hazardous Chemicals in Laboratories* (f) (3-4).
- Facility-specific hazard information, in accordance with [29 CFR 1910.1450](#) (f).
- Awareness briefing on operation and building chemical inventory, how to obtain an MSDS/SDS, secondary container labeling requirements, building signs and postings, building emergency plans, written program documents, location of eyewashes and safety showers, spill response, and chemical storage requirements in accordance with [29 CFR 1910.1200](#) (h) (1-3) and [29 CFR 1910.1450](#) (f).
- Level 1 On-the-Job Training (Level 1 formality of training requires trainee to read, observe/walk through, and self-assess/sign the communication document) or pre-job briefing on specific chemical hazards, procedures, and PPE and review the hazard analysis documentation (for moderate and high-level hazard IWDs) authorized by his/her RLM/PIC for the job assignment every time a worker receives a new job assignment or a new hazard is introduced into the current assignment in accordance with [29 CFR 1926.21](#), *Labor, Safety and Health Regulations for Construction, Safety Training and Education* (b), [29 CFR 1910.1450](#) (f) (3), and [29 CFR 1910.1003](#), *Labor, Occupational Safety and Health Standards, 13 Carcinogens*.
- If a chemical worker will be generating waste, [Course #23263](#) *Waste Generation Overview Live*, and [Course #21464](#), *Waste Generation Overview Refresher*, every three years, in accordance with [40 CFR 262](#), *Protection of Environment, Standards Applicable to Generators of Hazardous Waste*.

- If a chemical worker will be using gas, [Course #769](#), *Pressure Safety Orientation*, and [Course #9518](#), *Gas Cylinder Safety*.

7.0 EXCEPTION OR VARIANCE

To obtain an exception or variance to this document, see the following instructions:

- Managers may request an exception or variance from the IA through the RM;
- At the IA's request, the RM will provide a recommendation or supporting information; and
- The IA or designee will provide the requester with a written response and copy the RM.

The requesting organization must maintain the official copy of record of the approved correspondence granting the exception or variance.

8.0 DOCUMENTS AND RECORDS

8.1 Office of Record

The Policy Office is the Laboratory Office of Record for this Institutional Document and maintains the administrative record.

9.0 DEFINITIONS AND ACRONYMS

9.1 Definitions

See LANL [Definition of Terms](#).

Accident—Any event, including, but not limited to, equipment failure, rupture of containers, or failure of engineering controls, that potentially creates a hazard through uncontrolled release of a hazardous chemical.

Authorized Chemical Worker—A worker (Los Alamos National Security, Limited Liability Company [LANS, LLC or LANS], contractor, subcontractor, student) whose RLM and PIC have determined that he/she has the training, skill, knowledge, and abilities to safely perform the chemical work to which he/she is assigned.

Carcinogen—Those chemicals that have been identified as substances that can lead to cancer by the agencies listed below and that have a concentration equal to or greater than 0.1% (1,000 parts per million).

- American Conference of Governmental Industrial Hygienists (ACGIH), either Category A1 (confirmed human carcinogen) or Category A2 (suspected human carcinogen).
- Compounds that the International Agency for Research on Cancer (IARC) has confirmed or identified as possible human carcinogens and those chemicals that the National Toxicology Program (NTP) has identified as known to be carcinogenic or chemicals that may reasonably be expected to be carcinogenic.

Chemical—Any element, compound, or mixture of elements and compounds. A substance that (1) possesses potentially hazardous properties (including, but not limited to, flammability, toxicity, corrosivity, reactivity, and instability); or (2) is included on any Federal, state, or local agency regulatory list; or (3) is associated with a MSDS/SDS. For the purposes of this document, this definition also applies to chemical products.

Chemical Hygiene Officer (CHO)—(CHP areas only). An employee, appointed by the Division Leader, who is qualified by training or experience to provide technical guidance in the development and implementation of the provisions of the LANL Hazard Communication and Chemical Hygiene Plan (see Attachment A, *LANL Hazard Communication and Chemical Hygiene Plan*).

Chemical Hygiene Plan (CHP)—A written program that consists of the Laboratory's CHP (see Attachment A, *LANL Hazard Communication and Chemical Hygiene Plan*) and activity-specific documentation, such as IWDs, which set forth guidance to protect workers from the dangers presented by hazardous chemicals used in a particular laboratory work area.

Chemical Inventory—A written or electronic record of chemicals.

Chemical Owner—An authorized chemical worker to whom a container that contains a chemical on the chemical inventory is assigned.

Chemical Release—Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing of a chemical into the environment.

Chemical Worker—A worker who works with hazardous chemicals.

Corrosive—A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact. A substance or a mixture that by chemical action will materially damage, or even destroy, metals is termed "corrosive to metal." See [29 CFR 1910.1200](#), *Labor, Occupational Safety and Health Standards, Hazard Communication*, Appendix A.

Designated Area—An area that will be used for work with LANL Cat 1 chemicals and to which access is administratively restricted to authorized personnel.

Emergency Response—A response made by workers from outside the immediate release area or by other designated emergency responders (i.e., SEO-EM, the Los Alamos County Fire Department and the Hazardous Materials Response Group) to an occurrence that results, or is likely to result, in an uncontrolled release of a hazardous substance.

Environment, Safety, and Health (ESH) Qualified Person—An employee who has academic credentials or work experience in a relevant discipline, such as industrial hygiene or industrial safety, who has experience or training in conducting workplace exposure monitoring and in determining the hazards and consequences of exposure to chemicals.

Extremely Hazardous Substance—Any of 366 (+ or -) chemicals or hazardous substances identified by EPA on the basis of hazard or toxicity and listed under EPCRA. The list is periodically revised. [See 40 CFR Part 355.](#)

Explosive—A chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.

Flammable Liquid Storage Cabinet—A cabinet for the storage of flammable and combustible liquids constructed in accordance with Section 9.5 of NFPA 30, *Flammable and Combustible Liquids Code*.

Hazard Communication (HAZCOM) Plan—A written program developed and implemented by the Laboratory or subcontractor, which consists of requirements listed in Attachment A, *LANL*

Hazard Communication and Chemical Hygiene Plan, and activity-specific documentation such as IWDs, or operating procedures that set forth requirements to protect workers from the dangers presented by hazardous chemicals used in a specific construction or production work area.

Hazardous Chemical—Any chemical that presents a physical hazard or a health hazard (health hazard defined below). If a hazardous chemical comprises 1% (0.1% for carcinogens) or greater of a compound or mixture, the compound or mixture will be treated as a hazardous chemical. See [29 CFR 1910.1200](#), *Labor, Occupational Safety and Health Standards, Hazard Communication* (g) (2) (i) (c) (1).

Hazardous Waste—A solid waste that is not excluded from regulation as a hazardous waste and is a listed hazardous waste or exhibits any of the hazardous characteristics: ignitability, corrosivity, reactivity, or toxicity.

Health Hazard—A chemical that is classified as posing one of the following hazardous effects: acute toxicity (any route of exposure); skin corrosion or irritation; serious eye damage or eye irritation; respiratory or skin sensitization; germ cell mutagenicity; carcinogenicity; reproductive toxicity; specific target organ toxicity (single or repeated exposure); or aspiration hazard. The criteria for determining whether a chemical is classified as a health hazard are detailed in [29 CFR 1910.1200](#), Appendix A, *Health Hazard Criteria* having an NFPA rating of 2, 3, or 4 under fire conditions.

High Acute Toxicity—Substances that may be fatal or cause clinical damage to target organs as a result of a single exposure or exposures of short duration. High-acute-toxicity chemicals meet the following criteria: a Permissible Exposure Limit (PEL) or Threshold Limit Value (TLV) of less than 0.1 ppm Time-Weighted Average (TWA) or ceiling limit of less than 1.0 ppm.

High Chronic Toxicity—Refers to substances that produce adverse effects in humans who suffer repeated exposures to those substances over a relatively prolonged period.

Immediate Use—The hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.

Irritant—A chemical, which is not corrosive, but which causes a reversible inflammatory effect on living tissue by chemical action at the site of contact.

Laboratory Scale—Work with substances in which the containers used for reactions, transfers, and other handling of substances are designed to be easily and safely manipulated by one person.

Laboratory Produced Material—A chemical or chemical mixture that is manufactured or synthesized by an operating group at the Laboratory.

LANL Category 1 Chemical (LANL Cat 1)—A Laboratory designation identifying specific chemicals that are regulated at the Laboratory and that require the chemical worker to follow special provisions. LANL Cat 1 chemicals are known human carcinogens, chemicals of high acute or high chronic toxicity, and/or known human reproductive toxins. Lists are available at the [Chemical Safety Webpage](#). **Note:** The Globally Harmonized System (GHS) used in the update for [29 CFR 1910.1200](#) uses the term hazard category: the division of criteria within each hazard class. GHS hazard category 1 has specific criteria for each hazard class.

Legacy Chemical—A stable, non-time-sensitive stock chemical or chemical mixture being held for evaluation for future use. Note: Per EPA [40 CFR 261.2(a) (2) and 261.33], unused

commercial chemical products do not become solid wastes (i.e., they remain commercial chemical products) until a determination is made that the material will be discarded. Commercial chemical products, even those whose shelf life has been exceeded, that ultimately will be used for their intended purpose or that will be reclaimed are not subject to the Resource Conservation and Recovery Act (RCRA). In 2006 [71 FR 29719; May 23, 2006], EPA noted the following for laboratory chemicals "when accumulated for long periods of time, for example, such unused reagents may be considered solid or hazardous wastes if it can be determined that they are no longer usable for their intended purpose."

Material Safety Data Sheet/Safety Data Sheet (MSDS/SDS)—Written, printed, or electronically transmitted information on the hazards and properties of a particular material, including instructions for its safe use.

Mutagen—A chemical that induces DNA damage and genetic alterations that range from changes in one or a few DNA base pairs to gross changes in chromosome structure.

Occupational Exposure Limit (OEL)—The upper limit on the acceptable concentration of a hazardous substance in workplace air for a particular material or class of materials. LANL OELs include OSHA PELs (8-hour time weighted average), and Ceiling Values; ACGIH Threshold Limits Values (Threshold Limit Value-Time-Weighted Average [TLV-TWA], Threshold Limit Value-Short-Term Exposure Limit [TLV-STEL], and Threshold Limit Value-Ceiling [TLV-C]), or other appropriate OELs.

Occupational Safety and Health Administration Permissible Exposure Limit—regulatory limits on the amount or concentration of a substance in the air. They may also contain a skin designation. OSHA PELs are based on an 8-hour TWA exposure.

Physical Hazard—A chemical that is classified as posing one of the following hazardous effects: explosive; flammable (gases, aerosols, liquids, or solids); oxidizer (liquid, solid or gas); self-reactive; pyrophoric (liquid or solid); self-heating; organic peroxide; corrosive to metal; gas under pressure; or in contact with water emits flammable gas. See [29 CFR 1910.1200](#), Appendix B, *Physical Hazard Criteria*.

Production—An operation in which large quantities of a limited list of hazardous chemicals are used on a routine basis for synthesis, product manufacture, product preparation, dip tank or painting, solvent cleaning, photographic development, mechanical shops, construction, or maintenance activities.

Regulated Area—An area where entry and exit is restricted and controlled.

Reproductive Toxicants (known human)—Substances that are known to have lethal effects on the fertilized egg, developing embryo, or fetus, or to cause teratogenesis (malformation) in the fetus.

Secondary Container—Any chemical container other than an original container that will be used to store decanted chemicals or mixed chemicals beyond a single workday.

Note: This definition should not be confused with secondary containment for chemical release prevention and control.

Sensitizer—A chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.

Short-Term Exposure Limit (STEL)—A 15-minute time weighted average that should not be exceeded at any time during a work day.

