Permit

Los Alamos
NATIONAL LABORATORY

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Date: October 15, 2001
In Reply Refer To: ESH-18/WQ&H:01-350
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OCT 18 2001

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SUBJECT: LOS ALAMOS NATIONAL LABORATORY'S NPDES STORM WATER MONITORING PLAN

Dear Ms. McDonald and Mr. Spencer:

Enclosed for your review is a copy of Laboratory's National Pollutant Discharge Elimination System Storm, Water Monitoring Plan (Enclosure 1). The Laboratory is required to monitor its storm water runoff from industrial activities as required by it's NPDES Multi-Sector General Permit (MSGP) No. NMR05A734 and the U. S. Department of Energy's MSGP No. NMR05A735. Representatives from the Laboratory's Water Quality and Hydrology Group (ESH-18) would like to meet with you at the EPA Region 6 Office in Dallas, Texas, during the week of October 22, 2001. We would like to review the document for compliance with the MSGP monitoring requirements with you during our visit.

Please contact me at (505) 665-6085 or Mike Alexander at (505) 665-4752, if you have questions or need additional information regarding the Laboratory's Storm Water Monitoring Program. Thanks for your assistance.

Sincerely,

Mike Saladen
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MS/tml

15964

Enclosures: a/s

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IM-5, w/enc., MS A150

October 2001
Revision 0.0

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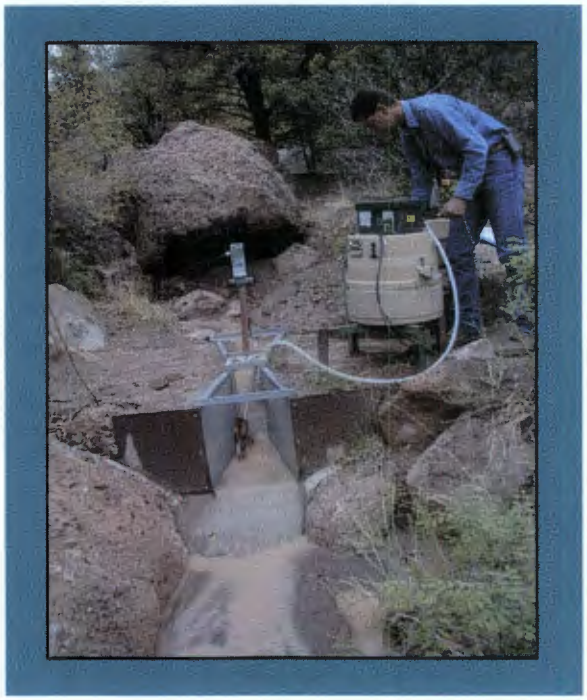
Los Alamos National Laboratory National Pollutant Discharge Elimination System Storm Water Monitoring Plan

Los Alamos National Laboratory
Water Quality and Hydrology
Group (ESH-18)
Los Alamos, New Mexico 87545

Los Alamos National Laboratory
National Pollutant Discharge Elimination System
Storm Water Monitoring Plan
Revision 0.0



October 2001

Prepared by:

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LIST OF ACRONYMS/ABBREVIATIONS

amsl	above mean sea level
AR	Analysis Request
ASTM	American Society for Testing and Materials
BMP	Best Management Practices
°C	degrees Celsius
CFR	Code of Federal Regulations
COC	Chain-of-Custody
DMR	Discharge Monitoring Report
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
EPA	U.S. Environmental Protection Agency
ER	Environmental Restoration
ESH	Environmental Safety and Health
FM	Facility Manager
FMU	Facility Management Unit
FR	Federal Register
GIS	Geographical Information System
HCP	Hazard Control Plan
ISM	Integrated Safety Management
LANL	Los Alamos National Laboratory
MSDS	Material Safety Data Sheets
MSGP	Multi-Sector General Permit
NMED	New Mexico Environment Department
NPDES	National Pollutant Discharge Elimination System
PPE	Personal Protective Equipment
QA	quality assurance
QC	quality control
RCRA	Resource Conservation and Recovery Act
SMO	Sample Management Office
SWMU	solid waste management unit
SWPPP	Storm Water Pollution Prevention Plan

LIST OF ACRONYMS/ABBREVIATIONS (continued)

TA	technical area
UC	University of California
US	United States
VOC	volatile organic compound

1.0 INTRODUCTION

This Storm Water Monitoring Plan provides the framework for meeting National Pollutant Discharge Elimination System (NPDES) Storm Water Multi-Sector General Permit (MSGP-2000) storm water monitoring requirements at Los Alamos National Laboratory (LANL) Los Alamos, New Mexico. The Environmental Safety and Health (ESH) Division, Water Quality and Hydrology Group (ESH-18) has the institutional responsibility for conducting storm water monitoring and reporting at LANL in accordance with this plan.

1.1 OBJECTIVE AND SCOPE

This plan is required by the U.S. Environmental Protection Agency (EPA) for compliance with the NPDES Permit Nos. NMR05A734 and NMR05A735 requirements under the Code of Federal Regulations (CFR), Title 40, Parts 122.26, 123, and 124 (40 CFR 122.26, 123, and 124). Storm water discharges associated with industrial activities are regulated under the conditions of a NPDES Multi-Sector General Permit issued by EPA. Copies of EPA's NPDES Storm Water Processing Center's confirmation of permit application for permit Nos. NMR05A734 and NMR05A735 are included as Appendix A.

This Storm Water Monitoring Plan addresses planning, collection, sample management, analysis, and the reporting of storm water discharges and sampling data. The plan is organized into pre-sampling planning activities, sampling approach and implementation, quality assurance (QA)/quality control (QC), and post-sampling activities.

1.2 SITE DESCRIPTION AND OPERATIONS

LANL is located in Los Alamos County, an incorporated county, in north-central New Mexico, approximately 60 miles north-northeast of Albuquerque and 25 miles northwest of Santa Fe. The regional location of LANL is shown on Figure 1. LANL is divided into technical areas (TA), as shown on Figure 2. LANL, which occupies an area of 43 square miles, and the associated residential and commercial areas of Los Alamos County, which occupy an area of 109 square miles, are situated on the Pajarito Plateau. The plateau consists of a series of finger-like

mesas separated by deep east-west trending canyons. Ephemeral or intermittent streams lie at the bottoms of the canyons. The mesa tops range in elevation from approximately 7,800 feet above mean sea level (amsl) at the flank of the Jemez Mountains, located to the west of Los Alamos, to about 6,200 feet amsl at their eastern extent, where they terminate above the Rio Grande.

LANL's central mission is the reduction of global nuclear danger supported by research that also contributes to conventional defense, civilian, and industrial needs. This includes programs in nuclear safeguards and stockpile stewardship; nuclear, medium energy, and space physics; hydrodynamics; conventional explosives; chemistry; metallurgy; radiochemistry; space nuclear systems; controlled thermonuclear fusion; laser research; environmental technology; geothermal, solar, and fossil energy research; biomedicine, health, and biotechnology; and industrial partnerships. LANL is owned by the U.S. Department of Energy (DOE) and is operated jointly by DOE and the University of California (UC).

1.3 PROJECT BACKGROUND

The NPDES permit program regulates storm water discharges from identified industrial activities. During 2000, LANL had nine active NPDES permits for its storm water discharges. LANL is covered by EPA NPDES MSGP-2000 for Industrial Activities. Under the EPA Region 6 NPDES General Permits for Discharges from Construction Activities , eight LANL projects were permitted and active: the Dual-Axis Radiographic/Radiography Hydrotest/Hydrodynamics Testing (DARHT) Facility Construction Project; Guaje Well Improvements Project; the Fire Protection Improvements Project; the Norton Power Line Project; the Strategic Computing Complex Project; TA-9-15 Gas Pipeline Replacement Project; The Cerro Grande Recovery Project; and the Nuclear Materials Safeguards and Security Upgrades Project.

UC and DOE are co-permittees under the NPDES MSGP-2000 for LANL, included as Appendix B of this document. The MSGP-2000 regulates storm water discharges from the following LANL industrial activities: Sector AA, Fabricated Metal Products; Sector C, Chemical and Allied Products Manufacturing; Sector D, Asphalt; Sector F, Primary Metals; Sector K, Hazardous Waste Treatment, Storage or Disposal; Sector L, Landfill, Land Application Sites,

and Open Dumps; Sector N, Scrap Recycling; Sector O, Steam Electric Generating Facilities; and Sector P, Motor Freight. These industrial activities are summarized in Table 1.

The MSGP-2000 is the third succession of general permits published by EPA to regulate storm water discharges from industrial activities at LANL since 1992. This permit expires September 30, 2005.

As with the 1992 Baseline General Permit and 1995 MSGP, the MSGP-2000 requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). During 2000, LANL maintained and implemented 19 SWPPPs for its industrial activities.

The MSGP-2000 also requires monitoring of the storm water discharges from all identified industrial activities. To meet the monitoring requirements of the MSGP-2000, LANL is currently operating 40 stream monitoring and partial record storm water monitoring stations. The enhanced monitoring program operates 75 storm water monitoring stations, which include the 40 stations used for MSGP-2000 compliance monitoring. The 40 compliance monitoring stations have been located to monitor site specific activities, while enhanced monitoring locations are located on canyons entering and leaving LANL and at the confluence of major canyons. The number of monitoring stations is subject to change based on site activities. Appendix C identifies stations required for both storm water compliance monitoring and enhanced monitoring stations which are discussed in Section 3.2. The flow discharge information for 2000 is reported in "Surface Water Data at Los Alamos National Laboratory: 2000 Water Year" (Shaull et al., 2001) and on Discharge Monitoring Reports (DMRs).

1.4 REGULATORY AND PERMIT REQUIREMENTS

1.4.1 Water Quality Standards and Storm Water Permit Compliance

Water quality standards apply to surface waters at all times (see Table 2), including during both dry weather and wet weather periods. Some states have adopted provisions in their water quality standards to limit the applicability of certain standards (e.g., turbidity, during storm events). However, New Mexico has not adopted any such provision. Consequently, an exceedance of a

water quality standard that occurs during a storm water runoff event may lead to a compliance action by EPA or the New Mexico Environment Department (NMED) .

The applicability of water quality standards to storm water is stated in the federal regulations promulgated to establish the MSGP-2000 for Industrial Activities (65 Federal Register (FR) 64746, October 30, 2000) and included in Appendix B of this document. The language pertaining to LANL's storm water permit are:

> "Your discharges must not be causing or have the reasonable potential to cause or contribute to a violation of a water quality standard. Where a discharge is already authorized under this permit and is later determined to cause or have the reasonable potential to cause or contribute to the violation of an applicable water quality standard, the Director will notify you of such violation(s). You must take all necessary actions to ensure future discharges do not cause or contribute to the violation of a water quality standard and document these actions in the Storm Water Pollution Prevention Plan. If violations remain or re-occur, then coverage under this permit may be terminated by the Director, and an alternative general permit or individual permit may be issued. Compliance with this requirement does not preclude any enforcement activity as provided by the Clean Water Act for the underlying violation" (65 FR 64811, October 30, 2000).
>
> "...discharges which do not comply with applicable anti-degradation provisions of State water quality standards are not eligible for coverage under the MSGP-2000. This eligibility condition is designed to better ensure compliance with NPDES regulations at 40 CFR 122.4(d), which requires compliance with State water quality standards" (65 FR 64756, October 30, 2000).

These statements indicate the following:

(1) The quality of storm water must comply with applicable state water quality standards;

(2) If a discharge from LANL causes an exceedance of a water quality standard or has a *reasonable potential* to cause or contribute to a violation of a standard, then action should be taken;

(3) A facility causing an exceedance of a water quality standard as a result of a storm water discharge should be granted an opportunity to correct the problem by implementing activities to prevent future exceedances; and

(4) If a facility does not take corrective action or the standards exceedance re-occurs after implementation of corrective actions, then the permitting authority may have the option to modify the general permit or issue an individual permit.

1.4.2 Water Quality Standards and Permit Compliance

Water quality compliance may be evaluated in two different ways under a storm water or MSGP-2000 permit: (1) as stated in federal regulations, surface waters receiving storm water runoff should meet state water quality standards (see above); and (2) for certain types of industries, including industries found at LANL, federal regulations require that "benchmark monitoring" be conducted under the storm water permit. The MSGP-2000 regulations describe benchmark monitoring in the following way:

> "The results of benchmark monitoring are primarily for your use to determine the overall effectiveness of your SWPPP [Storm Water Pollution Prevention Plan] in controlling the discharge of pollutants to receiving waters. Benchmark values, included in Part 6 of this permit, are not viewed as effluent limitations. An exceedance of a benchmark value does not, in and of itself, constitute a violation of this permit. *While exceedance of a benchmark value does not automatically indicate that violation of a water quality standard has occurred, it does signal that modifications to the SWPPP may be necessary.* In addition, exceedance of benchmark values may identify facilities that would be more appropriately covered under an individual, or alternative general permit where more specific pollution prevention controls could be required" (emphasis added) (65 FR 64816, October 30, 2000).

This statement indicates that an exceedance of a benchmark value does not automatically result in a finding of non-compliance with permit requirements. Instead, the finding of an exceedance is to be used to evaluate the effectiveness of Best Management Practices (BMPs). However, if the water quality exceedance is significant or the facility continues to have difficulty meeting the benchmark(s), then the facility may need to be permitted under another mechanism, e.g., an individual permit.

2.0 PRE-SAMPLING PLANNING ACTIVITIES

This section outlines the planning activities that will be completed prior to the initiation of storm water monitoring tasks.

2.1 WORK AUTHORIZATION, SCHEDULING, AND FACILITY MANAGEMENT UNIT CONTACT

All sampling efforts will be documented and approved by the appropriate Facility Management Unit (FMU) personnel for each sampling site prior to access of the area. Work control documentation must also be approved by the ESH-18 supervisor. Appendix C provides a list of station numbers, station names and locations, FMUs, and TAs for coordination efforts. An example of work control documentation is included in Appendix D.

Personnel must be aware that field activities at sites managed by other operating groups and Facility Managers (FM) may be governed by additional site-specific hazards and procedures under the purview of those FMs. ESH-18 Group Field Operations and Regulatory Compliance and Line Services team members who perform sampling duties must follow those site-specific procedures and complete required training. A list of TAs/Facilities that require site-specific training before the sampler is able to visit the site unescorted is contained in Appendix D. Keep in mind that this list can change and it is the sampler's responsibility to keep up with the site-specific requirements. The sampler must be familiar with individual FMU sampling plans, and work control requirements, and ESH Hazard Screenings shall be kept in the sample vehicle. Additionally, access agreements may be required for some sites. The sampler will obtain access agreements prior to sampling at one of these areas, and a copy of these agreements shall be maintained in the vehicle.

2.2 INDUSTRIAL SPECIFIC CATEGORIES

Table 1 identifies the industrial categories contained in the MSGP-2000 that are applicable to LANL, and which must be considered in planning sampling activities. Industrial activities at

LANL are divided into nine sectors according to activities performed at the site. These industrial categories, the target analytes associated with the area, the benchmark values and associated analytical method for sample analysis are summarized in Table 3.

2.3 EQUIPMENT/DOCUMENT LIST

Sample personnel must ensure that the following documents have been reviewed, are authorized to do the work and the suggested equipment and material needed are available prior to commencing sampling assignments:

- ESH-18-Hazard Control Plan (HCP)-002, General Field Work
- ESH-18-HCP-005, NPDES Storm Water Compliance Monitoring Plan Sampling
- ESH-18-HCP-009, Operation of Stream Gaging Stations and Collection of Storm Water Runoff Samples
- ESH-18-HCP-010, Processing Storm Water Runoff Samples
- Sampling Procedures and ESH-18 NPDES Analytical Log Book
- Personal Log Book
- Field Log Sheet
- Chain-of Custody forms
- Copies of the NPDES permits and FMU sampling plans, approved ESH Hazard Screenings and Site-Specific Permits
- ESH-18 Environment, Safety, and Health Manual.
- Worker Forms/Package
- First aid kit
- Hip waders
- Digital camera (recommended)
- Radio/cellular phone
- pH meter – calibrated according to EPA Method 150.1
- EPA-approved sample containers
- Refrigeration unit, electric cooler, or cooler with ice packs
- Marker pen (permanent, waterproof)
- Other necessary marking implements
- Sample labels
- Tape

- Stop watch
- Calculator
- Communication source (cell phone, radio)
- Maps with Outfall Locations
- Material Safety Data Sheets (MSDS) for all chemicals/products used during sampling or expected to be encountered during sampling
- Chemical resistant gloves and leather gloves
- Safety glasses
- Lab coat or Tyvek apron
- Hard hat
- Field boots and steel-toed boots

2.4 TRAINING VERIFICATION

Training required for all field personnel is outlined in Section 5.1 of this document. Additionally, no work may be performed without supervisor authorization. Work authorization for this effort is by:

- Worker authorization form signed by supervisor
- An HCP that has been read and signed
- A procedure to which the worker has been project trained. (See HCP 2.6)

2.5 HEALTH AND SAFETY PLANNING

LANL operates under an integrated safety management (ISM) policy that is followed by the entire workforce. The ISM sets environment, safety, and health policy for all persons performing work at LANL. The ISM requires that all work and all workers must meet the safety and environmental responsibility requirements as documented in appropriate LANL performance requirements and LANL implementation requirements and any supplemental requirements defined for a specific facility or activity (LANL, 1999).

In addition to general safety concerns described in ESH-18-HCP-002.6, General Field Work, sampling team members must be aware of the historical and present nature of constituents that could potentially be identified in storm water discharges associated with industrial activities at

LANL. Sampling team members should be familiar with the type of industrial activity associated with the area, as described in LANL's NPDES MSGP-2000 Permit, as well as constituents found at FMUs, Potential Release Sites and Solid Waste Management Units (SWMUs), and industrial activities. MSDSs for chemicals used in field analyses and sample preservation are included as Appendix E. Sampling team members must also be familiar with the proper operation of field monitoring equipment, field sampling equipment, and chemicals used in sampling operations.

2.5.1 Hazards

The ESH-18 Storm Water NPDES compliance sampling program requires sampling personnel to make health and safety related decisions in the field. To help in these decisions, sampling personnel must have knowledge of the physical, chemical, environmental, radiological, and biological hazards present when sampling at storm water gaging stations. If sampling personnel perceive a situation or task to be unsafe, the work should not be performed and a 5-step safety analysis shall be initiated. Personnel shall consult with the safety committee, Team Leader, or Group Leader before proceeding.

Physical safety issues at such outfalls include: slips, trips, and falls; sharp metal edges around outfall pipes; injury from tools or equipment; and proper sample transport (lifting techniques). Two people will be required at remote storm water stations located in difficult terrain. Gaging station work authorization will be completed to raise the safety awareness level of sampling personnel. Leather work gloves can be worn (in addition to chemical resistant gloves) where sharp metal edges of pipes are exposed near the sampling point. Team members should practice proper parking of the sampling vehicle to prevent hazards to oncoming traffic.

Chemical safety issues include: acidic sample preservatives; buffer solutions used in calibration; and chemicals used in field titrations. Chemical resistant gloves and safety glasses will be worn when collecting, preserving, analyzing, or handling samples.

Environmental safety issues include: heat; cold; rain, snow, and ice; flood risk; possible electric shock from lightning; and poor footing conditions. Proper vehicle operation on sloped roads and on roads next to sharp drop-offs is also a concern. Drivers should be aware that when driving off-road in extremely dry conditions, the catalytic converter on the sampling vehicle can be a potential source of combustion.

The ESH-18 Environment, Safety, and Health Manual contains more details on these safety issues. All team members should review the manual and be familiar with its contents at a minimum of once per year.

2.5.2 Personal Protective Equipment (PPE)

Appropriate field attire may vary by site and type of work. At a minimum, field attire shall be consistent with the requirements outlined in ESH-18-HCP-002.6, summarized as follows:

- Long pants
- Sturdy field boots
- Long or short sleeve shirt, as appropriate
- Eye protection, as needed by type of work
- Hearing protection, as required.

During sample collection, the following PPE must be worn:

- Nitrile gloves
- Eye protection
- Shirt with sleeves, equivalent to Level D
- Waders appropriate for flow conditions (ESH-18-HCP-009.0).

3.0 STORM WATER SAMPLING APPROACH

This section describes the sampling strategy and design, sampling locations, analytical parameters, and analytical requirements.

3.1 SAMPLING STRATEGY AND DESIGN

Members of the ESH-18 Field Operations and Regulatory Compliance and Line Services Team or contractors of the ESH-18 will perform a variety of permit compliance-related activities, including the operation and maintenance of the storm water monitoring network, comprised of approximately 75 automated gaging stations. Some sample locations are located directly at the site of the industrial activity, while others are located along discharge areas (Figures 3 and 4). Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. Sample location design was implemented to provide representative samples for a given area or industrial activity.

There are two types of monitoring required by the MSGP-2000, Quarterly Visual Monitoring and Benchmark Monitoring of Discharges Associated with Specific Industrial Activities.

Visual inspections shall be conducted at least quarterly (January through March, April through June, July through September, October through December) when flow is present. Visual inspections are a simple and inexpensive way of obtaining a rough assessment of storm water quality. The visual examination shall be performed within the first half hour of discharge (or as soon as practical, but not to exceed one hour) and note the color, odor, clarity, floating solids, suspended solids, foam, oil sheen, and any other indicators of possible storm water pollution. If foam, floating solids, or uncharacteristic odors or colors are detected in the effluent in more than trace amounts, or if any other unusual conditions are observed, the team member making the observation must inform the outfall owner or user group, FMU, and the designated ESH-18 contact, as soon as practical. A visual inspection form is provided in Appendix F.

Benchmark Monitoring shall be conducted quarterly. The industry-specific pollutants of concern at LANL are summarized in Table 1. Benchmark Monitoring is further discussed in Section 3.5.

3.2 SAMPLING LOCATIONS

Storm water samples and discharge data can be collected from the approximately 75 locations across LANL. Of the 75 stations, only 40 are used for storm water compliance monitoring required by MSGP-2000, while gaging stations at the LANL boundaries and canyon confluences are part of other enhanced monitoring programs. These locations are shown in Figures 3 and 4. Potential release sites and industrial activities located above the gaging stations are summarized in Appendix G.

Under the MSGP-2000, LANL is using its' storm water monitoring network to meet MSGP-2000 storm water monitoring requirements. For specific industrial activities, LANL has located storm water monitoring stations directly below the industrial activity. Storm water sampling is conducted by ESH-18's Field Operations Team in accordance with criteria provided in the MSGP-2000 and established by LANL and EPA Region 6. A description of the detailed sampling procedures are included in this plan.

MSGP-2000 Sample Collection

Storm water samples will be collected at gaging stations located at the regulated industrial activity or within the drainage basins at LANL to meet the requirements of the SWPPP. Industrial Activities and SWMUs have been identified "which may reasonably be expected to affect the quality of storm water discharges" as required by Section 4.1.1 of MSGP-2000. This approach will provide data required for the submittal of DMRs. The following LANL Industrial Activities are authorized under the MSGP-2000 (ref: Table 1, Part IV, p. 64749);

- Steam electric power generating facilities (Sector O)
- Asphalt batch plants as described in the Asphalt Paving Mixtures category (Sector D)
- Hazardous Waste Treatment Storage, or Disposal (TSD) Facilities, including those that are operating under interim status or a permit under Subtitle C of Resource Conservation and Recovery Act (RCRA), including SWMUs (Sector K)
- Landfills, including those that are subject to regulation under Subtitle D of RCRA (Sector L)

- Chemical and Allied Products Manufacturing (Sector C)
- Primary Metals (Sector F) and Fabricated Metal Products (Sector AA)
- Land Transportation and Warehousing (Sector P)
- Scrap Recycling (Sector N)

These Industrial Categories are also summarized in Table 1.

As part of LANL's enhanced monitoring program, the analytical priority for any sampling event will be for compliance monitoring requirements (i.e., benchmark parameters) associated with LANL's Storm Water MSGPs (NMR05A734 and NMR05A735). After these quarterly and annual requirements have been met, the remaining water collected at the monitoring stations will be used to provide information for other programs.

The frequency of sample collection will vary based on the expected flow regime at each station. The NPDES Storm Water permit requires a minimum of four samples per year during the 2nd and 4th year of the permit, ideally one in each quarter of the year. Most run-off and precipitation events occur in the late spring and summer. It has been demonstrated that samples from the colder months cannot be obtained since there is no discharge. See Appendix G for a listing of industrial activities located upstream from monitoring stations. Appendix C lists the storm water monitoring stations used to meet the requirements of the MSGP-2000.

Enhanced Monitoring Network

The enhanced surface water-monitoring network will include monitoring locations existing prior to the development of this plan and the additional monitoring stations proposed in the Watershed Management Plan. Monitoring stations are located just above the confluence of each major drainage and sub-drainage, and in each drainage at the downstream LANL boundary, or as near as possible. This network design allows for the collection of samples that can be used to 1) characterize the quality of water and assess the presence of contaminants in a main drainage before influence from a sub-drainage, 2) characterize the quality of water and assess the presence of contaminants in a sub-drainage before it enters a main drainage, 3) characterize the quality and quantity of water that may flow onto and off of DOE property and, 4) meet DOE Orders for Environmental Surveillance.

Surface water samples should be representative of both the sediment load and the mass of contaminants being transported. Sampling stations are equipped, as appropriate, to collect water levels in order to produce hydrographs of each flow event and to automatically collect water samples from these flow events. In general, automated samplers are programmed to collect time-weighted grab samples from every flow event sufficient to trigger the samplers. Whenever required, manual sampling can usually be conducted during flow events that do not trigger the automated samplers.

The analytical data and discharge data needed from each sample and sampling event are:

- Total analyte concentration in water
- Dissolved analyte concentration in water
- Mass of the total suspended solids in the water
- Hydrograph from the event
- Position on the hydrograph where samples were collected, individual and composite samples.

The Enhanced Monitoring Network will be used to collect information for the Environmental Surveillance Program, the Watershed Management Program, the Environmental Restoration (ER) Program and for Cerro Grande Fire impacts. LANL's Enhanced Monitoring Network is provided in Appendix C.

3.3 PARAMETERS FOR ANALYSIS

Site analytical requirements are defined by the industrial activity in the permit. Table 3 illustrates all of the MSGP-2000 analytes that are applicable to LANL and are consistent with the requirements of 40 CFR Part 136, "Guidelines Establishing Test Procedures for the Analysis of Pollutants." The list covers all permit analytes from all applicable sectors and co-located sectors under the MSGP-2000. Additionally, specific target analytes, benchmark values, and analytical methods are outlined in Table 3. Additionally, Appendix H outlines EPA Region 6 interim approval of several methods which may be used as alternate test procedures in wastewater compliance monitoring.

3.4 SAMPLE ANALYTICAL REQUIREMENTS

Sample analytical requirements vary by site depending on the industrial activities performed at the site. If an insufficient quantity of sample is collected, then sampling will be prioritized. Additional manual grab samples will need to be collected to meet permit requirements. Volume requirements are summarized in Table 4.

With a limited sample volume collected in the automated samplers, the MSGP-2000 analytes receive first priority for submittal to the analytical laboratory. Table 4 shows only approximately 4 liters of water are required to complete the suite of analytes needed to comply with all permit requirements under the MSGP-2000. Station E122 is the only station requiring an oil and grease sample. Thus, all other sample requirements will be limited to approximately 3 liters of water or less. The analytical parameters shown on the table for the MSGP-2000 will be the first priority for submittal to the analytical laboratory. Other parameters needed for enhanced monitoring will be second in priority. Some stations might not require all parameters to be analyzed and all 4 liters of water will not be required. Generally, requirements will be for 3 liters of water. With less water being required for compliance with MSPG-2000, more sample volume will be available for analysis under the enhanced monitoring program.

3.5 MONITORING PERIODS

Benchmark monitoring periods are October 1, 2001 to September 30, 2002 (year two of the permit) and October 1, 2003 to September 30, 2004 (year four of the permit). Benchmark monitoring shall be conducted quarterly during the monitoring periods. A benchmark monitoring waiver may be applicable for the 2003-2004 monitoring year.

3.6 MONITORING WAIVERS

Waivers for the 2003-2004 monitoring year will be provided:

- Samples were collected for all four quarters of the 2001-2002 monitoring year and the average concentration was below the benchmark in Part 6 of the MSGP-2000
- LANL provides certification in the SWPPP which indicates that, based on current potential pollutant sources and BMPs used, discharges from the facility are reasonably expected to be

essentially the same (or cleaner) than the benchmark monitoring for the 2001-2002 monitoring year

- You are unable to conduct monitoring at an inactive or unstaffed site, as long as the site remains inactive or unstaffed.

It is unlikely that LANL will qualify for these waivers due to the arid climate and cold winter conditions limiting flow.

3.7 FLOW MEASUREMENTS

Appropriate water level instrumentation and methods consistent with accepted scientific practices will be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The instrument shall be installed, calibrated, and maintained to ensure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Instruments selected shall be capable of measuring water levels with a maximum deviation of less than 10 percent from true water levels throughout the range of water levels. Discharge rates can vary due to the channel configuration, so this calibration for accuracy should be on the instrument not the discharge.

4.0 STORM WATER SAMPLING FIELD IMPLEMENTATION

This section describes project organization and key personnel roles: the field activities and required equipment; sample collection and sample management procedures; sample custody; sample documentation; sample handling, preservation, storage, and transportation; and equipment decontamination.

4.1 ORGANIZATION AND ROLES

The organization of ESH-18 is provided in Figure 5. Members of ESH-18's Field Operations, and the Regulatory Compliance and Line Services Team, or contractors, perform the permit-compliance related activities, including sample collection and related field work, described in this section.

4.2 DESCRIPTION OF ACTIVITIES AND EQUIPMENT

Because of the unpredictable nature of storm water discharge, sampling personnel and equipment are required to be ready for rapid response to a precipitation event. 40 CFR Part 122 requires that samples may only be taken when a storm water event is at least 0.1 inch of precipitation and only if the previous precipitation of this magnitude was at least 72 hours prior to the current event. However, section 5.2.2 of the permit states "The 72-hour storm interval is waived when the preceding measurable storm did not yield a measurable discharge or if you are able to document that less than a 72-hour interval is representative for local storm events during the sampling period." Thus, no sample submittal for the permit shall be performed for 72 hours after each storm event exceeding 0.1 inch, unless the event does not produce adequate flow to sample. Otherwise, sampling may be performed when sufficient rainfall occurs, which is the norm.

The Air Quality Group, ESH-17 maintains a record of daily rainfall totals from a number of meteorological towers.

Total precipitation for an event is determined by the use of the meteorological towers operated by the air quality group, ESH-17. These stations are situated in various locations around LANL, allowing a representative precipitation amount to be determined for a specific storm water monitoring station. The locations of the towers are shown in Table 5. This procedure might be amended at a later time if rain gauges are added to specific storm water monitoring stations. If amended, a rain gauge installed at a station would be used to determine a precipitation amount for this station and possibly other stations in close proximity.

The Field Operations Team Leader shall be responsible for ensuring that personnel are available for runoff monitoring. This requirement applies to the workweek; however, with the automated stations, samples can be collected on weekends as well. Rainfall data shall be recorded in the database or on the website. Data collected shall include the date and time that the rainfall event started, the time that the event ended, and the total precipitation of the event.

All necessary sampling equipment (except sample coolers and ice) is maintained in the field. The ISCO automated samplers shall be regularly maintained to ensure operation. No sample preservation shall be done prior to compositing.

When there is a significant precipitation event, the automated samplers collect a sample, the sampler sends a signal to the Field Operations Team Leader, who will assess the safety of sending out a field crew to pick-up the collected sample. When the intensity of the event slows, a sample team will be dispatched for sample pick-up and for the collection of any necessary grab samples.

The sampling team members shall complete the Surface Water Sampling Field Sheet. At a minimum, this sheet shall have the following entries completed: Station Name, Station Number, Name of Sampler, Date, Time, Chain-of-Custody (COC) Record Number, and the purpose of the sample. If no flow or an insufficient flow is found at the sampling point, the team shall wait until weather conditions indicate that no additional flow will occur. If a sufficient flow is found, a required grab or composite sample should be collected immediately.

4.3 SAMPLE COLLECTION AND SAMPLE MANAGEMENT PROCEDURES

ESH-18 is prepared to collect samples year-round for analysis of storm water runoff sampling. However, sampling often cannot be conducted in freezing weather due to weather-related complications (e.g. freezing bottles, ice dams, frozen tubing, etc.). The sampling points at gaging stations (Appendix C) are both within the LANL facility boundaries and are at locations that collect representative samples (Figures 3 and 4). Sample packaging and transportation are an important part of the collection process. The purpose of this section is to ensure that all personnel involved in the sampling process adhere to all LANL and Department of Transportation (DOT) policies that apply to the transportation of samples.

In general, storm water samples taken by ESH-18 are expected to have low concentrations of potential contaminants including radionuclides. These low-concentration samples that do not satisfy the DOT hazard class definitions are classified as environmental samples and are thus not subject to DOT regulations. Historical data, knowledge of process, and field screening results will assist the team members in making decisions as to whether a sample can be treated as environmental or needs to be treated as a DOT hazardous material. Samples collected for ESH-18 are coordinated with the ER Sample Management Office (SMO) for delivery from the field and for shipment to the analytical lab. Prior to delivery at ER SMO, the bottles are labeled with the sample location, bottle number, and storm water event number. The samples are then submitted to the analytical laboratory for processing and analysis.

4.3.1 Sample Types

Two options are available for the collection of stormwater run-off samples, grab or automated. Grab sampling may include time-weighted collection and/or manually collected grab samples. Composite samples are prepared for enhanced surveillance monitoring needs.

Time Weighted Grab Sample – During normal operation, automated, ISCO samples are pre-programmed to collect time weighted samples at 1-minute, 5-minute, or 15-minute intervals. For each sample collected, the automated sampler initiates 2 purge/rinse cycles before drawing a discrete one-liter sample.

Manually Collected Grab Sample – On occasion, automated samplers will become plugged with run-off debris, have electric failures, or just won't collect a sample, rendering the sampler incapable of time weighted sample collection. ESH-18 sampling personnel, if in the field during the storm event, will physically collect grab samples manually at that point in time.

Composite Samples – Automated grab samples collected in the field are preserved at 4 degrees Celsius (°C) at the time of retrieval and shipped to an off-site analytical laboratory where samples are composited and analyzed.

4.3.2 Field Measurements

Field parameters are also sampled if water is flowing at a station. Procedures for measuring field parameters are outlined in ESH-18-HCP-009.0. These measurements include:

- pH
- temperature
- flowrate.

The pH and temperature shall be measured using a portable pH meter as outlined in ESH-18-HCP-009.0. Depending on flow rate, flow shall be measured using one of the three techniques described below.

If the flow is deep enough, use the current flow meter to measure the stream flow. For use of the meter, see Geological Survey Water-Supply Paper 2175, "Measurement and Computation of Stream Flow: Volume 1, Measurement of Stage and Discharge, Chapter 5."

If the flow is too shallow to use the current meter, use the modified Parshall 3-inch flume to measure stream flow. For use of the flume, see Geological Survey Water-Supply Paper 2175, "Measurement and Computation of Stream Flow: Volume 1, Measurement of Stage and Discharge, Chapter 8."

If there is no flow at the time of visit, flag the high water mark, preferably in a location where the channel is narrowing slightly and has a straight reach. For slope area, the reach must be a minimum of 75 times the mean depth.

At a later time, take appropriate survey measurements to allow for a later calculation of flow. This method uses various surveying techniques and high water marks from flow events. Some types of indirect measurements are slope area, critical depth, step back water and computation through a culvert. Refer to "Techniques of Water Resources Investigations of the United States Geological Survey."

4.4 SAMPLE CUSTODY

Procedures to ensure the custody and integrity of the samples begin at the time of sample collection and continue through transport, sample receipt, preparation, analysis and storage, data generation and reporting, and sample disposal. Records concerning the custody and condition of the samples are maintained on the Surface Water Sampling Field Sheet.

A sample is defined as being under a person's custody if any of the following conditions exist: (1) it is in their possession, (2) it is in their view, after being in their possession, (3) it was in their possession and they locked it up or, (4) it is in a designated secure area.

All sample containers shall be sealed in a manner that shall prevent or detect tampering if it occurs. Custody seals shall be placed over the caps of the bottles. Custody seals for volatile organic compound (VOC) analysis vials shall not be placed over the septum; instead the seal should be placed around the cap so it straddles the lid/vial interface, and initialed and dated by a sample team member. In no case shall tape be used to seal sample containers.

The following minimum information concerning the sample will be documented on the Analysis Request (AR)/COC form as outlined in ESH-18-HCP-010.0:

- Unique COC identification
- Date and time of sample collection

- Source of sample (including name, location, and sample type)
- Preservative used
- Analyses required
- Name of collector(s)
- Serial numbers of custody seals and transportation cases (if used)
- Custody transfer signatures and dates and times of sample transfer from the field to transporters and to the laboratory or laboratories
- Bill of lading or transporter tracking number (if applicable).

4.5 SAMPLE DOCUMENTATION

The following records will be generated as required by the NPDES Permit:

- Surface Water Sampling Field Sheet
- Entries in NPDES analytical log book
- Sampling record form including AR/COC (Appendix I). The sample record form must include the sample location, date and time of collection, and the individual(s) who performed the sampling or measurements.

4.6 SAMPLE HANDLING, PRESERVATION, STORAGE AND TRANSPORTATION

This section describes the sample identification and numbering system, sample preservation requirements, packaging and shipment procedures, and sample holding times. Pre-cleaned sample containers will be provided by the analytical laboratory through a second-source distribution. The sample containers will be certified to meet or exceed analyte specifications established by the EPA.

4.6.1 Sample Identification and Numbering System

The following information shall be written in the logbook and on the sample label when samples are collected for laboratory analysis per ESH-18-HCP-010.0:

- Project identification
- Sample identification number
- Sample location
- Preservatives added

- Date and time of collection
- Requested analytical methods
- Sampler's name or initials.

Each sample will be assigned a unique identification (ID) number that describes where the sample was collected. A list of sample numbers will be maintained by the field coordinator. Per ESH-18-HCP-010.0, sample identifiers are limited to 11 characters by the database. The format of the sample ID is "LCYYMMTEnnn," where

L = laboratory identifier, P for Paragon and G for Gel Labs

C = sampler initial for unfiltered samples, F for filtered sample splits

YY = two-digit year

MM = month number

T = time sequence; first filtered sample for the month will be "1", second will be "3", third will be "5", etc. For max TSS samples, first filtered sample for the month will be "2", second will be "4", third will be "6", etc. Use letters after "9": 10 = "A", 11 = "B", etc.

Ennn = unique sample location identifier. Refer to the table maintained by the Storm Water Sampling Project Leader or to the table in Access database "Storm Water Sample Tracking."

The field coordinator will maintain a list that describes how each QC sample corresponds with specific environmental samples. For example, each trip blank will be correlated with a particular set of samples shipped to the laboratory, and each field blank will be correlated to those samples collected by a particular set of decontaminated sampling tools.

4.6.2 Sample Preservation Requirements, Packaging, and Transportation Procedures

Table 6 lists sample handing requirements for storm water monitoring activities. All samples will be transported to the ER SMO and shipped to the analytical laboratory in properly packed and iced coolers. Samples will be transported in order to meet parameter holding times.

Samples collected in the field shall be transported to the ER SMO or ESH-18 Lab at TA-59-1 as expeditiously as possible. When a four °C requirement for preserving the sample is indicated, the samples shall be packed in ice or chemical refrigerant to keep them cool during retrevial, collection, and transportation. During transit, it is not always possible to rigorously control the temperature of the samples. As a general rule, storage at low temperature is the best way to preserve most samples. A temperature blank (a VOC sampling vial filled with water) shall be included in every cooler and used to determine the internal temperature of the cooler upon receipt of the cooler at the analytical laboratory.

4.6.3 Sample Holding Times

Sample holding time tracking begins with the collection of samples and continues until the analysis is initiated. Holding times for all required analysis are specified in Table 6.

4.7 DECONTAMINATION

To prevent contamination of samples by materials originating from onsite sampling machinery and equipment, all equipment will be decontaminated before use at each sample location. Decontamination will consist of washing the sampling and testing equipment with a deionized water and Alconox solution and rinsing the equipment with deionized water to prevent cross contamination. Equipment dedicated to a sample location will not require full decontamination, but will be rinsed with sample water several times prior to sample collection. This rinse method will be completed to ensure a representative sample with no trace residue from previous sampling events. This is completed by the purge cycles on the automated sampler.

5.0 QUALITY ASSURANCE/QUALITY CONTROL

This section describes the specific procedures that will be used to provide QA and QC for this project.

5.1 TRAINING

The training method for personnel assigned to process storm water samples is on-the-job training provided by an experienced individual. All training will be documented by the employee's team leader as described in ESH-18-HCP-010.0 (Appendix J).

Additional training requirements include:

- Health Physics Checklist Indoctrination
- Hazard Communication Introduction
- First Aid: Standard
- Cardio Pulmonary Resuscitation (CPR)-Adult
- LANL General Employee Training – Examination
- Occupational Safety and Health Administration 24-hour initial HAZWOPER training and 8-hour refresher training in compliance with 29 CFR 1910.120.
- Electric Safety Basics
- 24-Hour HAZWOPER Training.

In addition, the sampler will read and comprehend all applicable ESH-18 HCP/Operational Procedures relevant to this activity (Appendix J). The sampler will also be trained on any additional applicable Laboratory Implementation Requirements as they are implemented by ESH-18.

5.2 DOCUMENTATION

This section describes the field documentation procedures which will be followed as a means of recording observations and findings during field activities. Documentation will include Surface

Water Sampling Field Sheets, equipment calibration forms, sample collection forms, site photographs, and drawings and sketches. All documentation will be completed in indelible ink and corrections will be clearly stricken and initialed.

5.3 EQUIPMENT CALIBRATION, MAINTENANCE, AND CLEANING

ESH-18 shall properly operate and maintain all equipment as efficiently as possible. ESH-18 shall calibrate and perform maintenance procedures on all monitoring and analytical instruments at intervals frequent enough to ensure accuracy of measurements and shall maintain appropriate records of such activities. An adequate analytical QC program, including the analyses of sufficient standards, spikes, and duplicate samples to ensure the accuracy of all required analytical results shall be maintained by ESH-18 or the designated analytical laboratory. All equipment shall be calibrated using methods provided by the equipment manufacturer and must meet NPDES permit requirements. All field calibrations will be documented in the field sheets. Field equipment calibration will be considered satisfactory if the calibration result is ±10 percent of the calibration standard. If equipment does not pass calibration initially, the equipment shall be recalibrated using manufacturer's instructions. Equipment shall be maintained by ESH-18 personnel. Equipment shall be decontaminated prior to any measurement activities and shall be protected from contamination until ready for use.

5.4 FIELD QUALITY CONTROL SAMPLES

Field QC samples will be collected or prepared to evaluate the reliability of field sampling procedures. QC samples will be used for data evaluation and data validation.

For storm water runoff grab samples, for each storm event collected (lot shipped or batch submitted) the following QC samples will be submitted:

- Matrix for radiochemistry analysis
- Matrix for organic analysis
- Field Blank
- Trip Blank Field Duplicate.

For storm water runoff samples collected by ISCO sampler, no QC samples can be collected. If an additional amount of water is submitted with the samples, a request will be written on the COC for the analytical laboratory to use the water for QC.

5.5 ANALYTICAL LABORATORY QC SAMPLES

For each batch of samples (maximum of 20) analyzed, the analytical laboratory shall perform analysis on the following types of QC samples:

- One duplicate laboratory control sample
- One method blank
- One analysis of surrogate compounds for the gas chromatograph/mass spectrometer.

The results of these analyses shall be reported with the other data from the batch.

5.6 DATA VALIDATION

Data validation shall be performed in accordance with procedures approved by the ESH-18. The SMO Leader shall assign data reviewers. Sample Data Review Checklists shall be used for data validation. The Field Operations Team Leader shall be informed of data that do not meet the data quality objectives, which shall not be reported, or conditionally accepted data, which shall be reported with qualifiers. The need for re-sampling or re-analysis shall be determined and approved by the Field Operations Team Leader.

6.0 POST SAMPLING ACTIVITIES

This section describes the procedures for sample submission, database maintenance, noncompliance follow-up, record keeping, compliance inspections and evaluations, discharge monitoring reports, and the storm water pollution prevention plan.

6.1 SAMPLE SUBMISSION

Samples are submitted and shipped through the ER SMO. Prior to delivery of samples, the ER SMO is notified of a pending delivery of storm event samples for shipment. Samples must be delivered to the ER SMO by 3:00 p.m. for same day shipment.

The ER SMO makes one copy of the Surface Water Sampling Field Sheet COCs and sends copies with the samples to the analytical laboratory. The SMO will at this time fax a copy of the COC to the analytical laboratory.

The analytical laboratory is informed of the sampling location, event, and volume of water collected. The analytical laboratory is advised by e-mail that a sampling event has taken place and samples have been submitted for analyses. The ER SMO makes one copy of the Surface Water Sampling Field Sheet AR/COC form(s) and sends copies with the samples to the analytical laboratory. The ER SMO will also fax a copy of the AR/COC form(s) to the analytical laboratory. The ESH-18 sample management personnel are copied on the e-mail sent to the analytical laboratory and are provided with a copy of the fax.

The samples are submitted to the analytical laboratory for processing and analysis. Processing the samples includes compositing and filtering of the samples as requested on the COC received with the submitted samples. The analytical laboratory performs the sample compositing and filtering of the samples by following protocol provide by the ESH-18 SMO.

Once the samples are received by the analytical laboratory, they are assigned a laboratory identification number that is used by the analytical laboratory. The analytical laboratory also

assigns a sample description number to the samples. The sample description number is the sample ID used by the ESH-18 sample management office to identify and track the samples.

6.2 DATABASE MAINTENANCE

The database is maintained by the Information Management Team for ESH-18. The data is delivered from the lab as an electronic database deliverable. This is loaded directly into the Water Quality Database. The data is also delivered in hard copy format. All QA/QC is done by the Information Management Team.

6.3 NONCOMPLIANCE FOLLOW UP

6.3.1 Variances

A variance is a change to an established plan or procedure that is required to accommodate unanticipated conditions in the implementation of the plan or procedure. Variances to this plan shall be documented in a log or other suitable means. This documentation shall include the date of the variance, the name of the person initiating the variance, a description of the established procedure, a description of the modification of the established procedure, the justification for the variance, and the signature (dated) of the Team Leader. Variances shall be approved, at least verbally, by the Team Leader prior to implementation.

6.3.2 Nonconformances

A nonconformance is any action or condition that does not meet the project requirements or specifications of an established plan or procedure. A nonconformance in the implementation of this plan may be identified by any project personnel, including contractors. Nonconformances shall be documented, evaluated, and have a disposition prepared and implemented. This documentation shall contain the name(s) and affiliation(s) of the originator(s), a description of the nonconformance with reference to the procedure of the specification violated, an evaluation of the effects of the nonconformance, an evaluation of the cause of the nonconformance, a recommendation for final disposition, and a report distribution list.

6.3.3 Corrective Actions

Whenever possible, corrective actions shall be taken to rectify or prevent a nonconformance or other condition that could adversely affect the quality of the data. Corrective actions shall be implemented in accordance with the ESH-18 Quality Assurance Plan. A corrective action shall be documented by the person(s) identifying the need for the action. The documentation shall contain the name(s) and affiliation(s) of the originators, a description of the adverse condition requiring corrective action, an evaluation of the source and effects of the condition, a recommendation for corrective action, and a report distribution list. The corrective action shall be approved, signed, and dated by the Team Leader.

6.4 RECORD KEEPING

6.4.1 EPA Inspection and Entry

The permittee must allow the Director, or an authorized representative of EPA, upon the presentation of credentials and other documents as may be required by the law to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment).

6.4.2 Retention of Records

The permittee must retain records of all monitoring information, and copies of all monitoring reports required by the MSGP-2000 for at least 3 years from the date of the sample, measurement, evaluation or inspection, or report. This period may be extended by request of the Director at any time. Permittees must submit any such records to the Director upon request. The

permittee shall retain the SWPPP developed in accordance with Part 4 of the MSGP-2000, including the certification required under Section 2.2.4.3 of the MSGP-2000, for at least three years after the last modification or amendment is made to the plan.

6.4.3 Record Contents

Records of monitoring information must include:

a. The date, exact place, and time of sampling or measurements;

b. The initials or name(s) of the individual(s) who performed the sampling or measurements;

c. The date(s) analyses were performed;

d. The time(s) analyses were initiated;

e. The initials or name(s) of the individual(s) who performed the analyses;

f. Reference and written procedures, when available, for the analytical techniques or methods used; and

g. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results.

Records to be maintained at LANL include, but are not limited to:

- Storm Water Monitoring Plan
- AR/COC Forms
- Equipment Calibration Records
- Contract Analytical Laboratory Data Reports
- Sample Data Review Checklists and other Data Validation Records
- Variance Logs
- Nonconformance Reports
- Corrective Action Reports.

6.5 DISCHARGE MONITORING REPORTS

Monitoring results and "no discharge" reports must be reported on EPA Form 3320_1 (10-96) or reported on a DMR Form previously approved, in writing, by EPA's Compliance Assurance and Enforcement Division, Water Enforcement Branch, Administrative Section, Section Chief in accordance with the "Guidance Manual for the Monitoring and Reporting Requirements of the NPDES Storm Water Multi-Sector General Permit," provided as Appendix K. Analytical monitoring results obtained from each outfall associated with industrial activity (Appendix G) must be submitted for each storm event sampled. DMRs will be signed by the "authorized representative" (Appendix K). The original DMR will be sent to EPA at:

Compliance Assurance and Enforcement Division
Water Enforcement Branch (6EN-W)
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue
Dallas, TX 75202-2733

Duplicate copies of DMRs and all other reports shall be submitted to NMED at:

Program Manager
Surface Water Quality Bureau
New Mexico Environment Department
P. O. Box 26110
1190 Saint Francis Drive
Santa Fe, NM 87502

DMRs are due January 28, 2003 for year 2 monitoring and January 28, 2005 for year 4 monitoring.

6.6 STORM WATER POLLUTION PREVENTION PLAN

The purpose of a SWPPP is to reduce and/or eliminate the migration of potential pollutants, due to storm water runoff, from a SWMU to "Waters of the United States (US)". With respect to LANL, "Waters of the US" are defined as the canyons, streams, rivers, and natural drainages within and surrounding LANL TAs. The prevention of pollutant migration will be accomplished through pollutant source reduction, the implementation of BMPs, and remediation activities. BMPs include maintenance procedures, schedules of activities, prohibition of practices, structural controls, and additional applicable management practices.

The MSGP-2000 requires monitoring of the storm water discharges from all identified industrial activities. SWPPPs associated with industrial activities are shown in Table 7. To meet monitoring requirements, LANL is operating storm water monitoring stations directly at its operational sites and as a drainage basin monitoring strategy. Specifically, an automated telemetry-based or radio-based monitoring system has been installed to collect surface water samples at 40 monitoring stations located throughout LANL.

Storm water sampling will be conducted by ESH-18's Operation's Team in accordance with criteria to be established by LANL and EPA Region 6. Each of these monitoring stations are designed to collect storm water samples for analysis for sector-specific benchmark parameters described in Table 3. All sample collection information is available on the ESH-18 website at http://drambuie.lanl.gov/~esh18/index.html. The flow information is also reported in "Surface Water Data" reports generated annually at LANL (Shaull, 2001).

6.7 Use of Geographical Information Systems to Support Storm Water Permitting

ESH-18 uses Geographical Information Systems (GIS) for its' storm water program to identify and characterize pollutant loads and sources. The GIS helps track and trend the results of BMP implementation and water quality monitoring in a visual manner so that the spatial distribution of potential pollutant sources can be viewed. The following bulleted items summarize the types of analyses that can benefit from the use of GIS:

- Describe LANL watersheds, e.g., identify appropriate attributes for each watershed, e.g., watershed area, relative land use and underlying geology, which may be important to associate with natural background levels of pollutants. Note: Dividing watersheds into smaller subdivisions, increases the power of analyses conducted using GIS.
- Once watersheds are defined, watershed indices can be calculated, e.g., area each land use covers, average imperviousness of each drainage area (based on land use and area), volume of rainfall runoff for each drainage area and the volume of runoff for each watershed based on the cumulative runoff from each drainage area. Note: many of these calculations may be done on an annual, seasonal, or per storm basis. In addition the user has the option to change land use and/or rainfall intensity parameters for use in computing theoretical runoff volumes.
- Estimate the annual, seasonal, or per storm pollutant loadings from various combinations of storm drains and/or drainage areas.

- Determine pollutant sources and relative volumes. By spatially locating watershed activities, pollutant loadings can be related to potential pollutant sources. Analysis can help determine relative contribution of pollutant loads from nonpoint, point and background sources.
- Target BMP implementation – spatial analysis can help identify key sources of pollutant loads and direct efforts to minimize pollutant levels in storm water runoff.
- Evaluate BMP effectiveness - analyze the pollutant reducing ability of various BMPs in a watershed to assess their potential effectiveness. This will allow for the selection of appropriate and cost-effective BMPs for specific watersheds.
- Cost effective implementation – using spatial analyses to target areas to implement BMPs to minimize pollutant loads can increase the cost-effectiveness of the storm water BMP program.
- Tracking and Trending as BMPs.

7.0 REFERENCES

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Los Alamos National Laboratory (LANL), November 3, 2000, "Watershed Management Plan", Los Alamos National Laboratory, Los Alamos, New Mexico.

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Rantz, S.E. et al., 1982, Measurement and Computation of Streamflow: Volume 1. Measurement of Stage and Discharge: Geological Survey Water Supply Paper 2175, Vol. 1, pgs. 1-284.

United States Geological Survey Publications on Techniques of Water Resource Investigations -http://Oregon.usgs.gov/pubs_dir/twri-list.html

Table 1. Los Alamos National Laboratory Industrial Activities Categories

Sector	Target Analyte	Benchmark Value	Method
AA	**Fabricated Metals**		
	Aluminum, total recoverable	0.75 mg/l	202.1, 202.2, 200.7,200.8
	Iron, total recoverable	1.0 mg/l	236.1,236.2,200.7,200.8
	Nitrate + Nitrite Nitrogen	0.68 mg/l	353.1,353.2,353.3,354.1
	Zinc, total recoverable	0.117 mg/l	289.1,289.2,200.7,200.8
C	**Inorganic Chemical**		
	Aluminum, total recoverable	0.75 mg/l	202.1, 202.2, 200.7,200.8
	Iron, total recoverable	1.0 mg/l	236.1,236.2,200.7,200.8
	Nitrate + Nitrite Nitrogen	0.68 mg/l	353.1,353.2,353.3,354.1
	Zinc, total recoverable	0.117 mg/l	289.1,289.2,200.7,200.8
D	**Asphalt**		
	TSS	100 mg/l	160.2
F	**Primary Metals**		
	Copper, total recoverable	0.0636 mg/l	202.1, 202.2, 200.7,200.8
	Zinc, total recoverable	0.117 mg/l	289.1,289.2,200.7,200.8
K	**Treatment, Storage, and Disposal**		
	Ammonia	19 mg/l	350.1,350.2,350.3
	Arsenic, total recoverable	0.16854 mg/l	206.2,206.3,206.4,206.5,200.7,200.8
	Cadmium, total recoverable	0.0159 mg/l	213.1,213.2,200.7,200.8
	Chemical Oxygen Demand	120 mg/l	410.1,410.2,410.3,410.4
	Cyanide, total	0.0636 mg/l	335.2,335.3
	Lead, total recoverable	0.0816 mg/l	239.1,239.2,200.7,200.8
	Magnesium, total recoverable	0.0636 mg/l	242.1,200.7
	Mercury, total	0.0024 mg/l	245.1,245.2
	Selenium, total recoverable	0.2385 mg/l	270.2,200.7,200.8
	Silver, total recoverable	0.0318 mg/l	272.2,272.2,200.7,200.8
L	**Landfill**		
	Iron, total recoverable	1.0 mg/l	236.1,236.2,200.7,200.8
	TSS	100 mg/l	160.2
N	**Recycling**		
	Aluminum, total recoverable	0.75 mg/l	202.1, 202.2, 200.7,200.8
	Chemical Oxygen Demand	120 mg/l	410.1,410.2,410.3,410.4
	Copper, total recoverable	0.0636 mg/l	202.1, 202.2, 200.7,200.8
	Iron, total recoverable	1.0 mg/l	236.1,236.2,200.7,200.8
	Lead, total recoverable	0.0816 mg/l	239.1,239.2,200.7,200.8
	TSS	100 mg/l	160.2
	Zinc, total recoverable	0.117 mg/l	289.1,289.2,200.7,200.8
O	**Steam Electric**		
	Iron, total recoverable	1.0 mg/l	236.1,236.2,200.7,200.8
P	**Motor Freight**		
	None Specified		

Table 2. Standards for Interstate and Intrastate Surface Waters

Filed with State Records Center
January 24, 2000
As NMAC 6.1
Effective February 23, 2000

TITLE 20 ENVIRONMENTAL PROTECTION
CHAPTER 6 WATER QUALITY
PART 1 STANDARDS FOR INTERSTATE AND INTRASTATE SURFACE WATERS

3100. STANDARDS APPLICABLE TO ATTAINABLE OR DESIGNATED USES

K. Livestock Watering: The following numeric standards shall not be exceeded:

Dissolved aluminum	5.0	mg/L
Dissolved arsenic	0.2	mg/L
Dissolved boron	5.0	mg/L
Dissolved cadmium	0.05	mg/L
Dissolved chromium	1.0	mg/L
Dissolved cobalt	1.0	mg/L
Dissolved copper	0.5	mg/L
Dissolved lead	0.1	mg/L
Total mercury	0.01	mg/L
Dissolved selenium	0.05	mg/L
Dissolved vanadium	0.1	mg/L
Dissolved zinc	25.0	mg/L
Radium-226 + radium-228	30.0	pCi/L
Tritium	20,000	pCi/L
Gross alpha	15	pCi/L

L. Wildlife Habitat: Wildlife habitat should be free from any substances at concentrations that are toxic to or will adversely affect plants and animals that use these environments for feeding, drinking, habitat or propagation, or can bioaccumulate and impair the community of animals in a watershed or the ecological integrity of surface waters of the State. In the absence of site-specific information, and subject to the following paragraph, the following chronicnumeric standards shall not be exceeded:

Total mercury	0.77	ug/L
Total recoverable selenium	5.0	ug/L
Cyanide, weak acid dissociable	5.2	ug/L
Total chlorine residual	11	ug/L
Total DDT and metabolites	0.001	ug/L
Total PCBs	0.014	ug/L

The discharge of substances which bioaccumulate, in excess of levels specified above is allowed if, and only to the extent that, the substances are present in the intake waters which are diverted and utilized prior to discharge, and then only if the discharger utilizes best available treatment technology to reduce the amount of bioaccumulating substances which are discharged.

Table 3. Applicable Benchmark Parameters – Los Alamos National Laboratory Multi-Sector General Permit – 2000

Target Analyte	Benchmark Value	Method
Aluminum, total recoverable	0.75 mg/l	202.1, 202.2, 200.7,200.8
Ammonia, NH3	19 mg/l	350.1,350.2,350.3
Arsenic, total recoverable	0.16854 mg/l	206.2,206.3,206.4,206.5,200.7,200.8
Cadmium, total recoverable	0.0159 mg/l	213.1,213.2,200.7,200.8
Chemical Oxygen Demand, COD	120 mg/l	410.1,410.2,410.3,410.4
Copper, total recoverable	0.0636 mg/l	202.1, 202.2, 200.7,200.8
Cyanide, total	0.0636 mg/l	335.2,335.3
Iron, total recoverable	1.0 mg/l	236.1,236.2,200.7,200.8
Lead, total recoverable	0.0816 mg/l	239.1,239.2,200.7,200.8
Magnesium, total recoverable	0.0636 mg/l	242.1,200.7
Mercury, total	0.0024 mg/l	245.1,245.2
Nitrate + Nitrite Nitrogen, NO3+NO2-N	0.68 mg/l	353.1,353.2,353.3,354.1
Oil & Grease	15 mg/l	413.1,1664
Selenium, total recoverable	0.2385 mg/l	270.2,200.7,200.8
Silver, total recoverable	0.0318 mg/l	272.2,272.2,200.7,200.8
TSS	100 mg/l	160.2
Zinc, total recoverable	0.117 mg/l	289.1,289.2,200.7,200.8

Table 4. Volume Needed for NPDES MSGP Analyses

Parameter	Volume Required (L)
Total Suspended Solids	0.10
Metals (unfiltered)	1.00
Metals (Hg)	0.25
General Inorganics	1.00
Cyanide	0.25
Total Volume Needed	2.60

Table 5. Rain Gauges Used for Specific Stations

Rain Gauge	Name of Station	E#
TA-6 Met Tower		
	Acid Canyon At Mouth	56
	Sandia Powerplant	121
	Sandia RS & Gs	122
	Sandia Sigma building	122.2
	Sandia Motor Pool	122.4
	Sandia Salvage Yard	122.5
	TA-55	196
	Mortandad at TA-50	200
	CB-46	218
	Starmers Gulch at TA-22	242
	Arroyo De La Delfe	242.5
	Two Mile Canyon Tributary at Mouth	243.5
	Two Mile Canyon at mouth	244
	Three Mile Canyon at TA-18	246
	Canon Del Valle Below MDA-P	256
TA-49 Met Tower		
	Water Canyon above mouth of S Site Canyon	260
	S Site Canyon at mouth	261
	Canon del Valle at mouth	262
	Water Canyon Area AB	262.5
	Chaquehui Canyon South Site	338
TA-53 Met Tower		
	LA Canyon below TA-2	30
	DP Canyon below Meadow at TA-21	39
TA-54 Met Tower		
	Ten Site Canyon at mouth	201.5
	Mortandad Canyon near LA	204
	RANT	220
	J-1	221
	L-1	223
	CDB abv WR	225
	G-6	227
	G-1	247
	G-2	248
	G-3	248.5
	G-5	249
	G-4	249.5
	Pajarito above SR4	250
	Potrillo Canyon near White Rock	267
	North Fork Ancho Canyon at TA-39	274
TA-74 Met Tower		
	LA near LA	42
	Pueblo Canyon near LA	60

Table 6: Required Containers, Preservation Techniques, and Holding Times

REQUIRED CONTAINERS, PRESERVATION TECHNIQUES, AND HOLDING TIMES			
Parameter	**Container(1)**	**Preservative (2), (3)**	**Maximum Holding Time (4)**
Inorganic Tests			
Ammonia	P, G	Cool, 4°C H_2SO_4 to pH<2	28 days
Chemical oxygen demand	P, G	Cool, 4°C H_2SO_4 to pH<2	28 days
Cyanide, total and amenable to chlorination	P, G	Cool, 4°C NaOH to pH>12 0.6g ascorbic acid (5)	14 days (5)
Hydrogen ion (pH)	P, G	None required	Analyze immediately
Mercury	P, G	$HN0_3$ to pH<2	28 hours
Metals	P, G	$HN0_3$ to pH<2	6 months
Nitrate-nitrite	P, G	Cool, 4°C H_2SO_4 to pH<2	28 days
O&G	G	Cool, 4°C H_2SO_4 or HCl to pH<2	28 days
Residue, nonfilterable (TSS)	P, G	Cool, 4°C	7 days
Alpha, beta, and radium	P, G	$HN0_3$ to pH<2	6 months

(1) Polyethylene (P) or Glass (G).

(2) Sample preservation should be performed immediately upon sample collection. For composite chemical samples each aliquot should be preserved at the time of collection. When use of an automated sampler makes it impossible to preserve each aliquot, then chemical samples may be preserved by maintaining at 4°C until compositing and sample splitting is completed.

(3) When any sample is to be shipped by common carrier or sent through the United States Mails, it must comply with the Department of Transportation Hazardous Materials Regulations (49 CFR Part 172). The person offering such material for

Table 6: Required Containers, Preservation Techniques, and Holding Times

REQUIRED CONTAINERS, PRESERVATION TECHNIQUES, AND HOLDING TIMES			
Parameter	**Container(1)**	**Preservative (2), (3)**	**Maximum Holding Time (4)**
transportation is responsible for ensuring such compliance. For the preservation requirements of Table II, the Office of Hazardous Materials, Materials Transportation Bureau, Department of Transportation has determined that the Hazardous Materials Regulations do not apply to the following materials: Hydrochloric acid (HC1) in water solutions at concentrations of 0.04% by weight or less (pH about 1.96 or greater); Nitric acid (HNO_3) in water solutions at concentrations of 0.15% by weight or less (pH about 1.62 or greater); Sulfuric acid (H_2SO_4) in water solutions at concentrations of 0.35% by weight or less (pH about 1.15 or greater); and Sodium hydroxide (NaOH) in water solutions at concentrations of 0.080% by weights or less (pH about 12.30 or less).			
(4) Samples should be analyzed as soon as possible after collection. The times listed are the maximum times that samples may be held before analysis and still be considered valid. Samples may be held for longer periods only if the permittee, or monitoring laboratory, has data on file to show that the specific types of samples under study are stable for the longer time, and has received a variance from the Regional Administrator under § 136.3(e). Some samples may not be stable for the maximum time period given in the table. A permittee, or monitoring laboratory, is obligated to hold the sample for a shorter time if knowledge exists to show that this is necessary to maintain sample stability.			

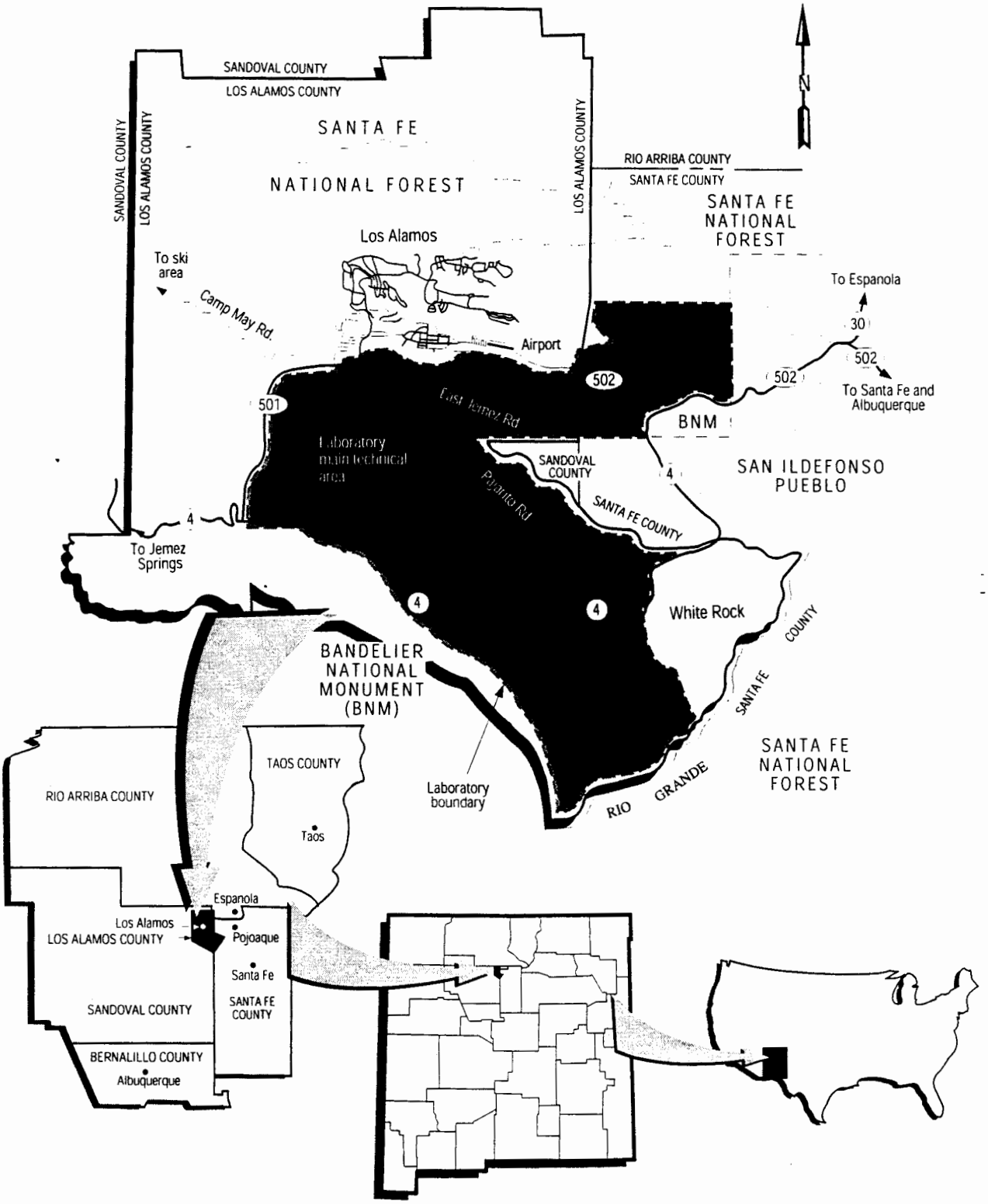
Table 6: Required Containers, Preservation Techniques, and Holding Times

REQUIRED CONTAINERS, PRESERVATION TECHNIQUES, AND HOLDING TIMES			
Parameter	**Container(1)**	**Preservative (2), (3)**	**Maximum Holding Time (4)**
See § 136.3(e) for details. (5) Maximum holding time is 24 hours when sulfide is present. Optionally all samples may be tested with lead acetate paper before pH adjustments in order to determine if sulfide is present. If sulfide is present, it can be removed by the addition of cadmium nitrate powder until a negative spot test is obtained. The sample is filtered and then NaOH is added to pH 12.			

Source: Neptune and Company, Inc. August 2000 Draft Storm Water Runoff Sampling Plan.

Table 7. Los Alan[illegible] [illegible]ational Laboratory
SWPP Plans Associated with Industrial A[illegible]vity, Permit # NMR05A734 and NMR05A735

#	LOCATION	OPERATION	INDUSTRIAL ACTIVITY	Signatory GROUP	Signatory Person	CONTACT	PHONE	Comments
1	TA-3-22	POWER PLANT	STEAM ELECTRIC POWER	FWO-UI	DAVE PADILLA	JERRY FORTE	7-4221	
2	TA-3-38	METAL SHOP	FABRICATED METALS	FWO-DF	RON BRODD	LARRY McKNIGHT	5-2272	New activity
3	TA-3-39	METAL SHOP	FABRICATED METALS	ESA	GERRY LEECHES	LONGER/ELLINGTON	5-5665	New activity
4	TA-3-66	FOUNDARY/ PLATING SHOPS	PRIMARY METALS	MST	LISA WOODROW	TERRY PRIESTLY	5-3263	New activity
5	TA-3-73	ASPHALT BATCH PLANT	ASPHALT BATCH PLANT	FWO-UI	DAVE PADILLA	LARRY McKNIGHT	7-4221	
6	TA-16	BURN GROUNDS	TSD	ESA/WMA	RICHARD ORTIZ	OLINGER/ELLINGTON	7-6891	
7	TA-35-85	CHEMISTRY BUILDING	CHEMICAL PRODUCTION	CST-5	SARA HELMICK	LOREN ABERCROMBIE	7-0813	New activity
8	TA-14-West	FIRING SITE	ACTIVE FIRING SITE	DX-4	GERALD VASILIK	KEN UHER	7-9293	Firing Site has been inactive, going to start new operations, SWPP Plan to be developed prior to startup.
	TA-14-23	OB/OD	TSD	DX-4	GERALD VASILIK	KEN UHER	7-9293	
	TA-15-306	ACTIVE FIRING SITE	HSWA, PRS	DX-4	GERALD VASILIK	W. QUINTANA	7-9293	
	TA-15-310	OB/OD	TSD	DX-4	GERALD VASILIK	C. MARTINEZ	7-9293	
	TA-36-3	ACTIVE FIRING SITE	HSWA, PRS	DX-4	GERALD VASILIK	E. VIRAMONTES	7-9293	
	TA-36-6	ACTIVE FIRING SITE	HSWA, PRS	DX-4	GERALD VASILIK	R. LOPEZ	7-9293	
	TA-36-8	OB/OD	TSD	DX-4	GERALD VASILIK	P. CHAVEZ	7-9293	
	TA-36-12	ACTIVE FIRING SITE	HSWA, PRS	DX-4	GERALD VASILIK	R. ARCHULETA	7-9293	
	TA-36-107	ACTIVE FIRING SITE	HSWA, PRS	DX-4	GERALD VASILIK	V. SANDOVAL	7-9293	
	TA-39-6	OB/OD	TSD	DX-4	GERALD VASILIK	D. TORREZ	7-9293	
	TA-39-56	ACTIVE FIRING SITE	ACTIVE FIRING SITE	DX-4	GERALD VASILIK	D. SHAMPINE	7-9293	
	TA-39-57	OB/OD	TSD	DX-4	GERALD VASILIK	J. KING	7-9293	
	TA-39-88	ACTIVE FIRING SITE	HSWA, PRS	DX-4	GERALD VASILIK	D. HERRERA	7-9293	
	TA-40-4	ACTIVE FIRING SITE	ACTIVE FIRING SITE	DX-4	GERALD VASILIK	D. SHAMPINE	7-9293	
	TA-40-15	ACTIVE FIRING SITE	HSWA, PRS	DX-4	GERALD VASILIK	D. MURK	7-9293	
9	TA-50-1	RLWTF	TSD	FWO-RLW	RICK ALEXANDER	RICK ALEXANDER	7-4301	
10	TA-50-37	WCRRF AND RAMROD FACILITY	TSD/FABRICATED MATEALS	CST-FM	SARA HELMICK	LOREN ABERCROMBIE	7-0813	
11	TA-54-38	RANT	TSD PENDING	CST-FM	SARA HELMICK	LOREN ABERCROMBIE	7-0813	
12	TA-54	AREA G, L, J AND H	TSD, LANDFILL	FWO-SWO	STEVE MEE	SEAN FRENCH	5-8468	
13	TA-55	TA-55 PLUTONIUM FACILITY	TSD, EPCRA	NMT-7	ERIC ERNST	LIZ RONQUILLO	May-39	
14	TA-60-1	MOTORPOOL/BLISS LOT	VEHICLE MAITENANCE	FWO-DF	RON BRODD	LARRY McKNIGHT	7-6111	
15	TA-72	LIVE FIRING RANGE	HSWA, PRS	S-DO/PTLA	STEVE RIVERA	STEVE RIVERA	7-6427	
16	TA-16	16-021(c) CMS	TSD, SWMU	ER Project	WARREN NEFF	DON HICKMOTT	7-8753	
17	TA-16	MDA P, Clean Closure	TSD, SWMU	ER Project	WARREN NEFF	KEN BOSTIC	7-8483	
18	TA-49	MDA AB, Stabilazation	TSD, SWMU	ER Project	DEBA DAYMON	DEBA DAYMON	7-9021	
19	SITE WIDE	SWMUs	TSD, SWMU	INISTITUTION	DENNIS ERICKSON	MIKE ALEXANDER	5-4752	
	TA-9-48	CHEMISTRY BUILDING	CHEMICAL PRODUCTION	DX-2				Currently operation at TA-16-360 shutdown, will restart at TA-09, SWPP Plan to be developed prior to startup.



Modified from: "Environmental Surveillance and Compliance at Los Alamos During 1996," 1997, LA-13343-ENV, Los Alamos National Laboratory, Los Alamos, New Mexico.

Figure 1
Regional Location Map of Los Alamos National Laboratory and Surrounding Land Use

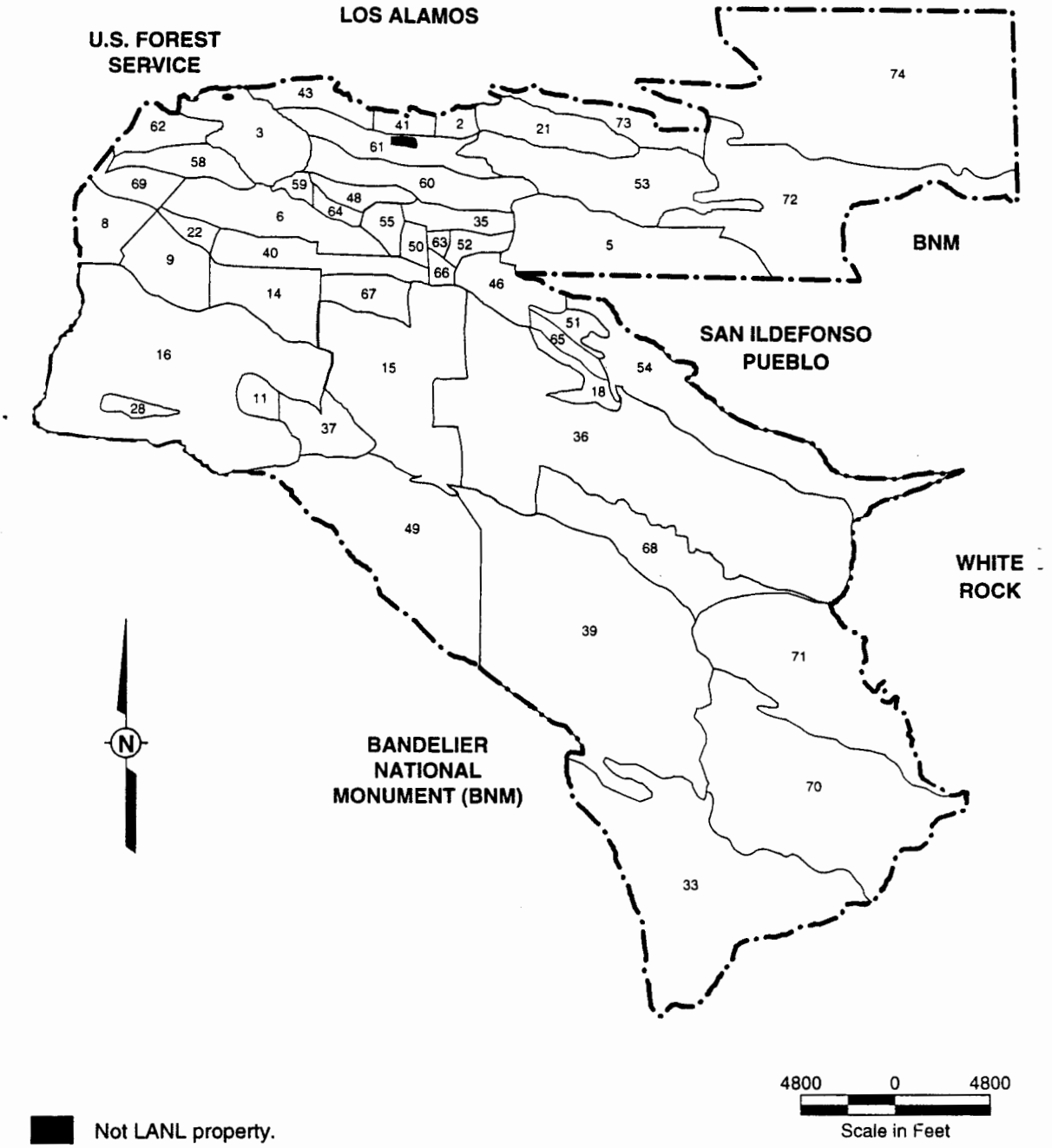


Figure 2
Location Map of Technical Areas (TA) at Los Alamos National Laboratory (LANL)

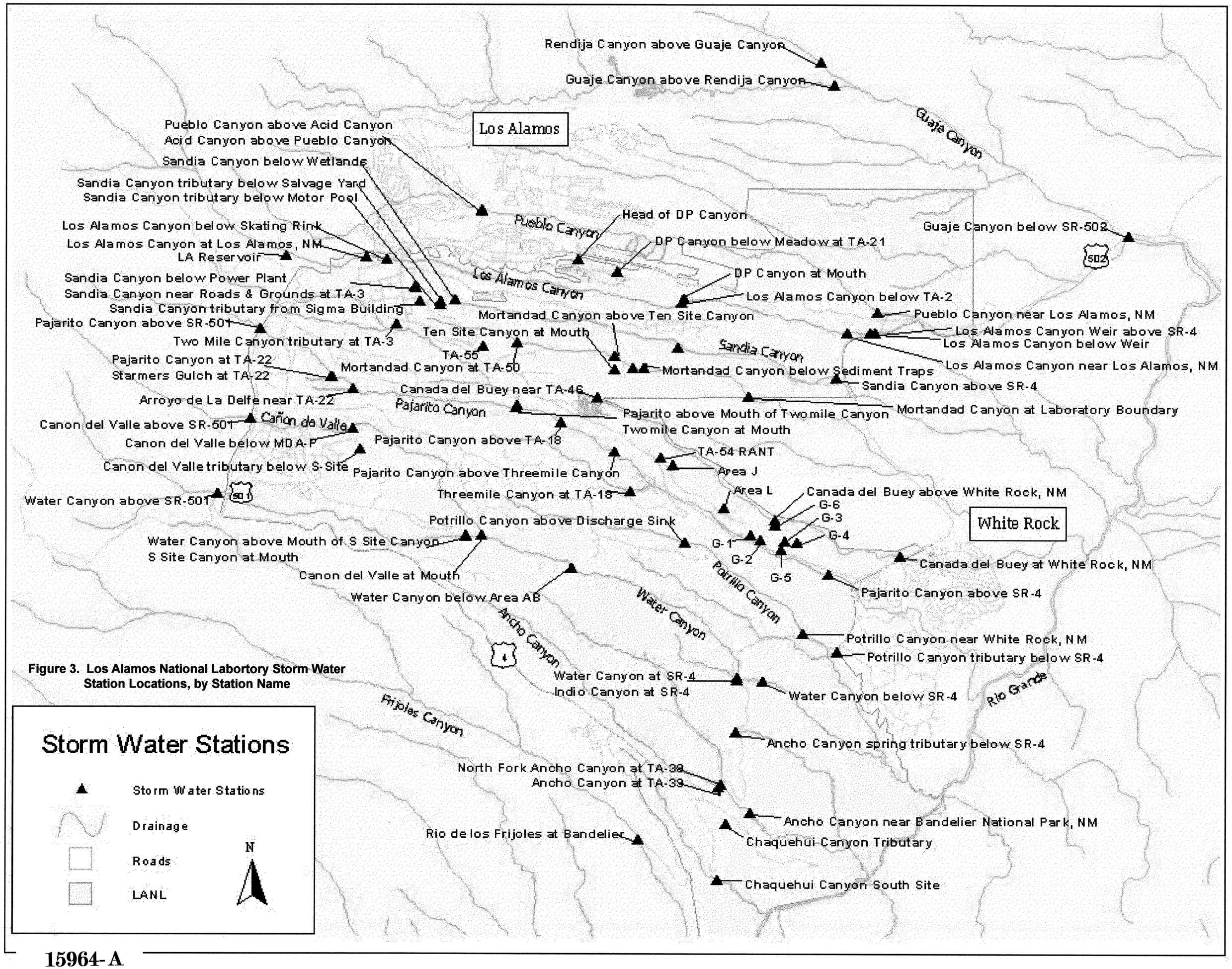


Figure 3. Los Alamos National Labortory Storm Water Station Locations, by Station Name

15964-A

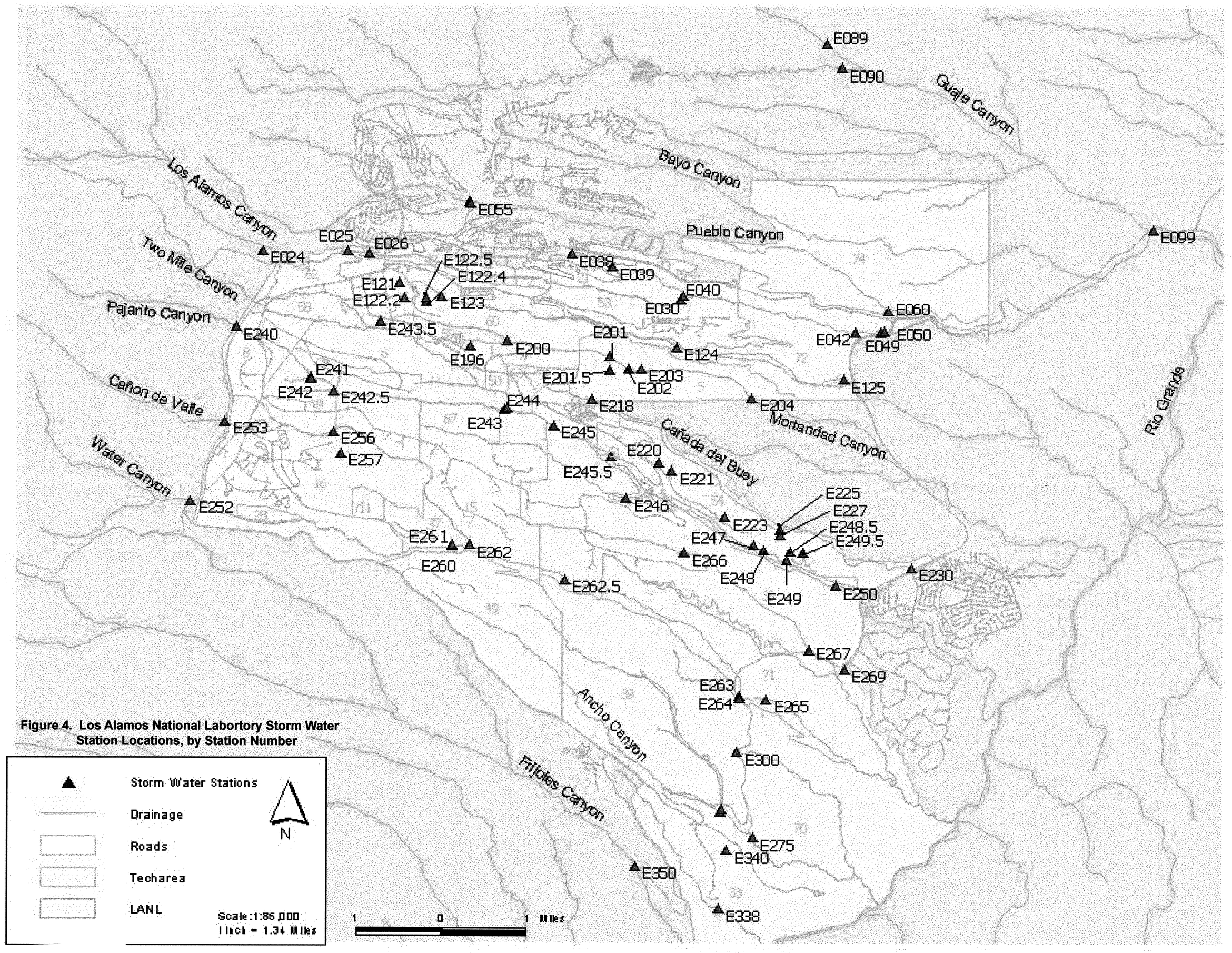


Figure 4. Los Alamos National Labortory Storm Water Station Locations, by Station Number

15964-B

Water Quality and Hydrology Group, ESH-18

Group Management
Steven Rae, Group Leader

Information Management
Ken Mullen, Project Leader
Kendra Henning
Penny Gomez
Sue Kinkead

Administrative Support
Tina Lopez
David Nochumson

Institutional Ground Water Issues
Charlie Nylander, Program Manager

Institutional Surface Water Issues
Ken Mullen, Project Leader

Operations Team
Mike Alexander, Team Leader
Michelle Benak (GRA)
Amanda Bissell (UGS)
Kevin Buckley (GRA)
Betsy Cata (UGS)
Greg Helland
Max Maes
Nicholas Martinez (UGS)
Consuelo Montoya
Dave Ortiz
Eric Riebsomer (GRA)
Ryan Romero
Dave Shaull
Billy Turney
Jeff Walterscheid

Regulatory Compliance and Line Services Team
Mike Saladen, Team Leader
Tina Sandoval, Project Leader
Marc Bailey
Harvey Decker
Beth Gray
Carla Jacquez
Chris McLean
Robin Reynolds
Steve Veenis

Environmental Surveillance Team
David Rogers, Acting Team Leader
Bob Beers
Bruce Gallaher
Steve McLin
Neal Tapia (GRA)
Mark Vaneeckhout (GRA)

Figure 5

APPENDIX A

EPA AUTHORIZATION LETTERS FOR NPDES PERMIT NOs. NMR05A734 (LANL) and NMR05A735 (DOE)

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
STORM WATER NOTICE OF INTENT CENTER

NMR05A734

Dear Operator: **01/10/2001**

The EPA has processed your Notice of Intent (NOI) application for the facility noted below. **This facility is authorized to discharge storm water associated with multi-sector activity under the terms and conditions imposed by the EPA's NPDES Storm Water Multi-Sector Permit.** The facility permit number is listed above and the active date of permit coverage is 12/23/2000.

EPA's multi-sector permit requires certain pollution prevention and control measures, possible monitoring and reporting, and annual inspections. Among the conditions and requirements of this permit, you must prepare and implement a pollution prevention plan (PPP) that is tailored to your industrial site. You may also be required to submit monitoring data for your facility's storm water discharges. As a facility authorized to discharge under this storm water multi-sector permit, all terms and conditions must be complied with to maintain coverage and avoid possible penalties.

FACILITY:
LOS ALAMOS NATIONAL LABORATORY
PO BOX 1663 MS K497
LOS ALAMOS, NM
87544

OPERATOR:
UNIVERSITY OF CALIFORNIA
PO BOX 1663 MS K491
LOS ALAMOS, NM
87545

To obtain a copy of the EPA's storm water multi-sector permit terms and conditions to which you are now held accountable, please call the EPA Office of Water Resource Center at (202) 260-7786. If you have general questions concerning the storm water program, please call the EPA Region **06** contact: **Brent Larsen, (214) 665-7523.**

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
STORM WATER NOTICE OF INTENT CENTER

NMR05A735

Dear Operator: **01/10/2001**

The EPA has processed your Notice of Intent (NOI) application for the facility noted below. **This facility is authorized to discharge storm water associated with multi-sector activity under the terms and conditions imposed by the EPA's NPDES Storm Water Multi-Sector Permit.** The facility permit number is listed above and the active date of permit coverage is 12/23/2000.

EPA's multi-sector permit requires certain pollution prevention and control measures, possible monitoring and reporting, and annual inspections. Among the conditions and requirements of this permit, you must prepare and implement a pollution prevention plan (PPP) that is tailored to your industrial site. You may also be required to submit monitoring data for your facility's storm water discharges. As a facility authorized to discharge under this storm water multi-sector permit, all terms and conditions must be complied with to maintain coverage and avoid possible penalties.

FACILITY:
LOS ALAMOS NATIONAL LABORATORY
PO BOX 1663
LOS ALAMOS, NM
87544

OPERATOR:
DEPARTMENT OF ENERGY
528 35TH STREET
LOS ALAMOS, NM
87545

Received 1-23-01

To obtain a copy of the EPA's storm water multi-sector permit terms and conditions to which you are now held accountable, please call the EPA Office of Water Resource Center at (202) 260-7786. If you have general questions concerning the storm water program, please call the EPA Region **06** contact: **Brent Larsen, (214) 665-7523**.

Intergovernmental Panel on Climate Change (IPCC). The Inventory of U.S. Greenhouse Gas Emissions and Sinks is the latest in a series of annual U.S. submissions to the Secretariat of the United Nations Framework Convention on Climate Change.

DATES: To ensure your comments are considered for the final version of this document, please submit your comments prior to February 20, 2001. However, comments received after that date will still be welcomed and will be considered for the next edition of this report.

ADDRESSES: Comments should be submitted to Mr. Wiley Barbour at: U.S. Environmental Protection Agency, Office of Atmospheric Programs, Market Policy Branch (MC: 2175), 1200 Pennsylvania Avenue NW., Washington, DC 20460, Fax : (202) 260–6405.

If you wish to send an email with your comments, you may send the email to *barbour.wiley@epa.gov.*

FOR FURTHER INFORMATION CONTACT: Mr. Wiley Barbour, Environmental Protection Agency, Office of Atmospheric Programs, (202) 260–6972.

SUPPLEMENTARY INFORMATION: You may view and download the document referenced above on the US EPA global warming site at http://www.epa.gov/globalwarming/publications/emissions/.

Dated: January 3, 2001.

Robert Perciasepe,

Assistant Administrator, Office of Air and Radiation.

[FR Doc. 01–567 Filed 1–8–01; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[FRL–6931–4]

Final Reissuance of the National Pollutant Discharge Elimination System (NPDES) Storm Water Multi-Sector General Permit for Industrial Activities; Correction

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of final NPDES general permit; correction.