Solid Waste—As defined by regulations promulgated under RCRA and the New Mexico Hazardous Waste Act, unless otherwise excluded, is any discarded material, either abandoned, recycled, or inherently waste-like, including liquids, solids, semisolids, and contained gases.

Spill—An unintentional release of a hazardous chemical, liquid, or solid that creates a hazard because of quantity, physical properties, or toxicity.

Subcontractor—A party entering into a contract with LANS, LLC.

Threshold Limit Value (TLV)—An ACGIH limit that is usually expressed as an 8-hour TWA, meaning a time-weighted airborne contaminant concentration for a normal 8-hour workday and a 40-hour work week, to which nearly all workers may be repeatedly exposed, day after day, over a working lifetime, without adverse effect.

Time Sensitive Chemicals—Those chemicals that, when stored for prolonged periods or under improper storage conditions, can develop hazards that were not present in the original formulation. There are four general categories of time-sensitive chemicals loosely based on those unsafe properties that can develop. They are (1) peroxide formers, (2) peroxide formers that can undergo hazardous polymerization, (3) materials that become shock or friction sensitive upon the evaporation of a stabilizer, and (4) materials that generate significant additional hazards by undergoing slow chemical reactions. It should be noted that time-sensitive chemicals can be pure reagents or they can be commercial mixtures formulated as cleaners, adhesives, and other products. **Note:** This definition does not include chemicals that have expiration dates for nonsafety reasons, e.g., inorganic standard solutions that expire 1 year from purchase.

Toxicant—A material that has the ability to injure biological tissue.

Toxicity—A relative property of a chemical agent that refers to a harmful effect on some biologic mechanism and the condition under which this effect occurs.

9.2 Acronyms

See LANL [Acronym Master List](#).

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| ACGIH | American Conference of Governmental Industrial Hygienists |
| ADESH | Associate Director for Environment, Safety, Health |
| ADNHHO | Associate Director for Nuclear and High Hazard Operations |
| ANSI | American National Standards Institute |
| ASM | Acquisition Services Management |
| CFR | Code of Federal Regulations |
| CGA | Compressed Gas Association |
| CHO | Chemical Hygiene Officer |
| CHP | Chemical Hygiene Plan |
| CTS | Comprehensive Tracking System |
| D&D | Decontaminate and Decommission |
| DEAR | Department of Energy Acquisition Regulation |
| DOE | Department of Energy |

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|------------------------|--|
| DOT | Department of Transportation |
| DPR | Designated Procurement Representative |
| DSESH | Deployed Services Environment, Safety, and Health |
| ENV-ES | Environmental Protection-Environmental Stewardship |
| EO-EPP | Emergency Operations-Emergency Planning and Preparedness |
| ESH | Environment, Safety, Health |
| FOD | Facility Operations Director |
| FP-DO | Fire Protection-Division Office |
| GHS | Globally Harmonized System |
| HAZCOM | Hazard Communication |
| HDBK | Handbook |
| HEPA | High-Efficiency Particulate Air |
| IA | Issuing Authority |
| IARC | International Agency for Research on Cancer |
| ISEA | International Safety Equipment Association |
| IWD | Integrated Work Document |
| IWM | Integrated Work Management |
| LANL or the Laboratory | Los Alamos National Laboratory |
| LAMC | Los Alamos Medical Center |
| LANS, LLC or LANS | Los Alamos National Security, Limited Liability Company |
| MAQ | Maximum Allowable Quantity |
| MOV | Management Observation and Verification |
| MSDS/SDS | Material Safety Data Sheet |
| NFPA | National Fire Protection Association |
| NTP | National Toxicology Program |
| OEL | Occupational Exposure Limit |
| OM | Occupational Medicine |
| OS | Operations Support (Division) |
| OS-DO | Operations Support-Division Office |
| OSHA | Occupational Safety and Health Administration |
| OSH-ISH | Occupational Safety and Health-Industrial Safety and Hygiene |
| OSH-OM | Occupational Safety and Health-Occupational Medicine |
| OS-PT | Operations Support-Packaging and Transportation |
| OST | Operations Support Tool |
| PEL | Permissible Exposure Limit |
| PFITS | Performance Feedback and Improvement Tracking System |
| PIC | Person in Charge |
| PPE | Personal Protective Equipment |
| R&D | Research and Development |
| RCRA | Resource Conservation and Recovery Act |
| RLM | Responsible Line Manager |

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| RM | Responsible Manager |
| RO | Responsible Office |
| SBP | Safety Basis Procedure |
| SME | Subject Matter Expert |
| STEL | Short-Term Exposure Limit |
| STR | Subcontract Technical Representative |
| TA | Technical Area |
| TLV | Threshold Limit Value |
| TLV-C | Threshold Limit Value-Ceiling |
| TLV-STEL | Threshold Limit Value-Short-Term Exposure Limit |
| TLV-TWA | Threshold Limit Value-Time-Weighted Average |
| TWA | Time-Weighted Average |
| USI | Unreviewed Safety Issue |
| USQ | Unreviewed Safety Question |
| WMC | Waste Management Coordinator |

10.0 HISTORY

| Revision History | | |
|------------------|-----------------|---|
| 04/22/08 | P101-14, Rev. 0 | Renumbered document, ISD 101-14, <i>Chemical Management</i> . |
| 04/15/09 | P101-14, Rev. 1 | Reformatted to meet the requirements as set forth in P311-1 , <i>Creating, Revising, and Cancelling Institutional Documents</i> . Updated to address needs identified by the Chemical Management Improvement Project, driven by a Black Belt Project Execution Plan, and captured in Laboratory Issues Management Tracking System (LIMITS). The need to provide a more user friendly chemical inventory process, and tools to Designated Procurement Representatives (DPRs) and chemical workers is addressed. As part of the provision of a more user friendly chemical inventory process, drivers based on compliance requirements for chemical management were identified. Divisions responsible for these compliance requirements provided additional requirements for chemical inventory management and tracking, which are now reflected in a Chemlog functional requirements document. The set of requirements is provided in Section 3.3 of the document. There are no new requirements in this document, but the document has been simplified and updated, including combining the Hazard Communication (HAZCOM) plan and the Chemical Hygiene Plan (CHP) into one attachment. |
| 08/11/10 | P101-14, Rev. 2 | Issued as a PROVISIONAL document until October 11, 2010. Added a requirement to ensure compliance with 29 Code of Federal Regulations (CFR) 1910.119 , <i>Labor, Occupational Safety and Health Standards, Process Safety Management of Highly Hazardous Chemicals (OSHA PSM Rule)</i> , Appendix A. by requiring Facility Operations Directors (FODs) to ensure that quantities are kept below threshold |

| Revision History | | |
|------------------|-----------------|---|
| | | <p>quantities.</p> <p>Updated responsibilities for chemical inventory to reflect ownership by Emergency Operations-Emergency Planning and Preparedness (EO-EPP).</p> <p>Clarified training requirements for “authorized chemical workers” and explained the training requirements for a worker who performs chemical spill/control/mitigation/cleanup.</p> <p>Added a requirement that work involving hazardous chemicals is reviewed using a new activity review process or equivalent process.</p> <p>Clarified the requirement for Chemical Hygiene Officers (CHOs), added the requirement that CHOs are assigned by the Division Leader, and added training and responsibilities for CHOs.</p> <p>Added specific requirements for job-specific briefings and/or information.</p> <p>Added the requirement for evaluation of chemicals and chemical reactions before start of laboratory activities.</p> |
| 10/11/10 | P101-14, Rev. 2 | Document became effective and is no longer PROVISIONAL. |
| 11/30/10 | P101-14, Rev. 3 | <p>Updated links to ensure correct names; removed irrelevant, incorrect, or duplicative links.</p> <p>Section 3.2: Elimination of a requirement for DPRs and clarification of chemical owner responsibility for procurement.</p> <p>Reducing requirement for justification of keeping chemical containers from six months to five years.</p> |
| 11/30/11 | P101-14, Rev. 4 | <p>Updated items in Section 3.2 to consider before a chemical is purchased and provided link to list of chemicals with no disposal path.</p> <p>Changed Form 2134, <i>Medical Surveillance and Medical Certification Program Enrollment Form</i>, to Form 1793, <i>Job-Demands Evaluation</i>.</p> <p>Changed Chemical Management Webpage to Chemical Management Webpage.</p> <p>Updated Section 5.0 to reflect that this Quick Change does not require an Unreviewed Safety Question/Unreviewed Safety Issue (USQ/USI) review.</p> <p>Updated links, titles, and acronyms.</p> |
| 09/27/12 | P101-14, Rev. 5 | <p>Section 5.0: Updated to reflect effective date of December 17, 2012 for applicable nuclear, high- and moderate-hazard facilities and accelerators.</p> <p>Removed the requirement for the approval by the Person in Charge (PIC) for the applicable Integrated Work Document (IWD).</p> <p>Updated links, titles, and acronyms.</p> |
| 01/08/15 | P101-14, Rev. 6 | <p>This document cancels PD100, <i>Occupational Safety and Health</i>.</p> <p>Performed three-year review in accordance with PD311,</p> |

| Revision History | | |
|------------------|-----------------|---|
| | | <p><i>Requirements System and Hierarchy.</i></p> <p>Changed the Issuing Authority (IA) from Associate Director for Environment, Safety, and Health (ADESH) to Associate Director for Nuclear and High Hazard Operations (ADNHHO); changed the Responsible Manager (RM) from Industrial Hygiene and Safety Division Leader to Operations Support (OS) Division Leader; and changed the Responsible Office (RO) from Industrial Hygiene and Safety Division to Operations Support-Division Office (OS-DO).</p> <p>Addressed revised Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, now aligned with the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals.</p> <p>Clarified requirements for Chemical Hygiene Officers.</p> <p>Reinserted requirements for chemical inventory.</p> <p>Added new requirements in 29 CFR 1910.1200, <i>Labor, Occupational Safety and Health Standards, Hazard Communication</i>.</p> <p>Added requirements for handling of sharps.</p> <p>Clarified and streamlined other chemical management requirements.</p> <p>Revised language in Section 5.0 to reflect Unreviewed Safety Question/Unreviewed Safety Issue (USQ/USI) process and implementation dates for affected facilities.</p> <p>Updated acronyms, links, and organization names.</p> <p>Made other edits and clarifications to resolve vague or inappropriate wording.</p> |
| 08/06/15 | P101-14, Rev. 7 | <p>Performed three-year review in accordance with PD311, <i>Requirements System and Hierarchy</i>.</p> <p>Throughout document: Changed "Chemlog@lanl.gov" to "ChemDB@lanl.gov."</p> <p>Section 1.0: Changed the name from "Hazardous Materials Lifecycle Management Program" to "Chemical Lifecycle Management Program."</p> <p>Section 3.3: Changed how to barcode, enter, and track to the "Support and Resources" tab in the LANL institutional chemical inventory database application.</p> <p>Section 5.0: Updated this section to read, "The requirements in this document are effective on the issue date."</p> <p>Section 6.0: Updated broken link to UTrain course # 25418.</p> <p>Attachment A, Section 1.3: Removed sentence referencing Tools #9.</p> <p>Updated hyperlinks and references.</p> |

11.0 REFERENCES

Prime Contract:

- Clause I-121, Department of Energy Acquisition Regulation (DEAR) 970.5203-1, *Management Controls* (Dec. 2000)
- Clause I-122, DEAR 970.5203-3, *Contractor's Organization* (Dec. 2000) (Deviation)
- Clause I-123, DEAR 970.5204-2, *Laws, Regulations, and DOE Directives* (Dec. 2000) (Deviation)
- DEAR 970.5223-1, *Integration of Environment, Safety and Health into Work Planning and Execution*
- DEAR 970.5204-2, *Laws, Regulations, and DOE Directives; Appendix B 4.2, Environment, Safety, and Health*
- [29 CFR 1910.1200](#), *Labor, Occupational Safety and Health Standards, Hazard Communication*
- [DOE O 151.1C](#), *Comprehensive Emergency Management System*