SUMMARY: EPA published a new version of the NPDES Storm Water Multi-Sector General Permit (MSGP) in the **Federal Register** of October 30, 2000 (65 FR 64746), which replaced the first version issued on September 29, 1995 (60 FR 50804) and amended on February 9, 1996 (61 FR 5248), February 20, 1996 (61 FR 5248), September 24, 1996 (61 FR 50020), August 7, 1998 (63 FR 42534) and September 30, 1998 (63 FR 52430). This general permit authorizes the discharge of storm water from industrial activities consistent with the terms of the permit. The permit contained incorrect dates, typographical errors and omissions from any of the following: The fact sheet portion of the final MSGP from October 30, 2000, the proposed MSGP from March 30, 2000 (65 FR 17010), or the original 1995 version of the MSGP and subsequent amendments.

FOR FURTHER INFORMATION CONTACT: Bryan Rittenhouse, 202.564.0577; *rittenhouse.bryan@epa.gov.*

SUPPLEMENTARY INFORMATION:

Correction

The following corrections are to be made to the **Federal Register** of October 30, 2000, (65 FR 64746):

1. On pages 64749–64752 under Table 1.—SECTORS/SUBSECTORS COVERED BY THE FINAL MSGP, the following Standard Industrial Classification (SIC) codes were omitted: 2441 and 2033–2038. Correct the appropriate entries in Table 1. to read:

TABLE 1.—SECTORS/SUBSECTORS COVERED BY THE FINAL MSGP

Subsector	SIC code	Activity represented
		Sector A. Timber Products
	2441–2449	Wood containers.
		Sector E. Glass, Clay, Cement, Concrete, and Gypsum Product Manufacturing
4	3271–3275	Concrete, gypsum and plaster products.
		Sector U. Food and Kindred Products
3	2032–2038	Canned, frozen and preserved fruits, vegetables and food specialties.

2. On page 64749, in column 3, remove the sentence "Certification was not received from Arizona in time for that state to be included in this permit."

3. On page 64754, column 2, paragraph 1; and on page 64756, column 1, paragraph 2, replace the date "December 29, 2000" with: "January 29, 2001."

4. On page 64766, first column, under 4. Deadlines, correct the sentences "Today's MSGP requires that permittees previously covered by the 1995 MSGP must update their SWPPPs to comply with any new requirements of today's MSGP by the date they submit their new NOIs. As noted earlier, the new NOIs are due January 29, 2001." to read:

Today's MSGP requires that permittees previously covered by the 1995 MSGP must update their SWPPPs to comply with any new requirements of today's MSGP within 90 days after the effective date of this permit which is January 29, 2001.

5. On page 64773, in column 3, under "1. Notice of Intent Address", correct the address given to read:

Storm Water Notice of Intent (4203M)
USEPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

6. On page 64796, column 1 under Section VI.C Common Pollution Prevention Plan Requirements, Response b, replace the word "fillers" with: filters.

7. On pages 64804–64806, under Table 1–1.—SECTORS OF INDUSTRIAL ACTIVITY COVERED BY THIS PERMIT, the following SIC codes were omitted: 2441, 3281, 2033–2038 and 3821–3873. Correct the appropriate entries in Table 1–1. to read:

TABLE 1.1.—SECTORS OF INDUSTRIAL ACTIVITY COVERED BY THIS PERMIT

SIC code or activity represented	Activity represented
	Sector A. Timber Products
2441–2449	Wood containers.

TABLE 1.1.—SECTORS OF INDUSTRIAL ACTIVITY COVERED BY THIS PERMIT—Continued

SIC code or activity represented	Activity represented
Sector E. Glass, Clay, Cement, Concrete, and Gypsum Product Manufacturing	
3271–3275	Concrete, gypsum and plaster products.
3281	Cut stone and stone products.
Sector U. Food and Kindred Products	
2032–2038	Canned, frozen and preserved fruits, vegetables and food specialties.
Sector AC. Electronic, Electrical, Photographic and Optical Goods	
3812–3873	Measuring, analyzing and controlling instrument; photographic and optical goods, watches and clocks.

8. On pages 64804–64806 under Table 1–1.—SECTORS OF INDUSTRIAL ACTIVITY COVERED BY THIS PERMIT, Sectors Z and AA were omitted. Add this Sector information to Table 1–1 so it reads:

TABLE 1.1.—SECTORS OF INDUSTRIAL ACTIVITY COVERED BY THIS PERMIT

SIC code or activity represented	Activity represented
Sector Z: Leather Tanning and Finishing	
3111	Leather tanning and finishing.
Sector AA: Fabricated Metal Products	
3411–3499	Fabricated metal products, except machinery and transportation equipment.
3911–3915	Jewelry, silverware, and plated ware.

9. On page 64809, in the footnotes at the bottom of the second column under footnote 2, replace "Part 1.2.2.3" with "Part 1.2.2.1.3," so footnote 2 reads:

[2] The provisions specified in Part 1.2.2.1.3 and Part 1.2.4 related to documenting New Source reviews are requirements of Federal programs under the National Environmental Policy Act of 1969 and will not apply to such facilities in the event that authority for the NPDES program has been assumed by the State/Tribe agency and administration of this permit has been transferred to the State/Tribe.

10. On page 64810 under TABLE 2–1.—DEADLINES FOR NOI SUBMITTAL, correct the date under Deadline to read:

TABLE 2–1.—DEADLINES FOR NOI SUBMITTAL

Category	Deadline
1. Existing discharges covered under the 1995 MSGP (see also Part 2.1.2—Interim Coverage).	January 29, 2001.

11. On page 64811, column 1, under part 2.2.4.1, remove the words "or proposed" so that the sentence reads:

Based on the instructions in Addendum A, whether any listed threatened or endangered species, or designated critical habitat, are in proximity to the storm water discharges or storm water discharge-related activities to be covered by this permit;

12. On page 64824, third column, under 6.G.4.4, correct the definition of Reclamation Phase to read:

Reclamation phase—activities undertaken following the cessation of mining intended to return the land to an appropriate post-mining land use in order to meet applicable mined land reclamation requirements.

13. On page 64827, under Table G–3, add "(H)" after Lead in column 4, row 9 (under the headings), and add "Lead (H)" in column 4, row 8 so those rows now read:

TABLE G–3.—ADDITIONAL MONITORING REQUIREMENTS FOR DISCHARGES FROM WASTE ROCK AND OVERBURDEN PILES FROM ACTIVE ORE MINING OR DRESSING FACILITIES

[Supplemental Requirements]

Type of ore mined	Pollutants of Concern		
	Total Suspended Solids (TSS)	pH	Metals, total
Vanadium Ore	X	X	Arsenic, Cadmium (H), Copper (H), Lead (H), Zinc (H).
Copper, Lead, Zinc, Gold, Silver and Molybdenum	X	X	Arsenic, Cadmium (H), Copper (H), Lead (H), Mercury, Zinc (H).

14. On page 64831, first column, under 6.J.4.4, correct the definition of Reclamation Phase to read:

Reclamation phase—activities undertaken following the cessation of mining intended to return the land to an appropriate post-mining land use in order to meet applicable mined land reclamation requirements.

15. On page 64845, under Table S–1.–SECTOR-SPECIFIC NUMERIC LIMITATIONS AND BENCHMARK MONITORING, realign the table elements that were present to read (entire table is reproduced):

BILLING CODE 6560–50–U

Table S-1. SECTOR-SPECIFIC NUMERIC LIMITATIONS AND BENCHMARK MONITORING

Sector of Permit Affected / Supplemental Requirements			
Subsector (Discharges may be subject to requirements for more than one sector/subsector)	**Parameter**	**Benchmark Monitoring Cutoff Concentration[1]**	**Numeric Limitation**
Facilities at airports that use more than 100,000 gallons of glycol-based deicing/anti-icing chemicals and/or 100 tons or more of urea on an average annual basis: monitor ONLY those outfalls from the airport facility that collect runoff from areas where deicing/anti-icing activities occur (SIC 45XX)	Biochemical Oxygen Demand (BOD_5)	30 mg/L	--
	Chemical Oxygen Demand (COD)	120.0 mg/L	--
	Ammonia	19 mg/L	--
	pH	6.0 to 9.0 s.u.	–

[1] Monitor once/quarter for the year 2 and year 4 monitoring years.

BILLING CODE 6560–50–U

16. On page 64873, Addendum D-Notice of Intent Form, under section A. Permit Selection, correct the sentence to read:

Permit number assigned to your facility under the previous permit, or the generic permit number for your location (from part 1.1 of the MSGP):

17. On page 64874, column 1, under "Where to File the NOI Form", add the following language before the sentence "You must indicate the NPDES storm water general permit under which you are applying for coverage.":

If your facility was previously covered by the MSGP and you are transferring to the October 29, 2000 version MSGP, you must indicate your original MSGP registration number that was assigned to you by the NOI Center.

For new filers, i.e., those facilities not previously covered by the MSGP, do the following:

18. On page 64874, in column 1, under "Where to File the NOI Form", correct the phone number, "(202) 260–9541" to read:

(202) 564–9537

19. On page 64875, under "Instructions for Completing the Notice of Termination (NOT) Form", column 2, replace the address given with:

Storm Water Notice of Termination (4203M)

USEPA

1200 Pennsylvania Avenue, NW

Washington, DC 20460

20. On page 64875, under "Instructions for Completing the Notice of Termination (NOT) Form", column 2, correct the phone number "(703) 931–3230" to read:

(301) 495–4145

21. On page 64876, in column 2, under "Paperwork Reduction Act Notice", replace both addresses given with the single address:

Director, Office of Environmental Services

Collection Services Division (2823)

USEPA

1200 Pennsylvania Avenue, NW

Washington, DC 20460

Signed and issued this 15th day of December, 2000.

Robert Goetzl,

Acting Director, Office of Ecosystem Protection, Region 1.

Signed and issued this 21st day of December, 2000.

Kathleen C. Callahan,

Director, Division of Environmental Planning and Protection, Region 2.

Signed and issued this 15th day of December, 2000.

Jon M. Capacasa,

Acting Director, Water Protection Division, Region 3.

Dated: December 20, 2000.

A. Stanley Meiburg,

Deputy Regional Administrator, Region 4.

Signed and issued this 15th day of December, 2000.

Sam Becker,

Acting Director, Water Quality Protection Division, Region 6.

Signed and issued this 18th day of December, 2000.

Stephen S. Tuber,

Acting Assistant Regional Administrator, Office of Partnerships and Regulatory Assistance, Region 8.

Signed and issued this 15th day of December, 2000.

Alexis Strauss,

Director, Water Division, Region 9.

Signed and issued this 15th day of December, 2000.

Randall F. Smith,

Director, Office of Water, Region 10.

[FR Doc. 01–566 Filed 1–8–01; 8:45 am]

BILLING CODE 6560–50–U

FEDERAL COMMUNICATIONS COMMISSION

Notice of Public Information Collection(s) Being Reviewed by the Federal Communications Commission, Comments Requested

January 2, 2001.

SUMMARY: The Federal Communications Commission, as part of its continuing effort to reduce paperwork burden invites the general public and other Federal agencies to take this opportunity to comment on the following information collection, as required by the Paperwork Reduction Act of 1995, Public Law 104–13. An agency may not conduct or sponsor a collection of information unless it displays a currently valid control number. No person shall be subject to any penalty for failing to comply with a collection of information subject to the Paperwork Reduction Act (PRA) that does not display a valid control number. Comments are requested concerning (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimate; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology.

DATES: Written comments should be submitted on or before March 12, 2001. If you anticipate that you will be submitting comments, but find it difficult to do so within the period of time allowed by this notice, you should advise the contact listed below as soon as possible.

ADDRESSES: Direct all comments to Les Smith, Federal Communications Commissions, 445 12th Street, SW., Room 1–A804, Washington, DC 20554 or via the Internet to lesmith@fcc.gov.

FOR FURTHER INFORMATION CONTACT: For additional information or copies of the information collections contact Les Smith at (202) 418–0217 or via the Internet at lesmith@fcc.gov.

SUPPLEMENTARY INFORMATION:

OMB Control No.: 3060–0957.

Title: Wireless Enhanced 911 Service, Fourth MO&O.

Agency Form Number(s): None.

Type of Review: Extension of currently approved collection.

Respondents: Business or other for-profit, not-for-profit institutions, state or local governments.

Number of Respondents: 2,500.

Estimated Time Per Response: 3.

Frequency of Response: Once.

Total Annual Burden: 7,500 hours.

Total Annual Cost: 0.

Needs and Uses: The information required to be included in a successful waiver request will be used to assist the Commission in judging whether the request has merit.

Federal Communications Commission.

Magalie Roman Salas,

Secretary.

[FR Doc. 01–580 Filed 1–8–01; 8:45 am]

BILLING CODE 6712–01–U

EPA United States Environmental Protection Agency
Federal Register
Environmental Documents

[Federal Register: March 23, 2001 (Volume 66, Number 57)]
[Notices]
[Page 16233-16237]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr23mr01-68]

ENVIRONMENTAL PROTECTION AGENCY

[FRL-6953-7]

Final Reissuance of the National Pollutant Discharge Elimination System (NPDES) Storm Water Multi-Sector General Permit for Industrial Activities; Correction

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of Final NPDES general permit; correction.

SUMMARY: EPA published a new version of the NPDES Storm Water Multi-Sector General Permit (MSGP) in the Federal Register of October 30, 2000 (65 FR 64746), which replaced the first version issued on September 29, 1995 (60 FR 50804) and amended on February 9, 1996 (61 FR 5248), February 20, 1996 (61 FR 5248), September 24, 1996 (61 FR 50020), August 7, 1998 (63 FR 42534) and September 30, 1998 (63 FR 52430). This general permit authorizes the discharge of storm water from industrial activities consistent with the terms of the permit. The permit contained incorrect dates, typographical errors and omissions from any of the following: the fact sheet portion of the final MSGP from October 30, 2000, the proposed MSGP from March 30, 2000 (65 FR 17010), or the original 1995 version of the MSGP and subsequent amendments. This correction is subsequent to an initial correction notice published January 9, 2001 (66 FR 1675).

FOR FURTHER INFORMATION CONTACT: Bryan Rittenhouse, 202-564-0577; rittenhouse.bryan@epa.gov.

SUPPLEMENTARY INFORMATION:

Correction

The following corrections are to be made to the Federal Register of October 30, 2000, (65 FR 64746):

1. On page 64758, first column, under ``2. Deadlines", correct the second paragraph to read:

Facilities currently covered by the 1995 MSGP who cannot immediately determine if they are eligible for coverage under today's reissued MSGP may nevertheless continue their previous coverage for up to 270 days, providing the permittee submits to EPA an application for an individual permit by January 29, 2001. He must also submit a written

notification before January 29, 2001, that he needs the extension. The notification alerts the permitting authority of the need for continued coverage under the 1995 MSGP (and also that the permittee may

[[Page 16234]]

need some help in submitting the application), and it must include the reason why the extension is needed (e.g., to conduct Endangered Species Act or National Historic Preservation Act investigations, or intentionally obtain an individual permit). Applications and notifications must be sent to the appropriate Regional office as listed in part VI.F.2 of this portion of the permit. This interim coverage enables permittees to assesses their eligibility for the MSGP-2000 and, if necessary, still meet the 180 day lead time required for applications for individual permits. If a permittee subsequently determines he is eligible for coverage under the MSGP-2000 before the 270 day extension is up, he may withdraw his individual permit application and submit an NOI for coverage under the MSGP-2000.

2. On page 64766, first column, under ``4. Deadlines", insert ``in writing, to the appropriate Regional office (listed in part VI.F.2), for" into the third sentence so that it reads:

However, a permittee may request, in writing, to the appropriate Regional office (listed in part VI.F.2), for an extension for the SWPPP update not to exceed 270 days from the expiration date of the 1995 MSGP.

3. On page 64779, second column, under ``Section 2.1 Notice of Intent (NOI) Deadlines", Replace the first sentence following ``Response:" with:

The fact sheet clarifies that SWPPPs are to be prepared, in general, by January 29, 2001.

4. On page 64790, first column, under ``Response c:", correct the second sentence to read:

He then has up to 180 additional days of interim coverage under the MSGP while he conducts the consultation and determines whether he meets the criteria for coverage under the MSGP-2000, providing he requests in writing to the appropriate Regional office for the extension.

5. On page 64808, second column, under ``1.2.3.6 Endangered and Threatened Species or Critical Habitat Protection.", replace the first sentence with:

You are not authorized for discharges or discharge-related activities that are likely to jeopardize the continued existence of any species that are listed as endangered or threatened under the ESA or result in the adverse modification or destruction of habitat that is designated as critical under the ESA.

6. On page 64808, second column, under part 1.2.3.6.1, delete the phrase ``or proposed to be designated" from the first sentence.

7. On page 64808, third column, under part 1.2.3.6.3.4, replace the phrase ``listed species or critical habitat would be adversely affected." with:

the discharges and discharge-related activities will jeopardize the continued existence of any species or result in the adverse

modification or destruction of critical habitat.

8. On page 64809, first column, under part 1.2.3.6.6, delete the phrase ``or proposed to be designated" from the first sentence.
9. On page 64810, second column, under part 2.1.2.2, in the first sentence, replace the phrase ``under this permit" with:

for continued coverage under the previous permit

10. On page 64810, second column, under part 2.1.2.2, after the first sentence, add the following sentence:

A written notification must also be submitted to the Director explaining why you need the extended coverage (e.g., conducting Endangered Species Act or National Historic Preservation Act investigations, or applying for an individual permit). If you subsequently determine you are eligible for coverage under the MSGP-2000 before the 270 day extension is up, you may withdraw your individual permit application and submit a notice of intent for coverage under the MSGP-2000. If you cannot determine eligibility for the MSGP-2000 by the end of 270 days (July 29, 2001) your alternative permit coverage must be finalized or your discharges will be unauthorized.

11. On page 64825, second column, under ``6.G.6 Storm Water Pollution Prevention Plan (SWPPP) Requirements", delete the sentence: ``In addition to the following requirements, you must also comply with the requirements listed in Part 4."
12. On page 64825, second column, under ``6.G.6.1 SWPPP Requirements for Active and Temporarily Inactive Metal Mining Facilities", add the following sentence:
For Part 6.G.6.1 only, in addition to the following requirements, you must also comply with the requirements listed in Part 4.

13. On page 64832, first column, under ``6.K.2 Industrial Activities Covered by Sector K", add the following paragraph after the one found there:

Disposal facilities that have been properly closed and capped, and have no significant materials exposed to storm water, are considered inactive and do not require permits.
14. On page 64817, under Table 5-1, footnote 3, delete the word ``ethylene'.
15. On page 64817, in Table 5-1, column 2, following the words ``Scrap Recycling", add the following:

and Waste Recycling Facilities

16. On page 64837, first column, following ``6.N.4.2 Scrap", insert the word:

Recycling

17. On page 64838, third column, after ``6.N.5 Monitoring and Reporting Requirements. (See also Part 5)", add the following:

The monitoring and reporting requirements given in TABLE N-1 apply only to scrap recycling and waste recycling facilities (non-source separated facilities only).

18. On page 64839, in Table 5N-1, column 1, following the words

``Scrap Recycling", add the following:

and Waste Recycling

19. On page 64845, column 3, under ``6.S.6 Monitoring and Reporting Requirements (See also Part 5)", add the following language:
Monitor per the requirements in Table S-1, 4 times only during the three month period of December, January and February when deicing activities are occurring, for the year 2 and year 4 monitoring years.

20. On page 64845, under table S-1, delete the footnote: ``1 Monitor once/quarter for the year 2 and 4 monitoring years."
21. On page 64799, first column, under ``Response y", replace the entire paragraph with:
EPA will keep the visual monitoring requirement waiver for representative outfalls that was contained in the 1995 MSGP. This applies when two or more outfalls at a facility discharge substantially identical effluents. When this occurs, the permittee can perform a visual examination of just one of the discharges, providing he describes in his SWPPP why the other outfalls are expected to discharge essentially the same effluents.

22. On page 64818, third column, in ``5.2.4 Representative Outfalls-Essential Identical Discharges", replace the word ``Essential" with:

Essentially

23. On page 64818, third column, under ``5.2.4 Representative Outfalls-Essential Identical Discharges", add the following sentence after the first sentence:

The same outfall monitoring waiver for substantially identical discharges applies to quarterly visual monitoring as well.

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24. On page 64873, Addendum D-Notice of Intent Form, under ``A. Permit Selection', correct the sentence to read:

If new, enter generic permit, otherwise enter previous permit:

25. On page 64874, column 1, under ``Section A. Permit Selection", replace the language in both the original version published on October 29, 2000 and the corrected version published on January 9, 2001 with the following:

If your facility was previously covered by the MSGP 1995 Permit, and you are transferring to the October 29, 2000 version of the MSGP (MSGP 2000), then you must indicate the MSGP 1995 permit number assigned to you by the Storm Water Notice of Intent Center.
If your facility was not previously covered by the MSGP 1995 Permit, and you are applying for new coverage under the MSGP 2000 Permit, you must indicate the ``generic" permit number covering your facility area. You will find your generic permit number in the MSGP 2000 Permit, Federal Register, Vol. 65, No. 210, Monday, October 30, 2000, on pages 64802-64803. (As an example, the generic permit number for an industrial site in Puerto Rico would be PRR05*###.) The MSGP 2000 Permit is available online at http://www.epa.gov/owm/sw/industry/

msgp/msgp2000.pdf.

26. On page 64871, column 1, under ``Puerto Rico, Commonwealth of", delete ``Deputy: Berenice Sueiro, E-Mail: bsueiro@prshpo.prstar.net" and replace ``Ms. Lilliane D. Lopez" with:

Ms. Enid Torregrosa de la Rosa

27. On page 64826, column 3, under ``6.G.6.2.4.4 Capping", replace ``6.G.6.1.7" with:

6.G.6.1.6.4

28. On page 64826, column 3, under ``6.G.6.2.4.5 Treatment", replace ``6.G.6.1.8" with:

6.G.6.1.6.5

Region 1

Signed and issued this 30th day of February 2001.
Susan Studlien,
Deputy Director, Office of Ecosystem Protection.

Region 2

Signed and issued this 28th day of January 2001.
George Pavlou,
Director, Division of Environmental Planning and Protection.
Signed this 2nd day of February, 2001.
Jon M. Capacasa,
Deputy Director, Water Protection Division, Region 3.
Dated: February 12, 2001
A. Stanley Meiburg,
Acting Regional Administrator, Region 4.

Region 6

Signed and issued this 1st day of February 2001.
Oscar Ramirez, Jr.,
Acting Director, Water Quality Protection Division.

Region 8

Signed and issued this 26th day of January 2001.
Stephen S. Tuber,
Acting Assistant Regional Administrator, Office of Partnerships and Regulatory Assistance.

Region 9

Signed and issued this 24th day of January 2001.
Alexis Strauss,
Director, Water Division.

Region 10

Signed and issued this 29th day of January 2001.
Robert Robichaud,
Acting Director, Office of Water.
BILLING CODE 6560-50-P

[[Page 16236]]

[GRAPHIC] [TIFF OMITTED] TN23MR01.025

[[Page 16237]]

[GRAPHIC] [TIFF OMITTED] TN23MR01.026

[FR Doc. 01-7280 Filed 3-22-01; 8:45 am]
BILLING CODE 6560-50-C

[EPA Home | FR Home | Comments | FR Search]
Last Updated: 03/23/01 17:18:16
URL: http://www.epa.gov/fedrgstr/EPA-WATER/2001/March/Day-23/w7280.htm

APPENDIX C

MONITORING STATIONS

Stations With Associated Industrial Activity monitored under The MSGP 2000

# of Stations	Stations (E#)	Industrial Activity	Sector
1	30	TSD	K
2	39	TSD	K
3	42	TSD	K
4	56	TSD	K
5	60	TSD	K
6	121	TSD, SE	K, O
7	122	TSD, FM, AS	K, AA, D
8	122.2	TSD, PM	K, F
9	122.4	TSD	K
10	122.5	RY	N
11	196	TSD	K
12	200	TSD	K
13	201.5	TSD	K
14	204	TSD	K
15	218	TSD	K
16	220	TSD	K
17	221	TSD, LF	K, L
18	223	TSD, LF	K, L
19	225	TSD	K
20	227	TSD, LF	K, L
21	242	TSD	K
22	242.5	TSD, Chem	K
23	243.5	FM	AA
24	244	TSD	K
25	246	TSD	K
26	247	TSD, LF	K, L
27	248	TSD, LF	K, L
28	248.5	TSD, LF	K, L
29	249	TSD, LF	K, L
30	249.5	TSD, LF	K, L
31	250	TSD, LF	K, L
32	256	TSD	K
33	257	TSD	K
34	260	TSD	K
35	261	TSD	K
36	262	TSD	K
37	262.5	TSD	K
38	267	TSD	K
39	274	TSD	K
40	338	TSD	K
TSD= Treatment, Storage and Diposal Facilities (including SWMUs)			
LF= Landfill			
SE= Steam Electric			
AS= Asphalt			
MF= Motor Freight/Transport			
PM=Primary Metals			
FM=Fabricated Metals			
CH=Chemical			
RY=Recycle			
Sector AA-Fabricated Metals			
Sector C-Chemical Production			
Sector D-Asphalt Paving,			
Sector F- Primary Metals			
Sector K-Hazardous Waste TSDFs (SWMUs)			
Sector L-Landfills			
Sector N-Scrap Recycling			
Sector O-Steam Electric Power,			
Sector P-Motor Transportation			

ENHANCED MONITORING NETWORK - OPERATIONAL LIST

#	Station #	Station Name/Location
1	E024	LA Reservoir
2	E025	LA Canyon @ LA
3	E026	LA Canyon below Skating Rink
4	E030	LA Canyon below TA-2
5	E038	Head of DP Canyon
6	E039	DP Canyon below Meadow
7	E040	DP Canyon at mouth
8	E042	LA Canyon near LA
9	E049	LA Weir
0	E050	LA Weir downstream
10	E055	Pueblo Canyon above mouth of Acid Canyon
11	E056	Acid Canyon at mouth
12	E060	Pueblo Canyon near LA
13	E070	Guaje Canyon below SR 502
14	E089	Rendija Canyon at mouth
15	E090	Guaje Canyon above mouth of Rendija Canyon
16	E121	Sandia Canyon below Power Plant
17	E122	Sandia Canyon near Roads & Grounds at TA-3
18	E122.4	Sandia Canyon tributary behind Motor Pool
19	E122.5	Sandia Canyon tributary behind Salvage Yard
20	E123	Sandia Canyon below wetlands
21	E124	Sandia Canyon Truck Route
22	E125	Sandia Canyon above SR 4
23	E196	TA-55
24	E200	Mortandad Canyon at TA-50
25	E201	Mortandad Canyon above Ten Site Canyon
26	E201.5	Ten Site Canyon at mouth
27	E202	Mortandad above sediment traps
28	E203	Mortandad at exit of sedimemt traps
29	E204	Mortandad Canyon near LA
30	E218	CB-46
31	E221	Area J
32	E223	Area L
33	E225	Canada del Buey above White Rock
34	E227	G-6
35	E230	Canada del Buey at White Rock
36	E240	Pajarito Canyon above Hwy 501
37	E241	Pajarito Canyon at TA-22
38	E242	Starmers Gulch at TA-22
39	E242.5	Arroyo de La Delfe
40	E243	Pajarito above mouth of Two Mile Canyon
41	E244	Two Mile Canyon at mouth
42	E245	Pajarito Canyon above TA-18
43	E245.5	Pajarito Canyon above Three Mile Canyon
44	E246	Three Mile Canyon at TA-18
45	E247	G-1
46	E248	G-2
47	E248.5	G-3
48	E249	G-5
49	E249.5	G-4
50	E250	Pajarito Canyon above SR 4

ENHANCED MONITORING NETWORK - OPERATIONAL LIST

#	Station #	Station Name/Location
51	E252	Water Canyon above Hwy 501
52	E253	Canon del Valle above Hwy 501
53	E256	Canon del Valle below MDA-P
54	E257	Canon del Valle tributary at S-Site
55	E260	Water Canyon above mouth of S-Site Canyon
56	E261	S Site Canyon at mouth
57	E262	Canon del Valle at mouth
58	E262.5	Water Canyon Area AB
59	E263	Water Canyon at SR 4
60	E264	Indio Canyon at SR 4
61	E265	Water Canyon below SR 4
62	E266	Potrillo Canyon above Discharge Sink
63	E267	Potrillo Canyon near White Rock
64	E269	Potrillo Canyon tributary below SR4
65	E273	Ancho Canyon at TA-39
66	E274	North Fork Ancho Canyon at TA-39
67	E275	Ancho Canyon near Bandalier
68	E300	Ancho Canyon Spring below SR4
69	E338	Chaquehui Canyon South Site
70	E340	Chaquehui Canyon Main Site
71	E350	Rio de los Frijoles at Bandalier
72	S001	SWSC Line Spring
73	S002	Burn Ground Spring
74	S003	Martin Spring

APPENDIX D

WORK AUTHORIZATIONS AND SITE-SPECIFIC TRAINING EXAMPLES

Los Alamos

Los Alamos National Laboratory

Los Alamos, New Mexico 87545

memorandum

TO: Rusty Powers, FWO-WFM, MS J595

FROM: Robin Reynolds, ESH-18, MS K497

DATE: September 17, 2001

MAIL STOP/TELEPHONE: K497/7-4689

SYMBOL: ESH-18/WQ&H:

SUBJECT: **WORK CONTROL DOCUMENTATION FOR ESH-18 STORM WATER TEAM PROGRAM WORK AND REQUEST FOR SITE SPECIFIC ES&H REVIEW.**

As per you request, I am forwarding to you a work control documentation package detailing ESH-18's Group Leader authorization documentation for the ESH-18 Storm Water Team Program Work ongoing at FMU-64. Also included are:

- Storm Water Program Work description

SR:RR/mm

Attachments: a/s

Cy: Steve Mee, FWO-SWO, MS J595
Sean French, FWO-SWO, w/att., MS J595
Sam Garcia, ESH-5, MS K403
Mike Alexander, ESH-18, MS K497
Robin Reynolds, ESH-18, MS K497
Dave Shaull, ESH-18, MS K497
Ryan Romero, ESH-18, MS K497
Chris McLean, ESH-18, MS K497
Jeff Walterscheid, ESH-18, MS K497
WQ&H File, MS K497
SH-18, w/att., MS K497

WQ&H File, w/att., MS K497

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO: Gerald Vasilik, DX-4, MS P44 DATE: September 17, 2001

FROM: Steven Rae, ESH-18 MAIL STOP/TELEPHONE: K497/5-1859

SYMBOL: ESH-18/WQ&H:

SUBJECT: **AUTHORIZATION OF STORM WATER PROGRAM WORK**

The following Water Quality and Hydrology Group (ESH-18) personnel are authorized to conduct work associated with the Laboratory's Storm Water Program. This work includes:

- Site reconnaissance and siting of new monitoring stations. Installation, and/or oversight in the installation, and instrumentation of new monitoring station locations.
- Storm water runoff sample collection and field measurements. These are usually performed during the summer months, during or after precipitation events.
- Instrumentation, operation, and maintenance of the storm water monitoring stations. An integral aspect of this institutional task, includes electrical work as specified in Class 2.1, of the LIG,402-600-01, Electrical Safety Implementation Guide.
- Surface water flow measurements, seepage runs, and recommendations on general surface water issues.
- Field assessments for potential pollutant migration (Site-Specific Surface Water Assessment) and BMP selection and placement.

Michael Alexander
Dave Shaull
Chris McLean
Robin Reynolds
Ryan Romero
Jeff Walterscheid

For these personnel, Mike Alexander is their supervisor who authorizes electrical work and can be reached at 5-4752.

If there are any question please contact me at 5-1859.

MA/md

Cy: Franco Sisneros, DX-FMU, MS P915
Sam Garcia, ESH-5, MS K403
Mike Alexander, ESH-18, MS K497
Robin Reynolds, ESH-18, MS K497
Dave Shaull, ESH-18, MS K497
Ryan Romero, ESH-18, MS K497
Chris McLean, ESH-18, MS K497
Jeff Walterscheid, ESH-18, MS K497
WQ&H File, MS K497

DX Division Access Control Requirements:

Tech Area	Requirements:	Contact:
8	Q-Clearance or Q cleared Escort with Form 1812	Lucille Westerhold or E. Corine Ortiz
9 or 14	L-Clearance or L Cleared Escort with Form 1812	Donna Osborn
22 or 40	Q-Clearance or Q Cleared Escort with Form 1812	Lisa Martinez
15 or 36	Q clearance or Q Cleared Escort with Form 1812	Janette Lujan
39	L-Clearance or L Cleared Escort with Form 1812	Rita Galvin-Prada
69	Open Area	Lucille Westerhold or E. Corine Ortiz

EMERGENCY AND INCIDENT REPORTING

IN AN EMERGENCY CALL 911

Report all incidents to the DX Duty Officer/Facility Manger Designee at 104-2926 (digital pager - enter your phone number followed by #)
When calling from outside the Laboratory dial 664-2926

NOTE: The Duty Officer will contact others to summon help appropriate for the situation (e.g., RCT, Emergency Management, Industrial Hygienist, etc.)

Emergency Management Office – 7-6211

For emergencies during operations at Firing Sites, contact the Access Control Office at 7-6742 a soon as possible.

The following are examples of emergencies and incidents and who to call for different situations.

Emergencies/Incidents	Who to call first	2nd	3rd
Fire or smoke in the area	911	Duty Officer	Line manager
Personnel injury-severe	911	Duty Officer	Line manager
Personnel injury-minor	Line manager	ESH-2	Duty Officer
Property damage, government vehicle accident, personal vehicle accident	Duty Officer	Line manager	
Facility equipment malfunction - severe situation or after-hours	Duty Officer		
Facility equipment malfunction - daytime	Facility Coordinator		
Radiological incident or contamination	Duty Officer	Line manager	
To report on injured wildlife	Duty Officer		
To report a spill	Duty Officer	Line manager	
Security incident (e.g., open security gate, vault, or safe)	Duty Officer	Security	Line manager

NOTE: If in doubt always call the DX Duty Officer. The Duty Officer will summon help, make the appropriate notifications, and assist with the required reporting.

MEMORANDUM OF UNDERSTANDING

BETWEEN

DX DIVISION AND LABORATORY ORGANIZATIONS PERFORMING FIELD WORK ON DX DIVISION PROPERTY

DX Facility Manager or Designee
Accepted By: _____
Date: _____

Respective Group Leader or Designee:
Accepted By: _____
Date: _____

DX Environmental Generalist or Designee:
Accepted By: _____
Date: _____

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I. INTRODUCTION

A. Purpose of Memorandum of Understanding

This memorandum of Understanding (MOU) is designed to formalize the interfaces between DX/FM/ESH, but not limited to; Los Alamos National Laboratory (LANL) Environment Safety and Health (ESH) Groups, Environmental Restoration (ER) Program, State of New Mexico Environment Department (NMED), Facility Waste Operations (FWO) and all Subcontractors of above listed organizations that intend to perform Environmental or Fire Restoration type work activities on DX Division properties.
The MOU follows the intent and spirit of the Laboratory Implementation Requirement (LIR) 402-10-03.0, DX site specific requirements and serves as a means to communicate a mutual understanding of the safety interfaces, requirements, roles, responsibilities and authorities of both the above listed groups and organizations and DX designated personnel.

B. Project Scope

Various Divisions and Groups at LANL will be performing a myriad of environmental activities such as, but not limited to; archaeological and historical surveys and verifications, site remediation and sampling, water and air sampling, erosion control activities, and various fire related mitigation activities at or within DX Division properties. This MOU provides guidance to these organizations requesting access for these projects.

C. Definitions

Ownership: Ownership implies the operational control and maintenance responsibility for the property; each party shall seek approval from the owner for changes desired to property. In all cases, control of the work is by the Facility Manager or designee, DX operations Group leader or designee, EM/ER Team Leader or designee for the area where work is to be performed.

D&D: Decommission and Decontamination.

SWMU: Solid Waste Management Unit

PRS: Potential Release Site

II Physical Assets and Area of Ownership

DX's physical assets and area of ownership includes the following:

- All buildings and most lands located at TA's-6, 8, 9, 14, 15, 22, 36, 39, 40 and 69 except those transferred for D&D or Environmental Restoration remediation activities;

- Open space at all TA's except utilities and utility corridors and right of ways;
- The safety envelope of TAs-8, 9, 22, and 69; and
- The day to day security associated with work at all TA's.

E Divisions, EM/ER's Group physical assets and area of ownership includes SWMUS or PRS's until remediation activities are completed or the site is approved by the **EPA** and **NMED** as requiting no further action and includes the following:

All operations related to the ecological/environmental sampling of EM/ER SWMUS'S and PRS's;

- Any materials removed or generated, including soil and biota samples;
- Waste generated from ER projects;
- All equipment and supplies used to conduct the Project; and
- Any by-products of sampling activities;
- Any structures put in place and used during EM/ER projects, including project specific utilities or **BMP's**

III Requirements and Responsibilities

DX is responsible for the following:

- Maintain the physical assets as listed in the DX's physical area of ownership;
- Review and concur with changes in EM/ER project operations or configurations as deemed necessary;
- Provide a prepared ESH Site Hazard and Control Form for the work activities;
- Provide site specific safety briefing and security orientation to personnel performing field work as necessary at the start of the project(s); and
- Provide a LANL DX HE expert to assist in identifying HE or other site hazards.

Fieldwork representatives are responsible for the following:

- Maintain the physical assets as listed in the groups physical area of ownership;
- Define the work activities and establish operating limits and procedures for the project(s). And, coordinate with the DX Zone Team Leader at TA-8-21 (5-6177) to ensure that the work is entered into the work control database and all applicable DX work requirements and authorizations are obtained prior to commencing the work;
- Develop a site-specific health and safety plan (SSHASP, ER only) modification. Develop and Submit all **HCPs**, identifying task hazards and controls and get concurrence from DX;
- Ensure that facility site-specific, health and safety, and other applicable training are completed;
- Perform activities according to all approved work plans, SSHASPs, HCPs, contract agreements, applicable laws, laboratory standards, facility policies (LIRs, LIGs, etc.), and the MOU as necessary
- Properly stage/store waste and other materials;
- Provide drinking water for workers;
- Notify DX/ESH and DX duty officer when and if a stop work order is issued or an incident occurs or of any potential radioactive or hazardous materials releases, spills, or other new releases. Notify DX/ESH or DX duty officer when fieldwork could affect other workers at the facility (please see attached list of relevant DX Division phone numbers);
- Rad. screen survey all equipment prior to release from work areas, and ensure all applicable release criteria are met if necessary. An RCT will be required to screen all equipment or vehicles. If the worker is Rad Worker II trained and only personal monitoring is to be performed the worker can check out an instrument from one of the RCT's located at TA-15-446 (7-9545, 7-9083 or 7-9891) on a daily basis. A minimum 2 day lead time must be provided to the TA-15-446 RCT staff prior to requesting the use of one of the instruments.
- Assume financial responsibility for equipment and materials damaged during the course of the fieldwork;
- Ensure that any runoff or spill control measures needed for the work are installed, maintained or readily available during the fieldwork;
- Evacuate the site immediately if requested by the DX FM or designee, access control or firing site operations staff.
- Follow all fieldwork safety requirements that may be imposed by EM&R for work in canyons. Specific requirements such as the two person rule, radio communications at all times and carrying the Laboratory's 104-RAIN pager for emergency potential flooding notification may be required.

All fieldwork operations must be conducted in accordance with this MOU unless site-specific revision or considerations are presented to and agreed upon by DX/FM and operations staff prior to initiation of work. The fieldwork Team Leader (or designee) is responsible for ensuring these requirements are known, understood, supported, and adhered to. The fieldwork Team Leader (or designee) is ultimately responsible for the safety of all workers and environmental compliance of the project.

IV Conflict Resolution

A. Method Explained

In the course of implementing this agreement, it is realistic to expect that there will be conflicts in understanding, interpretation or opinions with regards to ownership, roles, responsibilities, authorities, facility operating limits, work control, costs, maintenance and operating requirements. In order to reasonably and equitably settle any apparent differences, the following methodology and criteria will be used:

1. Any differences should try to be resolved by the DX Facility Manager and the field work Team Leader or their designees.
2. All conflicts should be described in writing. The written description and scope of the problem shall be prepared jointly to capture all aspects of the situation from both parties' perspectives. An effort shall be made by both parties to identify the root cause and necessary corrective actions or mitigations to resolve differences.
3. If an agreement cannot be reached, the problem shall be forwarded to the respective Division Directors for settlement.
4. It shall be the responsibility of each party to adequately accept and implement the final decision, in any event, as soon as reasonably possible.

V References

LIR 402-10-03.0 *ES&H Management of Contractor Performed Facility Construction/Maintenance, Environmental Restoration/Decontamination and Decommissioning, and Related Drilling Operations*

VI ADDITIONAL INFORMATION, SPECIFIC REQUIREMENTS

1) Required training at DX Division for performing fieldwork includes;

A. Beryllium (Be) Awareness Training (course # 725 through the ESH-13 Training Center),
B. Depleted Uranium awareness (Can be provided by DX deployed ESH-1 Representative if required).
C. Any additional site-specific training needs here?

2) Environment, Safety, Health and Security Documentation and Requirements

   A. Any environmental permits required to perform the work such as; USACOE 404 permitting for dredge and fill operations etc, Air quality permitting or other permits.
   B. A DX approved and signed ESH Hazard Screening form.
   C. Any forms required for security access to all DX division areas (form 1812 for uncleared access, etc.)
   D. Approved field communications for work in remote areas such as radios and pagers. Radios shall be LANL radios only and capable of communicating to the field teams group from remote areas of DX division. It is recommended that a radio be checked out from DX access Control at TA-15-447 for work within all TA's at DX Division. For work in canyons during the summer monsoon months a 104-RAIN pager must be worn to warn the field team of possible canyon flooding. LANL cell phones must be approved to be brought on site, and used only for emergencies.

Attachment 1

DX ESH and Duty officer phone list

DX/FM ESH contacts
1) Franco Sisneros, 665-6978 or pgr. 996-1253
2) Harvey Decker, 667-1616 or pgr. 104-7568

DX Duty Officer
1) Rotating schedule, pgr. 104-2926 for officer on call.

DX Division ES&H Contacts – by Group

Kathy Smith, DX-1
665-7035
104-6843 (pgr.)
TA-22-90, Rm. A-101

Ken Uher, DX-2
665-4901
996-1129 (pgr.)
TA-9-21, Rm. 128

Jerry Vasilik, DX-4
667-9293
996-1008 (pgr.)
TA-15-446, Rm. 108

Mark Towers, DX-4
665-1026
104-6817 (pgr.)
TA-15-446 Rm. 108

DX-4 (TA-8) VISITOR ORIENTATION/INFORMATION

Please read this information and attest to this by signing the signature sheet, then the daily logbook. Your signature means that you have read, understand, and have had an opportunity to ask questions about this information. Visitors will keep the copy of their orientation (updated yearly) which includes a list of emergency numbers and a map of the visited DX area.

POTENTIAL HAZARDS

High Explosives (HE)
Laser Light
Chemicals
Depleted Uranium (DU)
Pressurized Gases
Cryogenics
High Voltage/Pulsed Power Systems
X-ray Radiation
Neutron Radiation
Moving Machinery
Intense Noise
Beryllium

GENERAL INFORMATION

It is strictly forbidden to pass any barricade, closed gate, roadblock, or warning sign.

Visitors encountering any of these access restrictions should return to the Access Control Office or Local Access Office or wait until the restriction is removed by the cognizant Firing Leader or designee. Only the Firing Leader may grant permission to remove any such restriction. This permission can be granted only through direct verbal contact (includes radio and telephone). Visitors escorts will explicitly inform their charges of the acquired permission and the circumstances of its granting.

- **After obtaining permission to enter, visitors will close the access gates behind them. Visitors will only travel to specified destinations. Any changes in plans must be discussed and approved with the appropriate Access Control Office.**
- **Tailgating (allowing other personnel to enter or exit the area when you open the gate) is not allowed in any DX-Division firing area, unless the person granting access has ascertained that the person(s) is authorized to enter or exit this area by physically checking the person(s) exchange badge.**
- **You must exchange your badge before entry and immediately upon exit.**
- **Unescorted visitors** shall have a Q-Clearance and will exchange their badges upon entry in the DX-4 firing areas. They shall obey all aspects of the site-specific orientation. Unescorted visitors may escort **Escorted visitors.** Escorted visitors shall obey and stay with their escort at all times while in the firing area. L-Cleared and Uncleared visitors do not receive an exchange badge, but are listed under their escorts exchanged badge.
- If you are in an area where an experiment is in progress, you will be advised when a shot is about to be fired and assigned a **Knowledgeable escort**, if necessary. After the "all clear" is announced you will be informed to resume activities.

- Firing site leaders have full responsibility (and commensurate authority) for everything that happens at their site. **Their orders will be followed**.
- Eating and drinking is prohibited on the firing mounds, check with site personnel for designated eating and drinking areas.
- Do not leave paved roads without permission. Personnel and equipment that have been off the paved roads at TA14, TA15, TA36, TA39, and TA40 (Bldg. 4/Exclusion Area) must be monitored prior to leaving the area.
- Flame or spark producing devices are not allowed in any HE area without prior approval (Special Work Permit).
- All signs, warning lights, warning announcements must be observed and obeyed.
- All wastes (Haz. and Non-Haz.) must be handled and disposed of properly.
- Do not pick up or touch any materials.
- Visitors may be required to wear TLD badges, safety glasses, safety shoes, booties, or other protective gear as a condition of access.
- DX Division has in place a Traffic Safety Improvement Plan. Part of this plan is intended to increase the awareness of personnel, promote the observance of safe driving practices while driving on LANL property, and reduce the number of traffic incidents. The expectation of DX Division is that **you will follow all posted traffic rules, watch out carefully for wildlife sharing the roads with you and drive as if your own family is in the other vehicles you encounter**.
- Beryllium is used in some experimental HE shots in DX Division. Beryllium is a toxic metal that can cause sensitization at low levels in some individuals, and may result in a systemic disease that evidences itself primarily in reduced lung function. The hazard is primarily from inhalation of airborne beryllium particulates.
- For medical service, Laboratory personnel should go to the Occupational Medical Facility at TA-3-409; all other personnel should go to the Los Alamos Medical Center.
- Call 911 for emergency response.
- Working hours are 8:00 a.m. to 4:00 p.m. If you will be in the firing areas after hours, arrangements to exchange your badge should be made with the Access Control Office at 667-6742.