11.1 Other References

- [29 CFR 1910.1450](#), *Labor, Occupational Safety and Health Standards, Occupational Exposure to Hazardous Chemicals in Laboratories*
- [29 CFR 1926.59](#), *Labor, Safety and Health Regulations for Construction, Hazard Communication*
- [P101-29](#), *Working with Nanotechnology Materials and Processes*
- [P101-15](#), *Biological Safety*
- [P101-8](#), *Explosives Safety*
- [P121](#), *Radiation Protection*
- [29 CFR 1910.119](#), *Labor, Occupational Safety and Health Standards, Process Safety Management of Highly Hazardous Chemicals (OSHA PSM Rule), Appendix A*
- [MSDS/SDS electronic binder](#)
- [Designated Procurement Representative \(DPR\)](#)
- [LANL institutional chemical inventory](#)
- [10 CFR 1021](#), *Energy, National Environmental Policy Act Implementing Procedures*
- [40 CFR 355](#), *Protection of Environment, Emergency Planning and Notification*
- NFPA 704, *Standard System for the Identification of the Hazards of Materials for Emergency Response*
- [P300](#), *Integrated Work Management*
- [P101-32](#), *Worker Exposure Assessments*
- NFPA 45, *Standard on Fire Protection for Laboratories Using Chemicals*
- [Research Library](#)
- [P101-34](#), *Pressure Safety*
- NFPA 55, *Compressed Gases and Cryogenic Fluids Code*

- [P409](#), *LANL Waste Management*
- [P151-1](#), *LANL Packaging and Transportation Program Procedure*
- [49 CFR 100–185](#), *Transportation, Pipeline and Hazardous Materials Safety Administration, Department of Transportation*
- [49 CFR 171.8](#), *Transportation, General Information, Regulations, and Definitions, Definitions and Abbreviations*
- [49 CFR 173](#), *Transportation, Shippers—General Requirements for Shipments and Packagings, Parts 115–141 and Parts 403–436*
- *SOP-C-DO-003, On-Site Shipping of Analytical-Scale Samples of Hazardous or Radioactive Materials (DOT Small Quantities)*
- [SBP 112-3](#), *Unreviewed Safety Question (USQ) Process*
- [29 CFR 1926.21](#), *Labor, Safety and Health Regulations for Construction, Safety Training and Education*
- [29 CFR 1910.1003](#), *Labor, Occupational Safety and Health Standards, 13 Carcinogens*
- [40 CFR 262](#), *Protection of Environment, Standards Applicable to Generators of Hazardous Waste*
- *NFPA 30, Flammable and Combustible Liquids Code*
- [P311-1](#), *Creating, Revising, and Cancelling Institutional Documents*
- [PD311](#), *Requirements System and Hierarchy*
- [P101-21](#), *Chronic Beryllium Disease Prevention Program*
- [Laboratory Industrial Hygiene and Safety Manual](#)
- [P101-16](#), *Local Exhaust Ventilation and HEPA Filtration Systems*
- *American National Standards Institute/International Safety Equipment Association (ANSI/ISEA) z358.1-2009, American National Standard for Emergency Eyewash and Shower Equipment*
- [LANL Operations and Maintenance Manual, Criterion 407: Emergency Eyewash and Shower Equipment](#)
- [LANL Category 1 Chemicals](#) list
- [P101-19](#), *Safety Signs, Labels, and Tags*
- [P101-6](#), *Personal Protective Equipment*
- [PD1200](#), *Emergency Management*
- [P102](#), *Occupational Medicine*
- [10 CFR 851](#), *Energy, Worker Safety and Health Program*
- [Montreal Protocol on Substances that Deplete the Ozone Layer](#)
- [Public Law 101-549](#), *Clean Air Act Amendments of 1990*
- [29 CFR 1910 Subpart Z](#), *Labor, Occupational Safety and Health Standards, Toxic and Hazardous Substances*
- [29 CFR 1910.1020](#), *Labor, Occupational Safety and Health Standards, Access to Employee Exposure and Medical Records*

- [40 CFR 61](#), *Protection of Environment, National Emission Standards for Hazardous Air Pollutants*
- [40 CFR 63](#), *Protection of Environment, National Emission Standards for Hazardous Air Pollutants for Source Categories*
- [40 CFR 68](#), *Protection of Environment, Chemical Accident Prevention Provisions*
- [40 CFR 82](#), *Protection of Environment, Protection of Stratospheric Ozone*
- [40 CFR 261](#), *Protection of Environment, Identification and Listing of Hazardous Waste*
- [40 CFR 263](#), *Protection of Environment, Standards Applicable to Transporters of Hazardous Waste*
- [40 CFR 268](#), *Protection of Environment, Land Disposal Restrictions*
- [40 CFR 302](#), *Protection of Environment, Designation, Reportable Quantities, and Notification*
- [40 CFR 370](#), *Protection of Environment, Hazardous Chemical Reporting: Community Right-to-Know*
- [40 CFR 372](#), *Protection of Environment, Toxic Chemical Release Reporting: Community Right-to-Know*
- [40 CFR 700–799](#), *Protection of Environment, Toxic Substances Control Act*
- [49 CFR](#), *Transportation*
- NFPA 430, *Code for the Storage of Liquid and Solid Oxidizers*
- NFPA 432, *Code for the Storage of Organic Peroxide Formulations*
- NFPA 484, *Standard for Combustible Metals*
- [Compressed Gas Association \(CGA\)](#) Publications
- [49 CFR 171-180](#), *Transportation, Hazardous Materials Regulations*
- DOE-HDBK (Handbook)-1139/2-2006, *Chemical Management (Volume 2 of 3), Chemical Safety and Lifecycle Management*
- DOE-HDBK-1139/3-2003, *Chemical Management (Volume 3 of 3), Consolidated Chemical User Safety and Health Requirements*
- [P313](#), *Roles, Responsibilities, Authorities, and Accountability*
- [P301](#), *Research Sample Management for Quality R&D*

12.0 FORMS

There are no forms associated with this document.

13.0 ATTACHMENTS

Attachment A. LANL Hazard Communication and Chemical Hygiene Plan

14.0 CONTACTS

Chemical Management: ADNHHO Operations Support (OS) Division

Telephone: (505) 665-5550

Website: <http://int.lanl.gov/org/padops/adnhho/operations-support/index.shtml>

Chemical Safety: Occupational Safety and Health Division

Telephone: (505) 606-0295

Website: <http://int.lanl.gov/org/padops/adesh/occupational-safety-and-health/index.shtml>

No: P101-14 Chemical Management**Attachment A. LANL Hazard Communication and Chemical Hygiene Plan (Page 1 of 12)**

1.0 INTRODUCTION

A Chemical Hygiene Plan (CHP) is required by [29 Code of Federal Regulations \(CFR\) 1910.1450](#), *Labor, Occupational Safety and Health Standards, Occupational Exposure to Hazardous Chemicals in Laboratories*, which applies to facilities where multiple chemicals are used in laboratory scale quantities or Research and Development (R&D). A written Hazard Communication (HAZCOM) Plan is required by [29 CFR 1910.1200](#), *Labor, Occupational Safety and Health Standards, Hazard Communication*, and [29 CFR 1926.59](#), *Labor, Safety and Health Regulations for Construction, Hazard Communication*, which apply to workers who use chemicals in shops, maintenance activities, construction or facility work, product manufacture, laboratory analysis, environmental restoration, or decommissioning activities. This attachment covers both standards. Areas where only one standard applies will be noted in the text.

Personnel exposure to chemical agents is to be minimized, and maintained within acceptable exposure limits. Exposures will be minimized by the use of hazard elimination, hazard substitution, engineering controls, administrative controls, and Personal Protective Equipment (PPE). Every employee, guest, visiting scientist, student, or subcontractor working on or off-site will be familiar with and comply with appropriate Los Alamos National Laboratory (LANL or the Laboratory) safety standards.

This plan includes:

- procedures to be followed when work involves the use of hazardous chemicals,
- criteria used to determine and implement control measures to reduce employee exposure to hazardous chemicals through the Integrated Work Management (IWM) and Worker Exposure Assessment processes,
- methods used to inform workers of non-routine tasks and hazards associated with chemicals in unlabeled pipes through the IWM process,
- requirements for:
 - fume hoods and other protective equipment,
 - employee information and training,
 - authorization and approval of activities through the IWM process,
 - additional employee protection for work with particularly hazardous substances in accordance with [29 CFR 1910.1450](#),
 - a hazardous chemical listing, and
 - subcontractor personnel in terms of HAZCOM.

1.1 Purpose

The purpose of this Hazard Communication and Chemical Hygiene Plan is to provide workers with the specific requirements for chemicals used during work, the hazards involved, the forms of warning, Material Safety Data Sheets/Safety Data Sheets (MSDS/SDSs), and the procedures and work practices to minimize their exposure to those chemicals.

No: P101-14 Chemical Management**Attachment A. LANL Hazard Communication and Chemical Hygiene Plan (Cont.) (Page 2 of 12)**

1.2 Scope

HAZCOM applies to the use of chemicals in shops, maintenance activities, construction or facility work, product manufacture, the use of chemicals in a process in excess of 40 pounds or 5 gallons (see [40 CFR 355](#), *Protection of Environment, Emergency Planning and Notification*), environmental restoration, or decommissioning activities.

The CHP applies to work with small quantities of chemicals where the work can be safely manipulated by one person and multiple chemical procedures or multiple chemicals are used.

1.3 Chemical Inventory Requirements

A list of the hazardous chemicals known to be present at the Laboratory is maintained in the [LANL institutional chemical inventory](#) database. Primary hazardous chemical containers must be barcoded, and entered and tracked in the database.

Note: Most primary hazardous chemical containers ordered through standard purchasing agreements will be delivered to the user with a barcode and will already be listed in the [LANL institutional chemical inventory](#) database.

The chemical owner is responsible for ensuring the entry was accurately made in the chemical inventory database (e.g., owner, name of chemical, location). Some hazardous chemical containers (e.g., P-card purchases) may be delivered without a barcode and absent from the chemical inventory database. Chemical owners are responsible for barcoding these containers and entering them into the chemical inventory database. When a primary hazardous chemical container is transferred to a new owner and/or a new location; or is disposed, the chemical owner is responsible for updating the database.

Responsible Line Managers (RLMs) are accountable for accurate chemical inventories and are responsible for ensuring that physical inventories of their primary hazardous chemical containers are performed annually to verify the database inventory.

Note: Accuracy of the Laboratory's chemical inventory is very important. For example, in accordance with [40 CFR 370](#), *Protection of Environment, Hazardous Chemical Reporting: Community Right-to-Know*, "The owner or operator or the officially designated representative of the owner or operator must certify that all information included in the Tier II submission is true, accurate, and complete...under penalty of law..." The accuracy of the Laboratory's Tier II submittal (annual hazardous chemical report) is dependent on the accuracy of the Laboratory's chemical inventory.

For assistance with the [LANL institutional chemical inventory](#) database, contact the help desk at 667-9242, or e-mail ChemDB@lanl.gov.

1.4 Material Safety Data Sheets/Safety Data Sheets (MSDS/SDSs)

Access to MSDS/SDSs is provided through a link on the [Chemical Safety Webpage](#).

No: P101-14 Chemical Management**Attachment A. LANL Hazard Communication and Chemical Hygiene Plan (Cont.) (Page 3 of 12)**

- For chemicals acquired prior to December 1, 2015: MSDSs are available for all hazardous chemicals and hazardous chemical mixtures in the [LANL institutional chemical inventory](#) database (see the [Chemical Safety Webpage](#)) through the [LANL MSDS/SDS database](#), or if specific manufacturer MSDS/SDSs are not available, refer to the Laboratory [Chemical Safety Webpage](#) for commercial MSDS/SDS databases.
- For chemicals acquired after December 1, 2015, or for chemicals for which an SDS has been created: SDSs, are available for all hazardous chemicals and hazardous chemical mixtures in the [LANL institutional chemical inventory](#) database (see the [Chemical Safety Webpage](#)) through the [LANL MSDS/SDS database](#), or if specific manufacturer SDSs are not available, refer to the Laboratory [Chemical Safety Webpage](#) for commercial MSDS/SDS databases.

Manufacturer's MSDS/SDSs are provided to Industrial Safety and Hygiene (ISH) as part of the I-procurement process. If a chemical owner has acquired the chemical through another process, the manufacturer's MSDS/SDS will be provided to ISH.

Note: This does not apply to samples being submitted for analysis.

New chemicals developed at the Laboratory for internal use will be evaluated by the chemical owner to determine if they are hazardous (CHP only). If it is determined the chemicals are hazardous, the information will be included in the Integrated Work Document (IWD), thus allowing for the chemical workers to receive information on how to control the hazard. If the chemical produced is a byproduct whose composition is not known, the chemical will be assumed to be hazardous and handled accordingly. If an employee produces a new chemical, and plans to ship it off-site for use or distribution, an MSDS/SDS is required to be created and shipped with the chemical. For chemicals created at the Laboratory, ISH will be contacted for assistance in creating an MSDS/SDS.

1.5 Labels

Labels on containers, including, but not limited to, tanks, totes, piping and drums must be maintained. This means that labels must be maintained on chemicals in a manner which continues to be legible and the pertinent information (such as the hazards and directions for use) does not get defaced (i.e., fade, get washed off) or removed in any way.

Note: All hazardous chemicals shipped after June 1, 2015, must be labeled with specified elements including pictograms, signal words and hazard and precautionary statements. However, manufacturers, importers, and distributors may start using the new labeling system in the revised HCS before the June 1, 2015 effective date if they so choose. LANL is not responsible for updating labels on shipped containers, even if the shipped containers are labeled under the 1994 Hazard Communication Standard, unless the labels have been removed or defaced. However, if there are newly-identified hazards that are not disclosed on the label, RLMs and PICs must ensure that the workers are aware of the hazards as discussed below under workplace labels.

Primary chemical containers associated with the 1994 Hazard Communication Standard will have a label with the chemical name, and hazard warning. The hazard warning is a statement of the hazardous effect of the chemical (e.g., "flammable" or "causes lung damage") or a numerical rating such as that found on the NFPA label.

No: P101-14 Chemical Management**Attachment A. LANL Hazard Communication and Chemical Hygiene Plan (Cont.) (Page 4 of 12)**

(CHP areas only) When one transfers a material from the original manufacturer's container to other vessels, these vessels are referred to as "secondary containers." Secondary containers in HAZCOM areas will include the chemical name, creation date, hazard warning, and manufacturer. Secondary containers in CHP areas will include the name of the chemical, date created, and the owner of the container.

Portable containers into which hazardous chemicals are transferred and which are intended only for the immediate use (i.e., use by one worker for one day, and always under the control of that one worker) of the chemical worker who performed the transfer are not required to be labeled. However, it is good practice to label the container with the name of the chemical and the owner.

Contact the CHO and OSH-ISH for assistance in developing labels

1.6 Methods Used to Inform Workers

Workers use the IWM process (see [P300](#), *Integrated Work Management*) to develop IWDs for the proposed work activity. The IWD or other work document describes the scope, location, duration, hazards and environmental aspects, and controls (including PPE) to mitigate the hazards and negative environmental impact of the work. The IWD is used to authorize the work in accordance with [P300](#). IWDs or other work documents will be used to address tasks involving hazardous chemicals.

Responsible Line Managers (RLMs) will ensure that all work involving hazardous chemicals is reviewed for impacts on security, environment, safety and health, facility or equipment, and facility safety basis concerns in accordance with [P300](#). At a minimum, the following steps will be performed:

1. Initially categorize hazardous chemical work in accordance with [P300](#). If categorized as high hazard/complex work, assemble a hazard analysis review team (see [P300](#) Appendix A, *Integrated Work Management Process for Research and Development*). In addition to the required members for the team, include deployed industrial hygienist(s), and other hazardous chemical Subject Matter Experts (SMEs).
2. Create a detailed description of the work for the IWD involving hazardous chemicals that identifies the hazards associated with performing the work.
3. Specify hazard controls within the IWD using the following hierarchy of controls.
 - a. Elimination or Substitution
 - b. Engineering Controls
 - c. Administrative Controls
 - qualifications
 - formal procedures
 - training
 - work practices

No: P101-14 Chemical Management**Attachment A. LANL Hazard Communication and Chemical Hygiene Plan (Cont.) (Page 5 of 12)**

d. PPE

Note: Guidance for Preparing IWDs: Consider and understand the potential for generating new hazardous chemical-bearing waste streams. Consider substituting a less hazardous chemical and speak with your Waste Management Coordinator (WMC) before creating new waste streams.

4. Contact your deployed industrial hygienist to perform a qualitative exposure assessment in accordance with the [Laboratory Industrial Hygiene and Safety Manual](#) to evaluate the potential for worker exposure to hazardous chemicals.

Your deployed industrial hygienist will work with subcontractor personnel to ensure that the potential for subcontractor worker exposure to hazardous chemicals is evaluated before removing, remodeling, servicing, maintaining, or repairing laboratory equipment and exhaust systems.

1.7 Worker Exposure Assessments

Worker exposure assessments, including exposure monitoring, will be conducted in accordance with applicable sections of:

- [P101-21](#), *Chronic Beryllium Disease Prevention Program*
- [P101-32](#), *Worker Exposure Assessments*
- the [Laboratory Industrial Hygiene and Safety Manual](#)

1.8 Use and Maintenance of Laboratory Fume Hoods

Requirements that will be followed for the proper design, operation, and use of laboratory fume hoods are located in [P101-16](#), *Local Exhaust Ventilation and HEPA Filtration Systems*.

1.9 Chemical Hygiene Officer (CHO) (Chemical Hygiene Plan [CHP] Only)

The LANL CHO resides in OSH-ISH. Each Division Leader will appoint a CHO to provide technical guidance to line management and chemical workers (CHP only). The CHO will be an authorized chemical worker with the education and experience to determine the hazards and consequences of exposure to the chemicals found in the chemical inventory.

1.9.1 Roles and Responsibilities (Based on [29 CFR 1910.1450](#), *Labor, Occupational Safety and Health Standards, Occupational Exposure to Hazardous Chemicals in Laboratories, Appendix A [nonmandatory] and Prudent Practices for Handling Hazardous Chemicals in Laboratories*)**LANL CHO:**

- Establish, maintain, and revise the CHP.
- Create and revise CHP documentation.
- Communicate chemical safety lessons learned to Division CHOs for dissemination.

Division CHO:

- Liaise with OSH-ISH to ensure compliance with this document.
- Monitor procurement, use, and disposal of chemicals used in the Division.
- Seek ways to improve the LANL Hazard Communication and Chemical Hygiene program.

No: P101-14 Chemical Management**Attachment A. LANL Hazard Communication and Chemical Hygiene Plan (Cont.) (Page 6 of 12)**

- Perform MOVs with Division management of laboratories, preparation rooms, and chemical storage rooms.
- Assist laboratory owners in developing and maintaining adequate facilities.
- Provide assistance to Division members for proposed research activities that involve hazardous chemicals.

1.10 Safety Showers and Eye Washes

- Safety Showers and Eye Washes will be maintained, inspected, and tested periodically as required by American National Standards Institute (ANSI)/International Safety Equipment Association (ISEA) z358.1-2009 *American National Standard for Emergency Eyewash and Shower Equipment*, with the exception of weekly activation of safety showers. Activation of safety showers will be done on a quarterly basis due to issues associated with containment of test water. See [LANL Operations and Maintenance Manual, Criterion 407: Emergency Eyewash and Shower Equipment](#).

1.11 Provisions for Additional Employee Protection**1.11.1 Work with LANL Category 1 Chemicals**

- Special handling procedures are necessary to minimize exposures to known human carcinogens, reproductive toxicants, and substances with high acute or high chronic toxicity. Chemicals in these hazard groups are identified in the [LANL Cat 1 Chemicals](#) list.
- Handling procedures for these agents will be defined in laboratory or work authorization documents and approved by Deployed Services Environment, Safety, and Health (DSESH) deployed personnel before initiation of work.
- Specific consideration will be given to the following controls, to be used as appropriate for the agent and process: establishment of designated areas; use of containment devices such as laboratory fume hoods or glove boxes; procedures for safe removal of contaminated waste; and decontamination procedures (see [29 CFR 1910.1450, Labor, Occupational Safety and Health Standards, Occupational Exposure to Hazardous Chemicals in Laboratories](#) [e] [3] [viii]).

Decontamination is necessary before the affected work area can be released from “designated area” status. The type and level of decontamination should be defined by ISH personnel. After decontamination, the area will no longer be considered a “designated area,” and all warning and control signs will be removed. A wet mop or a vacuum cleaner equipped with a High-Efficiency Particulate Air (HEPA) filter will be used instead of dry sweeping.

1.11.2 Additional Requirements for Carcinogens

A regulated area will be established where a known human or suspected human carcinogen is manufactured, processed, used, repackaged, released, handled, or stored. All materials containing 0.1% (by weight) or more of a listed carcinogen will be clearly labeled to warn of a carcinogen hazard. A list of carcinogens, located in the LANL Cat 1 chemical list can be found on the [Chemical Safety Webpage](#). Less-hazardous, noncarcinogenic chemicals that can be substituted for currently used carcinogens will be substituted when compatible with the work to be accomplished.

No: P101-14 Chemical Management**Attachment A. LANL Hazard Communication and Chemical Hygiene Plan (Cont.) (Page 7 of 12)**

All areas in which carcinogens are used or stored will meet the following conditions:

- Clearly marked by posting signs warning of a carcinogen hazard. Additional signs and labels are required when OSHA-regulated carcinogens are in use. See [P101-19](#), *Safety Signs, Labels, and Tags*.
- Signs posted prohibiting eating, drinking, gum chewing, smoking, or applying cosmetics or lip balm.
- Ventilation and hood performance that meet minimum requirements before beginning any new operations involving carcinogens. (See [P101-16](#), *Local Exhaust Ventilation and HEPA Filtration Systems*.)
- Evaluation of carcinogen storage and use using the [Laboratory Industrial Hygiene and Safety Manual](#), Chapter 33, *Carcinogens*. Request the Environment, Safety, Health (ESH) Qualified Person perform a re-evaluation of carcinogen hazards when the use of a carcinogen changes in quantity, concentration, frequency, or duration.
- Decontamination procedures for equipment and facilities will be documented in an IWD before new carcinogens are used.
- Notification of ISH and Occupational Medicine (OM) with names of authorized chemical workers working with carcinogens.

1.11.3 Evaluation of Laboratory Operations

- Before laboratory tests or chemical reactions begin, evaluations must be made for hazards that can be encountered or generated during the course of the work.
- Evaluations must include the hazards associated with the properties and the reactivity of the materials used and any intermediate and end products that can be formed, hazards associated with the operation of the equipment at the operating conditions, and hazards associated with the proposed reactions, for example, oxidation and polymerization.
- Where reactions are being performed to synthesize materials, the hazard characteristics of which have not yet been determined by test, precautions must be employed to control the highest possible hazard based on a known hazard of similar material.
- Where use of a new material might present an explosion potential, initial experiments or tests must be conducted in an enclosure that is designed to protect people and property from potential explosion damage.
- Unattended or automatic laboratory operations involving hazardous chemicals must be equipped with regular surveillance for abnormal conditions.