FIRING SITE WARNING SEQUENCES

The following are siren sequences used in areas controlled by DX-4:

TA-14 Sequence:

1. Siren sounds for 30 seconds (first warning, take cover).
2. Siren is silent for 30 seconds.
3. Siren sounds for a minimum of 90 seconds (siren sounds until the shot is fired).
4. The "all clear" signal is 2 short siren blasts.

TA-15 Sequence:

1. Siren sounds for 30 seconds (first warning, take cover).
2. Siren is silent for 30 seconds.
3. Siren sounds for a minimum of 90 seconds (siren sounds until the shot is fired).
4. Siren sounds at least 45 seconds after the shot is fired.
5. The "all clear" signal is 2 short siren blasts.

TA-36 Sequence:

1. Siren sounds for 30 seconds (first warning, take cover).
2. Siren is silent for 30 seconds.
3. Siren sounds for a minimum of 45 seconds. (siren sounds until the shot is fired.)
4. Siren sounds at least 60 seconds after the shot is fired.
5. The "all clear" signal is 2 short siren blasts.

TA-39 Sequence:

1. Siren sounds for 30 seconds (first warning, take cover).
2. Siren is silent for 30 seconds.
3. Siren sounds and remains on until the shot is fired.
4. The "all clear" signal is 2 short siren blasts.

TA-40 Sequence:

1. Siren sounds and remains on until the shot is fired.
2. The "all clear" signal is 2 short siren blasts.

IMPORTANT TELEPHONE NUMBERS

General Access Control Office - **7-6742**
Emergencies - **911**
Emergency Management Office - **7-6211**

DX Maintenance Coordinators

TA-6-22-39-40-60 – **Bill Meloy -7-8981, 104-1070**
TA-9-14-16-69 **– Wiley Gladson -7-5401, 104-1156**
TA-15-36-67-DARHT **– Donald Naranjo – 7-9414, 996-4279**

DX Division Access Control Offices

TA-14 Local Access Control Office - **7-4411**
TA-15 & 36 Access Control Office - **7-6742**
TA-39 Local Access Control Office - **7-6881**
TA-40 Local Access Control Office - **7-6842**

DX Division Contacts

DX-4 Group Office (Gary Laabs, Group Leader) - **7-4246**
ES&H Officer (Gerald Vasilik) - **7-9293, 996-1008**
On Duty Facility Manager Designee - **104-2926, 699-1765**
Waste Mgmt. Coordinator (Gordon Jio) – **7-4325, 104-8478**
RCT Support - **7-6742**

DX-4 VISITOR
ORIENTATION/INFORMATION

PLEASE PRINT

LAST NAME	FIRST NAME	MIDDLE INITIAL
Z NUMBER (SOCIAL SECURITY NUMBER IF Z NUMBER IS NOT AVAILABLE)	PAGER/CELLULAR (IF AVAILABLE)	DATE
ORGANIZATION LANL GROUP_____ JCNNM_____ OTHER_____	AREA VISITED:	

By my signature below, I affirm that I have read, understand, and have been given the opportunity to ask questions about the Visitor Information/Orientation.

SIGNATURE

Reason for Entry

DX-4 (TA-14) VISITOR ORIENTATION/INFORMATION

Please read this information and attest to this by signing the signature sheet, then the daily logbook. Your signature means that you have read, understand, and have had an opportunity to ask questions about this information. Visitors will keep the copy of their orientation (updated yearly) which includes a list of emergency numbers and a map of the visited DX area.

POTENTIAL HAZARDS

High Explosives (HE)	High Voltage/Pulsed Power Systems
Laser Light	X-ray Radiation
Chemicals	Neutron Radiation
Depleted Uranium (DU)	Moving Machinery
Pressurized Gases	Intense Noise
Cryogenics	Beryllium

GENERAL INFORMATION

It is strictly forbidden to pass any barricade, closed gate, roadblock, or warning sign.

Visitors encountering any of these access restrictions should return to the Access Control Office or Local Access Office or wait until the restriction is removed by the cognizant Firing Leader or designee. Only the Firing Leader may grant permission to remove any such restriction. This permission can be granted only through direct verbal contact (includes radio and telephone). Visitors escorts will explicitly inform their charges of the acquired permission and the circumstances of its granting.

- **After obtaining permission to enter, visitors will close the access gates behind them. Visitors will only travel to specified destinations. Any changes in plans must be discussed and approved with the appropriate Access Control Office.**
- **Tailgating (allowing other personnel to enter or exit the area when you open the gate) is not allowed in any DX-Division firing area, unless the person granting access has ascertained that the person(s) is authorized to enter or exit this area by physically checking the person(s) exchange badge.**
- **You must exchange your badge before entry and immediately upon exit.**
- **Unescorted visitors** shall have a Q-Clearance and will exchange their badges upon entry in the DX-4 firing areas. They shall obey all aspects of the site-specific orientation. Unescorted visitors may escort **Escorted visitors.** Escorted visitors shall obey and stay with their escort at all times while in the firing area. L-Cleared and Uncleared visitors do not receive an exchange badge, but are listed under their escorts exchanged badge.
- If you are in an area where an experiment is in progress, you will be advised when a shot is about to be fired and assigned a **Knowledgeable escort**, if necessary. After the "all clear" is announced you will be informed to resume activities.

- Firing site leaders have full responsibility (and commensurate authority) for everything that happens at their site. **Their orders will be followed**.
- Eating and drinking is prohibited on the firing mounds, check with site personnel for designated eating and drinking areas.
- Do not leave paved roads without permission. Personnel and equipment that have been off the paved roads at TA14, TA15, TA36, TA39, and TA40 (Bldg. 4/Exclusion Area) must be monitored prior to leaving the area.
- Flame or spark producing devices are not allowed in any HE area without prior approval (Special Work Permit).
- All signs, warning lights, warning announcements must be observed and obeyed.
- All wastes (Haz. and Non-Haz.) must be handled and disposed of properly.
- Do not pick up or touch any materials.
- Visitors may be required to wear TLD badges, safety glasses, safety shoes, booties, or other protective gear as a condition of access.
- DX Division has in place a Traffic Safety Improvement Plan. Part of this plan is intended to increase the awareness of personnel, promote the observance of safe driving practices while driving on LANL property, and reduce the number of traffic incidents. The expectation of DX Division is that **you will follow all posted traffic rules, watch out carefully for wildlife sharing the roads with you and drive as if your own family is in the other vehicles you encounter**.
- Beryllium is used in some experimental HE shots in DX Division. Beryllium is a toxic metal that can cause sensitization at low levels in some individuals, and may result in a systemic disease that evidences itself primarily in reduced lung function. The hazard is primarily from inhalation of airborne beryllium particulates.
- For medical service, Laboratory personnel should go to the Occupational Medical Facility at TA-3-409; all other personnel should go to the Los Alamos Medical Center.
- Call 911 for emergency response.
- Working hours are 8:00 a.m. to 4:00 p.m. If you will be in the firing areas after hours, arrangements to exchange your badge should be made with the Access Control Office at 667-6742.

FIRING SITE WARNING SEQUENCES

The following are siren sequences used in areas controlled by DX-4:

TA-14 Sequence:

1. Siren sounds for 30 seconds (first warning, take cover).
2. Siren is silent for 30 seconds.
3. Siren sounds for a minimum of 90 seconds (siren sounds until the shot is fired).
4. The "all clear" signal is 2 short siren blasts.

TA-15 Sequence:

1. Siren sounds for 30 seconds (first warning, take cover).
2. Siren is silent for 30 seconds.
3. Siren sounds for a minimum of 90 seconds (siren sounds until the shot is fired).
4. Siren sounds at least 45 seconds after the shot is fired.
5. The "all clear" signal is 2 short siren blasts.

TA-36 Sequence:

1. Siren sounds for 30 seconds (first warning, take cover).
2. Siren is silent for 30 seconds.
3. Siren sounds for a minimum of 45 seconds. (siren sounds until the shot is fired.)
4. Siren sounds at least 60 seconds after the shot is fired.
5. The "all clear" signal is 2 short siren blasts.

TA-39 Sequence:

1. Siren sounds for 30 seconds (first warning, take cover).
2. Siren is silent for 30 seconds.
3. Siren sounds and remains on until the shot is fired.
4. The "all clear" signal is 2 short siren blasts.

TA-40 Sequence:

1. Siren sounds and remains on until the shot is fired.
2. The "all clear" signal is 2 short siren blasts.

IMPORTANT TELEPHONE NUMBERS

General Access Control Office - **7-6742**
Emergencies - **911**
Emergency Management Office - **7-6211**

DX Maintenance Coordinators

TA-6-22-39-40-60 – **Bill Meloy -7-8981, 104-1070**
TA-9-14-16-69 – **Wiley Gladson -7-5401, 104-1156**
TA-15-36-67-DARHT – **Donald Naranjo – 7-9414, 996-4279**

DX Division Access Control Offices

TA-14 Local Access Control Office - **7-4411**
TA-15 & 36 Access Control Office - **7-6742**
TA-39 Local Access Control Office - **7-6881**
TA-40 Local Access Control Office - **7-6842**

DX Division Contacts

DX-4 Group Office (Gary Laabs, Group Leader) - **7-4246**
ES&H Officer (Gerald Vasilik) - **7-9293, 996-1008**
On Duty Facility Manager Designee - **104-2926, 699-1765**
Waste Mgmt. Coordinator (Gordon Jio) – **7-4325, 104-8478**
RCT Support - **7-6742**

DX-4 VISITOR
ORIENTATION/INFORMATION

PLEASE PRINT

LAST NAME	FIRST NAME	MIDDLE INITIAL
Z NUMBER (SOCIAL SECURITY NUMBER IF Z NUMBER IS NOT AVAILABLE)	PAGER/CELLULAR (IF AVAILABLE)	DATE
ORGANIZATION LANL GROUP_____ JCNNM_____ OTHER_____	AREA VISITED:	

By my signature below, I affirm that I have read, understand, and have been given the opportunity to ask questions about the Visitor Information/Orientation.

SIGNATURE

Reason for Entry

DX-4 (TA-39) VISITOR ORIENTATION/INFORMATION

Please read this information and attest to this by signing the signature sheet, then the daily logbook. Your signature means that you have read, understand, and have had an opportunity to ask questions about this information. Visitors will keep the copy of their orientation (updated yearly) which includes a list of emergency numbers and a map of the visited DX area.

POTENTIAL HAZARDS

High Explosives (HE)	High Voltage/Pulsed Power Systems
Laser Light	X-ray Radiation
Chemicals	Neutron Radiation
Depleted Uranium (DU)	Moving Machinery
Pressurized Gases	Intense Noise
Cryogenics	Beryllium

GENERAL INFORMATION

It is strictly forbidden to pass any barricade, closed gate, roadblock, or warning sign.

Visitors encountering any of these access restrictions should return to the Access Control Office or Local Access Office or wait until the restriction is removed by the cognizant Firing Leader or designee. Only the Firing Leader may grant permission to remove any such restriction. This permission can be granted only through direct verbal contact (includes radio and telephone). Visitors escorts will explicitly inform their charges of the acquired permission and the circumstances of its granting.

- **After obtaining permission to enter, visitors will close the access gates behind them. Visitors will only travel to specified destinations. Any changes in plans must be discussed and approved with the appropriate Access Control Office.**
- **Tailgating (allowing other personnel to enter or exit the area when you open the gate) is not allowed in any DX-Division firing area, unless the person granting access has ascertained that the person(s) is authorized to enter or exit this area by physically checking the person(s) exchange badge.**
- **You must exchange your badge before entry and immediately upon exit.**
- **Unescorted visitors** shall have a Q-Clearance and will exchange their badges upon entry in the DX-4 firing areas. They shall obey all aspects of the site-specific orientation. Unescorted visitors may escort **Escorted visitors.** Escorted visitors shall obey and stay with their escort at all times while in the firing area. L-Cleared and Uncleared visitors do not receive an exchange badge, but are listed under their escorts exchanged badge.
- If you are in an area where an experiment is in progress, you will be advised when a shot is about to be fired and assigned a **Knowledgeable escort**, if necessary. After the "all clear" is announced you will be informed to resume activities.

- Firing site leaders have full responsibility (and commensurate authority) for everything that happens at their site. **Their orders will be followed**.
- Eating and drinking is prohibited on the firing mounds, check with site personnel for designated eating and drinking areas.
- Do not leave paved roads without permission. Personnel and equipment that have been off the paved roads at TA14, TA15, TA36, TA39, and TA40 (Bldg. 4/Exclusion Area) must be monitored prior to leaving the area.
- Flame or spark producing devices are not allowed in any HE area without prior approval (Special Work Permit).
- All signs, warning lights, warning announcements must be observed and obeyed.
- All wastes (Haz. and Non-Haz.) must be handled and disposed of properly.
- Do not pick up or touch any materials.
- Visitors may be required to wear TLD badges, safety glasses, safety shoes, booties, or other protective gear as a condition of access.
- DX Division has in place a Traffic Safety Improvement Plan. Part of this plan is intended to increase the awareness of personnel, promote the observance of safe driving practices while driving on LANL property, and reduce the number of traffic incidents. The expectation of DX Division is that **you will follow all posted traffic rules, watch out carefully for wildlife sharing the roads with you and drive as if your own family is in the other vehicles you encounter**.
- Beryllium is used in some experimental HE shots in DX Division. Beryllium is a toxic metal that can cause sensitization at low levels in some individuals, and may result in a systemic disease that evidences itself primarily in reduced lung function. The hazard is primarily from inhalation of airborne beryllium particulates.
- For medical service, Laboratory personnel should go to the Occupational Medical Facility at TA-3-409; all other personnel should go to the Los Alamos Medical Center.
- Call 911 for emergency response.
- Working hours are 8:00 a.m. to 4:00 p.m. If you will be in the firing areas after hours, arrangements to exchange your badge should be made with the Access Control Office at 667-6742.

FIRING SITE WARNING SEQUENCES

The following are siren sequences used in areas controlled by DX-4:

TA-14 Sequence:

1. Siren sounds for 30 seconds (first warning, take cover).
2. Siren is silent for 30 seconds.
3. Siren sounds for a minimum of 90 seconds (siren sounds until the shot is fired).
4. The "all clear" signal is 2 short siren blasts.

TA-15 Sequence:

1. Siren sounds for 30 seconds (first warning, take cover).
2. Siren is silent for 30 seconds.
3. Siren sounds for a minimum of 90 seconds (siren sounds until the shot is fired).
4. Siren sounds at least 45 seconds after the shot is fired.
5. The "all clear" signal is 2 short siren blasts.

TA-36 Sequence:

1. Siren sounds for 30 seconds (first warning, take cover).
2. Siren is silent for 30 seconds.
3. Siren sounds for a minimum of 45 seconds. (siren sounds until the shot is fired.)
4. Siren sounds at least 60 seconds after the shot is fired.
5. The "all clear" signal is 2 short siren blasts.

TA-39 Sequence:

1. Siren sounds for 30 seconds (first warning, take cover).
2. Siren is silent for 30 seconds.
3. Siren sounds and remains on until the shot is fired.
4. The "all clear" signal is 2 short siren blasts.

TA-40 Sequence:

1. Siren sounds and remains on until the shot is fired.
2. The "all clear" signal is 2 short siren blasts.

IMPORTANT TELEPHONE NUMBERS

General Access Control Office - **7-6742**
Emergencies - **911**
Emergency Management Office - **7-6211**

DX Maintenance Coordinators

TA-6-22-39-40-60 – **Bill Meloy -7-8981, 104-1070**
TA-9-14-16-69 – **Wiley Gladson -7-5401, 104-1156**
TA-15-36-67-DARHT **– Donald Naranjo – 7-9414, 996-4279**

DX Division Access Control Offices

TA-14 Local Access Control Office - **7-4411**
TA-15 & 36 Access Control Office - **7-6742**
TA-39 Local Access Control Office - **7-6881**
TA-40 Local Access Control Office - **7-6842**

DX Division Contacts

DX-4 Group Office (Gary Laabs, Group Leader) - **7-4246**
ES&H Officer (Gerald Vasilik) - **7-9293, 996-1008**
On Duty Facility Manager Designee - **104-2926, 699-1765**
Waste Mgmt. Coordinator (Gordon Jio) – **7-4325, 104-8478**
RCT Support - **7-6742**

DX-4 VISITOR
ORIENTATION/INFORMATION

PLEASE PRINT

LAST NAME	FIRST NAME	MIDDLE INITIAL
Z NUMBER (SOCIAL SECURITY NUMBER IF Z NUMBER IS NOT AVAILABLE)	PAGER/CELLULAR (IF AVAILABLE)	DATE
ORGANIZATION LANL GROUP_____ JCNNM_____ OTHER_____	AREA VISITED:	

By my signature below, I affirm that I have read, understand, and have been given the opportunity to ask questions about the Visitor Information/Orientation.

SIGNATURE

Reason for Entry

DX-4 (TA-40) VISITOR ORIENTATION/INFORMATION

Please read this information and attest to this by signing the signature sheet, then the daily logbook. Your signature means that you have read, understand, and have had an opportunity to ask questions about this information. Visitors will keep the copy of their orientation (updated yearly) which includes a list of emergency numbers and a map of the visited DX area.

POTENTIAL HAZARDS

High Explosives (HE)	High Voltage/Pulsed Power Systems
Laser Light	X-ray Radiation
Chemicals	Neutron Radiation
Depleted Uranium (DU)	Moving Machinery
Pressurized Gases	Intense Noise
Cryogenics	Beryllium

GENERAL INFORMATION

It is strictly forbidden to pass any barricade, closed gate, roadblock, or warning sign.

Visitors encountering any of these access restrictions should return to the Access Control Office or Local Access Office or wait until the restriction is removed by the cognizant Firing Leader or designee. Only the Firing Leader may grant permission to remove any such restriction. This permission can be granted only through direct verbal contact (includes radio and telephone). Visitors escorts will explicitly inform their charges of the acquired permission and the circumstances of its granting.

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- **You must exchange your badge before entry and immediately upon exit.**
- **Unescorted visitors** shall have a Q-Clearance and will exchange their badges upon entry in the DX-4 firing areas. They shall obey all aspects of the site-specific orientation. Unescorted visitors may escort **Escorted visitors.** Escorted visitors shall obey and stay with their escort at all times while in the firing area. L-Cleared and Uncleared visitors do not receive an exchange badge, but are listed under their escorts exchanged badge.
- If you are in an area where an experiment is in progress, you will be advised when a shot is about to be fired and assigned a **Knowledgeable escort**, if necessary. After the "all clear" is announced you will be informed to resume activities.

- Firing site leaders have full responsibility (and commensurate authority) for everything that happens at their site. **Their orders will be followed**.
- Eating and drinking is prohibited on the firing mounds, check with site personnel for designated eating and drinking areas.
- Do not leave paved roads without permission. Personnel and equipment that have been off the paved roads at TA14, TA15, TA36, TA39, and TA40 (Bldg. 4/Exclusion Area) must be monitored prior to leaving the area.
- Flame or spark producing devices are not allowed in any HE area without prior approval (Special Work Permit).
- All signs, warning lights, warning announcements must be observed and obeyed.
- All wastes (Haz. and Non-Haz.) must be handled and disposed of properly.
- Do not pick up or touch any materials.
- Visitors may be required to wear TLD badges, safety glasses, safety shoes, booties, or other protective gear as a condition of access.
- DX Division has in place a Traffic Safety Improvement Plan. Part of this plan is intended to increase the awareness of personnel, promote the observance of safe driving practices while driving on LANL property, and reduce the number of traffic incidents. The expectation of DX Division is that **you will follow all posted traffic rules, watch out carefully for wildlife sharing the roads with you and drive as if your own family is in the other vehicles you encounter**.
- Beryllium is used in some experimental HE shots in DX Division. Beryllium is a toxic metal that can cause sensitization at low levels in some individuals, and may result in a systemic disease that evidences itself primarily in reduced lung function. The hazard is primarily from inhalation of airborne beryllium particulates.
- For medical service, Laboratory personnel should go to the Occupational Medical Facility at TA-3-409; all other personnel should go to the Los Alamos Medical Center.
- Call 911 for emergency response.
- Working hours are 8:00 a.m. to 4:00 p.m. If you will be in the firing areas after hours, arrangements to exchange your badge should be made with the Access Control Office at 667-6742.

FIRING SITE WARNING SEQUENCES

The following are siren sequences used in areas controlled by DX-4:

TA-14 Sequence:

1. Siren sounds for 30 seconds (first warning, take cover).
2. Siren is silent for 30 seconds.
3. Siren sounds for a minimum of 90 seconds (siren sounds until the shot is fired).
4. The "all clear" signal is 2 short siren blasts.

TA-15 Sequence:

1. Siren sounds for 30 seconds (first warning, take cover).
2. Siren is silent for 30 seconds.
3. Siren sounds for a minimum of 90 seconds (siren sounds until the shot is fired).
4. Siren sounds at least 45 seconds after the shot is fired.
5. The "all clear" signal is 2 short siren blasts.

TA-36 Sequence:

1. Siren sounds for 30 seconds (first warning, take cover).
2. Siren is silent for 30 seconds.
3. Siren sounds for a minimum of 45 seconds. (siren sounds until the shot is fired.)
4. Siren sounds at least 60 seconds after the shot is fired.
5. The "all clear" signal is 2 short siren blasts.

TA-39 Sequence:

1. Siren sounds for 30 seconds (first warning, take cover).
2. Siren is silent for 30 seconds.
3. Siren sounds and remains on until the shot is fired.
4. The "all clear" signal is 2 short siren blasts.

TA-40 Sequence:

1. Siren sounds and remains on until the shot is fired.
2. The "all clear" signal is 2 short siren blasts.

IMPORTANT TELEPHONE NUMBERS

General Access Control Office - **7-6742**
Emergencies - **911**
Emergency Management Office - **7-6211**

DX Maintenance Coordinators

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TA-9-14-16-69 **– Wiley Gladson -7-5401, 104-1156**
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ES&H Officer (Gerald Vasilik) - **7-9293, 996-1008**
On Duty Facility Manager Designee - **104-2926, 699-1765**
Waste Mgmt. Coordinator (Gordon Jio) – **7-4325, 104-8478**
RCT Support - **7-6742**

DX-4 VISITOR
ORIENTATION/INFORMATION

PLEASE PRINT

LAST NAME	FIRST NAME	MIDDLE INITIAL
Z NUMBER (SOCIAL SECURITY NUMBER IF Z NUMBER IS NOT AVAILABLE)	PAGER/CELLULAR (IF AVAILABLE)	DATE
ORGANIZATION LANL GROUP_____ JCNNM_____ OTHER_____	AREA VISITED:	

By my signature below, I affirm that I have read, understand, and have been given the opportunity to ask questions about the Visitor Information/Orientation.

SIGNATURE

Reason for Entry

Visitor Information for Access to TA-9
Contact: Wiley Gladson
Phone: (505) 667-5401
Pager (Voice) 104-1156

Alternate Contact: Kenneth Uher
Phone: (505) 667-4901
Pager: 996-1129

One or more of the following hazards may be present while visiting or working in TA-9.

High Explosives (HE)	Pressurized Gases	Chemicals	Cryogens
Depleted Uranium	Vehicle Traffic	Wildlife	

As a visitor to TA-9, you are responsible for observing the following safety guidelines and for being aware of the activities around you. Requirements for entry may include protective equipment such as safety shoes, safety glasses, laboratory coats, TLD (dosimetry) badge, or other items.

High explosives (HE) and chemicals may be found in drains, settling tanks, sumps, and other structures associated with the waste lines of the buildings, or in the vacuum systems of the building within the HE areas. Contamination from depleted uranium may also be a concern.

1. **NEVER, EVER** cross a closed gate, chain, or other barrier. The large orange hexagonal sign with the black "1" denotes the presence of explosives.
2. If warning lights are flashing on a building or a room, **DO NOT ENTER!**
3. Do **NOT** leave paved roads in a vehicle or on foot unless you have specific permission from the Area Coordinator at TA-9, Bldg. 29.
4. Do **NOT** enter another area other than the one you signed into without first obtaining permission from the Area Coordinator.
5. Smoking or flame producing devices are **NOT** permitted in explosive areas. A drop box has been provided at the group office and Bldg. 29 for matches and lighters.
6. Eating and drinking are **NOT** permitted where explosives or chemicals are being used.
7. Cellular phones and 2-way radios must be approved before they can be taken in the area.
8. Obey all vehicle speed limits and road signs.
9. Do **NOT** touch or handle any material or equipment without permission.
10. MSDSs for chemicals are available in the ES&H Library and at the facilities where they are used.
11. Private, noncommercial vehicles are not allowed in the HE area.
12. Depending on the time of year, insects, poisonous plants, rodents, and snakes are present.

Remember, if you are unsure about something, call 7-4411 (DX-2 Group Office) and they will put you in touch with someone who can help you. **When in doubt – ASK!!!**

For medical service, Laboratory employees should go to the Occupational Medical Facility at TA-3; contractors and others should go to the Los Alamos Medical Center. **The emergency phone number is 911.**

_____	/ _____	/ _____
Name	**Signature & Z Number**	**Date**

APPENDIX E

MATERIAL SAFETY DATA SHEETS

ALCONOX -- ALCONOX - DETERGENT, SURGICAL INSTRUMENT
MATERIAL SAFETY DATA SHEET
NSN: 6505008398894
Manufacturer's CAGE: 17534
Part No. Indicator: A
Part Number/Trade Name: ALCONOX

General Information

Item Name: DETERGENT, SURGICAL INSTRUMENT
Company's Name: ALCONOX INC
Company's Street: 215 PARK AVE S
Company's City: NEW YORK
Company's State: NY
Company's Country: US
Company's Zip Code: 10003
Company's Emerg Ph #: 212-473-1300
Company's Info Ph #: 212-473-1300
Record No. For Safety Entry: 001
Tot Safety Entries This Stk#: 001
Status: SMJ
Date MSDS Prepared: 14AUG92
Safety Data Review Date: 28SEP92
MSDS Serial Number: BPXXV
Hazard Characteristic Code: NK

Ingredients/Identity Information

Proprietary: NO
Ingredient: ALCONOX
Ingredient Sequence Number: 01
NIOSH (RTECS) Number: 1002102NX
OSHA PEL: NOT APPLICABLE
ACGIH TLV: NOT APPLICABLE

Physical/Chemical Characteristics

Appearance And Odor: WHITE POWDER INTERSPERSED W/CREAM COLORED FLAKES-ODORLESS
Boiling Point: N/A
Vapor Pressure (MM Hg/70 F): N/A
Vapor Density (Air=1): N/A
Specific Gravity: N/A
Evaporation Rate And Ref: NOT APPLICABLE
Solubility In Water: APPRECIABLE
Percent Volatiles By Volume: N/A

Fire and Explosion Hazard Data

Flash Point: NONE
Lower Explosive Limit: N/A
Upper Explosive Limit: N/A
Extinguishing Media: WATER, CARBON DIOXIDE, DRY CHEMICAL, FOAM SAND/EARTH.
Special Fire Fighting Proc: WEAR NIOSH/MSHA APPROVED SCBA AND FULL PROTECTIVE EQUIPMENT (FP N).
Unusual Fire And Expl Hazrds: NONE.

Reactivity Data

Stability: YES
Cond To Avoid (Stability): NONE.
Materials To Avoid: AVOID STRONG ACIDS.
Hazardous Decomp Products: MAY RELEASE CARBON DIOXIDE GAS ON BURNING.

Hazardous Poly Occur: NO
Conditions To Avoid (Poly): NOT RELEVANT

Health Hazard Data

LD50-LC50 Mixture: NONE SPECIFIED BY MANUFACTURER.
Route Of Entry - Inhalation: YES
Route Of Entry - Skin: NO
Route Of Entry - Ingestion: NO
Health Haz Acute And Chronic: PROLONGED EXPOSURE TO DUST MAY IRRITATE MUCOUS MEMBRANES.
Carcinogenicity - NTP: NO
Carcinogenicity - IARC: NO
Carcinogenicity - OSHA: NO
Explanation Carcinogenicity: NOT RELEVANT
Signs/Symptoms Of Overexp: SEE HEALTH HAZARDS.
Med Cond Aggravated By Exp: NONE SPECIFIED BY MANUFACTURER.
Emergency/First Aid Proc: EYES: FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MIN. SKIN: FLUSH WITH PLENTY OF WATER. INGEST: DRINK LARGE QTY OF WATER TO DILUTE MATERIAL. GET MED ATTN FOR DISCOMFORT. INHAL: REMOVE TO FRESH AIR. SUPPORT BRTHG (GIVE O*2/ARTF RESP) (FP N).

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: MATERIAL FOAMS PROFUSELY, SHOVEL & RECOVER AS MUCH AS POSSIBLE. RINSE REMAINDER TO SEWER. MATERIAL IS COMPLETELY BIODEGRADABLE.
Neutralizing Agent: NONE SPECIFIED BY MANUFACTURER.
Waste Disposal Method: SMALL QTY MAY BE DISPOSED OF IN SEWER. LARGE QTY SHOULD BE DISPOSED OF ACCORDING TO LOCAL, FEDERAL & STATE REQUIREMENTS FOR NON-HAZARDOUS DETERGENT.
Precautions-Handling/Storing: SHOULD BE STORED IN A DRY AREA TO PREVENT CAKING.
Other Precautions: NO SPECIAL REQUIREMENTS OTHER THAN THE GOOD INDUSTRIAL HYGIENE & SAFETY PRACTICES EMPLOYED WITH ANY INDUSTRIAL CHEMICAL.

Control Measures

Respiratory Protection: NIOSH/MSHA APPROVED DUST MASK.
Ventilation: LOCAL EXHAUST: NORMAL.
Protective Gloves: IMPERVIOUS GLOVES (FP N).
Eye Protection: CHEMICAL WORKERS GOGGLES (FP N).
Other Protective Equipment: NOT REQUIRED.
Work Hygienic Practices: NONE SPECIFIED BY MANUFACTURER.
Suppl. Safety & Health Data: NONE SPECIFIED BY MANUFACTURER.

Transportation Data

Trans Data Review Date: 93053
DOT PSN Code: ZZZ
DOT Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION
IMO PSN Code: ZZZ
IMO Proper Shipping Name: NOT REGULATED FOR THIS MODE OF TRANSPORTATION
IATA PSN Code: ZZZ
IATA Proper Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION
AFI PSN Code: ZZZ
AFI Prop. Shipping Name: NOT REGULATED BY THIS MODE OF TRANSPORTATION
Additional Trans Data: NOT REGULATED FOR TRANSPORTATION

Disposal Data

Label Data

Label Required: YES
Technical Review Date: 18SEP92
Label Date: 18SEP92
Label Status: G
Common Name: ALCONOX
Chronic Hazard: NO
Signal Word: CAUTION!
Acute Health Hazard-Slight: X
Contact Hazard-Slight: X
Fire Hazard-None: X
Reactivity Hazard-None: X
Special Hazard Precautions: ACUTE: PROLONGED EXPOSURE TO DUST MAY IRRITATE MUCOUS MEMBRANES. CHRONIC: NONE SPECIFIED BY MANUFACTURER.
Protect Eye: Y
Protect Skin: Y
Protect Respiratory: Y
Label Name: ALCONOX INC
Label Street: 215 PARK AVE S
Label City: NEW YORK
Label State: NY
Label Zip Code: 10003
Label Country: US
Label Emergency Number: 212-473-1300

Safety data for hydrochloric acid (concentrated)

General

Synonyms: muriatic acid, chlorohydric acid
Molecular formula: H Cl
CAS No: 7647-01-0
EC No: 231-595-7

Physical data

Appearance: clear colourless or slightly yellow liquid with pungent odour. Concentrated acid is fuming.
Melting point: -25 C
Boiling point: 109 C
Specific gravity: 1.19
Vapour pressure:
Flash point:
Explosion limits:
Autoignition temperature:

Stability

Stable. Avoid heat, flames. Incompatible with most common metals, amines, metal oxides, acetic anhydride, propiolactone, vinyl acetate, mercuric sulphate, calcium phosphide, formaldehyde, alkalies, carbonates, strong bases, sulphuric acid, chlorosulphonic acid.

Toxicology

Extremely corrosive. Inhalation of vapour can cause serious injury. Ingestion may be fatal. Liquid can cause severe damage to skin and eyes. TLV 5 ppm.

Toxicity data
(The meaning of any abbreviations which appear in this section is given here.)
ORL-RBT LD50 900 mg kg^{-1}
IPR-MUS LD50 40 mg kg^{-1}
IHL-RAT LC50 3124 ppm/1h.
IHL-HMN LCLO 1300 ppm 30min

Risk phrases
(The meaning of any risk phrases which appear in this section is given here.)
R23 R24 R25 R36 R37 R38.

Transport information

UN No 1789. Packing group II. Major hazard class 8.0. Transport category 2.

Personal protection

Safety glasses or face mask, gloves. Effective ventilation.

Safety phrases
(The meaning of any safety phrases which appear in this section is given here.)
S26 S45.

[Return to Physical & Theoretical Chemistry Lab. Safety home page.]

This information was last updated on April 6, 2001. Although we have tried to make it as accurate and useful as possible, we can take no responsibility for its use or misuse.

Safety data for nitric acid (concentrated)

General

Synonyms: azotic acid
Molecular formula: HNO_3
CAS No: 7697-37-2
EC No: 231-714-2

Physical data

Appearance: colourless liquid with choking odour
Melting point: -42 C
Boiling point: 121 C (69% boils at ca. 86C)
Specific gravity: 1.41
Vapour pressure: 62 mm at 20 C (68%)
Flash point:
Explosion limits:
Autoignition temperature:

Stability

Stable. Strong oxidizer. Substances to be avoided include strong bases, strong reducing agents, alkalis, most common metals, organic materials, alcohols, carbides. Corrodes steel. Light-sensitive.

Toxicology

May be fatal if swallowed or inhaled. Extremely corrosive. Contact with skin or eyes may cause severe burns and permanent damage. TLV 2 ppm. OES long-term 5 mg/m^3

Toxicity data
(The meaning of any abbreviations which appear in this section is given here.)
IHL-RAT LC50 244 ppm (NO_2)/30m

Personal protection

Safety glasses or face mask, gloves. Fume cupboard.

Safety phrases
(The meaning of any safety phrases which appear in this section is given here.)
S23 S26 S36 S37 S39 S45.

[Return to Physical & Theoretical Chemistry Lab. Safety home page.]

This information was last updated on March 27, 2001. We have tried to make it as accurate and useful as possible, but can take no responsibility for its use or misuse.

Safety data for sodium hydroxide

General

Synonyms: caustic soda, soda lye, white caustic
Molecular formula: NaOH
CAS No: 1310-73-2
EC No: 215-185-5

Physical data

Appearance: odourless white solid (often sold as pellets)
Melting point: 318 C
Boiling point: 1390 C
Vapour density:
Vapour pressure: 1 mm Hg at 739 C
Specific gravity: 2.12 g/ml
Flash point: n/a
Explosion limits: n/a
Autoignition temperature:

Stability

Stable. Incompatible with a wide variety of materials including many metals, ammonium compounds, cyanides, acids, nitro compounds, phenols, combustible organics. Hygroscopic. Heat of solution is very high and may lead to a dangerously hot solution if small amounts of water are used.

Toxicology

Very corrosive. Causes severe burns. May cause serious permanent eye damage. Very harmful by ingestion. Harmful by skin contact or by inhalation of dust. Typical TLV 2 mg m^{-1}.

Toxicity data
(The meaning of any abbreviations which appear in this section is given here.)
IPR-MUS LD50 40 mg kg^{-1}

Irritation data
(The meaning of any abbreviations which appear in this section is given here.)
EYE-MKY 1%/24h sev
SKN-RBT 500 mg/24h sev

Risk phrases
(The meaning of any risk phrases which appear in this section is given here.)

R35.

Transport information

UN Major hazard class 8.0. Packing group II. UN No 1823. EMS No 8.0-06.

Personal protection

Safety glasses, adequate ventilation, Neoprene or PVC gloves.

Safety phrases
(The meaning of any safety phrases which appear in this section is given here.)
S26 S37 S39 S45.

[Return to Physical & Theoretical Chemistry Lab. Safety home page.]

This information was last updated on April 6, 2001. We have tried to make it as accurate and useful as possible, but can take no responsibility for its use, misuse, or accuracy. We have not verified this information, and cannot guarantee that it is up-to-date.

Safety data for sodium thiosulfate

General

Synonyms: sodium hyposulfite, thiosulfuric acid disodium salt, disodium thiosulfate, sodium thiosulphate, sodothiol, s-hydril, chlorine control
Molecular formula: $Na_2S_2O_3$
CAS No: 7772-98-7
EINECS No: 231-867-5

Physical data

Appearance: colourless crystals or white powder
Melting point:
Boiling point:
Vapour density:
Vapour pressure:
Density (g cm^{-3}): 1.667
Flash point:
Explosion limits:
Autoignition temperature:
Water solubility:

Stability

Stable. Incompatible with strong acids, strong oxidizing agents, iodine, mercury.

Toxicology

Eye, skin and respiratory irritant. Toxicology not fully investigated.

Toxicity data
(The meaning of any abbreviations which appear in this section is given here.)
IPR-MUS LD50 5200 mg kg^{-1}

Risk phrases
(The meaning of any risk phrases which appear in this section is given here.)
R36 R37 R38.

Transport information

Non-hazardous for air, sea and road freight.

Personal protection

Minimize contact.

Safety phrases
(The meaning of any safety phrases which appear in this section is given here.)
S26 S36.

[Return to Physical & Theoretical Chemistry Lab. Safety home page.]

This information was last updated on August 2, 2001. We have tried to make it as accurate and useful as possible, but can take no responsibility for its use, misuse, or accuracy. We have not verified this information, and cannot guarantee that it is up-to-date.

Safety data for sulfuric acid (dilute)

General

Synonyms: oil of vitriol, mattling acid, vitriol, battery acid, dipping acid, electrolyte acid, vitriol brown oil
Molecular formula: H_2SO_4
CAS No: 7664-93-9
EC No: 231-639-5
EC index No: 016-020-00-8

Physical data

Appearance: Colourless liquid
Melting point: close to 0 C (depends upon concentration)
Boiling point: close to 100 C (depends on concentration)
Specific gravity:
Vapour pressure:
Flash point:
Explosion limits:
Autoignition temperature:
Water solubility: miscible in all proportions

Stability

Stable. Substances to be avoided include most common metals, organic materials, strong reducing agents, bases, strong oxidising agents. Reaction with many metals is rapid or violent, and generates hydrogen (flammable, explosion hazard).

Toxicology

Corrosive, the more concentrated solutions can cause serious burns to the mouth, eyes and skin. Toxic. Harmful by ingestion and through skin contact.

Toxicity data
(The meaning of any abbreviations which appear in this section is given here.)
(Note: the degree of hazard presented by this chemical depends upon its dilution; the following data refer to the concentrated acid, except where stated.)
UNR-MAN LDLO 135 mg kg^{-1}
ORL-RAT LD50 2140 mg kg^{-1} (25% solution)
IHL-MUS LC50 320 mg/m3/2h
IHL-GPG LC50 18 mg m^{-3}

Risk phrases
(The meaning of any risk phrases which appear in this section is given here.)

R21 R22 R35 R36 R37 R38 R49.

Transport information

Personal protection

Safety glasses. Suitable ventilation.

Safety phrases
(The meaning of any safety phrases which appear in this section is given here.)
S23 S30 S36 S37 S39 S45.

[Return to Physical & Theoretical Chemistry Lab. Safety home page.]

This information was last updated on April 11, 2001. Although we have tried to make it as accurate and useful as possible, we can take no responsibility for its use or misuse.

Safety data for zinc acetate dihydrate

General

Synonyms: zinc acetate, zinc ethanoate, zinc ethanoate dihydrate, acetic acid zinc salt dihydrate, zinc diacetate dihydrate
Molecular formula: $(CH_3COO)_2Zn\ 2H_2O$
CAS No: 5970-45-6
EC No:

Physical data

Appearance: white crystals
Melting point: 237 C
Boiling point:
Vapour density: 6.3 (air = 1)
Vapour pressure:
Density (g cm^{-3}):
Flash point:
Explosion limits:
Autoignition temperature:
Water solubility: appreciable

Stability

Stable. Incompatible with alkalies, strong oxidizing agents.

Toxicology

Irritant. May be harmful if swallowed. Dust may cause burns to eyes, skin or mouth.

Toxicity data
(The meaning of any abbreviations which appear in this section is given here.)
ORL-RAT LD50 2460 mg kg^{-1}

Risk phrases
(The meaning of any risk phrases which appear in this section is given here.)

Transport information

Non-hazardous for air, sea and road freight.

Personal protection

Safety glasses. Do not breathe dust.

Safety phrases
(The meaning of any safety phrases which appear in this section is given here.)

[Return to Physical & Theoretical Chemistry Lab. Safety home page.]

This information was last updated on April 11, 2001. We have tried to make it as accurate and useful as possible, but can take no responsibility for its use, misuse, or accuracy. We have not verified this information, and cannot guarantee that it is up-to-date.

APPENDIX F

VISUAL INSPECTION FORM AND GUIDELINES

MSGP STORMWATER VISUAL INSPECTION FORM

Permit Number: _____
Inspection Location: _____
Inspection Date & Time: _____
Inspection Person: _____
Inspection Quarter (Circle One): Jan-Mar, Apr-Jun, Jul-Sep, Oct-Dec

Inspection completed within first half hour of flow: ☐ **Yes** ☐ **No**
Reason if not within first half hour: _____

_____

Sample Parameters **(Provide Description)**

Odor:

Color: _____
Clarity: _____
Floating Solids: _____
Settled Solids: _____
Suspended Solids: _____
Foam: _____
Oil Sheen: _____
Other Indicators of Possible Storm Water Pollution: _____

Site Observations

☐ ☐

Potential Pollutants found during visual examination: **Yes** **No**

If Yes:
Potential sources of pollutants: _____

_____

BMPs on site: Y☐ No ☐

If BMPs on site are they working correctly: ☐ Yes ☐ No

If no BMPs, could installation mitigate contamination migration: ☐ Yes ☐ No

GUIDANCE MANUAL FOR THE MONITORING AND REPORTING REQUIREMENTS OF THE NPDES STORM WATER MULTI-SECTOR GENERAL PERMIT

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1. INTRODUCTION

The U.S. Environmental Protection Agency (EPA) issued the Multi-Sector Storm Water General Permit (MSGP) for storm water discharges associated with most industrial activities on September 29, 1995 (60 *FR* 51108). The general permit covers industrial activities in states and territories that have not been authorized to run the National Pollutant Discharge Elimination System (NPDES) general permitting program. See Exhibit 1 for a list of these areas. Technical corrections to the MSGP were made on February 9, 1996 (61 *FR* 5248) and February 20, 1996 (61 *FR* 6412), and the permit was finalized for Guam on September 24, 1996 (61 *FR* 50020). On September 30, 1998, EPA published a modification to the MSGP, which expanded permit coverage to industries previously ineligible for MSGP coverage. For purposes of this guidance manual, "MSGP" refers to the multi-sector general permit, inclusive of the latest modification.

This guidance will assist facilities subject to monitoring and reporting requirements under the MSGP in complying with their visual, analytical, and compliance monitoring requirements, and ensure proper reporting of laboratory results.

This guidance document:

- lists the industrial activities required to report storm water discharge monitoring results under the MSGP
- identifies the parameters to be monitored
- identifies when to monitor, and when and where to report monitoring results
- provides monitoring instructions for industries that transferred permit coverage from the 1992 Baseline General Industrial Storm Water Permit
- provides instructions on how to record monitoring results on a Discharge Monitoring Report (DMR)
- lists additional state-specific requirements that facilities, depending on their geographic location, must meet in addition to EPA requirements

It should be noted that this document is intended to be used solely as guidance to clarify the reporting terms and conditions of the permit. Please consult the permit for official requirements.

If you have any questions regarding this guidance or the NPDES storm water program, please contact the EPA Storm Water Coordinator in your Region (see Exhibit 8).

Comments from users of this guidance document are welcome. Please send comments to:

U.S. EPA, Office of Water
NPDES Program Branch
Mail Code 4203
401 M St. S.W.
Washington, DC 20460

EXHIBIT 1
AREAS WHERE THE MULTI-SECTOR GENERAL PERMIT IS APPLICABLE*

The conditions outlined in this guidance document are applicable only to facilities covered by the Multi-Sector General Permit, inclusive of the latest modification, issued by EPA. If you are located in an NPDES-authorized state, you must consult your state-specific storm water general permit or your state permitting authority for specific permit conditions. The Multi-Sector General Permit is available to industrial dischargers in the following states and territories:

- **State lands in:**
  - Alaska
  - Arizona
  - District of Columbia
  - Florida
  - Guam
  - Idaho
  - Johnston Atoll
  - Maine
  - Massachusetts
  - Midway and Wake Islands
  - New Hampshire
  - New Mexico
  - Oklahoma (Oil & Gas Exploration only-- SIC 13XX)
  - Puerto Rico

- **Indian lands in:**
  - Alaska
  - Arizona
  - California
  - Connecticut
  - Florida
  - Goshute Reservation in Utah
  - Idaho (except the Duck Valley Reservation)
  - Louisiana
  - Massachusetts
  - Maine
  - Navajo Reservation in Utah
  - New Mexico (except Ute Mountain Reservation lands)
  - Nevada
  - Oklahoma
  - Oregon
  - Rhode Island
  - Texas
  - Washington

- **Federal facilities in:**
  - Alaska
  - Arizona
  - District of Colombia
  - Delaware
  - Guam
  - Idaho
  - Johnston Atoll
  - Midway and Wake Islands
  - Puerto Rico
  - Vermont
  - Washington

* Based on 60 *FR* 51108, 61 *FR* 5248, 61 *FR* 50020, and 63 *FR* 52430.

2. OVERVIEW OF MONITORING REQUIREMENTS

This section presents a general overview of the types of monitoring required by the MSGP. Specific monitoring requirements may be found in Sections 3, 4, and 5 of this guidance. In addition, there are state-specific monitoring requirements that must be met. These are presented in Section 9.