1.12 Personal Protective Equipment (PPE)

- The Laboratory requires that suitable clothing and equipment be used to protect workers and others in Laboratory spaces from hazards in the workplace. PPE is intended to protect the body (including eyes, face, feet, hands, head, hearing, and respiratory system) from hazards capable of causing injury, illness, or impairment of bodily function. No protective material will provide full protection against all hazards. PPE is considered for use as a hazard control strategy only after it has been determined that elimination, substitution and engineered and administrative controls are not feasible, or in the interim while engineered and administrative controls are being designed and implemented. Proper PPE will be identified in the work authorization documentation.

No: P101-14 Chemical Management**Attachment A. LANL Hazard Communication and Chemical Hygiene Plan (Cont.) (Page 8 of 12)**

- The level of protection and type of PPE selected will match the applicable hazards. See [P101-6](#), *Personal Protective Equipment*.

1.13 Flammable Liquids Storage Cabinets

A flammable liquids storage cabinet is a cabinet that is Underwriters Laboratories listed or Factory Mutual approved for storage of flammable liquids. The Fire Protection-Division Office (FP-DO) should be contacted for questions on what qualifies as a flammable storage cabinet and the chemical limits.

Not more than 60 gallons of Class I and/or Class II liquids, or not more than 120 gallons of Class III liquids may be stored in an individual cabinet. Storage cabinets shall be designed and constructed to limit the internal temperature to not more than 325°F when subjected to a standardized 10-minute fire test. Storage cabinets shall be conspicuously labeled, "Flammable - Keep Fire Away."

The bottom, top, door, and sides of metal cabinets shall be at least No. 18 gage sheet metal and double walled with 1½-inch air space. The door shall be provided with a three-point lock, and the door sill shall be raised at least 2 inches above the bottom of the cabinet.

Note: Do not store compressed gases in these cabinets.

1.14 Hydrofluoric Acid (HF)

Hydrofluoric Acid (HF) is a particularly dangerous acid because of its unique ability among acids to penetrate tissue. This ability to penetrate tissue allows HF to cause severe systematic toxicity from even relatively small dermal exposures. For this reason, the following requirements and recommended safe practices apply to work with HF:

Requirements:

- Substitute less hazardous fluoride compounds, where possible, e.g., use aluminum fluoride instead of HF to remove silicates from aqueous solutions.
- An Integrated Work Document (IWD) (see [P300](#), *Integrated Work Management*) is required for work with HF. The IWD must include the first-aid procedure in case of an exposure and what to do in case of a spill.
- As required in [P300](#), the IWD must be readily accessible where the activity is being conducted.
- A Material Safety Data Sheet/Safety Data Sheet (MSDS/SDS) must be available.
- Before working with HF, workers must read the MSDS/SDS, read the IWD, complete training on the first-aid procedure in case of an exposure, and know what to do in case of a spill.
- Workers must be authorized in accordance with the requirements in [P300](#).
- Workers who work with HF must be registered and trained by Occupational Medicine on first-aid procedures associated with HF exposure.

No: P101-14 Chemical Management**Attachment A. LANL Hazard Communication and Chemical Hygiene Plan (Cont.) (Page 9 of 12)**

- Personal protection by engineered controls, personal protective equipment, or a combination is required for HF use. Controls must be commensurate with the HF hazard represented by a specific use or process involving HF. Your deployed industrial hygienist will assist in the development of and approve personal protective equipment and engineered controls for HF uses and processes through IWD development.
- A calcium gluconate skin exposure mitigation kit must be located in close proximity to the work involving HF. The kit must be replaced with new stock annually. A list of HF first-aid trained personnel must be posted near the kit. Contact Occupational Medicine for mitigation kits and replacement components.
- An HF spill kit must be available with calcium compounds such as calcium carbonate, calcium sulfate, or calcium hydroxide. It is advised that facilities that use or handle HF maintain on hand adequate compatible spill control materials to absorb or contain the volume of the largest volume container of HF commonly within the facility. In facilities with a “no spill cleanup” policy, these materials will supplement that which is immediately available to Hazardous Material (HAZMAT) first responders. Sodium bicarbonate should never be used with an HF spill since it does not bind the fluoride ion and can generate toxic aerosols.

Safe Practices

- Never work alone with concentrated (~6M or greater) HF or large volumes of dilute HF; use a buddy system. It is highly recommended that HF work not be conducted during hours when facilities may have minimum personnel such as nights and weekends even with small volumes and dilute solutions to ensure that there are adequate personnel to render aid in the event of an accident or spill.
- Use an HF-compatible tray or other suitable container while working with HF for containment in case of a spill.
- Store HF in compatible materials (e.g., Teflon, fluorinated ethylene propylene, polyethylene, etc.) containers and keep containers closed.
- Label all nonoriginal containers that contain HF and solutions other than that for immediate use (See Section 1.5).
- Store the stock HF in HF-compatible plastic secondary containment and label the cabinet. Store HF in lower cabinets near the floor. Store HF with other inorganic acids and away from bases, flammables, or oxidizers.
- Wash or wipe gloves with water before removing them, if permissible, by specific laboratory protocols.
- Protect exposed skin and nonresistant or absorbent clothing through:
 - enclosed processes and uses,
 - chemical fume hoods with sash down,
 - gloveboxes with HF-compatible gloves and windows,
 - specially engineered process enclosures, e.g., ventilated cabinets,

No: P101-14 Chemical Management**Attachment A. LANL Hazard Communication and Chemical Hygiene Plan (Cont.) (Page 10 of 12)**

Note: Concentrated HF and hydrogen fluoride gas from reactions can etch the glass hood sash on a fume hood and make it hard to see through. If the hood sash becomes fogged and hard to see through because of etching, contact your Facility Operations Director (FOD) representative about installing a polycarbonate sash. In some cases, hood sashes as well as glove box windows may be protected before exposure with a transparent film of Polyvinylidene Fluoride (PVDF, Kynar, Hylar, and Sygef) or other HF-resistant plastic.

- HF-resistant rubber or plastic apron,
- HF-resistant plastic arm coverings,
- HF-resistant gloves and glove combinations,
 - incidental use of dilute acid solutions—double gloves with heavy nitrile exam gloves; re-glove if there is any exposure to the gloves,
 - extended use of concentrated acid—heavy neoprene or butyl gloves worn over nitrile or silver shield gloves,
 - fluorinated polymer gloves for high-concentration and/or high-concentration HF gas exposure,
- closed toe shoes or chemical resistant boots,
- long pants and a long-sleeve shirt with a reasonably high-neck (not low-cut).
- Protect the face and eyes through
 - safety glasses in conjunction with chemical fume hoods with sash down (dilute solutions),
 - splash goggles in conjunction with a fume hood sash (high-concentration, high-reactivity process), and
 - face shield in conjunction with splash goggles (open processes, open hood sash).

1.15 Emergency Procedures

Emergency procedures will be in accordance with requirements contained in [PD1200](#), *Emergency Management*.

1.16 Medical Surveillance

Medical surveillance requirements will be in accordance with requirements contained in [P102](#), *Occupational Medicine*.

1.17 Worker Information, Training and Authorization

Chemical workers who work with hazardous chemicals will receive training about those chemicals before they begin work. Chemical workers receive this training through a combination of formal training, reading assignments and job-specific information as specified in the work authorization documentation. Chemical workers who work in areas where hazardous chemicals are used, but who do not work directly with such chemicals, will be made aware of the hazards before they begin work in those areas. Formal training will be conducted and documented in accordance with Laboratory training policy. Chemical workers will be trained on chemicals in use in their workplace at the time of initial assignment and whenever new hazards are introduced. See Section 6.0 of this document.

No: P101-14 Chemical Management**Attachment A. LANL Hazard Communication and Chemical Hygiene Plan (Cont.) (Page 11 of 12)**

1.18 Use of Non-medical Sharps

- Use the correct tool for the job, i.e., a box cutter to cut boxes.
- Do not shear, clip, or bend needles. Do not recap used disposable hypodermic needles. Do not remove used disposable hypodermic needles from the syringe. If you are using a glass syringe and a non-disposable needle, use extreme caution when recapping the needle, or removing the needle. To recap a non-disposable needle, use either a one-handed “scoop” technique or a mechanical device designed for holding the needle sheath.
- Do not walk with an unprotected sharp.
- Dispose of sharps at the point of use.
- Use needleless systems, or a blunt needle whenever possible.
- Organize your work space so that all materials for the experiment are ready and available before accessing the sharp device. This helps reduce the chance of having to set an exposed needle down on the lab bench in order to retrieve other necessary supplies.
- Be prepared to use the device the moment the sharp is exposed (e.g., when the needle is uncapped, the razor blade removed from its wrapper).
- Make sure you have adequate lighting to perform the task involving the sharp.
- Keep exposed sharps pointed away from yourself and others.
- Never directly hand an exposed sharp to another person. Instead, designate a “sharps passing zone” where exposed sharps are set down prior to being picked up by another person.
- Be accountable for the sharps you use.
- Look around after you complete your work and make sure that all sharps have been disposed of properly.
- Store sharps in a safe manner. Protect the sharp with a cap, cover, or store it in a rigid container.
- Use a dedicated, labeled sharps storage area.

Disposal of Non-medical Sharps:

- Hypodermic needles and contaminated sharps must always be discarded in an approved, rigid, leak-proof sharps container. Do not overfill the container. Do not open sharps containers. Note: sharps containers for personal medical use are available at Occupational Medicine.
- Do not discard loose sharps or sharps containers in the regular trash.
- **Broken glass:** (no regulated chemical or bioagent/biohazard contamination): Carefully sweep up any broken pieces into a dustpan and place them in a hard sided closed container (e.g., cardboard box) labeled “broken glass” with the technical area (TA), building number, room number and generator’s name written on the container. The container can be placed in the regular trash provided the broken glass is not contaminated; coordinate disposal with your WMC.

No: P101-14 Chemical Management**Attachment A. LANL Hazard Communication and Chemical Hygiene Plan (Cont.) (Page 12 of 12)**

- **Chemical contaminated sharps:** Store in leak-proof, rigid, puncture-resistant containers that are manufactured for the purpose of sharps containment and are taped closed or tightly lidded to preclude loss of contents. Label and manage in accordance with regulatory requirements for the material with which they are contaminated. Contact your WMC for assistance.
- **Uncontaminated (no rad, chemical, or biological) Sharps:** Store in leak-proof, rigid, puncture-resistant containers that are manufactured for the purpose of sharps containment and are taped closed or tightly lidded to preclude loss of contents. Label the container “non-infectious and non-hazardous waste” with the TA, building number, room number and generator’s name written on the container. The container can be placed in the regular trash; however, coordinate with your WMC.
- **New Mexico special waste sharps (infectious waste sharps):** Refer to [Tool 502 “Infectious Waste”](#) for assistance.

The [Chemical Safety Webpage](#) also contains guidance on [Working with Sharps](#) and [Management of Waste Sharps](#).

IMPORTANT

If you wish to receive credit for the preceding document you **must** enter the course through [UTrain](#) **not** the Policy Office website.



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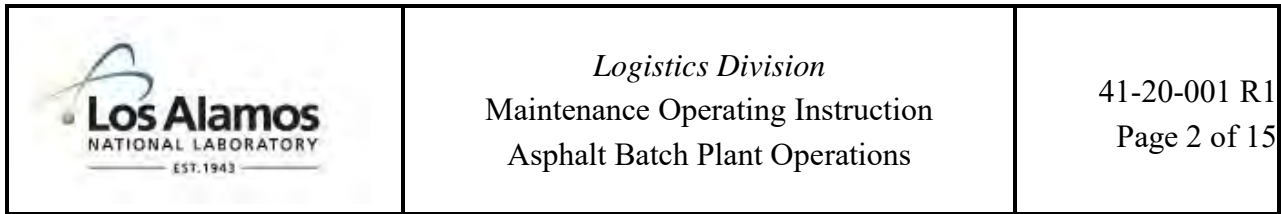
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LOGISTICS DIVISION
MAINTENANCE OPERATION INSTRUCTION

TITLE **ASPHALT BATCH PLANT OPERATION**

| <u>Name</u> | <u>Organization</u> | <u>Date</u> | <u>Signature</u> |
|--|---------------------|-------------|-------------------|
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| Issuing Authority: | | | |
| John Merhege LOG Division Leader | LOG-DIV | 1/12/2016 | Signature on File |



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RECORD OF REVISIONS

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1.0 PURPOSE/SCOPE

This document provides requirements and instruction for the operation of the Asphalt Batch Plant (ABP).

This instruction applies to all MSS personnel responsible for work performance in support of the ABP.

2.0 DEFINITIONS/ACRONYMS

ASM – Acquisitions Services Management

Asphalt Batch Plant (ABP) – A machine designed to heat asphalt and aggregate mix to specified proportions, and discharge it into a truck for delivery to the job site.

CFR – Code of Federal Regulations

DEP—Deployed Environmental Professional

°F – Degrees Fahrenheit

ENV-ES – The operational group in the Environmental Protection Division (ENV) that provides environmental compliance assistance with air quality regulations

ENV-RCRA - The operational group in the Environmental Protection Division (ENV) that provides environmental compliance assistance with water resources and hazardous/solid wastes regulations

ES&H – Environment, Safety, & Health

Heat Transfer Oil Heater – A machine designed to heat asphalt and circulate oil through a series of coils. The coils heat the asphalt in a separate tank.

Hot Mix –A mixture of asphalt binder and graded mineral aggregate mixed at an elevated temperature and compacted to form a relatively dense pavement layer.

IWD – Integrated Work Document

HERG – Heavy Equipment Roads & Grounds

LO/TO – Lockout/Tagout


MM – Maintenance Manager

Mix Design – Performance based mix for which the number, type, and proportions of ingredients are determined by the engineer with the objective of producing asphalt having certain strength, gradation, flow and durability.

MSDS – Material Safety Data Sheets

MSS – Maintenance & Site Services

NMED – New Mexico Environment Department

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NM DOT- New Mexico Department of Transportation

PM – Preventative maintenance

PPT – Pollution Prevention Team

SPCC—Spill Prevention, Control, and Countermeasures rule includes requirements for oil spill prevention, preparedness, and response to prevent oil discharges to navigable waters including implementation of a site-specific plan.

SWPPP – Storm Water Pollution Prevention Plan is a site-specific document that identifies the regulated industrial activity and the controls implemented to prevent pollutants from being transported from the site by storm water runoff.

3.0 ROLES AND RESPONSIBILITIES

Roles and responsibilities for personnel who will ensure implementation of this document, e.g, Maintenance Manager, Maintenance Coordinator, Superintendent, Supervisor, and Work Provider, can be found on P 950, *LANL Conduct of Maintenance* and P 313, *Roles, Responsibilities, Authorities, and Accountability*, for a listing of maintenance program roles and responsibilities.

3.1 Roads Section Superintendent

The Craft Superintendent is responsible for the operation of the ABP. The superintendent will establish the job qualifications for craft personnel, arrange for necessary training, establish and maintain program records and documentation, and enforce procedure requirements during work performance.


The Craft Superintendent is responsible for determining the necessary qualifications and training required to perform work supporting ABP operation, for developing the necessary procedures and checklists, and for ensuring that the program records and documentation are properly completed.

3.2 Operator Foreman

The operator foreman is responsible for the assignment of qualified and properly trained craft personnel to this work. The foreman will ensure that the necessary materials, equipment, tools or other resources needed to complete the work are available to the craft personnel. The foreman will also ensure that the craft personnel complete the work according to the procedure and the work checklist(s), as appropriate, and that all documentation is verified correct.

3.3 Deployed Environmental Professional

The Deployed Environmental Professional (DEP) is responsible for assisting the facility in maintaining compliance with applicable environmental regulations. The DEP will assist in

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developing, updating, and maintaining a site-specific Storm Water Pollution Prevention Plan (SWPPP) and a Spill Prevention, Control, and Countermeasures (SPCC) Plan; performing required inspections; and recommending measures to address environmental compliance concerns.

4.0 SAFETY

The PIC, Supervisor, or Foreman shall ensure the work package is complete in accordance with P 950, *LANL Conduct of Maintenance* and AP-WORK-002, *Work Planning*.

Before work is started, the Supervisor/Foreman shall conduct a pre-job briefing with the craft worker(s) to include: job assignment, hazards involved by reviewing the IWD approved and signed by a qualified person, training requirements, job site procedures, necessary safety equipment, personal protective equipment, and Material Safety Data Sheets (MSDS) information.

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|  | <p>HOT ASPHALT CAN CAUSE SEVERE BURNS.</p> |
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Refer to the IWD for required PPE when working outside the control room. Wear gloves when handling the unloading hose.

The craft is responsible for understanding the hazards and hazard controls (including **STOP WORK**) identified for the work tasks in the IWD. Notify the Supervisor or Foreman when a change in the scope of work is identified, or process or hazard conditions change (refer to P101-18, *Procedures for Pause/Stop Work*, P300, *Integrated Work Management*).

All changes to the scope of work and/or newly identified hazards and process changes must be addressed in a revised IWD subject to signature and approval by a qualified person. The job must be stopped until the IWD is revised and approved. All workers must be briefed on the revised IWD prior to restart of work.

No personnel shall be allowed to enter confined spaces without proper training and written procedures for each confined space.

Equipment must be de-energized as required in P101-3, *Lockout/Tagout for Hazardous Energy Control*. Follow LO/TO procedures to perform any electrical work except when troubleshooting before or during maintenance. All personnel shall comply with current LO/TO procedures when performing pre-operational or post-operational inspections or preventative maintenance.

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5.0 QUALIFICATIONS

Personnel performing tasks in this procedure must have a working knowledge of asphalt batch plant operations or be working under the direction of a qualified operator.

6.0 TRAINING

Personnel will receive training in the overall Laboratory ES&H policy. No activity or operation will be performed at the Laboratory unless it can be performed in a manner that is protective of employees, the public, and the environment. Accomplishing these goals requires a team effort on the part of all employees and line managers.

Required training or equivalent:

- Spill Prevention, Control, & Countermeasure and site-specific SPCC plan (annual)
- Basic Fall Protection
- Personnel Protective Equipment
- Chemical Hazard Communication
- Gas Cylinder Safety
- Hearing Conservation
- Ladder Safety
- LO/TO Hands-on Hazardous Energy Control
- Aerial Platform Lift Operator
- Storm Water Pollution Prevention Plan site-specific (annual)


7.0 SPECIAL INSTRUCTIONS

Submit any corrections or recommendations for improvement to this procedure to the Craft Superintendent.

7.1 Off-normal events

Report unusual events or incidents in accordance with P 322-3, *Manual for Communicating, Investigating, and Reporting Abnormal Events*. Report any structural or equipment deficiencies observed during the performance of work to the Operator Foreman so that immediate remedial action can be taken, if required.

Any malfunction of the ABP or environmental controls that may increase air emissions, result in uncontrolled stormwater discharges, or is a spill or release of material must be reported to the DEP for the plant as soon as possible. Malfunctions may need to be reported to NMED within a short period of time.


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7.2 Title V Operating Permit (Air Quality)

- A visible emission observation, as required by the Title V Air Quality permit, must be performed monthly by a certified reader as early in the month as possible and preferably during the first run of the month.
- A visible emission observation is not required for those months the plant does not operate.
- Contact the DEP for the plant if visible emissions are greater than normal, if there are visible emissions from the bag house stack, or to have a monthly observation performed.
- Observation documentation is maintained at the Asphalt Batch Plant Office.
- Plant dust collection system leaks will be repaired immediately to ensure that no dust escapes into the environment which may be in violation of the New Mexico air quality regulations. Notify the plant DEP of any malfunction or problems with the dust collection system immediately. Other data required by the air permit includes entries found on the daily operating log, Form 41-20-001.2.

7.3 SPCC Requirements

- The ABP is required to have a Spill Prevention Control and Countermeasures (SPCC) Plan per 40 CFR Part 112. The purpose of this plan is to provide spill prevention and response measures to prevent oil related spills from polluting navigable waters of the United States through implementation of adequate prevention and response measures.
- The plan is prepared, maintained, and updated by ENV-RCRA and/or the DEP; a copy is maintained on-site at the ABP office.
- Oil handling personnel must be trained in the operation and maintenance of equipment to prevent discharges, spill response actions, applicable regulations, general plant operations, and the contents of the SPCC plan.
- Inspections must be conducted daily, monthly, and annually.
 - Daily inspections (good housekeeping and general safety) are performed by plant operators to check for spills, leaks, obvious problems with tanks or lines, and general conditions. Daily inspections are documented on the Asphalt Batch Plant Daily Inspection Checklist Form 41-20-001.1
 - Monthly and annual inspections are performed by a LANL ENV-RCRA representative or DEP and documented on forms found in the site SPCC plan.
- Contact the DEP with information about spills or off-normal conditions so that the required and timely notifications to regulatory agencies can be made and the SPCC records can be updated.

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7.4 SWPPP Requirements

- Discharges of storm water from the ABP are regulated under the NPDES Multi-Sector General Permit for storm water discharges associated with industrial activities.
- The ABP is required to have a Storm Water Pollution Prevention Plan (SWPPP) to document site description, potential pollutant sources, descriptions of control measures, areas where spills and leaks have occurred, and procedures to maintain control measures. The plan is prepared, maintained, and updated by ENV-RCRA and/or the DEP; a copy is maintained on-site at the ABP office.
- The ABP is required to have a Storm Water Pollution Prevention Team (PPT) per the SWPPP. The PPT consists of operations and management personnel from the ABP, ENV-RCRA storm water personnel, and a DEP. PPT members are responsible for assisting the facility manager in developing and revising the facility's SWPPP as well as maintaining control measures and taking corrective actions where required.
- SWPPP compliance inspections must be conducted monthly, quarterly, and annually by the DEP or an ENV-RCRA storm water inspector and documented on the appropriate SWPPP inspection forms. Copies of the completed inspection forms are maintained in the SWPPP at the facility. Contact the DEP with information about spills or off-normal conditions so that the required and timely notifications to regulatory agencies can be made and the SWPPP records can be updated.

8.0 OPERATIONS


8.1 Site Structures

This site has been assigned structure numbers as follows:

- TA-60-233 – Control House
- TA-60-234 – Batch Tower
- TA-60-235 – Dryer
- TA-60-236 – Asphalt Tank
- TA-60-237 – Baghouse

8.2 Process Overview

The primary function of the facility is to produce asphalt for the Laboratory by using a “batch” process (as needed per project). The asphalt batch is then transferred to trucks for delivery to project sites. An overview of the plant's operational process is as follows: Aggregate material, used as feed stock for the asphalt production, is stockpiled on the west side of the property. There is at least one and sometimes more piles of material stored on the ground. The volume of stockpiled aggregate material on site at any given time is approximately 3,000 cubic yards.