2.1 Types of Monitoring

The MSGP requires operators of industrial facilities to perform as many as three types of monitoring of their storm water outfalls: visual examination, analytical monitoring, and compliance monitoring. The types of monitoring required vary among industry sectors and sub-sectors. Facilities that have discharges subject to analytical and/or compliance monitoring must report their results to the appropriate EPA Regional Office. In the case of Alaska, Arizona, Guam, and New Mexico, facilities must report their results to the appropriate state office (see Section 10). Instructions on how to record and report results of analytical and compliance monitoring are presented in Sections 4 and 5, respectively.

2.2 Sampling Guidance

Guidance on procedural methods for conducting storm water sampling is provided in the *NPDES Storm Water Sampling Guidance Manual* (EPA 833-B-92-001, July 1992), which can be obtained by contacting the Office of Water Resource Center at (202) 260-7786 or at waterpubs@epa.gov.

2.3 Sample Type

Grab samples may be used for all visual, analytical, and compliance monitoring required in the MSGP, except at airports required to conduct analytical monitoring of deicing/anti-icing activities. Such facilities must collect a flow-weighted composite in addition to a grab sample. All grab samples must be collected from the discharge resulting from a storm event greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. The 72-hour storm event interval may be waived where:

- the preceding measurable storm event did not result in a measurable discharge from the facility; or
- the permittee documents that less than a 72-hour interval is representative for local storm events during the season when sampling is being conducted.

2.4 Sample Frequency

While visual examinations must be performed on a quarterly basis throughout the permit term, analytical monitoring must be performed on a quarterly basis in years two and four of the MSGP. Compliance monitoring must be performed on an annual basis throughout the permit term with the exception of certain mine dewatering activities that must perform compliance monitoring on a quarterly basis. See Section 5 for more information.

Also, conditions published in 63 *FR* 42545 modifications require additional monitoring for Sector G, the Active Ore Mining and Dressing sites. See Section 4.2 for more information. Year four of the permit cycle started October 1998. All facilities with analytical monitoring requirements should begin sampling at that time except for two conditions. First, facilities that had permit coverage during the second year of coverage (October 1, 1996 to September 30, 1997) and qualify for the low concentration waiver do not need to monitor. Second, those facilities that are switching from the Baseline Permit to the MSGP during the first quarter of the fourth sampling year, do not commence sampling until the second quarter of year four.

3. VISUAL EXAMINATION REQUIREMENTS

Virtually all facilities covered by the MSGP are required to perform visual examinations of their storm water discharges. Visual examinations provide a simple and inexpensive means of obtaining a rough assessment of storm water quality. Each examination is to be performed in a well lit area by the facility operator, who must examine a sample collected in the first half hour of discharge (or as soon thereafter as practical, but not to exceed one hour) and note any color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and any other indicators of possible storm water pollution. Additional guidance on performing visual examinations is provided in the Fact Sheet to the MSGP (60 *FR* 50803).

Quick Reference:

Visual Examinations

- Visual examinations must be performed on a quarterly basis throughout the term of the permit.
- Samples should be collected within the first 30 minutes of discharge.
- Examination should be made for any color, odor, solids, oil sheen, etc.

3.1 When to Perform Visual Examinations

The schedule for performing visual examinations must be clearly documented in the facility's storm water pollution prevention plan. Examinations are required to be performed on a quarterly basis throughout the period of permit coverage, with the exception of air transportation facilities and coal mining facilities (see Section 3.2 *Exceptions* below). Visual examinations may begin during the first full quarter of permit coverage. At facilities where quarterly visual examinations are required, at least one examination must be performed during each of the following quarters: October through December, January through March, April through June, and July through September.

Grab samples must be taken in the first 30 minutes of the discharge. In the case of coal mining-related facilities (Sector H), grab samples must be taken in the first 60 minutes of discharge. If the collection of a grab sample during the first 30 minutes is impracticable (60 minutes for Sector H), a grab sample can be taken during the first hour of the discharge (two hours for Sector H), provided the discharger submits with the DMR a description of why a grab sample during the first 30 minutes was impracticable (60 minutes for Sector H).

3.2 Exceptions

There are two exceptions to the requirement to conduct visual examinations on a quarterly basis within the first 30 minutes of discharge:

1) Air transportation facilities (Sector S) are not required to perform visual examinations of their storm water discharges.
2) Coal mining-related facilities (Sector H) must perform visual monitoring within the first 60 minutes of discharge (or as soon thereafter as practical, but not to exceed 2 hours). Visual examinations are not required for inactive areas not under Surface Mining Control and Reclamation Act (SMCRA) bond. However, visual examinations must be performed:
    - **quarterly** for active areas under SMCRA bond located in areas with annual precipitation greater than 20 inches; and
    - **semi-annually** for inactive areas under SMCRA bond, and active areas under SMCRA bond located in areas with average annual precipitation of 20 inches or less. At least one examination must be performed during each of the following periods: January through June and July through December.

3.3 Reporting

A facility is not required to submit visual examination results unless requested to do so by EPA. However, results from all visual examinations should be documented in the facility's storm water pollution prevention plan, including the date, the name of the person performing the examination, storm event data such as intensity and duration, and the results.

3.4 Interpreting Visual Examination Results

Results of visual examinations should be used by the facility to identify any problems that need to be addressed, such as oil or grease in the storm water discharge. The operator should also document any changes made to the storm water pollution prevention plan as a result of visual examinations.

3.5 Representative Discharge

When a facility has two or more outfalls that the permittee reasonably believes discharge substantially identical effluents, the permittee may examine a sample from one of such outfalls and report that the examination data applies to the substantially identical effluent. Permittees must document their rationale for this in their storm water pollution prevention plan, including consideration of industrial activity, significant materials, and management practices in the drainage areas that flow to the respective outfalls. Page 107 of the *NPDES Storm Water Sampling Guidance Document* (EPA 800/B-92-001) lists criteria for substantially identical outfalls. The representative discharge provision is not available for compliance monitoring for national effluent guideline limit compliance purposes (see Section 5).

3.6 Sampling Waivers

The MSGP allows for waivers from visual examination requirements under two circumstances: adverse weather conditions, and unstaffed and inactive sites. It should be noted that these waivers cannot be used for compliance monitoring requirements associated with effluent limitations.

Adverse Weather Conditions

When a discharger is unable to collect samples over the course of the visual examination period as a result of adverse climatic conditions, the reason for not performing the visual examination must be documented and retained onsite with the storm water pollution prevention plan. Adverse weather conditions that may prohibit the collection of samples include weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricanes, tornadoes, electrical storms, etc.) or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.).

Unstaffed and Inactive Sites

If a facility with discharges subject to visual examination requirements is both inactive and unstaffed, the discharger may exercise a waiver of the visual examination requirement as long as the facility remains inactive and unstaffed. The facility must maintain a certification with the storm water pollution prevention plan stating that the site is inactive and unstaffed and that performing visual examinations during a qualifying event is not feasible.

4. ANALYTICAL MONITORING REQUIREMENTS

Analytical monitoring is required only for the industry sectors or sub-sectors that were determined to have a high potential to discharge a pollutant at concentrations of concern. It provides feedback to the facility operator to assess the effectiveness of the site's storm water pollution prevention plan. Exhibit 2 identifies the industry sectors or sub-sectors that are required to perform analytical monitoring of their storm water discharges. In addition to the requirements listed in this section, facilities must comply with specific state and EPA Region requirements in the permit (see Section 9 of this guidance).

Quick Reference:

Analytical Monitoring

- Analytical monitoring must be performed on a quarterly basis in years two and four of the permit.
- Samples should be collected within the first 30 minutes of discharge.
- Analytical results must be submitted to EPA on a Discharge Monitoring Report (DMR) form (see Exhibit 5).
- Results should be compared to Benchmark Concentrations (see Exhibit 4) to evaluate the effectiveness of the facility's Storm Water Pollution Prevention Plan.

4.1 Parameters to Monitor

Exhibit 2 lists the specific parameters (pollutants) that must be monitored by each industry sector or subsector that is subject to analytical monitoring. This table does not include parameters that must be monitored for discharges subject to compliance monitoring, which is discussed in Section 5. Sector G, the Active Ore mining and Dressing sites, requirements can be found in Exhibits 2.1 and 2.2.

4.2 When to Sample

Analytical monitoring must be performed on a quarterly basis in years two and four of the permit. However, years two and four do not exactly coincide in every geographic region of the United States due to the respective dates the permit was published by the EPA Regions. Consult Exhibit 3 to find the exact time frame for analytical monitoring. If a facility receives permit coverage during a monitoring period, monitoring may begin during the first full quarter of permit coverage.

If, as a result of averaging the results of the four quarterly samples collected in year two, a facility's average pollutant discharge concentration is below the benchmark levels found in Exhibit 4, the facility may waive year four's analytical monitoring requirements unless the facility operator is asked to continue monitoring by EPA. However, any facility that gained permit coverage during year two must sample in year four for whatever quarters were missed in year two prior to averaging the values for each parameter. If the average values are below the associated benchmark values, analytical monitoring for the remainder of year four is not required. A facility must still perform monitoring in year four for any parameters required by the MSGP that were not required under the Baseline General Industrial Permit.

A facility that began operation during year two may exercise a sampling waiver for the remainder of the term of the permit only if results from four monitoring periods (e.g., three in year two and one in year four) have been reported and the average pollutant concentration is less than the benchmark concentration for that pollutant.

Any facility that gained permit coverage after the end of year two or transferred permit coverage from the 1992 Baseline General Industrial Storm Water Permit after the end of year two is not required to perform analytical monitoring until year four of the permit.

All monitoring results obtained during the second and fourth years of permit coverage must be submitted by March 31st of the year following the last monitoring quarter, as shown in the monitoring and reporting schedule in Exhibit 3.

Monitoring requirements for waste rock and/or overburden sources eligible for authorization under Sector G of the Multi Sector General Permit were modified to include additional requirements (63 *FR* 42533). All permittees must conduct analytic monitoring once for the parameters listed in Exhibit 2.1, and twice annually for any parameters measured above the benchmark value listed in Exhibit 2.1. Permittees must also conduct analytic monitoring twice annually for the parameters listed in Exhibit 2.2 for each of the ore mine categories listed in Exhibit 2.2. The initial sampling conducted of Exhibit 2.1 pollutant parameters satisfies the requirement for the first sample for any pollutant measurement required by Exhibit 2.2.

4.3 Interpreting Analytical Monitoring Results

As stated previously, facilities with average pollutant concentrations that are lower than the benchmark concentrations on a pollutant-by-pollutant basis do not need to perform analytical monitoring for those parameters in year four. However, facilities with average pollutant concentrations that are higher than the benchmark concentration must, in addition to continuing to perform analytical monitoring in year four, review and revise their storm water pollution prevention plan to reduce the concentration of pollutants in their storm water discharges. Year four's analytical monitoring results may then be used as an indicator of the effectiveness of the revision to the storm water pollution prevention plan. If year four's analytical monitoring results are still above benchmark concentrations, the storm water pollution prevention plan must be reviewed and revised once again by the facility operator in an attempt to further reduce pollutant loads.

4.4 Representative Discharge

When a facility has two or more discharges that the permittee reasonably believes discharge substantially identical effluents, the permittee may test the effluent from one of such outfalls and report that the quantitative data applies to the substantially identical effluent. Permittees must document their rationale indicating substantially identical effluents in their storm water pollution prevention plan. Page 107 of the *NPDES Storm Water Sampling Guidance Document* (EPA 800/B-92-001) lists criteria for substantially identical outfalls. The representative discharge provision is not available for compliance monitoring for national effluent guideline limit compliance purposes.

4.5 Sampling Waivers

The MSGP allows for waivers from analytical monitoring requirements under two circumstances: adverse weather conditions, and unstaffed and inactive sites. It should be noted that these waivers cannot be used for compliance monitoring requirements associated with effluent limitations (see Section 5).

Adverse Weather Conditions

The permit allows for temporary waivers from analytical monitoring based on adverse climatic conditions. If samples cannot be collected within a specified sampling period due to insurmountable weather conditions such as drought or dangerous conditions (e.g., lightning, flash flooding, or hurricanes), the discharger must collect a substitute sample from a separate qualifying event in the next sampling period. This substitute sample must be taken in addition to the routine monitoring required in that period. Both samples should be analyzed separately.

Unstaffed and Inactive Sites

If a facility with discharges subject to analytical monitoring requirements is both inactive and unstaffed, and the ability to conduct sampling within permit specifications is not possible, then the discharger must certify in the DMR that the facility is inactive and unstaffed and that the ability to conduct sampling within

the specifications is not possible.

4.5.1 Facilities Transferring from the Baseline to the Multi-Sector Permit

For those facilities required to conduct quarterly analytical monitoring under the MSGP, the final sampling year of the permit runs from October 1, 1998 to September 30, 1999. According to a memo from Michael Cook, Director of the Office of Wastewater Management to the Regional Water Management Division Directors, permittees that transfer from the Baseline permit are not required to conduct the monitoring that the MSGP requires in the first quarter (i.e., October to December 1998) because the transferees coverage under the MSGP begins in the middle of that quarter.

Transferees from the Baseline permit are only required to perform any monitoring during 1998 that is required by the Baseline permit. For some permittees covered under the Baseline permit, the Baseline permit may have required annual or semiannual monitoring. If such permittees have not conducted monitoring required under the Baseline permit, the monitoring would need to be performed before December 31, 1998.

All permittees who transfer from the expiring Baseline permit are required to conduct any applicable analytic monitoring that the modified MSGP requires beginning with the second quarter (i.e., January to March 1999). Permittees should refer to the MSGP for the specific monitoring requirements applicable to their sector (63 *FR* 52467).

4.6 Sampling Exemption – Alternative Certification

A facility in an industry sector or sub-sector subject to analytical monitoring requirements can obtain an exemption from monitoring for any particular pollutant if the facility operator can certify that there is no source of that pollutant which is exposed or expected to be exposed to storm water during the certification period. This certification must be submitted as part of the DMR in lieu of monitoring data. The alternative certification is <u>not</u> available for compliance monitoring for effluent guideline limit compliance purposes.

EXHIBIT 2
INDUSTRY SECTORS/ SUB-SECTORS SUBJECT TO ANALYTICAL MONITORING UNDER THE MULTI-SECTOR GENERAL PERMIT [1]

MSGP Sector [2]	Industry Subsector	Required Parameters for Analytical Monitoring
A	General Sawmills and Planing Mills	COD, TSS, Zinc
	Wood Preserving Facilities	Arsenic, Copper
	Log Storage and Handling	TSS
	Hardwood Dimension and Flooring Mills	COD, TSS
B	Paperboard Mills	COD
C	Industrial Inorganic Chemicals	Aluminum, Iron, Nitrate + Nitrite N
	Plastics, Synthetic Resins, etc.	Zinc
	Soaps, Detergents, Cosmetics, Perfumes	Nitrate + Nitrite N, Zinc
	Agricultural Chemicals	Nitrate + Nitrite N, Lead, Iron, Zinc, Phosphorus
D	Asphalt Paving and Roofing Materials	TSS
E	Clay Products	Aluminum
	Concrete Products	TSS, Iron
F	Steel Works, Blast Furnaces, and Rolling and Finishing Mills	Aluminum, Zinc
	Iron and Steel Foundries	Aluminum, TSS, Copper, Iron, Zinc
	Non-Ferrous Rolling and Drawing	Copper, Zinc
	Non-Ferrous Foundries (Castings)	Copper, Zinc
G	Copper Ore Mining and Dressing	COD, TSS, Nitrate + Nitrite N
H	Coal Mines and Coal-Mining Related Facilities	TSS, Aluminum, Iron
J	Dimension Stone, Crushed Stone, and Nonmetallic Minerals (except fuels)	TSS
	Sand and Gravel Mining	Nitrate + Nitrite N, TSS
K	Hazardous Waste Treatment Storage or Disposal	Ammonia, Magnesium, COD, Arsenic, Cadmium, Cyanide, Lead, Mercury, Selenium, Silver
L	Landfills, Land Application Sites, and Open Dumps	Iron, TSS
M	Automobile Salvage Yards	TSS, Aluminum, Iron, Lead
N	Scrap Recycling	Copper, Aluminum, Iron, Lead, Zinc, TSS, COD
O	Steam Electric Generating Facilities	Iron
Q	Water Transportation Facilities	Aluminum, Iron, Lead, Zinc
S	Airports with deicing activities [3]	BOD, COD, Ammonia, pH
U	Grain Mill Products	TSS
	Fats and Oils	BOD, COD, Nitrate + Nitrite N, TSS
Y	Rubber Products	Zinc
AA	Fabricated Metal Products Except Coating	Iron, Aluminum, Zinc, Nitrate + Nitrite N
	Fabricated Metal Coating and Engraving	Zinc, Nitrate + Nitrite N

1. Exhibit does not include parameters for compliance monitoring under effluent limitations guidelines.
2. Sectors I, P, R, V, W, X, Z, AB, AC, and AD have no analytical monitoring requirements identified under the MSGP. However, facilities under these sectors may need to monitor for parameters listed under state-specific requirements (see Section 6).
3. Monitoring requirement is for airports with deicing activities that utilize more than 100 tons of urea or more than 100,000 gallons of ethylene glycol per year.

EXHIBIT 2.1
INITIAL MONITORING REQUIREMENTS FOR STORM WATER DISCHARGES FROM WASTE ROCK AND OVERBURDEN PILES RESULTING FROM MINING ACTIVITY AT ACTIVE ORE MINING OR DRESSING OPERATIONS

Pollutants of Concern	Benchmark Values
Total Suspended Solids (TSS)	100 mg/L
Turbidity (NTUs)	5 NTUs above background
pH	6.0 - 9.0 standard units
Hardness (as $CaCo_3$)	no benchmark value
Antimony, Total	0.636 mg/L
Arsenic, Total	0.16854 mg/L
Beryllium, Total	0.13 mg/L
Cadmium, Total (hardness dependent)	0.0159 mg/L
Copper, Total (hardness dependent)	0.0636 mg/L
Iron, Total	1.0 mg/L
Lead, Total (hardness dependent)	0.0816 mg/L
Manganese, Total	1.0 mg/L
Mercury, Total	0.0024 mg/L
Nickel, Total (hardness dependent)	1.417 mg/L
Selenium, Total	0.2385 mg/L
Silver, Total (hardness dependent)	0.0318 mg/L
Zinc, Total (hardness dependent)	0.117 mg/L

EXHIBIT 2.2
ADDITIONAL MONITORING REQUIREMENTS (TWICE ANNUAL) FOR STORM WATER DISCHARGES FROM WASTE ROCK AND OVERBURDEN PILES RESULTING FROM MINING ACTIVITY AT ACTIVE ORE MINING OR DRESSING OPERATIONS BASED ON TYPE OF ORE HANDLED

Type of Ore Mined	Pollutant/Parameter		
	Total Suspended Solids (TSS)	pH	Metal, total

Tungsten	X	X	Arsenic, Cadmium (H), Copper (H), Lead (H), Zinc(H)
Ore.....			
Nickel	X	X	Arsenic, Cadmium (H), Copper (H), Lead (H), Zinc (H)
Ore.....			
Aluminum	X	X	Aluminum, Iron
Ore.....	X	X	Nickel (H), Mercury
Mercury	X	X	Iron (Dissolved)
Ore..... Iron	---	---	Cadmium (H), Copper (H), Mercury, Lead (H), Zinc (H)
Ore.....			
Platinum	X	X	Iron, Nickel (H), Zinc (H)
Ore.....	X	X	Arsenic, Cadmium (H), Copper (H), Lead (H), Zinc (H)
Titanium	X	X	Arsenic, Cadmium (H), Copper (H), Lead (H), Mercury, Zinc (H)
Ore.....			
Vanadium	X	X	Chemical Oxygen Demand, Arsenic, Radium (Dissolved and Total), Uranium, Zinc (H)
Ore.....			
Copper, Lead, Zinc, Gold, Silver, and Molybdenum.....			
Uranium, Radium, and Vanadium.....			

Note: (H) indicates that hardness must also be measured when this pollutant is measured.

EXHIBIT 3
ANALYTICAL MONITORING PERIODS AND REPORTING DEADLINES

Geographic Location of Facility	Analytical Monitoring Schedule	DMR Postmark Deadlines
Facilities in all areas of coverage *other than* Alaska or Guam:	Years 2 and 4: October - December (1996, 1998) January - March (1997, 1999) April - June (1997, 1999) July - September (1997, 1999)	March 31 (1998, 2000)
Facilities in Alaska:	Years 2 and 4: January - March (1997, 1999) April - June (1997, 1999) July - September (1997, 1999) October - December (1997, 1999)	March 31 (1998, 2000)
Facilities in Guam:	Years 2 and 4: October - December (1997, 1999) January - March (1998, 2000) April - June (1998, 2000) July - September (1998, 2000)	March 31 (1999, 2001)

EXHIBIT 4
PARAMETER BENCHMARK VALUES FOR ANALYTICAL MONITORING*

Parameter	Benchmark Level (mg/l unless otherwise noted)	Parameter	Benchmark Level (mg/l unless otherwise noted)
Aluminum, Total Recoverable	0.75	Mercury, Total Recoverable	0.0024
Ammonia	19.0	Nitrate + Nitrite Nitrogen	0.68
Arsenic, Total Recoverable	0.16854	Nitrogen, Total Kjeldahl	1.5
Biological Oxygen Demand (BOD_5)	30	Oil & Grease	15
Cadmium, Total Recoverable	0.0159	pH	6.0 to 9.0 s.u.
Chemical Oxygen Demand (COD)	120.0	Phosphorous	2.0
Copper, Total Recoverable	0.0636	Selenium, Total Recoverable	0.2385
Cyanide, Total	0.0636	Silver, Total Recoverable	0.03818
Iron, Total Recoverable	1.0	Total Organic Carbon (TOC)	50
Lead, Total Recoverable	0.0816	Total Suspended Solids (TSS)	100
Magnesium, Total Recoverable	0.0636	Zinc, Total Recoverable	0.117

* Exhibit does not include parameter values for compliance monitoring under effluent limitations guidelines.

4.7 Step-By-Step Instructions for Recording Analytical Monitoring Results

Read Section 4 and refer to the additional state-specific requirements in Section 9 prior to recording monitoring results on a DMR. For each outfall, a separate DMR form is required for each storm event sampled. Facilities conducting analytical monitoring beyond the minimum requirements must report all additional data.

When following these step-by-step instructions, refer to Exhibit 5, *Sample DMR for Recording Analytical Monitoring Results.* The words and phrases in italics in the following step-by-step instructions refer to specific locations or headings on the DMR. The steps are identified on the sample DMR in Exhibit 5 by the step number enclosed in a circle. If more than one page is needed to record monitoring results, enter the information for steps 1, 2, 3, 4, 5, 6, and 12 on every page.

1) Name/Address

Enter the *Permittee Name/Mailing Address* and *Facility Name/Location*, if different.

2) Permit Number

Enter the *Permit Number* for your facility. The permit number is the unique number assigned specifically to your facility for coverage under a storm water general permit. Your facility's permit number can be found in the letter you received confirming that your facility is covered by the permit. If no confirmation letter was received, call the NOI Processing Center at (301) 495-4145.

3) Discharge Number

If you are submitting monitoring results for more than one outfall, you must record the outfall's *Discharge Number.* You must assign a unique discharge number (e.g., 001, 002, etc.) to each outfall. It is appropriate to assign each outfall the same number it is assigned in your facility's storm water pollution prevention plan. If the facility has existing NPDES permits for other outfalls, do not duplicate outfall numbers. Rather, begin with the number following the last one assigned in your existing permit. If you believe that the discharges from your facility's outfalls are substantially identical, please see the **Representative Discharge** (section 3.5) discussion.

4) Monitoring Period

Under *Monitoring Period*, enter dates for the beginning and end of the period covered by the DMR (see Exhibit 3)

5) Discharge Sector/Subsector

In the top right corner of the form, indicate the letter and the narrative description of the Sector(s) and/or Subsector(s) for the discharge that was sampled (e.g., Steam Electric Generation – Sector O).

6) No Discharge

If no discharge occurred from the outfall during the monitoring period, check the box labeled *Check here if No discharge.*

7) Storm Event Characteristics

Use the first box under *Parameter* to record the date and duration of the storm, as well as the time elapsed since the last measurable storm greater than 0.1 inch.

Under *Quantity or Loading*, in the *Maximum* column, enter the inches of rainfall (or best estimate) for the storm that generated the discharge sampled.

Under *Quality or Concentration*, in the *Maximum* column, enter an estimate in gallons of the total volume of flow through the outfall.

Record the units that were used in the *Units* columns.

8) Parameters - Sampled Pollutants

Enter each parameter as specified in the monitoring requirements of your permit (see Exhibits 2, 2.1, 2.2, 3, 5, and Section 9 for applicable parameters) in the *Parameter* column. Please note that you only have to monitor for those parameters listed in your permit. One line is needed for each sample type. Therefore, if required to report results for both grab and composite samples of the same parameter, use two lines.

9) Recording of Sample Results

Enter the monitoring results for each parameter according to the following format. Under *Quality or Concentration*, record grab sample results in the *Maximum* column and record composite sample results (if required) in the *Average* column. Remember to use one line for each sample type.

Leave the *Permit Requirement* row blank, as there are no numeric effluent limitations for analytical monitoring under the MSGP.

10) Sample Type

Only a grab sample must be collected and analyzed for all parameters, except for airports, which must collect a flow-weighted composite in addition to a grab sample. Enter a "G" for a grab sample or an "F" for a flow-weighted composite sample in the *Sample Type* column.

11) Comment

Any comments, additional information, or references to attachments should be recorded. For example, if a grab sample was not taken during the first 30 minutes, an explanation of why this was not possible must be submitted with the DMR. In addition, any sampling waivers the facility is taking (e.g., unstaffed or inactive site) should be clearly explained.

13) Identification/Certification

Enter *Name/Title of Principal Executive Officer, Signature of Principal Executive Officer or Authorized Agent, Telephone Number*, and *Date* at the bottom of each page of the DMR after reading the Certification Statement.

EXHIBIT 5
SAMPLE DMR FOR REPORTING ANALYTICAL MONITORING RESULTS

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)
NAME: J. Doe Company
ADDRESS: (1) 1234 Any Street, Anytown, TX 75005
FACILITY LOCATION: SAME

(2) PERMIT NUMBER (1-14): XXXXXXXXX
(3) DISCHARGE NUMBER (15-19): 001
(5) Steam Electric Power Generation Sector O
(4) MONITORING PERIOD: YEAR 98 MO 10 DAY 1 (20-21) (22-23) (24-25) — YEAR 98 MO 12 DAY 31 (26-27) (28-29) (30-31)
(6) ☐ Check here if no discharge

PARAMETER (33-37)		QUANTITY OR LOADING (3 Card Only) (46-53) AVERAGE	QUANTITY OR LOADING (54-61) MAXIMUM	UNITS	QUALITY OR CONCENTRATION (4 Card Only) (38-45) MINIMUM	QUALITY OR CONCENTRATION (46-53) AVERAGE	QUALITY OR CONCENTRATION (54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
November 28, 1998 (7) 2 hours Previous - 3 weeks	SAMPLE MEASUREMENT		(7) 1	inch			(7) 20,000	gallons			
	PERMIT REQUIREMENT										
Total Recoverable Iron (8)	SAMPLE MEASUREMENT						(9) 0.7	mg/l			(10) G
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

SAMPLE

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
(12) Jane Doe/President
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. (Penalties under these statutes may include fines up to $10,000 and or minimum imprisonment of between 6 months and 5 years.)

(12) Jane Doe
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
714	123-4444	99	1	10
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VOLATIONS (Reference all attachments here) (11)

5. COMPLIANCE MONITORING REQUIREMENTS

The MSGP provides coverage for storm water discharges subject to effluent guidelines, provided that the discharges are not already subject to an existing individual NPDES storm water permit. These are:

- contaminated storm water runoff from phosphate fertilizer manufacturing facilities
- runoff associated with asphalt paving or roofing emulsion production
- runoff from material storage piles at cement manufacturing facilities
- runoff from coal piles at steam electric generating facilities
- runoff from spray down of lumber and wood products in storage yards (wet decking) used by the timber industry
- coal pile runoff from all facilities covered by the permit

Quick Reference:

Compliance Monitoring

- The MSGP offers coverage to only very specific types of discharges subject to effluent limitation guidelines; compliance monitoring must be performed on these discharges.
- Compliance monitoring must be performed on an annual basis throughout the term of the permit.
- Results must be submitted to EPA on a Discharge Monitoring Report (DMR) form (see Exhibit 7).

Facilities with discharges subject to any other effluent limitation guideline may not seek coverage under the MSGP for those discharges. Those facilities should contact their Regional Storm Water Coordinator for further assistance (see Exhibit 8).

Monitoring is required for discharges subject to numeric storm water effluent limitations to determine compliance with those limits. Compliance monitoring is required to be performed on an annual basis (except for the EPA Region-specific effluent limitations discussed below). Each monitoring period extends from October 1 to September 30. Results from compliance monitoring must be reported annually and may be used to meet the quarterly analytical monitoring requirements for the specified pollutants, where compatible. Exhibit 6 lists those discharges that are subject to compliance monitoring and the respective parameters for which monitoring is required. Please consult the MSGP for specific effluent limitations values.

EPA Region-Specific Effluent Limitations

Exhibit 6 includes numeric effluent limitations for mine dewatering discharges composed entirely of storm water or ground water seepage from construction sand and gravel, industrial sand, and crushed stone mines located in Regions II, VI, IX, and X (See Exhibit 8 for EPA Region areas of coverage). In these four EPA Regions, compliance monitoring for mine dewatering discharges that are composed entirely of storm water or ground water seepage must be performed on a quarterly basis. Samples must be collected during each of the following periods: October through December, January through March, April through June, and July through September. Monitoring results must be submitted annually no later than the 30th day of November following each October-September monitoring period.

EXHIBIT 6
DISCHARGES SUBJECT TO COMPLIANCE MONITORING UNDER EFFLUENT LIMITATIONS GUIDELINES

Discharges	Compliance Monitoring Parameters
Phosphate Fertilizer Manufacturing Runoff (40 CFR part 418)	Total Phosphorus, Fluoride
Asphalt Paving and Roofing Emulsions Production Runoff (40 CFR part 443)	TSS, oil and grease, pH
Cement Manufacturing Materials Storage Piles Runoff (40 CFR part 411)	TSS, pH
Coal Pile Runoff from Steam Electric Facilities (40 CFR part 423)	TSS, pH
Coal Pile Runoff from All Facilities (60 *FR* 51118)	TSS, pH
Construction Sand and Gravel, Industrial Sand, and Crushed Stone Mine Dewatering (40 CFR part 436) located in Regions II, VI, IX, X and the State of Arizona	TSS, pH
Runoff from Wet Decking at Timber Products Facilities (40 CFR Part 429)	debris, pH

5.1 Step-By-Step Instructions for Recording Compliance Monitoring Results

Read Section 5 and refer to the additional state-specific requirements in Section 9 prior to recording compliance monitoring results on a DMR. For each outfall, a separate DMR form is required for each storm event sampled.

Additional Notification

Facilities with at least one storm water discharge associated with industrial activity to a medium or large municipal separate storm sewer system (systems serving a population of 100,000 or more) or a municipal system designated by the Director must submit signed copies of discharge monitoring reports to the operator of the municipal separate storm sewer system.

When following these step-by-step instructions, refer to Exhibit 7, *Sample DMR for Recording Compliance Monitoring Results.* The words and phrases in italics in the following step-by-step instructions refer to specific locations or headings on the DMR. The steps are identified on the sample DMR in Exhibit 7 by the step number enclosed in a circle. If more than one page is needed to record monitoring results, enter the information for steps 1, 2, 3, 4, 5, and 13 on every page.

1) Name/Address

Enter the *Permittee Name/Mailing Address* and *Facility Name/Location*, if different.

2) Permit Number

Enter the *Permit Number* for your facility. The permit number is the unique number assigned specifically to your facility for coverage under a storm water general permit. Your facility's permit number can be found in the letter you received confirming that your facility is covered by the permit. If no confirmation letter was received, call the NOI Processing Center at (301) 495-4145.

3) Discharge Number

If you are submitting monitoring results for more than one outfall, you must record the outfall's *Discharge Number.* You must assign a unique discharge number (e.g., 001, 002, etc.) to each outfall.

It is appropriate to assign each outfall the same number it is assigned in your facility's storm water pollution prevention plan. If the facility has existing NPDES permits for other outfalls, do not duplicate outfall numbers. Rather, begin with the number following the last one assigned in your existing permit.

4) Monitoring Period

Under *Monitoring Period*, enter dates for the beginning and end of the period covered by the DMR.

5) Discharge Sector/Subsector

In the top right corner of the form, provide a narrative description of the Sector(s) and/or Subsector(s) for the discharge that was sampled and the category for which compliance monitoring was performed (e.g., Steam Electric Generation – Sector O).

6) No Discharge

If no storm water discharge occurred from the outfall during the monitoring period, check the box labeled *Check here if No Discharge.*

7) Storm Event Characteristics

Use the first box under *Parameter* to record the date and duration of the storm, as well as the time elapsed since the last measurable storm greater than 0.1 inch.

Under *Quantity or Loading*, in the *Maximum* column, enter the inches of rainfall (or best estimate) for the storm that generated the discharge sampled.

Under *Quality or Concentration*, in the *Maximum* column, enter an estimate in gallons of the total volume of flow through the outfall.

Record the units that were used in the *Units* columns.

8) Parameters - Sampled Pollutants

Enter each parameter as specified in the monitoring requirements of your permit (see Exhibit 6 and Section 9). One line is needed for each sample type.

9) Recording of Sample Results

Enter the monitoring results for each parameter according to the following format. Under *Quality or Concentration*, record grab sample results in the *Maximum* column and record composite sample results (if required) in the *Average* column. Remember to use one line for each sample type. Record the units used in the *Units* column

10) Effluent Limitations

To report monitoring results for parameters where effluent limitations apply, enter the limitation as the *Permit Requirement* under *Quality or Concentration.*

11) No.Ex.

Under the *No. Ex* column, enter a *"Y"* if the sample measurement during the monitoring period exceeded the effluent limitation for that parameter. Otherwise, leave the space blank.

12) Frequency of Analysis

In the *Frequency of Analysis* column, enter the required sampling frequency. Insert "01/YR" if you are required to monitor once per year, or "04/YR" if you are required to monitor quarterly.

13) Sample Type

Under the *Sample Type* column, record the type of sample used for the analysis. The MSGP requires grab samples for compliance monitoring, so record "G" for a grab sample.

14) Comment

Any comments, additional information, or references to attachments should be recorded. For example, any violations of effluent limitations should be noted, along with an explanation of the violation and a description of remedial actions taken.

15) Identification/Certification

Enter *Name/Title of Principal Executive Officer, Signature of Principal Executive Officer or Authorized Agent, Telephone Number*, and *Date* at the bottom of each page of the DMR after reading the Certification Statement.

EXHIBIT 7

SAMPLE DMR FOR REPORTING COMPLIANCE MONITORING RESULTS

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)
NAME: J. Doe Company
ADDRESS: 1234 Any Street, Anytown, TX 75006 (1)
FACILITY LOCATION: SAME

(2) PERMIT NUMBER (1-16): XXXXXXXXX
(3) DISCHARGE NUMBER (17-19): 001
(5) Steam Electric Power Generation - Coal Pile Runoff
(6) ☐ Check here if no discharge

(4) MONITORING PERIOD

YEAR (20-21)	MO (22-23)	DAY (24-25)	YEAR (26-27)	MO (28-29)	DAY (30-31)
98	10	1	99	9	30

PARAMETER (33-37)		QUANTITY OR LOADING (3 Card Only) (46-53) AVERAGE	MAXIMUM (54-61)	UNITS	QUALITY OR CONCENTRATION (4 Card Only) (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
November 28, 1998 2 hours Previous - 3 weeks (7)	SAMPLE MEASUREMENT		(7) 1	inch			(7) 28,000	gallons			
	PERMIT REQUIREMENT								(11)	(12)	(13)
TSS (8)	SAMPLE MEASUREMENT						(9) 65	mg/l	Y	01/yr	G
	PERMIT REQUIREMENT						(10) 50				(13)
pH (8)	SAMPLE MEASUREMENT						(9) 7.5			01/yr	G
	PERMIT REQUIREMENT				6.0		9.0				
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

SAMPLE

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
(9) Jane Doe/President
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. *(Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)*

(15) Jane Doe
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
714	123-4444	98	10	15
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VOLATIONS *(Reference all attachments here)* (14)

6. STATE-SPECIFIC REQUIREMENTS

In addition to following the instructions discussed in Sections 3, 4, 5, 6, and 7, dischargers in Alaska, Arizona, Guam, New Mexico, and Texas must comply with the following special monitoring and reporting requirements. (See Part XII of the MSGP for additional requirements and more specific details.)

6.1 Alaska

Additional Reporting Requirements: Discharge monitoring reports or other reports required under the permit must also be sent to the nearest appropriate state office listed below.

Alaska Department of Environmental Conservation
Major Facilities & Water Permits Section
410 Willoughby Avenue, Suite #105
Juneau, AK 99801
(907) 465-5276
(907) 465-5274 (FAX)

Alaska Department of Environmental Conservation
Major Facilities & Water Permits Section
555 Cordova Street
Anchorage, AK 99503
(907) 269-7500
(907) 269-7652 (FAX)

Alaska Department of Environmental Conservation
Major Facilities & Water Permits Section
610 University Avenue
Fairbanks, AK 99709-3643
(907) 451-2360
(907) 451-2187 (FAX).

6.2 Arizona

Additional Reporting Requirements: Facilities subject to monitoring and reporting requirements shall also submit DMRs and other required monitoring information to the State of Arizona Department of Environmental Quality at the following address:

Storm Water Coordinator/DMR
Arizona Department of Environmental Quality
3033 N. Central Avenue
Phoenix, Arizona 85012

6.3 Guam

Additional Reporting Requirements: Copies of all discharge monitoring reports and other reports required under the permit must also be sent to the Guam EPA at the following address:

Guam Environmental Protection Agency
P.O. Box 22439 GMF
Barrigada, Guam 96921

6.4 New Mexico

Additional Reporting Requirements: Signed copies of all DMRs required under Parts XI and VI.C of the permit for facilities in New Mexico must be submitted to the following state office address:

Program Manager, Point Source Regulation Section
Surface Water Quality Bureau
New Mexico Environment Department
1190 St. Francis Drive
Santa Fe, New Mexico 87504-0968

Additional Monitoring Requirements: The New Mexico Environment Department (NMED) is requiring that all permittees covered under the MSGP who are required to do sampling be additionally **required to monitor and report pH**. In addition to the monitoring requirements in Part XI of the permit, the following facilities shall conduct quarterly monitoring in years two and four of the permit for the additional parameters indicated below.

Sector A: Sawmill & planing facilities: BOD, NO_3+NO_2, NH_3, and TKN.
Wood preserving facilities: TSS, NO_3+NO_2, NH_3, and TKN.
Log storage & handling facilities: COD, NO_3+NO_2, NH_3, and TKN.
Other wood products facilities: BOD, NO_3+NO_2, TKN, NH_3, and oil & grease.

Sector B: Paperboard mills: NH_3, TSS, BOD, NO_3+NO_2, and TKN.
Paperboard containers & boxes manufacturers: COD, NO_3+NO_2, NH_3, and TKN.
Converted paper & paperboard products manufacturers: COD, NO_3+NO_2, NH_3, and TKN.

Sector C: Agricultural chemical manufacturers: total Hg, TSS, NH_3, and TKN.
Inorganic chemical manufacturers: total Hg, NH_3, and TKN.
Detergents, cosmetics & perfumes manufacturers: COD, TKN, NH_3, and TSS.
Paints, varnishes, enamels & allied products manufacturers: TSS, NH_3, NO_3+NO_2, and TKN.
Plastics, synthetics, and resins manufacturers: total Hg, NO_3+NO_2, NH_3, and TKN.

Sector D: Asphalt paving & roofing materials manufacturers: COD, NO_3+NO_2, NH_3, and TKN.

Sector E: Clay product manufacturers: TSS.
Concrete & gypsum product manufacturers: TKN, NH_3, and NO_3+NO_2.
Flat glass, glass & glassware, pressed or blown glass products manufacturers: TKN, NH_3, and NO_3+NO_2.

Sector F: Steel works: total Hg, TKN, NO_3+NO_2, NH_3, and TSS.
Iron & steel foundries: total Hg, COD, NO_3+NO_2, NH_3, and TKN.
Rolling, drawing & extruding - non-ferrous: total Hg, NO_3+NO_2, NH_3, and TKN.
Non-ferrous foundries: total Hg, TSS, NO_3+NO_2, NH_3, and TKN.

Sector G: All metal mining facilities: COD, TSS, NO_3+NO_2, TKN, NH_3, total Hg; in addition, all permittees in the SIC code for metals mining shall monitor for any heavy metal which the permittee has reason to believe may be present in storm water runoff from the mining facility.

Sector I: All oil & gas facilities in this sector: oil and grease, P, and TSS.

Sector J: Sand & gravel mining facilities: TKN and NH_3.

Sector K: All facilities in this sector: TKN, NO_3+NO_2, and TSS.

Sector L: All facilities in this sector: TKN, NH_3, and NO_3+NO_2.

Sector M: All facilities in this sector: oil & grease, NO_3+NO_2, NH_3, and TKN.

Sector N: All facilities in this sector: oil & grease, NO_3+NO_2, NH_3, and TKN.

Sector O: All facilities in this sector: TSS, NO_3+NO_2, TKN, NH_3, and total Zn.

Sector P: Railroad transportation: COD, NO_3+NO_2, TKN, NH_3, TSS, total Zn, and oil & grease.
Local & highway passenger transportation: NO_3+NO_2, NH_3, oil & grease, TSS, and TKN.
Motor freight transportation & warehousing: NO_3+NO_2, NH_3, TSS, total Zn, TKN, and oil & grease.
U.S. Postal Service: total Zn.
Petroleum bulk stations: TKN, NO_3+NO_2, NH_3, and TSS.

Sector Q: All facilities in this sector: TSS, NO_3+NO_2, NH_3, and TKN.

Sector S: All facilities in this sector: oil & grease, COD, and TSS.

Sector T: All facilities in this sector: BOD, NO_3+NO_2, TKN, NH_3, TSS, and fecal coliform.

Sector U: Grain mill products: COD, total Zn, TKN, NO_3+NO_2, NH_3, and total P.
Fats and oils products: TKN and NH_3.
Dairy products: BOD, COD, NO_3+NO_2, TKN, NH_3, and TSS.
Meat products: NO_3+NO_2, TKN, NH_3, and TSS.
Canned, frozen & preserved fruits: NO_3+NO_2, NH_3, COD, and TKN.
Bakery products: TKN, NO_3+NO_2, NH_3, and TSS.
Beverage facilities: total Zn.
Miscellaneous: TKN, NO_3+NO_2, NH_3, and TSS.

Sector W: All facilities in this sector: NO_3+NO_2, TKN, NH_3, TSS and total Zn.

Sector Y: Rubber products manufacturing: TSS, TKN, NO_3+NO_2, NH_3, and total Hg.
Miscellaneous plastics products: NO_3+NO_2, NH_3, TKN, TSS, and total Hg.

Sector Z: All facilities in this sector: COD, NO_3+NO_2, TKN, NH_3, and TSS.

Sector AA: Metal products except coating: TKN, NH_3, and TSS;
Metal coating & engraving: shall monitor TKN, and NH_3.

Sector AC: All facilities in this sector: total Al, total Zn and total Hg.

6.5 Texas

The State of Texas presents maximum allowable concentrations of various metals in discharges to inland and tidal waters. While these are not compliance monitoring requirements, they are effluent limitations. More information is provided at 60 *FR* 51260.

In addition, all facilities that have demonstrated significant lethality which has not been controlled must continue to perform WET testing in accordance with the requirements set forth at 60 *FR* 51261.

7. WHERE TO SEND DISCHARGE MONITORING REPORTS

Completed DMRs should be sent to the appropriate EPA Regional office mailing address (see Exhibit 8). Please make sure to provide adequate postage. In addition, facilities located in Alaska, Arizona, Guam, and New Mexico are required to submit a copy of the DMR to their respective state offices. The permittee should also retain a copy for his or her records.