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Front-end loaders transfer the aggregate material from stockpiles to a hopper/feeder unit and the material is then mechanically fed to the asphalt processing plant. The processing plant (a BDM Model TM2000 Asphalt Plant) includes a Hopper/Feeder Bin attached to a Conveyor Belt (Structure 60-233), and a Batch Tower with Drop and Dryer Unit (Structure 60-236).

Asphalt emulsion oil and heated aggregate are mechanically mixed in the Batch Tower (Structure 236).

Processed asphalt is transferred (dropped) from the Batch Tower into delivery trucks. Air emissions are controlled by Bag House (Structure 60-235). Air emissions from the facility are regulated under the NMED Title V Air Quality Permit issued to LANL.

Reference Attachment 41-20-001.5, *Asphalt Batch Plant Flow Diagram*.

Any change to the plant, either physical or operational, needs to be communicated to the DEP prior to the change to verify it is compliant and environmental requirements.

8.3 Material Acceptance Criteria

- A qualified Materials Test Lab will approve and accept aggregate prior to use.
- A qualified Material Test Lab will approve and accept the hot mix according to work order specifications.


8.4 Hours of operation

Under the Title V Permit (Air Quality), the plant is authorized to operate during daylight hours between one-half hour after sunrise and through one-half hour before sunset each day of the year. This limitation on operating hours does not apply to the use of the hot oil heater or the loading and/or hauling of asphalt products or materials.

NOTE: Production is limited to 4380 hours/year or 13,000 tons/year, whichever occurs first. The rolling totals are compared to permit limits and reported to NMED twice annually by ENV-ES.

8.5 Operational Inspections and Checklist


- Pre-operational, start-up, operational, and shutdown steps are documented on Form 41-20-001.1, *Asphalt Batch Plant Daily Operational Checklist*.
- The operator will document completion of the steps on the checklist for each day of operation during an operational week.


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- The operator foreman will review the Asphalt Batch Plant Daily Operational Checklist 41-20-001.1, and the Asphalt Batch Plant Daily Operating Log 41-20-001.2 with craft personnel prior to executing the work.
- Prior to beginning operations, the ABP operator will complete the checks in Section 1 on Form 41-20-001.1, *Asphalt Batch Plant Daily Operation Checklist* to ensure that the heat transfer oil heater can be operated properly; there are no visible maintenance problems, leaks, or spills; and the equipment can be operated without safety and environmental concerns.
- The operator will record information required by the air permit on Form 41-20-001.2, *Asphalt Batch Plant Daily Operating Log*. This data must be submitted to the plant DEP within 14 days following the end of the operational month recorded.
- During production the operator will complete and document the start-up and operation checks in Section 2 on Form 41-20-001.1, *Asphalt Batch Plant Daily Operation Checklist*.
- When daily production is completed, the operator will complete and document the shutdown checks in Section 3 on Form 41-20-001.1, *Asphalt Batch Plant Daily Operation Checklist*.
- Review and update Form 41-20-001.1, *Asphalt Batch Plant Daily Operation Checklist*. at least annually or when operating parameters change.

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|  | <p>DO NOT OPERATE THE PLANT IF THERE ARE ANY SAFETY HAZARDS OR ENVIRONMENTAL CONCERNS. NOTIFY SUPERINTENDENT IF ANY HAZARDS ARE PRESENT.</p> |
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|  | <p>DO NOT OPERATE THE PLANT IF THE DUST COLLECTION SYSTEM IS NOT OPERATING PROPERLY.</p> |
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|  | <p>If any of the following items fail to pass inspection, the operator will halt operations and secure the hot plant until repairs are made.</p> |
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|  | <p>Inspect hot mix for proper mixing so that, no dry or oily streaks are visible.</p> |
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9.0 PREVENTATIVE MAINTENANCE AND CALIBRATION

9.1 Preventative Maintenance

- Plant preventative maintenance will be scheduled through the MSS work order/planning system and performed semi-annually.
- Preventative maintenance will be performed and documented using Form 41-20-001.3, *Asphalt Batch Plant PM Inspection & Lubrication Checklist*.
- Copies of maintenance records will be maintained at the plant and in the work order/planning system.

9.2 Batch Plant Equipment Requirements – Calibration and Testing

9.2.1 Calibration of the plant scales, load sensors, asphalt flow meter, and asphalt temperature indicating instruments will be performed as required in applicable NMDOT standard specifications and in accordance with LANL policy P330-2, “*Control and Calibration of Measuring and Test Equipment (M&TE)*.”

9.2.2 Calibration will be documented on Form 41-20-001.4, *Asphalt Batch Plant Calibration Compliance*.

9.2.3 Plant Scales (NMDOT 423.3.4.1.1)

- Ensure that the scales are accurate to 0.5% of the maximum allowable load in accordance with NMDOT standard 432.3.4.1.1.
- Annually calibrate Load Plant Scales for batched asphalt.

9.2.4 Weigh Box or Hopper (NMDOT 423.3.4.1.9.1)


- Ensure that the ABP can accurately weigh aggregate in a weigh box or hopper suspended on scales using a weigh box or hopper than can hold a full batch. Ensure that the gate of the weigh box or hopper does not allow material to leak into the mixer while being weighed.
- Annually calibrate Load Sensors for aggregate in accordance with NMDOT standard 432.3.4.1.9.1.

9.2.5 Asphalt Binder Control (NMDOT 423.3.4.1.9.2)

- Measure the asphalt binder with equipment accurate to $\pm 0.3\%$
- Annually calibrate Asphalt Flow Meter in accordance with NMDOT standard 432.3.4.1.9.2.

9.2.6 Asphalt Thermometers (NMDOT 423.3.4.1.7)

- Ensure the asphalt feed line, near the charging valve at the mixer unit, is equipped with an approved recording thermometer with a range from 100°F to 400°F.

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- Ensure the discharge chute of the drier is equipped with an approved recording thermometer to automatically register the temperature of the heated aggregates or mix, as applicable.
- Annually calibrate thermometers per NMDOT 432.3.4.1.7.

10.0 RECORDS

10.1 Forms and Checklists


- Prepare all forms and checklists required to operate the ABP in accordance with this document.
- Form 41-20-001.1, *Asphalt Batch Plant Daily Operation Checklist*. The purpose of this form is to document daily activities associated with heat transfer oil heater pre-operational inspection, start-up, and shut down. This ensures that the ABP can be operated safely and without environmental concerns. The operator foreman will review the checklists with the craft personnel prior to and after executing the work
- Form 41-20-001.2, *Daily Operating Log*. The purpose of this log is to document operational data as required for compliance with NMED Title V Air Quality Permit issued to Los Alamos National Laboratory. This data must be submitted to the plant DEP within 14 days following the end of the month recorded. This data is used to calculate emissions and is submitted to the State as a monitoring record. The DEP will scan the log and return it to the ABP.
- Form 41-20-001.3, *Asphalt Batch Plant PM Inspection and Lubrication Checklist*. This checklist is used to document or list required routine maintenance inspections and actions. The PM will be conducted semiannually and documented using this checklist.
- Form 41-20-001.4, *Asphalt Batch Plant Calibration Compliance*. The purpose of this form is to document performance of required calibrations.

10.2 Records Generated by this Operation

- 41-20-001.1: Asphalt Batch Plant Daily Operation Checklist
- 41-20-001.2: Asphalt Batch Plant Daily Operating Log
- 41-20-001.3: Asphalt Batch Plant PM Inspection and Lubrication Checklist
- 41-20-001.4: Asphalt Batch Plant Calibration Checklist

10.3 Environmental Compliance

- Title V Air Quality Visual Emissions Observation

| | | |
|---|--|--|
|  | <p style="text-align: center;"><i>Maintenance & Site Services</i> Maintenance Operating Instruction Asphalt Batch Plant Operations</p> | <p style="text-align: right;">41-20-001 R1 Page 14 of 15</p> |
|---|--|--|

- SPCC Plan, inspections, reports, and updates
- SWPPP inspections, reports, and updates

10.4 Records Disposition

Maintain records in accordance with AP-MSS-003, *MSS Records Management Program*.


All forms generated by this procedure must be maintained on site.

All Title V Air Quality Permit compliance records; SPCC Plan and records; and SWPP Plan and records must be maintained on site.

The operator will acknowledge the amount of oil/propane aggregate received on the shipping manifest form and will forward it to the ASM Property Management.

11.0 REFERENCES

| Document No. | Title |
|--|--|
| AP-MSS-003 | MSS Records Management Program |
| AP-WORK-002 | Work Planning |
| P 101-3 | Lockout/Tagout for Hazardous Energy Control |
| P 313 | Roles, Responsibilities, Authorities, and Accountability |
| P 315 | Conduct of Operations Manual |
| P 322-3 | Manual for Communicating, Investigating, and Reporting Abnormal Events |
| P330-2 | Control and Calibration of Measuring and Test Equipment (M&TE) |
| P 950 | LANL Conduct of Maintenance |
| NMDOT Standard Specification for Highway and Bridge Construction | Section 432 HOT-MIX ASPHALT — SUPERPAVE (QLA and Non-QLA) |
| | LANL Title V Operating Permit (Air Quality) |
| | TA60 Asphalt Batch Plant SPCC Plan |
| | TA60 Asphalt Batch Plant SWPPP |

| | | |
|---|--|---------------------------------------|
|  | <p><i>Maintenance & Site Services</i> Maintenance Operating Instruction Asphalt Batch Plant Operations</p> | <p>41-20-001 R1 Page 15 of 15</p> |
|---|--|---------------------------------------|

12.0 ATTACHMENTS

- 41-20-001.1: Asphalt Batch Plant Daily Operation Checklist
- 41-20-001.2: Asphalt Batch Plant Daily Operating Log
- 41-20-001.3: Asphalt Batch Plant PM Inspection and Lubrication Checklist
- 41-20-001.4: Asphalt Batch Plant Calibration Checklist
- 41-20-001.5: Asphalt Batch Plant Flow Diagram



Logistics Division
Maintenance Operating Instruction
Asphalt Batch Plant Operations
41-20-001.1: ASPHALT BATCH PLANT DAILY OPERATIONAL CHECKLIST