EXHIBIT 8
EPA REGIONAL MAILING ADDRESSES AND PHONE NUMBERS

Area of Coverage	Address	Storm Water Contact
Region I: State lands in MA, ME, and NH; Federal Indian Reservations in CT, MA, ME and RI; Federal facilities in VT	U.S. Environmental Protection Agency, Region I Office of Ecosystem Protection Municipal Assistance Staff JFK Federal Bldg - CMU Boston, MA 02203	Thelma Hamilton (617)565-3569
Region II: State lands in PR; Federal facilities in PR	U.S. Environmental Protection Agency, Region II Division of Environmental Planning and Protection Water Program Branch 290 Broadway, 24th Floor New York, NY 10007-1866	Sergio Bosques (787)729-6951 (x.255)
Region III: State lands in the District of Columbia; Federal facilities in District of Columbia, and DE	U.S. Environmental Protection Agency, Region III Water Protection Division, (3WP30) Storm Water Staff 841 Chestnut Building Philadelphia, PA 19107	Mary Letzkus (215) 814-2087
Region IV: State lands in FL; Federal Indian Reservations in FL	U.S. Environmental Protection Agency, Region IV Water Management Division Surface Water Permits Section (SWPFB) 61 Forsyth St., SW Atlanta, GA 30303-3104	Michael Mitchell (404) 562-9303
Region VI: State lands in NM[1]; and TX; Federal Indian Reservations in LA, NM (except Navajo and Ute Mountain Reservation lands -- see Region IX), OK and TX; Oil & Gas Exploration Activities in OK (SIC 13XX)	U.S. Environmental Protection Agency, Region VI Compliance Assurance and Enforcement Division Water Enforcement Branch (6EN-W) 1445 Ross Avenue, Suite 1200 Dallas, TX 75202-2733	Brent Larson (214) 665-7523
Region IX: State lands in AZ[1], Guam[1], Johnson Atoll, Midway Island, Wake Island; Federal Indian Reservations in AZ, CA and NV, the Goshute Reservation in UT, the Navajo Reservation in UT and NM, the Fort McDermitt Reservation in OR, the Duck Valley Reservation in ID; Federal facilities in AZ, Guam, Johnston Atoll, Midway Island and Wake Island	U.S. Environmental Protection Agency, Region IX Water Management Division, (W-5-3) Storm Water Staff 75 Hawthorne Street San Francisco, CA 94105	Eugene Bromley (415) 744-1906
Region X: State lands in AK[1] and ID; Federal Indian Reservations in AK, ID (except Duck Valley Reservation lands -- see Region IX), OR (except Fort McDermitt Reservation lands -- see Region IX) and WA; Federal facilities in WA	U.S. Environmental Protection Agency, Region X Office of Water (OW-130) Storm Water Staff 1200 Sixth Avenue Seattle, WA 98101	Joe Wallace (202) 553-8399

[1] NOTE: DMR materials must be sent to the EPA Regional office and a copy must be sent to the following corresponding state offices:

AK: Alaska Department of Environmental Conservation, Major Facilities & Water Permits Section, 410 Willoughby Avenue, Suite #105, Juneau, AK 990801, or Alaska Department of Environmental Conservation, Major Facilities & Water Permits Section, 555 Cordova Street, Anchorage, AK 99503, or Alaska Department of Environmental Conservation, Major Facilities & Water Permits Section, 610 University Avenue, Fairbanks, AK 99709-3643

AZ: Storm Water Coordinator/DMR, Arizona Department of Environmental Quality, 3303 N.Central Avenue, Phoenix, AZ 85012

GU: Guam Environmental Protection Agency, P.O. Box 22439 GMF, Barrigada, Guam 96921

NM: Program Manager, Point Source Regulation Section, Surface Water Quality Bureau, New Mexico Environment Department, 1190 St. Francis Drive, Santa Fe, NM 87504-0968

APPENDIX G

POTENTIAL RELEASE SITES AND INDUSTRIAL ACTIVITIES

Potential Release Sites and Industrial Activities Located Above LANL Gauging Stations

PRS	Consolidation Unit	PRS Description	Erosion Matrix Score	HSWA?	FMU	Comments
Los Alamos below TA-2		Station E030				
01-001(c)	01-001(a)-99	Septic tank 137	38	Y	ER	SWMU/SWPPP
01-001(d)	01-001(a)-99	Septic tank 138 (hillside)	74.5	Y	80	
01-003(a)	01-001(a)-99	Landfill	79	Y	80	
01-003(e)	01-001(a)-99	Surface disposal site	83	Y	80	
02-009(a)		Non-intentional release	26	Y	71	Not reasonably expected to impact water quality
21-003	21-003-99	Container storage - RCRA Unit	33.3	Y	66	MDA G, H, J, L SWPPP (and 21-003)
21-013(b)	21-018(a)-99	Surface disposal site	67	Y	80	
21-018(a)	21-018(a)-99	Material disposal area (MDA V)	18.1	Y	80	Not reasonably expected to impact water quality
21-018(b)	21-018(a)-99	Material disposal area (MDA V) Laundry Facility	15.8	Y	80	Not reasonably expected to impact water quality
21-024(i)		Septic system	53.7	Y	66	
DP Canyon below meadow		Station E039				
21-011(c)	21-016(a)-99	Tank and Sump	54	Y	80	
21-011(k)		Outfall	72	Y	80	
21-016(a)	21-016(a)-99	MDA T	54	Y	80	
21-016(b)	21-016(a)-99	MDA T	54	Y	80	
21-016(c)	21-016(a)-99	MDA T	54	Y	80	
LA Canyon Near "Y"		Station E042				
53-002(a)	53-002(a)-99	Disposal lagoon inactive (NE, NW impoundments)	47.8	Y	61	Upstream Tributary from TA-53
53-002(b)	53-002(a)-99	Disposal lagoon (active)RCRA corrective action	3.6	Y	61	Upstream Tributary from TA-53, no erosion potential
Acid Canyon		Station E056				
01-002	01-001(a)-99	Outfall TA1 SWMU to be in TA45	71.5	Y	ER	

Potential Release Sites and Industrial Activities Located Above LANL Gauging Stations

PRS	Consolidation Unit	PRS Description	Erosion Matrix Score	HSWA?	FMU	Comments
45-004		Sanitary Sewer Outfall	50.2	Y	ER	
	Pueblo	Station E060				
00-019		Wastewater treatment plant, Central	51.5	Y	ER	
73-001(a)	73-001(a)-99	Landfill	85.5	Y	80	
73-002	73-002-99	Incinerator surface disposal	56	Y	80	
73-004(d)	73-001(a)-99	Septic tank (land fill)	46.7	Y	80	
	Upper Sandia	Stations E121				
03-012(b)		Operational release and outfall	65	Y	80	Located at Steam Plant should be their SWPPP
Sector O		Steam Electric Plant			80	Regulated Industrial Activity (Sector O) Steam Power Plant SWPPP
03-014(q)		Waste water treatment facility	14	Y	80	Not reasonably expected to impact water quality
03-036(g)		Sulfuric Acid Tank		N	80	Monitoring not required
03-036(j)		Diesel Tanks		N	80	Monitoring not required
03-045(a)		Outfall (Ind. or san. waste water treatment)	48	Y	80	
03-045(b)		Ind. or san. waste water treatment	65	Y	80	
03-045(c)		Outfall	59.3	Y	80	
03-045(d)		Oil Storage	15.3	N	80	Monitoring not required
03-045(g)		Storm Drain	38.3	Y	80	Not reasonably expected to impact water quality
03-046		Above Ground Storage Tank	3.6	Y	80	Not reasonably expected to impact water quality
03-056(c)		Transformer storage area - PCB only site	45	Y	ER	3-056(c) VCA SWPPP
	Upper Sandia	Stations E122				
Sector D		Asphalt Batch Plant			80	Regulated Industrial Activity (Sector D), Asphalt Batch Plan SWPPP
03-002(c)		Storage area	15.3	Y	80	Not reasonably expected to impact water quality
03-009(a)		Surface disposal	61.3	Y	80	

Potential Release Sites and Industrial Activities Located Above LANL Gauging Stations

PRS	Consolidation Unit	PRS Description	Erosion Matrix Score	HSWA?	FMU	Comments
03-028		Surface impoundment	8.8	Y	80	Not reasonably expected to impact water quality
03-001(i)		Container storage		N	80	Monitoring not required
03-020(b)		Steam Cleaning Pit	8.8	N	80	Monitoring not required
03-036(a,c,d)		Leaks and Spills	8.8 for (a)	Y	80	Not reasonably expected to impact water quality
03-036(b,e,f)		Leaks and Spills		N	80	Monitoring not required
03-043 (a,b,d,f,g,h)		Removed ASTs	19.8 for (b) 19.8 for (d) 19.8 for (h)	N	80	Monitoring not required
03-045(e)		Storm Drain	17	Y	80	Not reasonably expected to impact water quality
03-047 (b,c,e,f)		Storage Sheds		N	80	Monitoring not required
03-029		**Landfill**	**44.3**	**Y**	**80**	
03-052(f)		**Storm drainage**	**45**	**Y**	**80**	
Sector AA		**Metal Shop 3-38**			**67**	**Regulated Industrial Activity (Sector AA), Fabricated Metals SWPPP**
03-013(a)		Operational release	45	Y	67	Also covered under SWMU/SWPPP, I&M being done by IT
03-013(b)		Operational release	45	N	67	Monitoring not required
03-013(d)		Operational release		N	67	Monitoring not required
03-001(f)		90-day Storage Area		N	67	Monitoring not required
03-013(c)		Operational release		N	67	Monitoring not required
03-056(i)		Drum Storage		N	67	Monitoring not required
Upper Sandia (Sigma)		**Stations E122.2**				
Sector F		**Foundary/Plating Shop 3-66**			**67**	**Regulated Industrial Activity (Sector F), Primary Metals SWPPP**
03-007		Inactive Firing Site	8.8	N	67	Monitoring not required
03-049(a)		Outfall	36.8	Y	67	Outfall discharges to the south into Mortandad
03-049(b)		Exhaust Outlet	3.6	Y	67	Not reasonably expected to impact water quality
03-052(b)		Storm drain	39.8	N	67	Monitoring not required
C-03-014		Equipment Storage	22.3	N	67	Monitoring not required

Potential Release Sites and Industrial Activities Located Above LANL Gauging Stations

PRS	Consolidation Unit	PRS Description	Erosion Matrix Score	HSWA?	FMU	Comments
Upper Sandia (Motor Pool)		**Stations E122.4**				
Sector P		**TA-60 Motor Pool**			**80**	**Regulated Industrial Activity (Sector P), Land Transportation SWPPP, Station is not capturing runoff from 60-1**
60-001(a)		Container Storage Area		N	80	In SWPPP, monitoring not required
60-002		Storage Area		Y	80	On HSWA, not covered in SWPPP (Sigma Mesa)
60-003		Vehicle Maintenance		N	80	In SWPPP, monitoring not required
60-005(a)		Surface Impoundment	15.3	Y	80	On HSWA, not covered in SWPPP (Sigma Mesa)
60-006(a)		Septic Tank	22.3	Y	80	Not reasonably expected to impact water quality
60-007(a)		Operational Release	15.3	Y		Sigma Mesa, not at Motor Pool
60-007(b)		Operational Release	43.8	Y	80	Drainage north of 60-1
Upper Sandia (Salvage)		**Stations E122.5**				
Sector N		**TA-60 Metal Recycling**			**81**	**Regulated Industrial Activity (Scrap Recycling) SWPPP, Station is not capturing runoff from Metal Recycling**
TA-55 Effluent Canyon		**Station E196**				
Sector K?		**PF-4 Activities**			**76**	**Regulated Industrial Activity (TSD) TA-55 SWPPP**
55-008		Sumps and tanks	3.6	Y	76	Not reasonably expected to impact water quality
55-009		Sumps and tanks	10.6	Y	76	Not reasonably expected to impact water quality
Upper Mortandad		**Station E200**				
03-054(e)		**Outfall**	**89**	**Y**	**65**	From CMR
42-001(a)	**42-001(a)-99**	**Former incinerator**	**65.8**	**Y**	**76**	Also covered under TA-55 SWPPP, I&M being done by IT
42-001(b)	**42-001(a)-99**	**Former ash storage tank**	**65.8**	**Y**	**76**	Also covered under TA-55 SWPPP, I&M being done by IT
42-001(c)	**42-001(a)-99**	**Former ash storage tank**	**65.8**	**Y**	**76**	Also covered under TA-55 SWPPP, I&M being done by IT
42-002(b)	**42-001(a)-99**	**D&D Facility driveway**	**65.8**	**Y**	**76**	Also covered under TA-55 SWPPP, I&M being done by IT
42-003	**42-001(a)-99**	**Former Septic system**	**49.3**	**Y**	**76**	

Potential Release Sites and Industrial Activities Located Above LANL Gauging Stations

PRS	Consolidation Unit	PRS Description	Erosion Matrix Score	HSWA?	FMU	Comments
48-003		Septic system	65.5	Y	71	
48-007(a)		Drains and outfalls	55.8	Y	71	
48-007(b)		Drains and outfalls	49.3	Y	71	
48-007(c)		Drains and outfalls	69.5	Y	71	
48-007(d)		Drains and outfalls	55.8	Y	71	
48-007(f)		Drains and outfalls	76.5	Y	71	
48-010		Surface Impoundment	80.3	Y	71	
50-006(d)		Effluent discharge	89	Y	84	This site is not covered in the TA-50 SWPPP, but should be
TenSite at Mouth		**Station E201.5**				
04-001	04-001-99	Firing Site	43.9	Y	80	
04-002	04-001-99	Surface disposal	43.9	Y	80	
04-003(b)		Outfall	51.5	Y	80	
35-003(d)	35-003(a)-99	Waste water treatment facility	59	Y	80	
35-003(l)	35-003(a)-99	Waste water treatment facility	59	Y	80	
35-003(q)	35-003(a)-99	Waste water treatment facility	59	Y	80	
35-008		Surface disposal and landfil	61	Y	80	
35-014(e)		Oil Spill	61	Y	80	
35-016(a)		Drains and outfalls	92	Y	80	
35-016(c)		Outfall	47.2	Y	80	
35-016(d)		Outfall	76.5	Y	80	
35-016(i)		Drains and outfalls	61	Y	80	
35-016(m)		Drains and outfalls	72	Y	80	
35-016(o)		Drains and outfalls	60.3	Y	80	
35-016(q)		Drains and outfalls	92	Y	80	
50-001(a)		Waste treatment facility - RCRA Unit	8.8	Y	84	These sites are not in the TA-50 SWPPP
50-002(a)		Underground tanks	15.8	Y	84	Not reasonably expected to impact water quality

Potential Release Sites and Industrial Activities Located Above LANL Gauging Stations

PRS	Consolidation Unit	PRS Description	Erosion Matrix Score	HSWA?	FMU	Comments
50-002(b)		Underground tank	8.8	Y	84	Not reasonably expected to impact water quality
50-002(c)		Underground tank	8.8	Y	84	Not reasonably expected to impact water quality
50-004(b)		Underground tanks	38.6	Y	84	Not reasonably expected to impact water quality
50-004(c)		Waste lines	10.6	Y	84	Not reasonably expected to impact water quality
50-006(a)		Operational release	77.8	Y	84	
50-006(c)		Operational release	38.6	Y	84	Not reasonably expected to impact water quality
50-009		MDA C	54.8	Y	84	
50-011(a)		Septic system	38.6	Y	84	Not reasonably expected to impact water quality
Mortandad Near LA		**Station E204**				
05-003		Former Calibration chamber	49.7	Y	80	These may not be flowing into a E204 since the drainage is on southern tributary below station (maybe 205?)
05-004		Former Septic system	49.7	Y	80	
05-005(b)		Outfall	27	Y	80	Not reasonably expected to impact water quality
05-006(c)		Soil contamination beneath former bldgs.	27	Y	80	Not reasonably expected to impact water quality
05-001(a)	05-001(a)-99	Former Firing Site	15.3	Y	80	These likely flow to E202 or 203
05-001(b)	05-001(a)-99	Former Firing Site	15.3	Y	80	Not reasonably expected to impact water quality
05-005(a)		Former French drain	15.3	Y	80	Not reasonably expected to impact water quality
05-006(b)		Soil contamination beneath former bldgs.	15.3	Y	80	Not reasonably expected to impact water quality
05-006(e)		Soil contamination beneath former bldgs.	15.3	Y	80	Not reasonably expected to impact water quality
05-006(h)		Soil contamination beneath former bldgs.	15.3	Y	80	Not reasonably expected to impact water quality
50-007		CAI Complex	38.6	N	84	May require monitoring as a TSD, E204 is currently closest
50-008		WCRR Facility	38.6	N	84	May require monitoring as a TSD, E204 is currently closest
Upper Canada del Buey		**Station E218**				
46-004(a2)		Outfall	30.5	Y	70	Not reasonably expected to impact water quality
46-004(b2)		Operational release	27.5	Y	70	Not reasonably expected to impact water quality

Potential Release Sites and Industrial Activities Located Above LANL Gauging Stations

PRS	Consolidation Unit	PRS Description	Erosion Matrix Score	HSWA?	FMU	Comments
46-004(c2)		Outfall	30.5	Y	70	Not reasonably expected to impact water quality
46-004(d2)	46-004(d2)-99	Stack emissions	56	Y	70	
46-004(g)	46-004(d2)-99	Outfall/Stack Emissions	56	Y	70	
46-004(h)	46-004(d2)-99	Outfall/Stack Emissions	56	Y	70	
46-004(m)		Outfall	30.5	Y	70	Not reasonably expected to impact water quality
46-004(s)		Outfall/	27.5	Y	70	Not reasonably expected to impact water quality
46-004(u)		Outfall	30.5	Y	70	Not reasonably expected to impact water quality
46-004(v)		Outfall	30.5	Y	70	Not reasonably expected to impact water quality
46-004(x)		Outfall	30.5	Y	70	Not reasonably expected to impact water quality
46-004(y)		Outfall	30.5	Y	70	Not reasonably expected to impact water quality
46-004(z)		Outfall	30.5	Y	70	Not reasonably expected to impact water quality
46-006(d)		Operational release	30.5	Y	70	Not reasonably expected to impact water quality
46-006(f)		Storage area	34.6	Y	66	Not reasonably expected to impact water quality
46-007		Operational Release	22.8	Y	66	Not reasonably expected to impact water quality
Canada del Buey at RANT		**Station E220**				
Sector K		TA-54 RANT			64	Regulated Industrial Activity (TSD?) RANT SWPPP
54-007(e)	54-007(c)-99	Septic system	23.3	N	64	Monitoring not required
54-015(h)		Drum Storage	22.3	Y	64	Not reasonably expected to impact water quality
54-016(a)		Sump		N	64	Monitoring not required
Canada del Buey at MDA J		**Station E221**				
Sector L		MDA J			64	Regulated Industrial Activity (Landfill) SWPPP
54-005		MDA J	20.9	Y	64	Not reasonably expected to impact water quality
Canada del Buey at MDA L		**Station E223**				
Sector L		MDA L			64	Regulated Industrial Activity (Landfill)
54-001(a)		Storage Area	22.3	Y	64	Not reasonably expected to impact water quality
54-001(b)		Storage Area		N	64	Monitoring not required
54-001(c)		Storage Area		N	64	Monitoring not required
54-001(d)		Storage Area		N	64	Monitoring not required
54-001(e)		Storage Area		N	64	Monitoring not required

Potential Release Sites and Industrial Activities Located Above LANL Gauging Stations

PRS	Consolidation Unit	PRS Description	Erosion Matrix Score	HSWA?	FMU	Comments
54-002		Storage Area		N	64	Monitoring not required
54-006		Subsurface Shafts	10.6	Y	64	All subsurface units located at MDA L, Not reasonably expected to impact water quality
54-008		Sewage Tanks		N	64	Monitoring not required
54-009		Barium Treatment Tanks		N	64	Monitoring not required
54-012(b)		Drum Compactor	22.3	Y	64	Not reasonably expected to impact water quality
54-014(a)		Subsurface Shafts		N	64	Monitoring not required
54-015(g)		Lead Casks		N	64	Monitoring not required
54-015(i)		Forklift battery		N	64	Monitoring not required
Canada del Buey Above White Rock		**Station E225**				
46-002		**Surface impoundment**	**52.8**	**Y**	**70**	SWSC Canyon
46-004(q)		**Outfall**	**30.5**	**Y**	**70**	SWSC Canyon
46-004(t)		**Outfall**	**68.3**	**Y**	**70**	
46-008(g)		**Storage area**	**68.3**	**Y**	**66**	SWSC Canyon
46-009(a)		**Surface disposal**	**74.5**	**Y**	**66**	SWSC Canyon
46-009(b)		**Surface disposal**	**70**	**Y**	**66**	SWSC Canyon
54-007(c)	54-007(c)-99	Septic system	56	Y	64	Septic tanks NW of RANT, may want to remove this station from list
54-007(b)		**Septic system**	**27**	**Y**	**64**	Not reasonably expected to impact water quality
Canada del Buey - MDA G6		**Station E227**				
Sector L		**MDA G**			**64**	**Regulated Industrial Activity (Landfill)**
54-001(a)		Storage area	22.3	Y	64	Not reasonably expected to impact water quality
54-007(a)		Septic system	20.5	Y	64	Not reasonably expected to impact water quality
54-010		UST		N	64	Monitoring not required
54-012(a)		Former Compactor Bldg.		N	64	Monitoring not required
54-013(b)	54-013(b)-99	Former Pit Area		Y	64	
54-014(b)	54-013(b)-99	Waste Storage Area	14	Y	64	Not reasonably expected to impact water quality
54-015(a)		Former Drum Storage		N	64	Monitoring not required
54-015(b)		Waste Storage Area		N	64	Monitoring not required
54-016(b)		Sump		N	64	Monitoring not required

Potential Release Sites and Industrial Activities Located Above LANL Gauging Stations

PRS	Consolidation Unit	PRS Description	Erosion Matrix Score	HSWA?	FMU	Comments
Starmer's-Pajarito		Station E242				
09-013		Material disposal area (MDA M)	56	Y	67	
22-015(c)		Outfall	8.8	Y	67	Not reasonably expected to impact water quality
40-006(a)		Firing site (active)	83	Y	67	Covered by DX SWPPP- Not TSD
40-006(b)		Firing site (active)	62	Y	67	
40-006(c)		Firing site (active)	62	Y	67	
40-007(a)		Storage area	29.6	N	67	Monitoring not required
40-009		Landfill	76.5	Y	67	
40-010		Surface disposal site	40.2	Y	67	
Arroyo Ladelfe		Station E242.5				
Sector C		Chemistry Building 9-48?			67	Regulated Industrial Activity (Chemical Products) SWPPP (no SWPPP available)
09-004(o)		Settling tank	43.8	Y	67	
09-009		Surface impoundment	58.8	Y	67	
Two Mile @ TA-3 Tributary		Station E243.5				
Sector AA		Metal Shop (3-39)				Regulated Industrial Activity (Fabricated Metals) SWPPP
Two Mile @ TA-3 Tributary		Station E244				
03-009(d)		Surface disposal site	64.8	Y	80	
03-010(a)		Former vacuum repair shop	69	Y	80	
03-054(b)		Outfall	65.8	Y	67	
06-007(g)		Building & surface disposal	50.8	Y	67	
22-014(b)		Sump	56	Y	67	
Three Mile		Station E246				
15-006(b)		Firing site Ector - active	15.3	Y	67	Not reasonably expected to impact water quality
15-006(c)	15-006(c)-99	Firing site R-44 (inactive)	67.2	Y	67	
15-008(b)	15-006(c)-99	Surface disposal	67.2	Y	67	
15-009(c)		Septic tank	71.5	Y	67	
C-36-003		Storm drainages	69.5	Y	73	

Potential Release Sites and Industrial Activities Located Above LANL Gauging Stations

PRS	Consolidation Unit	PRS Description	Erosion Matrix Score	HSWA?	FMU	Comments
36-008		Surface Disposal Area	52	Y	73	
Pajarito - MDA G1		Station E247				
Sector L		MDA G			64	Regulated Industrial Activity (Landfill), Runoff from this Industrial Activity doesn't likely flow to G1
54-015(j)		Storage Dome		N	64	Monitoring not required
54-021		Storage Tanks		N	64	Monitoring not required
Pajarito - MDA G2		Station E248				
Sector L		MDA G			64	Regulated Industrial Activity (Landfill)
54-015(k)	54-013(b)-99	Waste Mound	18	Y	64	Not reasonably expected to impact water quality
54-018	54-013(b)-99	Disposal Pits	52.6	Y	64	
Pajarito - MDA G3		Station E248.5				
Sector L		MDA G			64	Regulated Industrial Activity (Landfill)
54-014(c)		Inactive Disposal Shafts	39.8	Y	64	Not reasonably expected to impact water quality
54-014(d)	54-013(b)-99	Inactive Disposal Trenches	66.5	Y	64	
54-017	54-013(b)-99	Inactive Disposal Pits	62	Y	64	
Pajarito - MDA G5		Station E249				
Sector L		MDA G			64	Regulated Industrial Activity (Landfill)
54-019	54-013(b)-99	Inactive Disposal Pits	27.5	Y	64	Not reasonably expected to impact water quality also to G6
54-020	54-013(b)-99	Disposal Shafts	53.7	Y	64	
Pajarito - MDA G4		Station E249.5				
Sector L		MDA G			64	Regulated Industrial Activity (Landfill)
54-001(f)		Drum Storage Area			64	
54-015(c-f)		Waster Storage Pads		N	64	Monitoring not required
Lower Pajarito SR4		Station E250				
18-003(c)		Septic system	62.3	Y	74	
Sector L		MDA H			64	Regulated Industrial Activity (Landfill)
54-004		MDA H	45.6	Y	64	
Canon de Valle below MDA P		Station E256				
16-003(k)	16-021(c)-99	Sumps/Drainlines	38.6	Y	ER	16-021(c) CMS SWPPP
16-010(a)	16-016(c)-99	Burn site	38.4	Y	ER	MDA P SWPPP
16-010(b)		Burn site - RCRA Unit	55.5	Y	ER	
16-016(c)	16-016(c)-99	Landfill	72	Y	ER	

Potential Release Sites and Industrial Activities Located Above LANL Gauging Stations

PRS	Consolidation Unit	PRS Description	Erosion Matrix Score	HSWA?	FMU	Comments
16-018		MDA P RCRA(closure)	69.3	Y	ER	
16-019		Material disposal area (MDA R)	83	Y	70	
16-020		Silver recovery unit	61.3	Y	70	
16-021(c)	16-021(c)-99	Outfall	73.3	Y	ER	
Canon de Valle Tributary at BG		**Station E257**				
Sector K		Burn Grounds			70	Regulated Industrial Activity (TSD) SWPPP
16-005(g)	16-010(h)-99	Burn Site	3.6	Y	70	Not reasonably expected to impact water quality
16-006(e)	16-016(c)-99	Septic system	8.8	Y	70	Not reasonably expected to impact water quality
16-010(c)		Burn site - RCRA Unit	47.2	Y	70	
16-010(d)		Burn site - RCRA Unit	50.3	Y	70	
16-010(e)		Burn site - RCRA Unit	14	Y	70	Not reasonably expected to impact water quality
16-010(f)		Burn site - RCRA Unit	14	Y	70	Not reasonably expected to impact water quality
16-010(h)	16-010(h)-99	Burn site	8.8	Y	70	Not reasonably expected to impact water quality
16-010(j)		Burn site - RCRA Unit	14	Y	70	Not reasonably expected to impact water quality
16-010(k)	16-010(h)-99	Trough	14	Y	70	Not reasonably expected to impact water quality
16-010(l)	16-010(h)-99	Trough	14	Y	70	Not reasonably expected to impact water quality
16-010(m)	16-010(h)-99	Trough	14	Y	70	Not reasonably expected to impact water quality
16-010(n)	16-010(h)-99	Trough	14	Y	70	Not reasonably expected to impact water quality
16-028(a)		South Drainage	51.5	Y	70	
Upper Water		**Station E260**				
16-003(a)		Sump TA-16-410	55.5	Y	70	
16-006(c)		Septic system	49.5	Y	70	
16-026(a)		Outfall	73.5	Y	70	
16-026(c2)		Outfall TA-16-462	61.8	Y	70	
16-026(h2)	16-029(e)-99	Outfall TA-16-360	61	Y	70	
16-026(v)	16-003(c)-99	Outfall	65.8	Y	70	
16-028(b)		SWWTF TA-16-370	83	Y	70	
16-029(g)	16-029(g)-99	Sump TA-16-450	21.5	Y	70	Not reasonably expected to impact water quality
16-030(h)	16-003(l)-99	Outfall TA-16-430	29.1	Y	70	Not reasonably expected to impact water quality
S-Site		**Station E261**				
11-001(b)		Firing site (inactive)	22.7	Y	70	Not reasonably expected to impact water quality
11-004(a)	11-004(a)-99	Drop tower - Firing Site	56	Y	70	
11-004(b)	11-004(a)-99	Drop tower - Firing Site	56	Y	70	

Potential Release Sites and Industrial Activities Located Above LANL Gauging Stations

PRS	Consolidation Unit	PRS Description	Erosion Matrix Score	HSWA?	FMU	Comments
11-004(c)	11-004(a)-99	Drop tower - Firing Site	56	Y	70	
11-004(d)	11-004(a)-99	Drop tower - Firing Site	56	Y	70	
11-004(e)	11-004(a)-99	Drop tower - Firing Site	56	Y	70	
11-006(a)	11-006(a)-99	Sump	10.6	Y	70	Not reasonably expected to impact water quality
11-006(b)	11-006(a)-99	Tank and equip.	52	Y	70	
11-006(c)	11-006(a)-99	Tank and equip.	68.8	Y	70	
11-006(d)	11-006(a)-99	Tank and equip.	74	Y	70	
16-003(f)	16-003(d)-99	Sump	8.8	Y	70	Not reasonably expected to impact water quality
16-004(f)	16-004(a)-99	Waste water treatment facility	31	Y	70	Not reasonably expected to impact water quality
Canon de Valle		**Station E262**				
14-001(a)		Firing site - active	3.6	N	67	Monitoring not required
14-001(b)		Firing site - active	3.6	N	67	Monitoring not required
14-001(c)		Firing site - active	3.6	N	67	Monitoring not required
14-001(d)		Firing site - active	3.6	N	67	Monitoring not required
14-001(e)		Firing site - active	3.6	N	67	Monitoring not required
14-001(f)	14-002(a)-99	Firing site - active	3.6	N	67	Monitoring not required
14-001(g)		Firing site - active	53.3	N	67	**TSD Monitoring Required**
14-002(a)	14-002(a)-99	Firing site (inactive)	51.5	Y	67	
14-002(c)	14-002(c)-99	Building	36.8	Y	67	
14-002(d)	14-002(c)-99	Firing site (inactive)	40.8	Y	67	Not covered in DX SWPPP as cited
14-002(e)	14-002(c)-99	Firing site (inactive)	47.8	Y	67	Not covered in DX SWPPP as cited
14-005		Incinerator (active)	57.3	Y	67	
14-006		Tank and assoc. equip.	47.1	Y	67	**TSD Monitoring Required**
14-009	14-002(a)-99	Surface disposal site	53.7	Y	67	
14-010	14-002(a)-99	Sump	51.5	Y	67	
15-007(b)		Material disposal area (MDA Z) Landfill	40.2	Y	67	
15-011(a)		Sump	3.6	Y	67	Not reasonably expected to impact water quality
15-011(b)		Dry well	87	Y	67	
15-011(c)		Sump	87	Y	67	
15-014(i)		Outfall	3.6	Y	67	Not reasonably expected to impact water quality
15-014(j)		Outfall	61.3	Y	67	
15-014(k)		Outfall	3.6	Y	67	Not reasonably expected to impact water quality

Potential Release Sites and Industrial Activities Located Above LANL Gauging Stations

PRS	Consolidation Unit	PRS Description	Erosion Matrix Score	HSWA?	FMU	Comments
16-003(n)	16-003(n)-99	Sump	25	Y	70	Not reasonably expected to impact water quality
16-003(o)		Sump	27.3	Y	70	Not reasonably expected to impact water quality
Water Canyon at MDA AB		**Station E262.5**				
49-001(b)		Material disposal area (MDA AB)	34.6	Y	ER	TA-49 MDA AB SWPPP
49-001(c)		Material disposal area (MDA AB)	17.5	Y	ER	Not reasonably expected to impact water quality
49-001(d)		Material disposal area (MDA AB)	17.5	Y	ER	Not reasonably expected to impact water quality
49-001(g)		Material disposal area (MDA AB)	59.2	Y	ER	
49-003		Leach field	36.8	Y	ER	Not reasonably expected to impact water quality
Potrillo-Fence		**Station E267**				
15-003		Firing site - active PHERMEX	15.3	Y	67	Not reasonably expected to impact water quality
15-004(f)	15-004(f)-99	Machine firing site E-F non RCRA (inactive) hazard but VCA uranium	33.2	Y	67	Not reasonably expected to impact water quality
15-008(a)	15-004(f)-99	Surface disposal E/F site	72	Y	67	
36-001		Material disposal area (MDA AA)	45.7	Y	67	
36-004(a)	36-006-99	Firing site - active	48.5	N	67	Monitoring not required
36-004(b)		Firing site - active	57.3	N	67	Monitoring not required
36-004(c)		Firing site - active	68.3	N	67	TSD Monitoring Required
36-004(d)		Firing site - active	33	Y	67	Not reasonably expected to impact water quality
36-004(e)		Firing site - active	57.3	N	67	Monitoring not required
36-006	36-006-99	Surface disposal site	78	Y	67	
Ancho-North at TA-39		**Station E274**				
39-004(a)		Firing site - active	74	Y	67	
39-004(b)		Firing site - active	74.5	Y	67	
39-004(c)		Firing site - active	85	Y	67	TSD Monitoring Required
39-004(d)		Firing site - active	74	Y	67	TSD Monitoring Required

Potential Release Sites and Industrial Activities Located Above LANL Gauging Stations

PRS	Consolidation Unit	PRS Description	Erosion Matrix Score	HSWA?	FMU	Comments
39-004(e)		Firing site - active	78.5	Y	67	
Chaquehui South Site		Station E338				
33-004(j)		Outfall	85	Y	75	
33-006(a)		Firing site (inactive)	56	Y	75	
33-007(b)		Firing range (inactive)	59.3	Y	75	
33-010(c)		Surface disposal	60.5	Y	75	
33-015		Incinerator	50.8	Y	75	
Bayo Canyon		No Gauging Station				
10-003(a)	10-002(a)-99	Disposal pit	59.2	Y	ER	These sites are stable, no erosion is evident
10-003(b)	10-002(a)-99	Disposal pit	59.2	Y	ER	
10-003(c)	10-002(a)-99	Disposal pit	59.2	Y	ER	
10-003(d)	10-002(a)-99	Disposal pit	59.2	Y	ER	
10-003(e)	10-002(a)-99	Disposal pit	59.2	Y	ER	
10-003(f)	10-002(a)-99	Disposal pit	59.2	Y	ER	
10-003(g)	10-002(a)-99	Manholes	59.2	Y	ER	
10-003(h)	10-002(a)-99	Manholes	59.2	Y	ER	
10-003(i)	10-002(a)-99	Septic tank	59.2	Y	ER	
10-003(j)	10-002(a)-99	Tank	59.2	Y	ER	
10-003(k)	10-002(a)-99	Tank	59.2	Y	ER	
10-003(l)	10-002(a)-99	Tank	59.2	Y	ER	
10-003(m)	10-002(a)-99	Waste line	59.2	Y	ER	
10-003(n)	10-002(a)-99	Leach field	59.2	Y	ER	
10-003(o)	10-002(a)-99	Leach field	59.2	Y	ER	
10-004(b)	10-002(a)-99	Septic system	59.2	Y	ER	
10-007	10-002(a)-99	Landfill	59.2	Y	ER	

MDA G, H, J, L SWPPP
TA-54 RANT SWPPP
DX SWPPP
3-39 SWPPP
16-260 SWPPP
MDA P SWPPP

Potential Release Sites and Industrial Activities Located Above LANL Gauging Stations

PRS	Consolidation Unit	PRS Description	Erosion Matrix Score	HSWA?	FMU	Comments
	Burn Grounds SWPPP					
	MDA AB SWPPP					
	Asphalt Batch Plant SWPPP					
	SWMU/SWPPP					
	3-38 SWPPP					
	TA-60 Motor Pool					
	Sigma Foundary SWPPP					
	Steam Electric Power SWPPP					
	TA-50 Facility SWPPP					
	TA-55 SWPPP					
	Chemical Production					
	Metal Recycling TA-60					

APPENDIX H

EPA Interim Approval Granted to Los Alamos National Laboratory for Use of Several Methods Proposed on October 18, 1995 as Alternate Test Procedures for Use in Wastewater Compliance Monitoring

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

DEC 03 1999

Ken Mullen
Water Quality & Hydrology Group
Los Alamos National Laboratory
Los Alamos, NM 87545

Dear Mr. Mullen:

Your request to recommend interim approval of several methods proposed on October 18, 1995 as Alternate Test Procedures for Use in Wastewater Compliance Monitoring using the updated methods 200.7, 200.8, 200.9 and 300.0 has been granted.

Region 6 grants the use of these methods on an interim basis, and any laboratory wishing to use these test methods must demonstrate the ability to achieve acceptable performance, and must keep a copy of such. Please review the November 16, 1999, letter from Dr. Maria Gomez-Taylor, AMS, OW for specific details (Attachment 1). Methods in the proposed Table 1B, October 18, 1995, can also be used on an interim approval for wastewater compliance monitoring.

Note that approval is **not** given to all methods published in the three manuals reference in your letter dated November 10, 1999, (Attachment 2). **Only** the methods proposed in the October 18, 1995, Table 1B can be used.

Should you need additional information, please feel free to call me, or contact Dave Stockton of my staff at (281) 983-2106.

Sincerely yours,

Lynda F. Carroll

Lynda F. Carroll
Assistant Regional Administrator
for Management

Enclosures(2)
1. Letter dated Nov 16, 1999
2. Letter dated Nov 10, 1999

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ATTACHMENT NO. 1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

NOV 16 1999

OFFICE OF WATER

MEMORANDUM

SUBJECT: Recommendation for Interim Approval of Several Methods Proposed on October 18, 1995, as Alternate Test Procedures for Use in Wastewater Compliance Monitoring

FROM: Maria Gomez-Taylor
Analytical Methods Staff (4303) Maria Gomez-Taylor

TO: David Stockton
EPA Region 6

THRU: William A. Telliard, Director
Analytical Methods Staff (4303)

This memorandum responds to your request for a written recommendation regarding approval of several methods proposed in the *Federal Register* on October 18, 1995 (60 FR 53988), to be used as alternate test procedures in wastewater compliance monitoring by the Los Alamos National Laboratory. The specific methods listed in the request are EPA Methods 200.7, 200.8, 200.9, and 300.0.

On October 18, 1995, EPA proposed to amend the Guidelines Establishing Test Procedures for the Analysis of Pollutants under Section 304(h) of the Clean Water Act to replace or provide alternative methods to several currently approved methods. This was proposed to make new technologies available to the regulated community and to achieve greater consistency between the methods approved for use in the analysis of drinking water and those approved for the analysis of wastewater. The proposed methods are expected to be promulgated as part of a final rule to be published in the *Federal Register* at a later date.

In response to several requests from other Regional Offices, the Analytical Methods Staff (AMS) has previously recommended approval of the methods in the October 18, 1995 proposal on an interim basis. These methods, as indicated in Table 1B of the proposal (List of Approved Inorganic Test Procedures), are technically sound. Therefore, we recommend that Region 6 grant interim approval for the use of these methods in wastewater compliance monitoring to Los Alamos National Laboratory and any others requesting approval. However, any laboratory wishing to use these test methods must demonstrate the ability to achieve acceptable performance and must keep a copy of all required initial demonstration of capability data on file for review by federal and state auditors.

Interim approval for each alternate test procedure should be effective until the effective dates specified in the publication of the final rule(s) promulgating these methods in the *Federal Register*. At that time the laboratories must adhere to the final version of each method as referenced in the final rule(s).

Please note that we can not recommend the use of every test method that EPA has published in the three manuals referenced in the November 10, 1999 letter from Los Alamos. Some methods in these

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manuals have not been evaluated or proposed for use in the EPA's Clean Water Act compliance programs. Therefore, I would suggest that Los Alamos provide a list of any other methods they would like to use. Depending on the request, Los Alamos may have to substantiate the performance of the method as specified in EPA's *ATP Protocol for Organic and Inorganic Analytes* before we can make a recommendation about approval or disapproval.

If I can be of any additional assistance on this matter or others, please write or call me at 202/260-1639 at your convenience.

Los Alamos

NATIONAL LABORATORY

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Date: November 10, 1999
In Reply Refer To: ESH-18/WQ&H:95-
Mail Stop: K497
Telephone: (505) 667-0818

David Stockton
United States Environmental Protection Agency
Region 6
10625 Fallstone Rd.
Houston, Texas 77099

Subject: Request to use published updated analytical methods

Per our conversation on June 7, 1999 we request permission to use the most recently published revisions of the following methods for Clean Water Act programs at Los Alamos National Laboratory (LANL). The water quality methods originally published in *Methods for Chemical Analysis of Water and Wastes (EPA-600/4-79-020)* have been revised in the EPA publication *Methods for the Determination of Metals* (EPA-600/4-91/010 and Supplement I, EPA/600/R-94-111, May 1994) and *Inorganic Chemicals in Environmental Samples* (EPA/600/R-93-100). While our conversation focused on the methods listed below, we desire approval to use any method included in these updated EPA publications for analytical services provided by any of the analytical laboratories used by LANL. If ruling on our ability to use all the recently updated methods would require additional time, please first advise us on the four specific methods listed below. A ruling on the suitability of the remaining methods described in the referenced sources may be provided in a follow up memorandum. For our immediate needs, we request permission to use the following updated methods at our discretion, unless a permit specifies otherwise.

Methods:

200.7 - "Determination of Metals and Trace Elements in Water and Wastes by Inductively Coupled Plasma-Atomic Emission Spectrometry"

200.8 - "Determination of Trace Elements in Water and Wastes by Inductively Coupled Plasma-Mass Spectrometry" (I have attached a November 3, 1992 letter recommending this method for approval under 40 CFR 136.)

200.9 - "Determination of Trace Elements by Stabilized Temperature Graphite Furnace Atomic Absorption Spectrometry"

300.0 - "Determination of Inorganic Anions by Ion Chromatography" (The attached letter also recommends this method for approval under 40 CFR 136.)

Thank you for your assistance. Please do not hesitate to call me at (505) 667-0818 if you have any questions.

Sincerely,

Ken Mullen
Water Quality and Hydrology Group

KM/km

Cy:

Cathy Smith, EES-13, MS-M992
Mike Saladen
Mike Alexander
Steve Veenis
Penny Gomez
Billy Turney
Scott Wilson, EPA
Jim Davis, NMED-SWQB
Everett Spencer, EPA
WQ&H File, MS K497
CRM-4, MS A150

Tables

TABLE 1

MATH FORMULAS

CONVERSION FACTORS:

1 gallon	=	8.34 lbs.
1 cu. ft.	=	7.48 gallons
1 acre	=	43,560 sq. ft.
1 ft. head	=	.43 PSI
π	=	3.14

FORMULAS:

1. Area of a Rectangle (square units)

   Length X Width = Area

2. Area of a circle (square units)

   π X radius^2 = Area or .785 X Diameter^2 = Area

3. Volume of rectangular or circular container (clarifier, pond, pipe, etc.)

   Surface Area X Depth = Volume (cu. units)

4. Volume in Gallons

   Volume in cu. ft. X 7.48 = gallons

5, Detention Time

   $\frac{\text{Volume (gals.)}}{\text{Flow (gpm)}}$ = Detention Time (in minutes)

   NOTE: If flow is in gpd, detention time is in days.)

6. Circumference of a Circle

π X Diameter = Circumference

7. BOD (mg/l)

$$\frac{(\text{Initial D.O.} - \text{Final D.O.}) \times 100}{\%\ \text{Dilution}} = \text{BOD (mg/l)}$$

OR

(Initial D.O. - Final D.O.) X Dilution Facor = BOD

$$\text{Dilution Factor} = \frac{\text{TOTAL VOLUME}}{\text{SAMPLE VOLUME}}$$

8. Suspended Solids (mg/l)

$$\frac{\text{Weight}_2\ \text{(mg)} - \text{Weight}_1\ \text{(mg)} \times 1000}{\text{ml of Sample Filtered}}$$

9. Pounds of BOD, Solids, Chemicals

Concentration (mg/l) X Quantity (million gals.) X 8.34 = lbs.

NOTE: Quantity, Volume or Flow must be in million gals.

10. Weir Overflow Rate

$$\frac{\text{GPD}}{\text{Length of Weir}} = \text{gal./ft./day}$$

11. Surface Loading Rate

$$\frac{\text{GPD}}{\text{Surface Area}} = \text{gal./sq.ft./day}$$

METRIC SYSTEM

Prefix		Value	Example		
Kilo	-	1000	1 Kilogram	=	1000 Grams
Hecto	-	100	1 Hectogram	=	100 Grams
Deka	-	10	1 Deckagram	=	10 Grams
(Unit)	-	1	1 Gram	=	1 Gram
Deci	-	0.1 (1/10)	1 Decigram	=	0.1 Gram
Centi	-	0.01 (1/100)	1 Centigram	=	0.01 Gram
Mili	-	0.001 (1/1000)	1 Miligram	=	0.001 Gram
Micro	-	0.000001 (1/1,000,000)	1 Microgram	=	0.000001 Gram

METRIC SYSTEM CONVERSION FACTORS

1 pound	=	454 grams
1 ounce	=	28 grams
1 gallon	=	3.785 litres
1 quart	=	0.946 litre
1 inch	=	25.4 milimeter
1 foot	=	0.305 meters
1 mile	=	1.609 kilometers

POPULATION EQUIVALENT

$$\text{Population Equivalent} = \frac{\text{Average BOD (mg/l)} \times \text{Average Flow (MGD)} \times 8.34}{.17 \text{ lbs/person/day}}$$

Average BOD will consist of a minimum of four (6 hour composite) samples taken at least 5 days apart.

Average flow will be the average of at least 20 days within a 30-day period.

Example: If your average BOD is 200 mg/l and your average flow is 1.0 MGD

$$\text{Pop. Eq.} = \frac{200 \times 1.0 \times 8.34}{.17} = 9{,}812 \text{ people}$$

TABLE 2

FREQUENCY OF ANALYSIS

FREQUENCY	DESCRIPTION	FREQUENCY	DESCRIPTION
N/A	NOT APPLIC	01/5Y	ONCE/5 YEARS
N/R	NOT REPORTD	01/60	ONCE/2 MONTHS
N/V	NOT VALID	01/7M	ONCE/7 MONTHS
CL/OC	CHLRNTN/OCCURS	01/90	QUARTERLY
DL/DS	DLY WHNDISCHRG	01/99	INSTNT
REPRT	REPORT	02/BA	TWICE/BATCH
WH/DS	WHEN DISCHRG	02/DS	TWICE/DISCH
WH/MN	MEASRD WHN MON	02/DW	TWICE/DSCHWK
01/BA	ONCE/BATCH	02/SH	TWICE/SHIFT
01/DD	ONCE/DSCHDY	02/YR	SEMI-ANNUAL
01/DM	ONCE/DSCHMN	02/01	TWICE/DAY
01/DQ	ONCE/DSCHQTR	02/07	TWICE/WEEK
01/DS	ONCE/DISCHG	02/12	TWICE/12 DAYS
01/DW	ONCE/DSCHWK	02/30	TWICE/MONTH
01/RN	ONCE/RN EVNT	02/90	TWICE/QTRLY
01/SH	ONCE/SHIFT	02/99	SEE PERMIT
01/SN	ONCE/SEASON	03/BA	THREE/BATCH
01/YR	ANNUAL	03/DS	THREE/DISCHG
01/01	DAILY	03/DW	3 DAYS/WEEK
01/02	ONCE/2 DAYS	03/YR	THREE/YEAR
01/03	ONCE/3 DAYS	03/01	THREE/DAY
01/04	ONCE/4 DAYS	03/05	THREE/5 DAYS
01/05	ONCE/5 DAYS	03/07	THREE/WEEK
01/06	ONCE/6 DAYS	03/08	THREE/8 DAYS
01/07	WEEKLY	03/30	THREE/MONTH
01/08	ONCE/8 DAYS	03/5Y	THREE/5 YEARS
01/09	ONCE/9 DAYS	03/99	SEE PERMIT
01/10	ONCE/10 DAYS	04/BA	FOUR/BATCH
01/11	ONCE/11 DAYS	04/01	FOUR/DAY
01/12	ONCE/12 DAYS	04/07	FOUR/WEEK
01/13	ONCE/13 DAYS	04/30	FOUR/MONTH
01/14	ONCE/2 WEEKS	04/99	SEE PERMIT
01/21	ONCE/3 WEEKS	05/BA	FIVE/BATCH
01/28	ONCE/4 WEEKS	05/DW	5 DAYS/WEEK
01/30	ONCE/MONTH	05/WK	5 TIMES/WEEK
01/4M	ONCE/4 MONTHS	05/01	5 TIMES/DAY
01/5M	ONCE/5 MONTHS	05/07	WEEK-DAYS

FREQUENCY	DESCRIPTION	FREQUENCY	DESCRIPTION
05/08	FIVE/8 DAYS	09/99	SEE PERMIT
05/30	5 TIMES/MONTH	10/30	TEN/MONTH
05/90	FIVE/QRTLY	10/99	SEE PERMIT
05/99	SEE PERMIT	12/01	TWELVE/DAY
06/SH	SIX/OPRSHIFT	12/30	12 PER MONTH
06/01	SIX/DAY	15/30	FIFTEEN/MONTH
6/07	SIX/WEEK	16/01	SIXTEEN/DAY
06/30	6 TIMES/MONTH	16/30	SIXTEEN/MONTH
06/99	SEE PERMIT	18/01	EIGHTEEN/DAY
07/30	7 TIMES/MONTH	18/30	EIGHTEEN/MONTH
07/99	SEE PERMIT	24/01	HOURLY
08/BA	EIGHT/BATCH	48/01	EVERY ½ HR
08/01	EIGHT/DAY	66/66	WPC PLAN
08/30	EIGHT/MONTH	77/77	CONTIN-GENT
08/99	SEE PERMIT	88/88	CLEANING
09/01	NINE/DAY	99/99	CONTINUOUS
09/30	NINE/MONTH		

TABLE 3

SAMPLE TYPES

SAMPLE	DESCRIPTION	SAMPLE	DESCRIPTION
CA	CALCTD	RD	RNG-DA
CN	CONTIN	RF	RCDFLO
CP	COMPOS	RG	RANG-C
CR	CK REQ	RP	REPRES
CS	CORSAM	RT	RCOTOT
CT	CERTIF	R4	RNG-4A
CU	CURVE	SR	SGLRDG
DA	DAILAV	SS	STAT-SH
DS	DISCRT	ST	STATIC
ES	ESTIMA	TI	TIMEMT
FI	FLOIND	TM	TOTALZ
GH	5GR24H	VI	VISUAL
GM	GRAB10	01	COMP-1
GR	GRAB	02	COMP-2
G2	GRAB-2	03	COMP-3
G3	GRAB-3	04	COMP-4
G4	GRAB-4	05	COMP-5
G5	GRAB-5	06	COMP-6
G6	GRAB-6	08	COMP-8
G7	GRAB-7	1H	AVG-1H
G8	GRAB-8	10	COMP10
G9	GRAB-9	12	COMP12
IM	IMERSN	16	COMP16
IN	INSTAN	2H	AVG-2H
IS	INSITU	20	COMP20
IT	IMRSTB	22	BATCH
MC	MATHCL	24	COMP24
MP	MATHCP	28	COMP28
MS	MEASRD	3G	3GR/HR
MT	METER	4C	4DA24C
NA	NOT AP	4H	AVG-4H
NR	NOTRPT	5G	5GR45M
OC	OCCURS	72	COMP72
PC	PMPCRV	96	COMP96
PL	PMPLOG	SB	SEQBAR
RC	RCORDR		

This document was produced by the following staff members of the Compliance Assurance and Enforcement Division, NPDES Compliance Monitoring Section, of the Environmental Protection Agency, Region 6:

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Compliance Assurance and Enforcement Division (6EN-W)
Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, TX 75202

APPENDIX I

FIELD FORMS

ESH-18 Operations Team
Chain-of-Custody Routing
Storm Water Runoff Samples

1. For storm water runoff grab samples, for each storm event collected (lot shipped or batch submitted) the following QC samples need to submitted:

   Matrix for radiochemistry analysis
   Matrix for organic analysis
   Field Blank*
   Trip Blank *
   Field Duplicate *

   → See Surface Water Sampling Field Sheet and QC Sample Descriptions*

2. For storm water runoff samples collected by ISCO sampler, NO QC samples can be collected.

3. Collect/retrieve samples, label bottles with location, bottle # and event #.

4. Assigned CoC record number to Surface Water Sampling Field Sheet. Located in FY01 Storm Water Runoff Sampling notebook.

5. Provide analytical laboratory with a copy of the sampling event information, CoC page 4 of the Surface Water Sampling Field Sheet, as soon as you return to the field. Provide a heads-up E-mail and fax a copy for the CoC to:

   E-mail:
   Edith Kent (emk@mail.gel.com) and David Setzer (djs@mail.gel.com)
   Copy: Billy Turney (turney@lanl.gov), Mike Alexander (mikea@lanl.gov), and Penny Gomez (pgomez@lanl.gov) on E-mail

   Fax:
   Edith Kent and David Setzer
   GEL
   Fax: 8-1-843-766-1178
   Phone: 8-1-843-856-8171

   Provide a copy of fax to Penny MS K497.

6. Determine the priority of analysis using available sample volume and the past listing of parameters requested. Indicate requested parameters by numbering the CoC and mark the column on the Sample Status Form. This information is located in FY01 Storm Water Runoff Sampling notebook.

7. Notify ER-SMO, Joylene Valdez, 665-9967 of a pending delivery of storm event samples to ER-SMO for shipment. Samples must be delivered to ER-SMO by 3:00 for same day shipment.

8. Remember to batch samples to allow for QC analysis.

9. ER-SMO makes one-copy of the Surface Water Sampling Field Sheet CoCs and sends copies with samples to analytical laboratory. Ensure the ER-SMO, faxes a copy of the CoC to the analytical laboratory.

10. Immediately upon your return to TA-59, make three copies of the Surface Water Sampling Field Sheet CoC, put one copy in Penny's box and another in the box for the Group Office to Scan, both are on Penny Gomez's door. Provide one copy to Beth Gray. Original field notes go into the station files.

ESH-18 Operations Team
Chain-of-Custody Routing
Storm Water Runoff Samples

References:
QC Sample Descriptions (Penny Gomez to get from Mark Minteer)
Surface Water Sampling Field Sheet
Sample Status Form
FY01 Storm Water Runoff Sampling notebook.
Procedure for ESH-18 Sample Data Management (May 9, 2001)

This procedure is recommended and approved for use.

Signatures

Prepared by: _____ Mike Alexander, Team Leader ESH-18	Date: _____
Approved by: _____ Billy Turney, Sample Management Officer, ESH-18	Date: _____
Approved by: _____ Penny Gomez, ESH-18	Date: _____
Approved by: _____ Mike Alexander, ESH-18 Group Leader	Date: _____
Approved by: _____ Steven Rae, ESH-18 Group Leader	Date: _____

Los Alamos National Laboratory
Water Quality and Hydrology Group (ESH-18)
Surface Water Benchmark Sampling Field Sheet

Station Name:	**Mean Time:** **Date:**
Station Number:	**CoC Record No.:**
Sampled By: _____	**Sample Purpose:** Baseflow Surveillance Storm Water Outfall Permit Storm Water Permit Special Study Other: specify

Req	Parameter	Bottle	Preserv.	Coll
	Rad (tot)	P, 2-1 gallon	HNO_3 pH<2	
	Rad (tot) 3H	G, 1-250 ml amb	None	
	Rad (filter)	P, 2-1 gal	HNO_3 pH<2	
	Metals (tot)	P, 1-1 liter	HNO_3 pH<2	
	Metals (tot) Hg	G, 1-250 ml amb	HNO_3 pH<2	
	Metals (filter) Hg	G, 1-250 ml amb	HNO_3 pH<2	
	Metals (filter)	P, 1-1 liter	HNO_3 pH<2	
	Gen Inorg (tot)	P, 1-1 liter	Cool 4°C	
	Gen Inorg CN	P, 1-250 ml	NaOH pH>12	
	Gen Inorg (tot)	P, 1-1 liter	Cool 4°C, H_2SO_4	
	Gen Inorg (filter)	P, 1-1 liter	Cool 4°C	
	Perchlorate (tot)	P, 1-250 ml	None	
	PCB (tot)	G, 1-1 liter amb	Cool 4°C	
	SVOA (tot)	G, 1-1 liter amb	Cool 4°C	
	HE (tot)	G, 1-1 liter amb	Cool 4°C	
	Diox/Furans (tot)	G, 1-1 liter amb	Cool 4°C	
	VOA (tot)	G, 2-40 ml amb	Cool 4°C, HCl	
	Toxicity	P, 1-1 gallon	Cool 4°C	
	FLOOD			
	Grab (Inorg)	P, 7-1 gallon	Cool 4°C	
	Grab (organ)	G, 5-1 liter amb	Cool 4°C	
	Grab (organ)	G, 2-40 ml amb	Cool 4°C, HCl	
	OTHER	See Comments below		

QA Samples							
Req		DI	Lab	Site	Bottle	Preserv	Col
	Field Blank				As specified above		
	Trip Blank				G, 1-40ml amb	4°C HCl	
	Matrix, Org				G, 8-1 l amb	Cool 4°C	
	Matrix, Rad				P, 4-1 gal	Cool 4°C	
	Field Dupl.				As specified above		
	Equipment				As specified above		

Sampling Time		
	Start Time:	**GHT:**
Mean Time		
	End Time:	
	Duration:	

FIELD MEASUREMENTS	
Q. Inst.: cfs meas. rating Est.	**Gage Ht.:** ft.
Staff:	**HWM:**
Peak Discharge:	**Other:**
pH: S.U.	**Water Temp.:** C°

SAMPLING CONDITIONS (Circle all that apply)	
Location:	wading bank station gage: at above below bridge: upstr., down str., side bridge ft mile, boat, ice, other (specify):
Sampling Site:	pool riffle open channel braided backwater sampler type:
Bottom:	bedrock rock cobble gravel sand mud concrete other (specify):
Stage Conditions:	Not determined Stable: normal low high Falling Rising Peak Other (specify:)
Hydraulic Event:	Routine Sampling Regular Flow Snowmelt Flood Drought Spill Ice cover: thickness inches Other (specify:)
Stream Color(s):	brown clear green blue gray other:
Weather:	Clear Partly cloudy Cloudy Hot Warm Cold Snow Rain: Light Medium Heavy Over Calm Light Breeze Windy Very Gusty
Stream Mixing:	Excellent Good Fair Poor

Visual Observations	
Inspection Completed from sample within first half hour of flow:	Yes No
Reason if not within first half hour: _____. _____.	

Provide Description	
Odor:	Color:
Clarity:	Floating Solids
Settled Solids:	Suspended Solids:
Foam:	Oil Sheen:
Other indicators of possible storm water pollution: _____. _____. _____.	

Other Observations: _____

Los Alamos National Laboratory
Water Quality and Hydrology Group (ESH-18)
Surface Water Benchmark Sampling Field Sheet

pH Meter Calibration

Temperature	Lab Tested Thermometer used?	Yes	No	If No, explain in remarks
Thermometer Checked w/ASTM within ± 0.5°C?		Yes	No	Date:

Meter Make/Model:	Meter No.
Electrode No.:	Electrode Type:

pH Buffer	PH buffer Temp °C	Initial Reading	Standardized Reading	Remarks	Unfiltered sample ☐ Filtered sample ☐
___ . ___ ___					Auto temp compensated used: Yes No
___ . ___ ___					Temp correction applied to buffers: Yes No
___ . ___ ___					Stirrer Used? ☐ Yes ☐ No
___ . ___ ___					Magnetic or Manual

pH subsample from or pH measurement location :	Churn Sample bottle Single point at _____ station _____depth vertical avg. of _____ points

Sample Temp:	°C	**Field pH:**	; ; ;	**Use:**	

Specific Conductance Meter Calibration

Meter Make/Model:	Meter No.
Electrode No.:	

Standard Value	Standard Temp °C	Initial Reading	Adjusted Reading	Remarks	Correction Factor Applied? Yes No
					☐ Auto temp compensated meter
					☐ Manual temp compensated meter

SC subsample from or SC measurement location :	Churn Sample bottle Single point at _____ station _____depth vertical avg. of _____ points

Field Conductance:	; ; ;	**Use:**	

Turbidity Meter Calibration

Meter Make/Model:	Meter No.
Turbidity measurement location or Turbidity subsample from:	Churn Sample bottle Single point at _____ station _____depth vertical avg. of _____points
Calibration Date:	

Field Turbidity :	; ; ;	**Use:**	

Sample Preservative Information

Nitric Acid – 2 ml	Lot #		**Sulfuric Acid – 2 ml**	Lot #		**Hydrochloric Acid (VOA)**	
Nitric Acid – 5 ml	Lot #		**Sodium Hydroxide – 2 ml**	Lot #		Lot #	

Calibration Remarks: _____

Los Alamos National Laboratory
Water Quality and Hydrology Group (ESH-18)
Surface Water Benchmark Sampling Field Sheet

Sample Identification Labels and Bar Codes		

ADDITIONAL OBSERVATIONS AND FIELD NOTES/SKETCHES

Sampling event checked/reviewed by: Name and Initials		**Date:**

Los Alamos National Laboratory
Water Quality and Hydrology Group (ESH-18)
Surface Water Benchmark Sampling Field Sheet

Station Number:	Station Name:	CoC Record Number:

Bottle #	Date	Time	Comments (bottle type, volume, readings)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
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46			
47			

Composite and analyze samples using the priority indicated in Priority List Column.

Analytical Laboratory =

Priority Listing		Parameter	Order Code	Analytical Laboratory Initials
1	liter	**TSS, TSS (M), pH**		
	8	**Rad (total)**	67	
	.25	**Rad (total):** 3H	4	
	8	**Rad (filter)**	67	
	1	**Metals (total)**	79	
	.25	**Metals (total):** Hg	68	
	1	**Metals (filter)**	22	
	.25	**Metals (filter):** Hg	68	
	1	**Gen Inorg (total):** TSS, LOI, SG, Cond.	32	
	.25	**Gen Inorg (total):** CN	33	
	1	**Gen Inorg (total)** : COD, PO4, NH3-N, N02+N03-N, TKN	30	
	1	**Gen Inorg (filter):** TDS, Alk*, SO4, Cl, pH	34	
	1	**Perchlorate (total)**	39	
	1	**PCB (total)**	49	
	1	**SVOA (total)**	44	
	1	**HE (total)**	57	
	1	**Diox/Furans (total)**	66	
22.25 liters plastic, **4.75 liters glass**				
		When Provided		
		VOA (total)	54	
		Toxicity (EPA)		

Relinquished By: Signature	Date	Time	Received By Signature	Date	Time

APPENDIX J

ESH-18 HAZARD CONTROL PLANS

GENERAL FIELD WORK

Purpose

This Water Quality and Hydrology Group Procedure describes safety and emergency procedures for field work.

Scope

This procedure applies to all ESH-18 staff and contract personnel who conduct field work.

In this procedure

This procedure addresses the following major topics:

Topic	See Page
General Information	3
Who Requires Training to This Procedure?	3
Background	6
Before Leaving for the Field	7
Facility Management-specific Activities	9
In the Field	1
Injury in the Field	13
Lost Person or Person Who Has Not Checked In or Returned	14
Electrical & Mechanical Hazards	15
General Field Hazards	16
Lightning Hazards	20
Poisonous Snakes and Spiders	21
Ticks	22
Large Predators	23
Prevention of Plague and Hantavirus Infections	24

Hazard Control Plan

The hazard evaluation associated with this work is documented in Attachment 1: Initial risk = **medium**. Residual risk = **low**. Work permits required: none.

First authorization review date is one year from group leader signature below; subsequent authorizations are on file in group office.

CONTROLLED DOCUMENT
This copy is uncontrolled if no signatures are present or if the copy number stamp is black. Users are responsible for ensuring they work to the latest approved revision.

GENERAL FIELD WORK

Signatures

Prepared by: _____ M. Alexander, ESH-18	Date: _____
Approved by: _____ M. Alexander, Team Leader	Date: _____
Approved by: _____ S. Rae, Safety Committee Chair	Date: _____
Approved by: _____ S. Rae, ESH-18 Group Leader	Date: _____

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General information about this procedure

Attachments

This procedure has the following attachments:

Number	Attachment Title	No. of pages
1	Hazard Control Plan	3
2	Field Work Checklist	1
3	EM&R Flood-related Requirements	#

History of revisions

This table lists the revision history and effective dates of this procedure.

Revision	Date	Description Of Changes
1	1989	New document.
2	1991	Process updated and revised.
3	4/29/94	Revised into new format; incorporated four-wheel-drive vehicle procedure and field hazards
4	2/96	Revised from Group ESH-8 for ESH-17; deleted sections on four-wheel-drive and destination log; shortened section on snakes and lightning.
5	2/96	Modified for ESH-18 use.
6	5/01	Revision of document to include HCP as attachment, addressed new requirements in LIRs.

Who requires training to this procedure?

The following personnel require training before implementing this procedure:

- All group personnel who perform field work.

Training method

The training method for this procedure is "**self-study**" (**reading**) and is documented in accordance with the procedure for training (ESH-18-HCP-xxx.0).

General information, continued

Prerequisites

The following training is required prior to performing this procedure, and training must be current:

- Hazard communications (ESH-13 course)
- First Aid
- CPR
- Electric Safety Basics (TBD)

The following training is required before entering a known contaminated soil area (PRS, SWMU, and/or radiologically controlled area):

- Radiological Worker II
- 24 hr. Hazwoper training

Reference: LIR 402-100-02, *Hazardous Waste Operations and Emergency Response Training Requirements*
LIG 402-718-01, *Radiological Training*
LIR 402-700-01, Chapter 8, *Occupational Radiation Protection Requirements*

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The following training is suggested:

- Back Care or Back Wise
- Defensive Driving
- Ladder Safety

The following training is required if an ESH-5 evaluation deems training necessary:

- Thermal Stresses (ESH-13 course)
- Hearing Conservation (ESH-13 course)

All field crew must be competent and confident in field activities and in good physical condition and fit for duty in accordance with ESH-2 requirements.

General information, continued

Definitions specific to this procedure

Buddy System: (LIR402-1310-01) A system requiring work to be conducted in teams of two or more persons.

Effective isolation: (LIR402-1310-01) A work location that is not within constant audio or visual range of other workers and/or is not normally occupied and is infrequently checked or visited by working personnel. **Guidance Note: A person in this situation may not be able to summon help and/or may not be discovered by other personnel for an extended period of time.**

Field work: (LIR402-1310-01) Performance of Laboratory related activities in areas that are removed or isolated from an established populated base of operations (that is, where emergency support and medical assistance are not readily available).

Working Alone: (LIR402-1310-01) The performance of Laboratory-related activities at times or in locations where other personnel are not present or the worker is effectively isolated from timely discovery and assistance.

References

The following documents are referenced in this procedure:

- LIR201-00-04, *LANL Incident Reporting Process*
- LIR402-150-01, *Working Alone*
- LIR402-600-01, *Electrical Safety*
- LIR402-820-01, *Noise and Temperature Stresses*
- LIR402-860-02, *Locking and Tagging Equipment, Machinery, and Systems*
- LIR402-880-01, *Excavation/Soil Disturbance Permit Process*
- LIR402-1310-01, *Field Work Safety*
- LIR402-1320-01, *Vehicular and Pedestrian Safety*
- ESH-18-HCP-004, *Radio and Cellular Phone Use*

Note

Actions specified within this procedure, unless preceded with "should" or "may," are to be considered mandatory guidance (i.e., "shall").

Background

Introduction

Group members in the Water Quality and Hydrology Group perform a variety of field tasks. Field work includes, but is not limited to, the collection of samples or data from remote outfalls, wells, samplers, streams, and lakes; routine station operation and maintenance; erosion control and best management practices; site inspections; permitting; spill response; and fuel mitigation. Work is performed both on and off LANL property.

ESH-18 calls on support groups several times a year for assistance with field work. This assistance varies with the specific field work, and many include radiation monitoring, scheduling, access, and escorts.

Safety concerns (continued on next page)

Safety concerns fall into two categories: use of equipment and supplies in the field the field environment.

Equipment-related concerns are primarily linked to powered equipment such as portable generators, pumps, winches, saws, and other equipment capable of inflicting severe injury. Working alone is not allowed when using such equipment. Hand tools are also of concern where cuts, abrasions, and/or bruises may result from careless use. Injury can occur in the use of acids and other chemicals in the preservation of samples.

Electrical equipment, if not properly used, can result in safety hazards. Field personnel should complete all required training and follow all operation and maintenance manuals when using electrical equipment.

Exposure of personnel to environmental hazards is a primary concern. Weather conditions can fluctuate greatly in very short time frames and can include rain, thunderstorms, dry lightning, and snow. Field personnel need to be aware of conditions that can cause hypothermia, heat exhaustion, or heat stroke. The collection of samples in rugged terrain also introduces the hazard of slips, trips, and falls. Field personnel must always be aware of their surroundings and try to avoid contact with wild animals, insects, and poisonous plants. In addition, following the Cerro Grande fire all field personnel must be aware of the potential for falling trees, rolling rocks, stump holes, and flooding. Reference ESH-18-HCP-018, *Access to Burned Areas.*

Distractions in the field while working with equipment and conducting sampling activities can result in safety hazards. Either remove, or ask to have removed, the distraction.

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Background, continued

Safety concerns (continued)

Field personnel must be cautious while working in a construction site. Be alert for indications of construction site hazards. Notify the site representative of your presence in the area, request permission to work, and obey all site postings.

Radiation hazard communication

Personnel shall:

- Notify the supervisor and/or facility manager of newly identified hazards.
- Complete all assigned training.
- Comply with all work control documents.

Other relevant procedures

Personnel must be aware that field activities at sites managed by other groups may be governed by procedures under the purview of those groups and/or facility managers. ESH-18 personnel must also follow those procedures. For specific ESH-18 activities, review the corresponding procedure(s).

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Before leaving the field

Emergency notification list

In case of an emergency requiring immediate assistance notify people in the following order:

- EM & R (phone 667-6211 or by radio)
- Team Leader
- Group Leader

Required training

Remember: no work may be performed without authorization by your supervisor. This procedure covers the general ESH-18 requirements for going into the field, and does not cover the specific field work to be done. Work authorization occurs via either:

- An HCP that you have read and signed
- A procedure to which you have been properly trained

Contractor/ visitor field work

Any field work conducted for ESH-18 by non-ESH-18 personnel, including tours, inspections, and special studies, are required to either:

- Complete all applicable training requirements required by LANL, ESH-18, and individual facilities if unescorted.
- Be escorted by trained ESH-18 personnel and any required operational or site-specific escorts.

ESH-5 safety personnel or BUS personnel may be consulted to review the safety plans of non-LANL personnel to ensure compliance with the training requirements of ESH-18.

Pager, phone, and radio

All personnel conducting field work are required to carry a pager with the RAIN frequency, a cell phone, and radio backup. Ensure that point of contact and the group office have the correct pager and phone numbers. Reference ESH-18-HCP-004, *Radio and Cellular Phone Use*, for additional guidance.

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Before leaving for the field, continued

Working alone policy

ESH-18 follows the 'two person rule' for all areas that are in "effective isolation" when performing any field work. See LIR402-150-01, *Working Alone*, for other specific requirements about working alone.

Two people are required for field work during inclement weather conditions or due to any other conditions that may pose increased risk of incident as determined by the team leader.

It is acceptable for one person to perform the listed field work below, provided that the enhanced radio communication protocol is followed (reference ESH-18-HCP-004, *Radio and Cellular Phone Use*.

- NPDES Outfall Sampling for certain outfalls
  - EPA03A158, TA21-209
  - EPASSS13S, TA46
- Data retrieval from certain gaging stations as specified in ESH-18-HCP-009, *Operation of Stream Gaging Stations and Collection of Storm Water Runoff Samples*. (Mike A – please provide the list to be added to HCP-009)

Equipment

Determine the equipment needed by reading the appropriate procedure or HCP. Collect all required support tools, supplies, and equipment for that equipment. Review owners' manual and equipment operation guides as necessary. If you are not sure about the proper operation of a piece of equipment, ask for a demonstration from a knowledgeable person on its use prior to taking it into the field. If unsure about proper equipment operation, do not conduct the activity.

Dosimetry

Wear external dosimetry if required. Know radiation dose limits and individual current radiation dose. Reference LIR 402-700-01, Chapter 5, *Occupational Radiation Protection Requirements* for further guidance is dosimetry program participation.

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Facility Management-specific Activities

FMU-specific areas

Before performing field work in any Laboratory area, contact the Facility Management ES&H representative for that facility to determine site-specific requirements. Areas that are radiologically posted or areas that are controlled for radiological or high explosives purposes may require escorts. Information related to access requirements and limitations are required on personnel at all times while within the FMU.

The following are a few of the requirements needed for work on site-specific activities.

Contaminated areas

Request an RCT for the following work (at least 24 hours prior notification to ESH-1 General Monitoring Pool at 665-4926):

- All general field work in the Mortandad Canyon water course below the TA-50.
- Outfall in or around the sediment traps or other known contaminated areas.
- Personnel and vehicle screening after field work in a water course.

While performing sampling operations in contaminated areas:

- Observe the Laboratory's ALARA (as low as reasonable achievable) policy by sampling as quickly and as safely as possible, staying as far away from the radiation source as possible.
- Don appropriate PPE as directed by the RCT, as specified on entry posting, or as required in facility-specific HCPs, radiation work plans, or other work control documents.

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Working in a facility

Under the Lab's Facility Management Model, work control is the responsibility of the Facility Manager. Obtain approval from facility management before beginning work within an FMU. Follow all facility sign-in procedures. Ensure you have completed all facility-specific training requirements, and, if required, develop a Hazard Control Plan or other FMU-specified document for work within the facility.

Facility Management-specific activities, continued

Protection Technology of Los Alamos (PTLA) notification

All general field work occurring within 100 ft. of a Protected Area (PA) security fence requires prior notification to Protection Technology of Los Alamos (PTLA) at 667-4437. Failure to do so COULD result in a security infraction. There is no time requirement as long as notice is given in advance of the start of the project.

The three PA's at the Laboratory requiring notification are:

- TA-3, CMR Building Security Fence
- TA-18, Pajarito Laboratory Security Fence
- TA-55, Plutonium Facility Security Fence
- TA-64, Central Guard Facility

There are NO written procedures for work near security fences, just verbal notification requirements.

Work in construction areas

When performing field work in construction areas, ESH-18 personnel must:

- Obey all site postings for PPE requirements. Wear hard hat, safety glasses, and safety shoes as minimum PPE.
- Notify the LANL site representative and construction contractor foreman of your presence in the area and request permission to work. Do not work in the area without permission. Ask if there are any site hazards that you should avoid. Notify LANL site representative and construction contractor foreman when you leave the site.
- Be alert for warning signs and indications of typical construction site hazards such as moving equipment, vehicular traffic, rotating machinery, tripping and falling hazards, open ditches and holes, noise (wear ear protection), dust (avoid or wear appropriate dust mask), and flying debris.
- Review and acknowledge understanding of construction-relevant HCPs.

Excavation permit requirements

When installing wells, field markers, stakes or posts, or when driving anything below the surface of the ground, obtain an Excavation Permit in accordance with LIR 402-880-01, *Excavation/Soil Disturbance Permit Process*.

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In the field

Field day

In general, the field day should begin no earlier than 7:30 a.m. and should run no later than 4:30 p.m. When exceptions to these times are necessary, notify your supervisor and arrange to notify the point-of-contact of your return.

Logging out

Prior to departure, inform your team leader, supervisor, or co-worker (point-of-contact) of your destination and estimated time of return. Each time an ESH-18 group member leaves the office for field work, he/she must establish a point-of-contact and sign out with destination on the appropriate in/out team board. This requirement applies without regard for the number of people in the field work team.

Leaving the county

When leaving Los Alamos County for field work, you are considered to be on travel. Arrange for periodic check in via cell phone or radio to a responsible individual in the group who will be at work past your planned return time. Reference ESH-18-HCP-004, *Radio and Cellular Phone Use*, Enhanced Communication chapter.

Reference the Working Alone Policy in the Before Leaving for the Field chapter of this document.

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Logging in

After returning, notify your point-of-contact that you have returned to the office and sign in on the appropriate sign in/out board. **WARNING**: Failure to notify your contact could result in an unnecessary search.

Late return

If the field work exceeds 4:30 p.m. or the time expected by more than one hour, notify the point of contact.

If a member of the group or team cannot be reached, notify the group office or your supervisor.

Unexpected conditions

If unexpected potentially hazardous conditions are encountered, stop work until the potential hazard has been mitigated.

In the field, continued

Don't do work you consider unsafe

DO NOT perform work under conditions you consider unsafe. Before beginning any work, review safety needs and requirements, identify hazards, and develop hazard mitigation measures. Be aware that facility configurations and hazards may change between visits.

Suspected radiation contamination

If radiation contamination is suspected, perform the following steps:

Step	Action
1	Remain in the immediate area.
2	Notify an RCT and facility manager, if applicable.
3	Follow all RCT instructions.
4	Minimize cross-contamination

For further guidance, reference LIR 402-700-01, Chapter 2, Occupational Radiation Protection Requirements.

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Injury in the field

In case of an injury

In case of minor injury to yourself or a co-worker while in the field, perform the following steps:

Step	Action
1	Safety First. Make sure the area is safe.
2	Notify EM&R (667-6211), Group Leader, Team Leader, and your Facility Manager contact as appropriate.
3	Administer first aid if trained and equipped.
4	If injuries allow safe transport, aid in transport of injured person to nearest hospital or Occupational Medicine Group (ESH-2) medical station.

To reach emergency facilities directly, use the following phone numbers:

Emergency Facility	Phone Number
Laboratory EM&R	667-6211
Los Alamos Fire Department/Central Alarm Station	667-7080
Los Alamos Police Department	662-8222

NOTE: When dialing 911 on a cellular phone, remember that the call **will not** reach the Los Alamos Police Department or Los Alamos Fire Department dispatch. Have the 911 dispatch relay necessary information to any of the above facilities.

Medical examination of Laboratory or contract employees by the Occupational Medicine Group is mandatory for work-related injuries.

Notify the Group Office in a timely manner.

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Lost person or person who has not checked in or returned

Late or lost employee

If a field team member is more than an hour late and can not be contacted, or when an employee has not checked in by 4:30 p.m. and can not be contacted, the **point-of-contact** notifies the employee's team leader.

The **point-of-contact** or **team leader** attempts to contact the field worker by pager, radio, or cellular phone. If unsuccessful:

- Verify that the field worker is not at home.
- Verify, insofar as possible, the known circumstances and conditions of the employee's absence.
- Notify EM&R at 667-6211
- Conduct a search of the destination, in coordination with EM&R, by at least two people.

DRAFT

Electrical and mechanical hazards

Electrical equipment and mechanical safety

For all ESH-18 personnel using electrical equipment (over 50 volt nominal) or mechanical energy sources outside the office:

- Review LIR 402-600-01, *Electrical Safety* and the HCP for this procedure (Attachment 1).
- Completion of "Electrical Safety Basics" training course is required.
- Read, understand, and follow the equipment manufacturer's operation and maintenance manual prior to using the equipment.
- Manuals for all equipment must be on hand.

Lock out/ tag out

Team leaders in charge of electrical equipment (over 50 volt nominal) or mechanical energy sources outside the office shall lock all equipment, which is not currently authorized for use such as: (Mike A to confirm this list with Max)

- the down hole video camera winch and trailer
- the large trailer mounted generator
- the large compressor
- the drill rig
- neutron probe
- cement mixer
- welding and acetylene torch (burn permit and fire watch required.)

DRAFT

Orange tags and orange locks shall be used to tag and lock equipment. Perform the following steps for lock out/tag out procedure:

Step	Action
1	Identify and evaluate all energy sources on or near the equipment.
2	Complete the information on the orange tag.
3	Follow normal shutdown/ stopping procedures for the equipment.
4	Isolate the equipment as required.
5	Use Laboratory-approved orange lock and orange tag to lock and tag equipment.
6	Relieve stored hazardous energy.
7	Verify integrity of the mechanical isolation and de-energization of equipment. Use normal operating controls when starting equipment. Return all operating controls to the neutral or off position.

Contact the responsible line managers for removal of lock and tag. The Team Leader should request an electrical safety review by ESH-5 for any items of equipment or procedures which he feels may need expert review. Contact ESH-18 Electrical Safety Officer.

General field hazards

Field dress and awareness

Be aware of your surroundings, the terrain, and where you are walking. Wear appropriate field dress.

- Long pants
- Sturdy field boots
  NOTE: To minimize risk of carrying contamination home, it is recommended that field boots remain at the work place.
- Long or short sleeve shirt, as appropriate
- Eye protection as needed by type of work

Other specific personal protective clothing may be required depending on the operation and specified in the sampling specific HCP.

Heat and cold

If an employee is routinely working in hot weather, contact an ESH-5 representative to perform an evaluation. The employee may need to be acclimated to the heat if the employee is new to working long durations in hot weather.

To avoid dehydration in the summer, drink at least one quart of fluid every two hours during periods of exertion in a hot environment. Be aware of the dangers of heat exhaustion. If heat exhaustion is allowed to progress, the individual may develop heat stroke.

Heat	Symptoms	To alleviate symptoms
Dehydration	• Headache • Fatigue	• Drink fluids
Heat Exhaustion	• Dizziness • Nausea • Headache • Fast resting pulse (>100/min) • Pale and cool skin	• Rest in cool place • Drink fluids

DRAFT

General field hazards, continued

Heat and cold (continued)

If an employee is routinely working outdoors in temperatures lower than 39.2°F (4°C), contact an ESH-5 representative to perform an evaluation of exposure.

Cold	Symptoms	To alleviate symptoms
Exposure	• Shivering • Excessive fatigue	• Return to warm location • Drink warm fluids
Frostbite	• Numbness or prickly feeling in extremities	• Return to warm location • Remove clothing from affected parts • Soak affected areas in warm water • Call ESH-2, Occupational Medicine, for evaluation • Call 911, if necessary
Hypothermia	• Intense shivering • Slurred speech • Confusion • Loss of coordination • Slow movements	• Get employee to warm and dry location • Call 911 immediately

DRAFT

In the winter, wear insulated, dry clothing, warm boots, and gloves to avoid getting chilled when doing your work. Have sufficient supplies to allow you to wait for rescue, if necessary, in the cold in an inoperable vehicle. If air temperature is at or below 39.2°F(4°C), and an employee is not adequately dressed to prevent hypothermia or frostbite, work shall be modified or suspended until adequate clothing is used or until weather conditions improve.

Refer to LIR402-820-01, *Noise and Temperature Stresses*. For additional information, access the ESH-13 training videos.

General field hazards, continued

Noise

Hearing protection device shall be made available to employees meeting one of the following conditions.

- Employees who have not received baseline audiometric exam for a period exceeding six month from the time they are first exposed to noise at or above the action level (50% of the occupational exposure limit as determined by ESH-5 evaluation.
- Employees who have incurred a standard threshold shift.
- Employees exposed above the occupational exposure limit.

Refer to LIR402-820-01, *Noise and Temperature Stresses*.

Falls from cliff edges

Lab policy requires fall protection when work must be performed within six feet of a drop of more than six feet. If doing field work near cliff edges, prevent injuries and mishaps by using the following prudent fall protection measures.

- Maintain a safe distance from the edge of flat or low slopes (six feet).
- Use co-workers as safety monitors.
- Use fall protection equipment (safety harness, lanyard) on steep slopes as specified in the activity specific HCP.

Rock slides

Rock slides can present a hazard to field workers and will be more prevalent in burned areas. Do not work in areas with the known potential for rock slides. When ascending or descending a slope, do not follow directly behind one another but spread across the slope or leave adequate space between coworkers to eliminate the risk of injury from dislodged rocks.

DRAFT

General field hazards, continued

Hand, electrical, and mechanical tools

Always use the correct tool for the job. While performing any operation that presents a hazard from flying particles, wear safety glasses with side shields or goggles. Examples of activities where there is a potential for eye injury include hammering, drilling, or using saws of any sort.

When using wrenches plan for the possibility that the wrench will slip or the bolt will break loose. Think about what your hand might hit if the wrench slips and place your hands or the tool such that a slip will not result in an injury.

When using screwdrivers, anticipate the screwdriver slipping off the screw. Do not place hands or both body parts in the path of the screwdriver if it should slip.

Match the extension cord to the tool. Use only grounded (3 prong) extension cords with tools having grounded plug. Two or three prong cords may be used for tools with two prongs. Do not use tools that are damaged or that have frayed or damaged cords. Always make sure that tools or equipment being used is properly protected with Ground Fault Circuit Interrupter (GFCI) when working outdoors.

DRAFT

Ladders

Ladders shall be used to gain access and not routinely used to perform work. When using a portable or fixed ladder for inspections, investigations, evaluations, or sampling, a fall from, or collapse of, the ladder is a potential hazard. Take the following precautions when using ladders:

- Use ladders that meet or exceed OSHA requirements
- Inspect ladder for defects.
- Place extension ladders such that feet are placed out a distance equal to one quarter that of the height to the top support point.
- Extend the ladder at least 36 inches above the surface being accessed.
- Use three-point control while climbing
- Wear a hard hat when overhead hazards are present.

Lightning hazards

Precautions

When in the field and a storm is approaching, time the interval between lightning and the thunder by counting the seconds. To obtain the distance in miles, divide by five; to obtain the distance in kilometers, divide by three.

Shut down operations when there is a 15-second delay between the time lightning is seen and the time it is heard; discontinue operations when there is a 10-second delay.

When lightning strikes are occurring in the vicinity:

- Suspend all work
- Seek shelter in on of the following locations, given in order of preference:
    - Steel-framed building
    - Enclosed vehicle with a steel roof
    - Low ground away from solitary trees and below and away from promontories
- Individuals should spread out to reduce the possibility of multiple casualties from a single lightning strike.
- Place any metal objects away from your position.
- On open ground, adopt a crouched position with hands off the ground and feet close together on some dry insulation such as sleeping pad, rope, or pack (not metal-framed).
- Stay away from streams and fences.

DRAFT

Poisonous snakes and spiders

Avoiding snakebites

Snakebites usually occur to the hands and feet. Wear field boots and avoid placing hands where you cannot see.

Treatment of snakebites

Report all bites to ESH-2, Occupational Medicine, and take the following action:

Steps	Action
1	Keep the victim from moving around (reduce the circulation of blood through the bite area and victim's body)
2	Keep the victim as calm as possible and preferably in a lying position.
3	Immobilize the bitten extremity and keep it at or below heart level.
4	Apply ice or cold pack
5	Transport the victim to a hospital as soon as safely possible (preferably within two hours).
6	Report all bites to ESH-2 (Occupational Medicine group).

DRAFT

Spider bites

The bites of some spiders, such as the black widow and the brown recluse, are particularly dangerous because they affect your whole body. Bites from both of these spiders can cause fever, nausea and pain in addition to the skin reactions at the site of the bite.

Look for spider webs and other signs of spider activity before reaching into dark corners.

Treatment of spider bites

Report all bites to ESH-2, Occupational Medicine, and take the following action.

Steps	Action
1	Immobilize the bitten arm or leg to limit movement.
2	Apply a cloth dampened with cold water or lined with ice to the bite.
3	Keep the arm or leg dangling down.
4	Seek emergency medical assistance.
5	Give the health care provider as accurate a description of the spider as possible.

DRAFT

Ticks

Avoiding exposure

Use insect repellent, wear long pants and long sleeve shirt. Wear brightly colored clothing so ticks can be seen and removed. Thoroughly check for ticks upon returning from the field.

If a tick is found embedded, gently, try to remove it with the use of tweezers or by applying alcohol. Seek medical attention if the tick is not readily extracted.

Symptoms of Rocky Mountain Spotted Tick Fever

If the following symptoms of tick fever appear, seek medical attention:

Fever, bone and muscle pain, headache, or rash.

DRAFT

Large predators

Large predators in New Mexico

Large predators, including mountain lions, black bear, bobcats, and coyotes, are found throughout most of New Mexico.

What to do if you meet a large predator

There are no definite rules about what to do if you meet a large predator. In most cases, the animal will detect you first and will leave the area. Attacks are rare compared to the number of encounters. However, if you do run into one before it has had time to leave an area, here are some suggestions. Remember that every situation is different with respect to the animal, the terrain, the people, and their activity.

- STAY CALM. If you see a predator that hasn't seen you, calmly leave the area. As you move away, talk aloud to let the animal discover your presence.
- STOP. Back away slowly while facing the predator if you can do so safely, while avoiding direct eye contact. Don't run as this might stimulate its instinct to chase and attack. Give it plenty of room to escape.
- DO ALL YOU CAN TO APPEAR LARGER. Raise your arms and open your jacket if you are wearing one. If you have small children with you, protect them by picking them up so they don't panic and run.
- NEVER APPROACH. Wild animals are unpredictable; however, they will usually avoid a confrontation unless pushed into one.
- WATCH FOR YOUNG. Coming between a female and her young can be dangerous. If a young animal is nearby, try to move away from it, being alert for others that might be around.
- CONVINCE IT YOU'RE NOT PREY. If the animal approaches closer or behaves aggressively, arm yourself with a large stick, throw rocks or sticks at it, speak louder and more firmly to it. Convince the predator that you are dominant and a danger to it.
- FIGHT BACK. If the predator does attack, fight back. Use any possible objects (rocks, sticks, backpacks, caps, jackets and even your bare hands) as a weapon.

DRAFT

Prevention of plague and hantavirus infection

Overview

Plague is a wild rodent disease. A complex rodent/flea cycle enables the plague bacteria to exist in certain resistant species of rodents, only to erupt periodically in other susceptible species. Field mice serve as reservoirs for the disease and are relatively resistant to its effects. Plague-infected fleas spread the bacteria to less-resistant species such as rock squirrels, chipmunks, and prairie dogs. These animals usually die from the disease in a few days and thus release their own plague-infected fleas to seek new hosts.

Hantavirus can cause a potentially fatal respiratory disease. The virus is carried in the blood urine, saliva, and feces of rodents, particularly deer mice. The greatest risk of exposure is from breathing an aerosol containing the virus.

Avoiding exposure

When in the field, leave sick or dead animals and their feces alone. Avoid animal burrows, rock outcrops, and rock walls where infected rodent fleas may be hiding.

Repellent may be used on the legs to reduce the chance of being bitten by fleas.

Prevent exposure to hantavirus by observing the following precautions:

- Avoid areas where rodents frequent, especially nests.
- Do not disturb such areas by brushing, sweeping, or vacuuming.
- Wear rubber gloves when handling any rodent materials.
- Wash reusable gloves with disinfectant and then with soap and water.
- Disinfect any utensils that were used.

Employees are strongly encouraged to avoid contact with rodents and rodent materials. Employees should call their building manager for proper disinfection, clean-up, and rodent-proofing of infested areas.

DRAFT

Prevention of plague and hantavirus infection, continued

Symptoms of plague

If the following symptoms of plague appear, seek medical attention:

- A high fever, general malaise, vomiting, diarrhea, and sometimes a headache.
- Muscles in the arm, legs, or back may become sore.
- A swollen lymph gland, or bubo, may or may not appear nearest the site of infection after a couple of days.

Seek medical attention as soon as these symptoms are observed. Do not delay in seeking medical attention.

Symptoms of hantavirus

If the following symptoms of hantavirus infection appear and you think you were exposed to hantavirus, seek medical attention right away:

- Cold-like symptoms that are accompanied by a high fever, respiratory difficulties.

DRAFT

HAZARD CONTROL PLAN

Scope

The work to be performed is described in the procedure ESH-18-HCP-002, *General Field Work.*

Potential hazards

A. Unique facility hazards: Various facilities within the Laboratory can contain unique hazards not readily identifiable except by the controlling entities of that facility.
B. Construction site hazards: Injury from moving equipment, falling debris, trips and falls.
C. Electrical hazards: Burns and injuries can result from improper use of electrical equipment.
D. Falls from cliff edges: Falls can result in severe injuries.
E. Cold and heat: Exposure to temperature extremes can cause frostbite, hypothermia, hyperthermia, heat stroke, or dehydration.
F. Inclement weather, lightning: Rain, hail, wind, lightning, snow.
G. Walking and tripping hazards: Uneven terrain and field obstacles create hazards.
H. Animals may act differently after the fire: The habits of large and small animals will be disrupted, their food sources drastically changed, and they will be found in new and maybe unexpected places.
I. Insects: Poisonous bites and disease may result from contact with insects.
J. Flooding: Reduced water retention in watershed areas creates potential for flash floods.
K. Injuries from hand tools: Cuts, bruised, pinches, scrapes.
L. Working alone hazards: Inability to receive immediate medical attention.
M. Vehicle operation: Off-road hazards such as rough roads, soft ground, obstacles.
N. Radiation hazard: Contamination from known or suspected sources.

HAZARD CONTROL PLAN, continued

Initial risk level

For each hazard, the likelihood and severity, and the resulting initial risk level (before any work controls are applied, a determined according to LIR300-00-01, section7.2) are listed below.

A. Unique facility hazards: improbable/ catastrophic = medium
B. Construction site hazards: occasional / critical = medium
C. Electrical hazards: occasional / moderate = low
D. Falls from cliff edges: improbable / catastrophic = medium
E. Heat and cold: occasional / moderate = low
F. Inclement weather, lightning: improbable / catastrophic = medium
G. Walking and tripping hazards: occasional / moderate = low
H. Animals may act differently: occasional / critical = medium.
I. Insect bites: occasional / moderate = low
J. Floods: improbable / catastrophic = medium
K. Injuries from hand tools: occasional / moderate = low
L. Working alone: occasional / critical = medium
M. Vehicle operation: occasional / critical = medium
N. Radiation hazard: occasional / moderate = low

Overall *initial* risk: ☐ Minimal ☐ Low ☒ Medium ☐ High

Operational requirements

List applicable Laboratory, facility, or activity operation requirements directly related to the work:

☐None ☒List: Work Permits required? ☐No ☒List:

- LIR402-150-01, *Working Alone*
- LIR402-600-01, *Electrical Safety*
- LIR402-820-01, *Noise and Temperature Stresses*
- LIR402-1310-01, *Field Work Safety*
- LIR402-1320-01, *Vehicular and Pedestrian Safety*
- LIR402-860-02, *Locking and Tagging Equipment, Machinery, and Systems*
- LIR402-880-01, *Excavation/Soil Disturbance Permit Process*
- LIR201-00-04, *LANL Incident Reporting Process*
- LIR402-700-01, *Occupational Radiation Protection Requirements*

FM work permits as required.