| | | | | | | | |
|--|-------------|------------|------------|------------|------------|------------|------------|
| | START DATE: | END DATE: | | | | | |
| PART 1- Place a Checkmark if the condition is OK or AR (Action Required) if not. Explain ARs in Part 2. | | | | | | | |
| SECTION 1: HEAT TRANSFER OIL HEATER AND OIL TANK PRE-OPERATIONAL INSPECTION | | | | | | | |
| ACTION | MON | TUE | WED | THU | FRI | SAT | SUN |
| Mark days plant is in operation for completion of checklist. For periods when plant is not in operation, complete Section 1 of checklist once a week. | | | | | | | |
| Inspect heat transfer oil heater and oil level weekly. If necessary, refill to at least ½ of capacity. Use heat transfer oil No. 1 only. | | | | | | | |
| Inspect heat transfer oil pump for leaks, ensure shaft is free. Repair/adjust if necessary | | | | | | | |
| Inspect heat transfer oil pump drive coupling. Should be secure, not loose or worn. Adjust/replace as necessary. | | | | | | | |
| Inspect electric drive motors, heat transfer oil pump, flower fan, and mount. Ensure wiring is secure. Adjust if necessary. | | | | | | | |
| Inspect temperature setting control valve. Maximum operating temperature should be between 250° F and 360°F | | | | | | | |
| Check oil tank and pad for spills, leaks, and problems with lines or containment | | | | | | | |
| Repair any oil leaks before starting Operations | | | | | | | |
| No general safety concerns identified. | | | | | | | |
| SECTION 2: START-UP AND OPERATION | | | | | | | |
| Check the asphalt temperature before starting. Check again every hour to ensure that the temperature does not drop below 250° F. | | | | | | | |
| Check propane tank. Re-order propane when the tank is 15% of capacity or less. | | | | | | | |
| Power On per manufacturer's recommendations, including fuel pumps propane, air compressor, asphalt pump forward, pug mill mixer, exhaust fan, burner blower, vibratory screen, hot elevator, dryer, incline conveyor, scalping screen, collector conveyor, cyclone screw, baghouse, feeders aggregate limit, dump aggregate hopper, mixer, and dump oil. | | | | | | | |
| Weigh required amounts of heated aggregate from three aggregate bins. | | | | | | | |
| Dump weighed aggregate into pug mill for mixing. | | | | | | | |
| Process two tons of aggregate (two batches) without asphalt oil through the system to ensure plant and aggregates are at working temperature of not less than 250° F. Do not exceed 360° F. | | | | | | | |
| Weigh aggregates and asphalt to mix design proportion; dump into pug mill and mix for approximately 60 seconds. | | | | | | | |
| After dump truck beds have been properly sprayed with a light mist of Zep, Operator will dump hot mix into trucks. Repeat process until desired tonnage is loaded into truck. | | | | | | | |
| SECTION 3: SHUTDOWN | | | | | | | |
| Shutdown the plant in reverse order of start-up, including dump oil, mixer, dump aggregate hopper, feeders aggregate limit, baghouse, cyclone screw, collector conveyor, scalping screen, incline conveyor, dryer, hot elevator, vibratory screen, burner blower, exhaust fan, pug mill mixer, asphalt pump forward, air compressor, and fuel pumps propane. NOTE: The incline conveyor and belt feeders will be shutdown first to stop material flow into the plant. As the material flow stops, the dryer flame will be turned down slowly until it is completely off. | | | | | | | |
| Shutdown asphalt pump. Ensure asphalt is not flowing between asphalt weigh hopper and asphalt storage tank. | | | | | | | |



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Maintenance Operating Instruction
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41-20-001.1: ASPHALT BATCH PLANT DAILY OPERATIONAL CHECKLIST

CRAFT NAME: _____ Z#: _____

CRAFT SIGNATURE: _____

SUPERINTENDENT NAME: _____ Z#: _____

SUPERINDENTEND SIGNATURE: _____

Comments:

Part 2- For any AR (Action required) in PART 1, describe below: action required, action taken, date, and time of action. Attach additional sheets if necessary. If more than one action is required, number each AR.

[illegible]

The data in this log is required by NMED Title V Operating Permit (Air Quality) and must be maintained on site for a minimum of 5 years.
41-20-001.2 Rev. 1 Approval Date: 01/12/2016



Logistics Division
Maintenance Operating Instruction
Asphalt Batch Plant Operations
41-20-001.3: ASPHALT BATCH PLANT PM INSPECTION & LUBRICATION CHECKLIST

| | PM DATE: | NEXT SCHEDULED PM DATE: | | |
|--|--|-------------------------|-------------|----------|
| TA- _____ | BLDG- _____ | EQUIP. ID: _____ | PM #: _____ | |
| Place a Checkmark under "S" if the condition is SATISFACTORY or "U" if the condition is UNSATISFACTORY. Note actions required or general remarks in "Comments" as applicable. Mark "N/A" under comments if not applicable. Advise the foreman or supervisor of problems involving imminent danger. | | | | |
| ASPHALT BATCH PLANT PREVENTATIVE MAINTENANCE INSPECTION AND LUBRICATION | | | | |
| STEP | ACTION / DESCRIPTION | S | U | Comments |
| 1.0 | PRE-MAINTENANCE INSTRUCTIONS | | | |
| 1.1 | Before beginning maintenance, follow applicable LO/TO procedures at the main control panel | | | |
| 2.0 | ASPHALT PLANT MAINTENANCE | | | |
| 2.1 | Perform preventative maintenance of the asphalt plant equipment semi-annually. | | | |
| 3.0 | LUBE/INSPECTION POINTS | | | |
| | FEEDER | | | |
| 3.1 | 8 Pillow Blocks | | | |
| 3.2 | 1 Gear Box (Check Oil) <i>Add if Necessary</i> | | | |
| 3.3 | 2 Wheel bearings | | | |
| 3.4 | Clear away stones and dust build up from any moving parts | | | |
| | CONVEYOR BELT | | | |
| 3.5 | 4 Pillow Blocks | | | |
| 3.6 | 1 Gear Box (Check Oil) <i>Add if Necessary</i> | | | |
| 3.7 | Clear away stones and dust build up from any moving parts | | | |
| | DRIER | | | |
| 3.8 | 12 Pillow Blocks | | | |
| 3.9 | 1 Gear Box (Check Oil) <i>Add if Necessary</i> | | | |
| 3.10 | Clear away stones and dust build up from any moving parts | | | |
| 3.11 | Inspect the drum roller drive chain for mechanical integrity. Replace or repair any broken parts | | | |
| 3.12 | Lube chain and idle gear | | | |
| | HOT ELEVATOR | | | |
| 3.13 | 2 Pillow Blocks | | | |
| 3.14 | 2 Flat Bearings | | | |
| 3.15 | 1 Gear Box (Check Oil) <i>Add if Necessary</i> | | | |
| 3.16 | Clear away stones and dust build up from any moving parts | | | |
| 3.17 | Inspect the elevator chain under the buckets for proper tension and mechanical integrity. Ensure no broken parts or damage exists. Adjust/replace if necessary | | | |
| 3.18 | Inspect elevator buckets for aggregate buildup and metal wear. Repair and/or clean parts if necessary. | | | |
| 3.19 | Inspect elevator bottom for excessive aggregate buildup. Remove and/or clean if evident. | | | |
| | SHAKER AND SCREENING PLANT | | | |
| 3.20 | 2 Bearing on Electric Motor | | | |
| 3.21 | 1 Gear Box (Check Oil) <i>Add if Necessary</i> | | | |
| 3.22 | Screen Cloth Tension | | | |
| 3.23 | Inspect even material feed and distribution into screen. | | | |
| 3.24 | Tighten Loose Bolts | | | |
| 3.25 | Drive Belt Tension | | | |
| 3.26 | Support Springs | | | |
| 3.27 | Clear away stones and dust build up from any moving parts | | | |



Maintenance & Site Services
Maintenance Operating Instruction
Asphalt Batch Plant Operations
41-20-001.3: ASPHALT BATCH PLANT PM INSPECTION & LUBRICATION CHECKLIST

| | | | | |
|--|--|----------|----------|-----------------|
| 3.28 | Inside the screen, inspect the feed and discharge wear plates for excessive buildup and wear. Repair and/or clean as needed | | | |
| ASPHALT BATCH PLANT PREVENTATIVE MAINTENANCE INSPECTION AND LUBRICATION | | | | |
| STEP | ACTION / DESCRIPTION | S | U | Comments |
| | <i>PUG MILL</i> | | | |
| 3.29 | 4 Pillow Blocks | | | |
| 3.30 | 1 Gear Box (Check Oil) <i>Add if Necessary</i> | | | |
| 3.31 | Clear away stones and dust build up from any moving parts | | | |
| 3.32 | Inside the mill, inspect the 2 paddle assemblies and wear plates under the paddles for excessive buildup and wear. Repair and/or clean as needed | | | |
| | <i>BAG HOUSE</i> | | | |
| 3.33 | 3 Flat Bearings | | | |
| 3.34 | 4 Gear Box Points (Check Oil) <i>Add if Necessary</i> | | | |
| | <i>EXHAUST FAN</i> | | | |
| 3.35 | 2 Pillow Blocks | | | |
| 3.36 | 2 Fittings on Electric Motor | | | |
| | <i>DAMPER CONTROL</i> | | | |
| 3.37 | 4 Flat Bearings | | | |
| | <i>AIR COMPRESSOR</i> | | | |
| 3.38 | Clean Air Filter | | | |
| 3.39 | Check Oil Level <i>Add if Necessary</i> | | | |
| | <i>DUST RETURN SCREW</i> | | | |
| 3.40 | 1 Gear Box (Check Oil) <i>Add if Necessary</i> | | | |
| | <i>HOT ASPHALT PUMP</i> | | | |
| 3.41 | 2 Fittings on Electric Motor | | | |
| | <i>HOT OIL PUMP AND ELECTRIC MOTOR</i> | | | |
| 3.42 | 2 Fittings on Electric Motor | | | |
| | <i>PROPANE PUMP</i> | | | |
| 3.43 | 2 Fittings | | | |
| 4.0 | <i>POST-MAINTENANCE INSTRUCTIONS</i> | | | |
| 4.1 | After completing maintenance, follow applicable LO/TO procedures at the main control panel | | | |

REMARKS / ACTION REQUIRED:

VERIFICATION

| | | |
|---------------------------|----------|------|
| CRAFT NAME: | Z-NUMBER | DATE |
| CRAFT SIGNATURE: | | |
| SUPERINTENDENT NAME: | Z-NUMBER | DATE |
| SUPERINTENDENT SIGNATURE: | | |



Logistics Division
Maintenance Operating Instruction
Asphalt Batch Plant Operations
41-20-001.4: ASPHALT BATCH PLANT CALIBRATION COMPLIANCE

| | | | |
|---|--------------------------|-------------------------------|-----------------|
| | CALIBRATION DATE: | NEXT CALIBRATION DATE: | |
| <p>Place a Checkmark under "S" if the condition is SATISFACTORY or "U" if the condition is UNSATISFACTORY. Note actions required or general remarks in "Comments" as applicable. Mark "N/A" under comments if not applicable. Advise the foreman or supervisor of problems involving imminent danger.</p> | | | |
| CALIBRATE PLANT SCALES | | | |
| TA- _____ BLDG- _____ EQUIP. ID: _____ | | PM #: _____ | |
| ACTION | S | U | Comments |
| Calibrate load scales for batched asphalt produced. Calibrate and adjust weight indicator to accuracy of 0.5% of the maximum allowable load in accordance with the Federal Motor Carrier Safety Administration (FMCSA) publication. | | | |
| CALIBRATE LOAD SENSORS | | | |
| TA- _____ BLDG- _____ EQUIP. ID: _____ | | PM #: _____ | |
| ACTION | S | U | Comments |
| Calibrate load sensors for aggregate using certified weights (<i>i.e., 1000 lb weight</i>). Calibrate and adjust weight indicator (<i>tolerance +/- 3%</i>). | | | |
| CALIBRATE ASPHALT FLOW METER | | | |
| TA- _____ BLDG- _____ EQUIP. ID: _____ | | PM #: _____ | |
| ACTION | S | U | Comments |
| Obtain a <i>calibrated</i> 5 gallon container | | | |
| Set up output of pipe. Turn on pump; measure pipe output (5 gal) and adjust as necessary till control panel output and pipe output are reading the same. Repeat as necessary until results are within tolerances (+/- 1%) | | | |
| CALIBRATE ASPHALT THERMOMETERS | | | |
| TA- _____ BLDG- _____ EQUIP. ID: _____ | | PM #: _____ | |
| ACTION | S | U | Comments |
| Calibrate thermometer in asphalt feed line, near the charging valve at the mixer unit. Thermometer shall be approved with a range from 100°F to 400°F calibrated with control unit to allowable tolerances. | | | |
| Calibrate thermometer near discharge chute to automatically register the temperature of heated aggregates or mix, as necessary. Thermometer shall be calibrated with control unit to allowable tolerances. | | | |
| VERIFICATION | | | |
| CRAFT NAME: | Z-NUMBER | DATE | |
| CRAFT SIGNATURE: | | | |
| SUPERINTENDENT NAME: | Z-NUMBER | DATE | |
| SUPERINTENDENT SIGNATURE: | | | |

ATTACHMENT 5: ASPHALT BATCH PLANT FLOW DIAGRAM