HAZARD CONTROL PLAN, continued

Mitigating hazards (continued on next page)

Describe how the hazards listed above will be mitgated (e.g., safety equipment, administrative controls, etc.):

A. Unique facility hazards:
- Damaged sites around the Lab may present unexpected hazards. Be alert for these hazards and follow all facility-specific access control and work requirements.

B. Construction site hazards:
- Obey all site postings.
- Wear appropriate PPE.
- Notify site representative of your presence.
- Be alert for warning signs and indications of construction site hazards.
- Review all construction-relevant HCPs.

C. Electrical hazards:
- Complete required training.
- Follow all manuals for equipment operation.
- Observe lockout/tagout processes.

D. Falls from cliff edges:
- Do not work within 6 feet of edges with greater than 6 foot drop.

E. Heat and cold:
- Consume water regularly.
- Wear appropriate warm clothing, always carry emergency clothing.
- Know the signs of hypothermia and hyperthermia and take appropriate actions when symptoms are noticed or suspected in your co-workers or yourself.
- Ask your supervisor for warmer clothing when needed for special conditions.

F. Inclement weather, lightning:
- During rain or floods, 2 people are required.
- When lightning is closer than 3 miles, quit work and return to vehicle.
- Do not plan work during rains, floods, or lightning closer than 3 miles. If work is required and in effective isolation, 2 people are required.

G. Walking and tripping hazards:
- Be aware of terrain and watch where you are walking.
- Wear appropriate clothing and footwear – field boots (no sandals!), long pants (no shorts!).

H. Animals may act differently:
- The habits of large and small animals have been disrupted; their food sources drastically changed; and they may appear in unexpected places.
- Be aware of your surroundings.
- Visually scan your surroundings frequently.

HAZARD CONTROL PLAN, continued

Mitigating hazards (continued)

I. Insect bites:
- Look for spider webs and oather signs fo spider activity before reaching into dark corners.
- Use insect repellent.
- Wear long pants and long sleeve shirt.
- Wear brightly colored clothing so ticks can be seen and removed.
- Thoroughly check for ticks upon returning from the field.

J. Floods:
- All ESH-18 field personnel must have a pager tuned to the RAIN common notification frequency.
- After the Cerro Grande fire, the watershed upstream of Lab property will not retain much precipitation. There is a potential for flash floods.
- Check meteorological data (on the web and by observing the clouds) for projected and current conditions and, when headed for low areas, watch and listen for signs of rain in the area and even several miles upstream.
- If there are rain indications, stay out of low areas.
- During rainy season, try to conduct field work required in low areas in early morning hours.
- In case of flood: Get to high ground. Abandon vehicle if necessary. DO NOT attempt to drive across running water unless the running water can be waded.

K. Injuries from hand tools:
- Wear work gloves.
- Think about what would happen if a tool slips.
- Only use the proper tool for a task.

L. Working alone:
- Use enhanced communication protocol (ESH-18-HCP-004, *Radio and Cellular Phone Use*)

M. Vehicle operation:
- For driving off road and on secondary roads which are not maintained or include other hazards (i.e. side slopes, drop offs, deep ruts), an additional person should be used to aid in navigation.
- Under no conditions attempt to cross or forge, with vehicles or by foot, channels flooded due to flash floods.
- Annually review LIR 402-1320-01 and when new transportation is purchased.

N. Radiation hazard:
- Maintain current training.
- Observe all posting and warning devices in areas of know contamiantion.
- Review facility-specific hazard control plans before conducting sampling on a facility.
- Wear personnel monitoring devices.
- Wear PPE when required.

HAZARD CONTROL PLAN, continued

Knowledge, Skills, and Abilities

List knowledge, skills, ability, and training necessary to safely perform this work (check one or both):

☒Group-level orientation (per ESH-18-xxx) and training to this procedure.

☒Other → See training prerequisites on procedure page 3.

Wastes, residual materials

Are there any wastes and/or residual materials? (check one) ☒None ☐List:

Residual risk

Consider the administrative and engineering controls to be used, the residual risk level (as determined according to LIR300-00-01, section 7.3.3) is (check one):

☐Minimal ☒Low ☐Medium (requires approval by Division Director)

Emergency actions

Emergency actions to take in event of control failures or abnormal operation (check one): ☐None ☒List:

Step	Action
1	Administer first aid.
2	Contact the ESH-18 group office.
3	Contact EM&R at 667-6211.

Signatures

Signature of preparer of this HCP: This HCP was prepared by a knowledgeable individual and reviewed in accordance with requirements in LIR 300-00-01 and LIR 300-00-02.

Preparer(s) signature(s) Name(s) (print) /Position Date

Signature by group leader on procedure title page signifies authorization to perform work for personnel properly trained to this procedure. This authorization will be renewed annually and documented in ESH-18 records. Controlled copies are considered authorized. Work will be performed to controlled copies only. This plan and procedure will be revised according to ESH-18-HCP-023, *Preparation, Review, and Approval of Procedures*, and distributed according to ESH-18-HCP-021, *Document Distribution*.

Water Quality & Hydrology Group

FIELD WORK CHECKLIST

This form is from ESH-18-HCP-002.0

Use this form as an informal checklist to ensure that necessary equipment is present before going into the field.

NOTE: Field personnel must have current certifications in First Aid, CPR, and field survival techniques. Additional specific personal protective clothing may be required depending on the operation.

Ensure the following equipment is present before leaving to conduct field work.

Always

- Facility-specific notification and sign-in steps understood, and documentation carried on personnel.
- Establish point-of-contact with co-worker or supervisor and advise them of your field work plan and schedule.
- Check out with a contact at office location (be sure to check in after returning). Scheduled return time should not be later than 4:30 p.m. Notify contact of any subsequent changes to schedule.
- First Aid kit in vehicle
- Pager on RAIN frequency
- Radio or cellular phone communication. If hand held radios are used for communication, always establish radio contact prior to leaving the technical area or before beginning work in the field.
- Check fuel

Outside Lab boundaries for Field Work

- Contact Group Office for coordination of work and to be placed on Laboratory travel status if required

Prolonged Field Work

- Drinking water / food
- Clothing for weather changes

Beyond radio or phone contact

- Additional person with required field training and supplementary communication

After normal working hours

- Notify Team Leader
- Use enhanced communication

EM&R Flood Related Requirements

…being developed

OPERATION OF STREAM GAGING STATIONS AND COLLECTION OF STORM WATER RUNOFF SAMPLES

Purpose

This Water Quality Group procedure describes the operation of automated water collection systems and collection of storm water runoff samples both manually during runoff events and from automated samplers.

Scope

This procedure applies to the collection of storm water samples collected from various streams within and around the Los Alamos National Laboratory area by ESH-18 personnel.

In this procedure

This procedure addresses the following major topics

Topic	See Page
General Information About This Procedure	2
Who Requires Training to This Procedure?	2
Preparing for Field Work	4
Checking Stations	8
Measuring Flowing Water At a Station	10
Collecting Storm Water Samples from ISCO Samplers	12
Collecting Storm Water Grab Samples	14
Logging in Samples upon Return	16
Chain-of-Custody for Samples	17
Battery Maintenance and Testing	18
Records Resulting from This Procedure	19

DRAFT

Hazard Control Plan

The hazard evaluation associated with this work is documented in Attachment 1: Initial risk = **medium**. Residual risk = **low**. Work permits required: none.
First authorization review date is one year from group leader signature below; subsequent authorizations are on file in group office.

Signatures

Prepared by: R. Romero, ESH-18	Date:
Approved by: M. Alexander, Team Leader	Date:
Approved by: S. Rae, ESH-18 Safety Committee Chair	Date:
Approved by: S. Rae, ESH-18 Group Leader	Date:

General information about this procedure

Attachments

This procedure has the following attachments:

Number	Attachment Title	No. of pages
1	Hazard Control Plan	2
2	Sample Collection Log and Chain of Custody Form	1
3	Gaging Station Field Log	1

History of revisions

This table lists the revision history and effective dates of this procedure.

Revision	Date	Description Of Changes
0	4/01	New document.

Who requires training to this procedure

The following personnel require training before implementing this procedure:

- Personnel assigned to collect storm water samples

Training method

The training method for this procedure is **on-the-job** training by a previously trained individual and is documented in accordance with the procedure for training.

Prerequisites

In addition to training to this procedure, the following training is also required prior to performing this procedure:
In addition to training to this procedure, the following training is also required prior to performing this procedure:

- Training as specified in ESH-18-HCP-002, *General Field Work*
- Electrical Safety
- Manual for Sutron datalogger
- Manual for Geomation datalogger
- Manual for ISCO sampler
- Manual for cell phone system
- Manual for multimeter
- Operation of E600 Rad Monitoring Instrument

In addition, comprehension of ESH-18-HCP-002, *General Field Work*, is required.

DRAFT

General information, continued

Definitions to this procedure

None.

References

The following documents are referenced in this procedure:

- Manual for Sutron datalogger
- Manual for Geomation datalogger
- Geological Survey Water-Supply Paper 2175, "Measurement and Computation of Stream Flow: Volume 1"
- United States Geological Survey Manual, "Techniques of Water Resources Investigations"
- LIR201-00-04, *LANL Incident Reporting Process*
- LIR404-00-05, *Managing Radioactive Waste*

Note

Actions specified within this procedure, unless preceded with "should" or "may," are to be considered mandatory guidance (i.e., "shall").

DRAFT

Preparing for field work

Personnel needs

Individuals may be allowed to travel to the field alone under the following conditions:

- performing routine gage maintenance, **and**
- gage location is accessible by vehicle, **and**
- two forms of communication (radio and cell phone) are taken to the field

Working alone in basement cages and storm water lab is acceptable.

No one may travel to the field alone under the following conditions:

- during inclement weather
- remote gage locations accessible only by foot

Under all conditions, personnel must sign in and out when performing any work away from the office.

Follow the procedure ESH-17-008, "Field Work." All field personnel must have a radio and some other means of communication (such as a cell phone) or as specified by the facility owner or other Laboratory requirements.

DRAFT

Time of visits

Currently, all station work will take place during normal work hours and during daylight hours. The **group leader** or **Storm Water Team leader** only may approve exceptions.

Clock times

[When at a site, station equipment clock times on both the datalogger and ISCO sampler will be checked and verified.] Before going to the field, check and set your watch to the precise time. This can be done by calling the lab's time system (667-TIME or 667-8463) or by logging on to the time page at www.time.gov (or click on the clock icon on the lab's internal home page).

Good field practices for water sample collection

Keep in mind the following principles and practices during all field sample collection:
Be aware of and record potential sources of contamination at each site.

- Wear appropriate disposable, powderless gloves.
- Use correct sample-handling procedures:
  - Minimize the number of sample-handling steps.
  - Use Clean hands/Dirty hands techniques.
- Turn off vehicles or stay up-wind of exhaust sources.
- Follow a prescribed order for collecting samples.

Preparing for field work, continued

PPE for field work

Consult the procedure ESH-18-008, "Field Work," for requirements for field work apparel and other PPE.

PPE for sample collection and preservation

During sample collection the following PPE must be worn:

- nitrile gloves
- eye protection
- shirt with sleeves, equivalent to Level D
- waders appropriate for flow conditions

Shorts and sandals are not appropriate work clothing.

PPE for operational and maintenance work

During work on the stations, the following PPE must be worn:

- long pants
- work gloves
- field boots or closed-toed shoes

Facility requirements

Prior to any site or field visit, coordinate or schedule with the FMU.

A copy of an approved ES&H Hazard Screening Form, signed by the FM, must be available on the SW Team Member's person or in the vehicle at all times while conducting work within the specific FMU.

ER Project personnel must operate under a separate FM-approved ES&H Hazard Screening Form.

DRAFT

Preparing for field work, continued

Generic sampling kit

Collect the generic sampling kit.

Equipment needed for sample collection

Collect the following equipment and supplies before traveling out to the field to collect storm water samples:

- Field sampling kit
- If taking grabs, appropriate bottles to collect samples
- List of current gaging stations and locations
- Coolers with ice or Blue Ice® blocks
- Copy of this procedure
- Sample Collection Log and Chain-of-Custody Form (Attachment 2)
- Field Log Sheets (Attachment 3)
- Copy of field analytical methods for pH analyses (EPA Method 150.1)
- pH meter - portable with 2 point standardization with Automatic Temperature Compensation (ATC)
- Replacement sample bottles (glass and plastic)
- Lids for sample bottles (enough for at least 2 stations)
- Marker pen (permanent, waterproof)
- Ball point pen
- Cellular telephone and radio
- First aid kit
- Appropriate PPE as specified on previous page or in ESH-18-008 "Field Work "
- Copy of Station Contact/FMU Listing
- List of stations to be sampled
- Multi-Sector General Permit Visual Inspection Guidelines
- Digital camera (recommended)
- Hip waders (when known or expected runoff is occurring)

DRAFT

Equipment needed for station maintenance work

Collect the following equipment and supplies before traveling out to the field to perform station work:

- Laptop computer
- Field notes
- Voltmeter
- Digital camera
- Radio
- Toolbag

Preparing for field work, continued

Calibrate portable pH meter

It is best to calibrate the pH meter before leaving for the field, though it may be done in the field when necessary.

Steps to calibrate pH meter

To calibrate the pH meter, perform the following steps:

Step	Action
1	Inspect meter, probes, cables and connectors to ensure meter and accessories are in good condition and properly installed. Replace parts as necessary.
2	Rinse combination electrode and automatic temperature compensator probe (ATC) with distilled water and blot excess.
3	Press the pH/mV key to toggle to pH mode.
4	Immerse both the combination electrode and ATC probe in pH 10 (or 7) buffer solution. Stir briefly with electrode and probe to remove bubbles from electrode surface. Press "standardize" and wait for a stable signal. The meter flashes an icon for the entered buffer, and briefly displays the % slope of the electrode as 100%.
5	After entering a buffer, the standardizing icon is replaced by the measuring icon, indicating the meter has returned to measuring mode,
6	Repeat steps 2 through 4 to enter a second or third buffer; the meter performs a diagnostic check on the electrode. The meter then shows the % slope between buffers, either good electrode (slope between 90 to 105%) or electrode error (slope outside 90 to 105%).

DRAFT

Checking stations

Equipment at the stations

Most stations are equipped with the following equipment:

- Datalogger, either
- Sutron Data Recorder/Transmitter 821~~000~~
- Geomation radio system
- **Stage Sensor** ~~Flow level recorder~~, one of the following:
- Shaft encoder in a stilling well (Sutron)
- Bubbler in a conduit
- Sonic beam over the water surface (Miltronics)
- Cell phone system
- Solar panel
- Battery charged by solar panel
- ISCO sampler connected to datalogger

How automatic sample stations work

Runoff samples are collected using automated samplers. When **a stage sensor measures a pre-programmed stage level of** ~~the flow meter sees flow, at a pre-set level,~~ the datalogger triggers the cell phone or radio to call three different programmed numbers, in sequence, with an alarm message. A pre-recorded, audible message notifies the call receiver that the station has a water sample that needs collection. The data logger also triggers the ISCO sampler to start collecting water. To prevent cross contamination of samples, the ISCO sampler completes flushes before and after every sample collected.

Stations equipped with Geomation datalogger equipment and a radio system (primarily the Area G stations) will transmit to the base station where a record of the call is logged into a computer database located at A-59-Building 53. It is then necessary to visit the radio receiver at TA-59 building 97 to open the database records to determine if there was a flow event for these stations.

When to collect samples

Current policy is that samples are collected only during daylight hours and on work days. Thus, most visits to the automated samplers will occur in the morning; most grab samples will be collected in late afternoon. This policy may be amended as necessary. Check with the project leader if questions or special situations arise.

DRAFT

Checking stations, continued

Steps to check stations

To check the condition of equipment at an automated station, perform the following steps:

Step	Action
1	Unlock and open the station door.
2	Scroll through the options on the datalogger (consult the manual for operating instructions) and check the following parameters: For Sutron dataloggers: • Date and time (set to **Mountain Standard** Time, even during summer daylight savings time) • "Recording" mode is on • Alarm condition is "normal" For Geomation dataloggers: • Verify power light is on • Verify charge light is on. If fully ~~charged,~~ "float" light will be also be on • Verify light from Miltronics probe comes on for ten seconds every minute • If power was removed, verify that Ran 2 lights for Rcv and Xmt are active after power is restored.
3	Check the phone system to ensure it is on and operating (consult operating manual).
4	If there is no flow, **verify that the inside stage reading is accurate with the outside staff gage;**~~check that the stage sensor indicates zero or less than zero;~~ if not, clean stilling well or, for Miltronics probe, remove dirt under sensor. If there is flow, **verify that the inside stage reading is accurare with the outside staff gage.** ~~check that the indicated flow matches the water stage on the staff gage.~~
5	If there has been a sample flow, follow the steps in the next chapter to collect the samples from the ISCO sampler.
6	If there has been no flow, check the status of the station: • Check the internal clock time on both the datalogger and the ISCO; reset if more than 2 minutes different from actual time. • Check that datalogger "recording" mode is on. • Check that phone is on. • Check ISCO sampler displays "bottle 1 after 1 pulse".
7	Visually inspect the integrity of the sampling tubes and electrical wiring.
8	Complete the Gaging Station Field Log (Attachment 3).
9	Close and lock station.

DRAFT

Measuring flowing water at a station

Measurements to make if water is flowing at station

If there is flowing water at a station,

- measure pH and temperature (see set of steps below)
- measure the flow rate using either the **current** ~~flow~~ meter or the modified Parshall Flume (see blocks below the steps below).

Field readings of water

If water is flowing at the station at the time of sample retrieval, take pH and temperature measurements with a portable pH meter, as described below.

Steps to take field readings

To take field readings of the flowing water, perform the following steps:

Step	Action
1	Don gloves.
2	Place the pH electrode directly into the flowing water near the station, slightly downstream of the sample intake. Read the pH and repeat until three consecutive pH readings are within 0.1 standard pH units.
3	Take temperature reading.
4	Record the pH and temperature reading on the Sample Collection Log and Chain of Custody along with the date, time, and name of the person performing the readings.

DRAFT

Measuring flow with current meter

If the flow is deep enough, use the current flow meter to measure the stream flow. For use of the meter, see Geological Survey Water-Supply Paper 2175, "Measurement and Computation of Stream Flow: Volume 1, Measurement of Stage and Discharge, Chapter 5.

Measuring flow with the Parshall flume

If the flow is too shallow to use the **current** ~~flow~~ meter, use the modified Parshall 3" flume to measure stream flow. For use of the flume, see Geological Survey Water-Supply Paper 2175, "Measurement and Computation of Stream Flow: Volume 1," Measurement of Stage and Discharge, Chapter 8.

Measuring flowing water at a station, continued

Computation of past flows

If there is no flow at the time of visit, flag the high water mark, preferably in a location where the channel is narrowing slightly and has a straight reach. For slope area, the reach must be a minimum of 75 times the mean depth.

At a later time, take appropriate survey measurements to allow for a later calculation of flow. This method uses various surveying techniques and high water marks from flow events. Some types of indirect measurements are slope area, critical depth, step back water and computation through a culvert. See Techniques of Water Resources Investigations of the United States Geological Survey.

DRAFT

Collecting storm water samples from ISCO samplers

Winter

In the winter, turn off the ISCO samplers when there is no chance of runoff due to freezing temperatures. Ensure the samplers are re-activated when warm weather could result in a runoff event (normally mid-March).

If ISCO collected samples

If there has been a runoff event and the ISCO sampler has collected samples, follow the steps below to collect the samples.

Steps to collect samples

To collect the runoff samples from the automated sampler, perform the following steps:

Step	Action
1	Remove the cover from the sampler.
2	Don gloves.
3	Put the lids on the bottles.
4	Number and label each bottle containing a water sample, if that has not already been done.
5	Record the date and time (from the ISCO sampler) and station ID (EXXX) onto each bottle lid. Record the same information on the Sample Collection form.
6	Remove the bottles containing water from the carousel and place into a cooler. Alternatively, the entire carousel can be removed if a replacement carousel is available. For gage location in TA-54 area G, Mortandad Canyon, Ten Site Canyon, DP Canyon, and Canada del Buey, where radionuclides have been found, do not remove the bottom carousel. Conduct a radiological surface contamination survey to verify that the surface of the carousel is free from surface contamination (see E600 Operation Instructions). If E600 alarm set point is exceeded during surface survey, do not remove carousel. Call RCT Pool at 665-4926 to arrange for a qualified RCT to conduct a rad surface survey. Note: annualized surveys for these stations may provide for removal of carousel without E600 survey.
7	Conduct a physical inspection of the samples and document the results on the MSGP Visual Inspection Form. Parameters to be noted include color, smell, foam, floating solids, or any changes from the previous visit to the station. See the Visual Inspection Guidelines Document for information on observations.

DRAFT

Steps continued on next page.

Collecting storm water samples from ISCO samplers, continued

Step	Action
8	Install a new set of bottles in the carousel; remove the lids and place them in the center of the carousel.
9	Replace the sampler cover.
10	Restart the sampler for the next event. Ensure the unit displays "Bottle 1 after 1 pulse."
11	Secure the sampl**er shelter** ~~ing unit lid~~ with ~~chain and~~ LANL padlock.
12	Estimate the high water mark of the flow event from the staff gage. Record this number on the Gaging Station Field Log. Clean the **high water** marks off the staff gage for the next flow event.

Record field data

The following information should be included on the Station Log Sheet:

- Station E-number
- Date and time of sample event (as recorded by the ISCO sampler)
- Date and time of sample retrieval
- **Verify that the inside stage reading is accurate with the outside staff gage.**~~Check that level reading is same as on staff gage~~
- High water mark from staff gage
- Name of sampling personnel - The initials of the person collecting samples must be indicated
- Method of preservation and preservative used

DRAFT

Accidents during sample transport

If an accident occurs during transportation of samples, sampling personnel must follow established Laboratory requirements described in LIR201-00-04, *LANL Incident Reporting Process*, and take appropriate health and safety measures.

If samples include radioactive materials, personnel must also follow notification requirements specified in LIR404-00-05, *Managing Radioactive Waste.*

Collecting storm water grab samples

Manual grab samples

The Laboratory's automated sampling system is supplemented by the collection of manual grab samples. A manual grab is collected by inserting a container into a stream flow with the container opening facing upstream. In most cases, the sample container itself may be used to collect the sample.

When to collect grab samples

The **Storm Water Team Leader** establishes policy for where and when to collect grab samples. This policy may be changed for each sampling season and even during a sampling season. The policy should be communicated during storm team meetings.

New locations without identifiers

If a grab sample is collected at a location that is more than 100 yards from an established sampling location that has a previously assigned identifier, accurately describe the location in the field log notebook in sufficient detail that another person can find the location. Use a GPS device to record the coordinates (this may be done later if necessary) but do not rely completely on the GPS coordinates to identify the location. Contact Storm Water Team personnel immediately to obtain an "M" number for future tracking.

Stream safety

For collecting grab samples or for measuring flow, it is sometimes necessary or desirable to wade into the stream.

If there are not two people present, DO not enter the steam.

If you are unsure of the water condition, DO NOT ATTEMPT TO ENTER.

When to wade into streams: depth-velocity product

If the stream depth (in feet) times the flow rate (in feet per second) is greater than 10, **DO NOT** enter the stream flow.

Example 1: Stream is 2 feet deep flowing 4 feet per second; depth-velocity product is 8: OK to wade across stream.

Example 2. Stream is 2 feet deep flowing 8 feet per second; depth-velocity product is 16: **DO NOT** enter the stream.

DRAFT

Collecting storm water grab samples, continued

Depth-integrated sampling

When stream conditions and depth support this type of activity, collect depth-integrated grab samples. For the techniques to do this, see USGS Manual "Techniques of Water Resource Investigations," Book 9, Isokinetic, Depth-Integrated Sampling Methods, Chapter A4, Section 4.1.1.A. Follow the general steps below when collecting depth-integrated samples.

Steps to collect grab samples

To collect grab samples from flowing streams, perform the following steps:

Step	Action
1	Don appropriate PPE such as waders, gloves, goggles, eye protection, etc.
2	Record bottle number and sequence time in relationship to others collected during the collection period.
3	Measure the pH and temperature (see steps in previous chapter).
4	Collect the grab sample from the horizontal and vertical center of the flume (under the cross braces) or channel.
5	Avoid touching the lid, lip, or inside of the container to prevent potential cross contamination.
6	Keep the sample free from uncharacteristic floating debris.
7	If possible, collect the sample in the container it will be shipped in.
8	If taking numerous grab samples, keep the samples separate and labeled clearly.
9	Put samples from one site in the same cooler; do not mix samples from different sites in the same cooler. If this is not feasible, place additional station samples in a large plastic trash bag for segregation.

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Logging in samples upon return

Upon return to lab

Samples must be placed in a secure location (observing chain-of-custody)

Steps to log in samples

To log in the collected field samples, perform the following steps:

Step	Action
1	Transport sample under chain of custody to SMO.
2	Follow SMO sample login requirements.
3	Relinquish custody of samples to SMO.
4	Obtain copy of chain of custody form.

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Chain-of-custody for samples

Maintaining custody of samples

A sample is physical evidence collected from a facility or the environment. Chain-of-custody must be documented for all samples used to demonstrate compliance. Verify that the possession and handling of samples is traceable at all times. A sample is considered in custody if it is one of the following:

In one's physical possession.
In one's view after being in one's physical possession.
In one's physical possession and then locked up so that no one can tamper with it.
Kept in a secure area where access is restricted to authorized and accountable personnel only.

NOTE: A secured area is an area that is locked, such as a room, cooler, vehicle, or refrigerator. If the area cannot be secured by locking, use a custody seal to secure the area or the sample container.

Transferring custody of samples

Whenever samples are transferred into the custody of another person or organization, complete the "relinquished by/received by" and "date" sections of the Chain of Custody Record. These sections of the form must provide a complete history of custody of the samples from collection to transfer to the analytical laboratory.

If chain-of-custody is broken

Whenever there is a break in the chain of custody of a sample, document the failure by completely describing the break in the appropriate logbook. Notify appropriate supervisors and team leaders affected by the problem.

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Battery Maintenance and Testing

Equipment needed

Gather the following equipment before conducting battery maintenance and testing.

- Volt meter

Review manufacturer's instructions for proper measurements and safe use of the multimeter. Multimeters are only to be used on the 12-volt systems described in this procedure.

Conduct battery test

Follow manufacturer's instructions for testing battery voltage with a voltmeter.

On new installations, a separate disconnect is provided for the battery during replacement.

On all existing installations, a terminal and a bolt and wing nut or an insulated male/female connector is provided. The insulated male/female terminals are provided for battery terminal connection and do not require special tools. All leads to the battery are color-coded and are labeled as red (+) or black (-).

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Step	Action
1	Don safety glasses.
2	Remove the ground wire from the negative battery cable. **WARNING**: Never lay metal tools across the top of a battery.
3	Mark the positive cable 'positive'.
4	Starting with the positive cable, remove the battery cables.
5	Remove the battery.
6	Check battery cables for fraying. • Replace any frayed parts.
7	Place new battery in tray. • Tighten hold-downs until snug. Do not over-tighten.
8	Attach the marked positive cable to the positive terminal.
9	Remove temporary power supply.
10	Turn the key to check your work.

If	Then
The battery is out of the vehicle	Positive lead to the positive terminal, and negative lead to the negative terminal
The battery is in the vehicle	Positive lead to the positive terminal, and negative lead to the engine block

Records resulting from this procedure

Records

The following records generated as a result of this procedure are to be filed as records in the specified location.

- copy of Field Log sheets: TA 59-53-Rm 111.
- copy of Sample Collection Log and c-of-c Form: to sample processing (will be filed according to ESH-18-101)
- measurements of stream flow (when collected): TA 59-53-Rm 111
- survey measurements of stream for calculation of past flows (when collected): TA 59-53-Rm 111.
- Photographs taken of the described activities, when taken: TA 59-53-Rm 111.

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HAZARD CONTROL PLAN

Scope

The work to be performed is described in ESH-18-HCP-009, *Operation of Stream Gaging Stations and Collection of Storm Water Runoff Samples*.

Potential hazards

Potential hazards associated with the work:

A. Wading hazards: falling in flowing water, being swept down stream, cold feet and legs, and exposure to potential pollutants
B. Power tool hazards: cuts, bruises, or pinch points
C. Lifting hazards: back injuries and muscle strains
D. Soldering hazards: burns or fire
E. Electrical hazards (includes solar panel): electrical shock and burns
F. Vehicle winch hazards: cuts, crushed finger, injury from snapped cable
G. Facility-specific hazards

Initial risk level

For each hazard, list the likelihood and severity, and the resulting initial risk level (before any work controls are applied, a determined according to LIR300-00-01, section7.2)

Overall *initial* risk: ☐ Minimal ☐ Low ☒ Medium ☐ High

Operational requirements

List applicable Laboratory, facility, or activity operation requirements directly related to the work:

☒None ☐List: Work Permits required? ☒No ☐List:

Mitigating hazards (continued on next page)

Describe how the hazards listed above will be mitgated (e.g., safety equipment, administrative controls, etc.):

A. Wading hazards:
- Wear waders to protect from cold water and any potential pollutants.
- Be sure of footing and use a wading rod to determine stream bottom anomalies.
- Do not attempt to wade a stream for which values of depth multiplied by velocity equal or exceed $10ft^2/s$. (2.5 ft deep and 5ft/s=$12ft^2/s$)
- In some instances, life jackets will be required for measuring or sampling depending on the depth of flow and velocity.
- If wearing chest waders and/or working off of a footbridge, a life jacket is recommended, again depending on depth of channel and velocity.

Hazard Control Plan, continued

Mitigating hazards (continued)

B. Power tool hazards
- Read manufactures instructions and safety precautions on all power hand tools.
- Safety glasses are required for all power tool use.
- Wear leather gloves as appropriate.

C. Lifting hazards
- For all heavy materials or equipment, the two-person rule will be followed.
- "Heavy" is determined by the person doing the work or their supervisor.

D. Soldering hazards
- Ensure work area is clear, maintain good housekeeping.
- Do not leave soldering gun or iron plugged in when not in use.
- Solder over bench using clamps and pliers; do not use fingers to hold fittings.
- Ensure soldering tool has cooled prior to putting away.
- Ensure no flammable materials are in close proximity to include clothing, badges, or hair.
- Ensure adequate ventilation – use a fan.

E. Electrical hazards
- SW Team members have been designated as Electrical Workers and have met the requirements for LIR402-600-01.0 Electrical Safety.
- Team members will have complete training as a Class 2.1 R&D Electrical Workers.
- Team Members will have complete Electrical Safety Basics Training, #11516.
- Report field injuries to the supervisor.
- Wear eye protection when making a connection to the battery and during handling.
- Replace lead acid batteries with Gel cell batteries.
- Neutralize and clean up all leaks from the lead acid batteries.
- Double check wiring connections in relation to wiring diagram.
- Use appropriate connector for wire termination and instrument connections. (WAGO)
- Have a peer review work, initial and date work review on inside of shelter.

F. Vehicle winch hazard
- Read owner's manual for safety precautions.

G. Facility specific hazards
- Review facility's site specific hazard control plans

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HAZARD CONTROL PLAN, continued

Training

List knowledge, skills, ability, and training necessary to safely perform this work (check one or both):

☒Group-level orientation and training to this procedure.
☒Other → See training prerequisites on procedure page 3.

Wastes, residual materials

Are there any wastes and/or residual materials? (check one) ☒None ☐List:
(Used filter media or analytical residue is disposed by the analytical laboratory.)

Residual risk

Consider the administrative and engineering controls to be used, the residual risk level (as determined according to LIR300-00-01, section 7.3.3) is (check one):
☐Minimal ☒Low ☐Medium (requires approval by Division Director)

Emergency actions

Emergency actions to take in event of control failures or abnormal operation (check one): ☐None ☒List:

Step	Action
1	Administer first aid.
2	Contact the ESH-18 group office.
3	Contact EM&R at 667-6211.

Signatures

Signature of preparer of this HCP: This HCP was prepared by a knowledgeable individual and reviewed in accordance with requirements in LIR 300-00-01 and LIR 300-00-02.

Preparer(s) signature(s) Name(s) (print) /Position Date

Signature by group leader on procedure title page signifies authorization to perform work for personnel properly trained to this procedure. This authorization will be renewed annually and documented in ESH-18 records. Controlled copies are considered authorized. Work will be performed to controlled copies only. This plan and procedure will be revised according to ESH-18-HCP-023, *Preparation, Review, and Approval of Procedures*, and distributed according to ESH-18-HCP-021, *Document Distribution*.

Water Quality Hydrology Group

Storm Water Sample Collection Chain-Of-Custody

This form is from ESH-18-102

Station Name and E#:	Sampler #:
Retrieval Date/Time:	Field person:

HWM:	Staff:	Logger:

Bottle #	Auto or Manual	Event Date	Event Time	pH / Tem	Est. ml collected	Bottle comments
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						

Station notes (use reverse side if needed):

Collected by (print and sign)	Date/ Time	Received by (print and sign)	Date/ Time
Relinquished to (print, sign)		**Relinquished to (print, sign)**	

Water Quality / Hydrology Group

Storm Water Sample Collection Chain-Of-Custody

Additional notes:

Water Quality Hydrology Group

Gaging Station Field Log

This form is from ESH-18-102

Station Name and E#:	
Date/Time:	Field person:
Inside Gage Reading:	Outside Gage Reading:
Battery Reading:	High Water Mark:
Data Retrieval Complete:	Start Date:
☐ Recording On	☐ Sampler On
☐ Phone On	☐ Gage Operational
☐ Clocks coincide between Data Loggers and Samplers	
☐ Stilling Well / Stage Sensors cleaned and inspected	
To do list, maintenance and replacement:	
Comments:	

PROCESSING STORM WATER RUNOFF SAMPLES

Purpose

This Water Quality Group procedure describes the processing of storm water runoff samples and their shipment to the analytical laboratories.

Scope

This procedure applies to the processing of storm water samples collected from various streams in the Los Alamos area by ESH-18 personnel.

In this procedure

This procedure addresses the following major topics

Topic	See Page
General Information About This Procedure	2
Who Requires Training to This Procedure?	2
Creating Chain-of-custody Forms and Labels	4
Processing Storm Water Samples	8
Acidifying the Analytical Bottles	13
Packaging the Samples for Shipment	14
Chain-of-custody for Samples	16
Records Resulting from This Procedure	17

Hazard Control Plan

The hazard evaluation associated with this work is documented in Attachment 1: Initial risk = **medium**. Residual risk = **low**. Work permits required: none. First authorization review date is one year from group leader signature below; subsequent authorizations are on file in group office.

Signatures

Prepared by: R. Reynolds, ESH-18	Date:
Approved by: R. Reynolds, Team Leader	Date:
Approved by: S. Rae, ESH-18 Safety Committee Chair	Date:
Approved by: S. Rae, ESH-18 Group Leader	Date:

09/05/01

CONTROLLED DOCUMENT
This copy is uncontrolled if no signatures are present or if the copy number stamp is black. Users are responsible for ensuring they work to the latest approved revision.

General information about this procedure

Attachments

This procedure has the following attachments:

Number	Attachment Title	No. of pages
1	Hazard Control Plan	2
2	Storm Water Sample Processing Form	1

History of revisions

This table lists the revision history and effective dates of this procedure.

Revision	Date	Description Of Changes
0	4/01	New document.

Who requires training to this procedure

The following personnel require training before implementing this procedure:

- Personnel assigned to process storm water samples

Training method

The training method for this procedure is **on-the-job** training by a previously-trained individual and is documented by the employee's team leader.

Prerequistes

In addition to training to this procedure, the following training is also required prior to performing this procedure:

- Training as specified in ESH-18-HCP-002, *General Field Work*

In addition, comprehension of ESH-18-HCP-002, *General Field Work*, is required.

General information, continued

Definitions to this procedure

None.

Note

Actions specified within this procedure, unless preceded with "should" or "may," are to be considered mandatory guidance (i.e., "shall").

DRAFT

Creating chain-of-custody forms and labels

Description of process

Storm water runoff samples are collected in the field by members of the storm water team during a runoff event by either grab samples or by an automated ISCO sampler. After collection, the field team members bring the bottles to the Storm Water Lab (in the basement of TA-59-01) and place them in the field sample receiving refrigerator.

Determine analyses needed

The **storm water sampling project leader** refers to the Watershed Management Plan and the Storm Water Permit requirements to determines the priorities of required analyses and adjusts the priorities when there is insufficient water collected to perform all desired analyses.

Format of sample IDs

Sample identifiers are limited to 11 characters by the database. The format of the ID is "LCYYMMTEnnn", where

L = laboratory identifier; P for Paragon and G for Gel Labs
C = sampler initial for unfiltered samples, "F" for filtered sample splits
YY = two-digit year
MM = month number
T = time sequence; first filtered sample for the month will be "1", second will be "3", third will be "5", etc. For max TSS samples, first filtered sample for the month will be "2", second will be "4", third will be "6", etc. Use letters after "9": 10 = "A", 11 = "B", etc.
Ennn = unique sample location identifier. Refer to the table maintained by the Storm Water Sampling Project Leader or to the table in Access database "Storm Water Sample Tracking."

NOTE: This sample ID configuration may be changed in the future.

Making new location identifiers

The Storm Water Project Leader assigns new location numbers if a grab sample is collected at a new location without an existing "E number" identifier. If the Project leader is not available at the time a new number is needed, contact a SW team member to get an "M" number (temporary identifier).

Make chain-of-custody form

After storm water samples have been collected, the **sample technician** prepares the necessary c-of-c form for the analytical sample bottles.

Creating chain-of-custody forms and labels, continued

Steps to prepare chain of custody form

To prepare the c-of-c forms, perform the following steps:

Step	Action
1	From the field chain-of-custody form, determine the sample IDs of the samples collected.
2	On the computer in the ESH-18 offices, open the folder where the Excel COC spreadsheets are kept.
3	Go to the appropriate sheets for the analytical labs being used. For example, "Runoff – Paragon" or "Runoff – Gel All".
4	Save the file (Save As...) with a new name that contains the station ID and the date (e.g., COCEnnn092900).
5	In the first cell under "Sample ID", enter the first sample ID for a sample location (normally the unfiltered splits). Determine how many samples have been collected from this location during the current month (the "T" part of the ID) by looking at the Access database printout or consult the table in the Access database "Storm Water Sample Tracking."
6	In the second cell under "Sample ID", enter the next sample ID (normally the filtered splits) for this sample location.
7	In the third cell under "Sample ID", enter the next sample ID (normally the maximum TSS split) for this sample location.
8	Refer to the table of analytical priorities kept by the Storm Water Project Leader and put a "1" in the appropriate cells under the column "Analyses Requested" for the first row only. For example, the first row is for unfiltered samples; enter a "1" under all the unfiltered analyses if there is sufficient water. The spreadsheet will automatically complete the remainder of the row under "Bottles Collected".
9	Repeat steps 1 through 9 for the next sample.
10	Refer to the priority analytes list and delete any marks under analytes that are not needed for that location.
11	Enter the date and time the first bottle was collected (get this from the field chain-of-custody form) and enter on the first and second row. For the TSS split (the third row), leave the time blank until the samples are processed.
12	Repeat steps 3 through 9 for the other samples (up to 3 per form) and other analytical labs.
13	When each sheet is complete, print it.
14	Have a second trained person review the c-of-c form.

Creating chain-of-custody forms and labels, continued

Make analytical bottle labels

After the c-of-c form is completed, the **sample technician** prepares the bar code labels for the analytical sample bottles.

Steps to prepare bottle labels

To prepare the analytical bottle labels, perform the following steps:

Step	Action
1	On the computer in the ESH-18 offices, open the folder "Surveillance\ESH_WaterQualityAndHydrology\Sample Info". Open the Access database "Labels."
2	Open the table "1 Enter Sample ID here".
3	Delete all records in the table, if necessary; table should be empty.
4	In the column "Sample ID", type in a sample ID from a line of the C-of-C forms prepared according to the steps above.
5	For this sample ID, enter the bottle identifier number (from the C-of-C form, the small numbers at the base of the columns "Bottles collected") in the field "ID". Create a new row (record) for each bottle ID and copy the sample ID into the row.
6	For this sample ID, create a record with 1 in the label ID field (this makes a label to go on the sample processing form). If two 1-gallon bottles are used for the 2-gallon analytes, make two records with the appropriate identifiers.
7	Repeat steps 4 – 6 for each sample ID on the c-of-c forms. It is recommended that no more than about 20 labels be printed at one time; complete all these steps then repeat for the remainder of the labels.
8	Save the table and close it.
9	Click on the "Queries" tab and open the query "2 Double click on this". This will run a make-table query to create a new table "Labels". If prompted, answer "yes" when asked if you want to run the make-table query, to overwrite the existing database, or to paste the data into the new table.
10	Close and exit the MS Access database.
11	Run the program "BarTender".
12	Open the file "c:\RunOff\Format".
13	Click on File / Input Data File Setup.
14	Choose "Refresh" (this imports the newly created Access table "Labels").

Steps continued on next page.

DRAFT

Creating chain-of-custody forms and labels, continued

Step	Action
15	Click OK to close the window, then click on the "Print" button, click on "Print" at the bottom. This will print the labels on the Zebra printer in room 126.
16	Retrieve the labels and ensure all are readable. If not (especially at the end of the strip), ensure the next label at the tear-off edge was torn off exactly between the label before. If not, carefully pull a label out until the space between it and the next label is exactly over the tear-off edge. Reprint the labels (step 15)
17	Take the c-of-c forms and the labels to the storm water processing room and follow the steps in the next chapters.

DRAFT

Processing storm water samples

Personnel needs

At least two people are needed to process samples. No one is allowed to work alone in the storm water sample processing laboratory (basement of TA-59, Building 1).

Required PPE for sample processing

During sample preparation, the following PPE will be worn:

- nitrile gloves
- eye protection
- long pants
- closed-toed shoes

For sample preservation and handling of acids and bases (see next chapter *Acidifying the analytical bottles*), all of the above plus long sleeves (e.g., lab coat).

Process one sample at a time

To avoid possible sample mix-ups, process only one sample at a time. It can take about an hour to process one sample, less if a smaller quantity of water is collected.

Label bottles

Take the prepared bar code labels (see previous chapter) and affix them to appropriate sample bottles. Obtain bottles from storage cages next to the processing room. The labels indicate the type of bottle. For samples that require 1.5 gallons, use two 1-gallon bottles. Arrange the bottles on the counter in order of priority (refer to c-of-c form) and group them by filtered and unfiltered processing.

NOTE: It is helpful to install the labels vertically with all labels turned in the same direction.

Have a second person check all the labels and the priority arrangement; document this check by initialing the c-of-c form.

Arrange samples on counter

Don gloves. Arrange all the field sample bottles, **without shaking**, for a single sample on the counter. Ensure all the field sample bottles are present and have the same location identifier; compare against the field c-of-c form. Have a second person check the bottles.

Processing storm water samples, continued

Fill sample bottle for TSS analysis

If the field sample requires analysis for maximum TSS (total suspended solids), compare the sample collection bottles arranged on the counter and select the bottle with the most sediment on the bottom. Shake the bottle well and quickly pour this sample into the analytical sample bottle for TSS analysis. Use the remainder of the sample in this bottle in the composite for unfiltered analyses (see steps below).

Record the bottle number used for the max TSS split on the SW Runoff Sample Processing Form (attachment 2).

Evaluate volume of sample vs. required

Make a rough estimate of the volume of sample needed to fill all the desired analytical sample bottles. If there appears to be insufficient sample, determine whether the filtered or unfiltered portions require more volume and split the sample accordingly.

Split sample in two sample volume

Because the churn splitter is not large enough to hold all the sample volume collected (except in cases where insufficient water was available), "split" the sample into two parts by selecting every second or third collection bottle, according to the proportions determined in the step above. Use one set of collection bottles for the unfiltered portion and the other set for the filtered portion.

Record the bottle numbers used in each portion in the SW Runoff Sample Processing Form (attachment 2).

Note on sample processing

The processing of the filtered and unfiltered portions of the sample (described in the two sets of steps below) may occur simultaneously by two teams of workers.

DRAFT

Processing storm water samples, continued

Equipment needed

Collect the following equipment and supplies before processing the unfiltered samples:

- Safety glasses
- Pylox gloves
- Apron
- Analytical bottles pre-labeled as described above
- Plastic screen for removing large debris
- Churn splitter
- Geopump® peristaltic pump
- Silicone tubing
- Box of Kimwipes
- Acid or base ampoules for sample preservation

Prepare bottles for unfiltered sample

Collect the analytical bottles for unfiltered analyses, in order of priority, near the splitter and Geopump®.

The analytical bottles may be filled by any convenient means that keeps the sample well mixed; the Geopump® method described below has been found to work better than using the spigot on the splitter. Pouring through a funnel may also be used.

Steps to fill sample bottles for unfiltered sample splits analyses

To fill analytical sample bottles for unfiltered sample splits, perform the following steps:

Step	Action
1	Place the plastic screen on top of the churn splitter. Use one of the two sets of bottles. Take each bottle and shake it until all the sediment on the bottom is re-suspended and immediately pour the sample through the plastic screen into the sample churn splitter. Empty (into trash) and clean the screen as needed.
2	Set up the Geopump® on a suitable stand (e.g., upside-down tray or box) next to the churn splitter.
3	Using a suitable length of silicone tubing, run a tube from the churn splitter through the Geopump® and into the first sample bottle.

Steps continued on next page.

Processing storm water samples, continued

Step	Action
4	Use the churn inside the container to keep the sediment well mixed within the sample water. Start the pump to fill the first bottle (in sample priority order).
5	If the tubing plugs, try reversing the pump or squeezing the tubing to break up the obstruction.
6	After the last analytical bottle is filled, clean up the area as described at the end of this chapter and repeat these steps for the next sample.

Collect bottles for filtered sample analyses

Arrange the analytical bottles for filtered analyses, in order of priority, near the splitter and Geopump®.

Equipment needed

Collect the following equipment and supplies before processing the filtered samples:

- Sample bottles pre-labeled as described above
- Plastic screen for removing large debris
- Churn splitter
- Geopump® peristaltic pump
- Silicone tubing
- In-line cartridge filters
- Box of Kimwipes

Steps to fill filtered sample bottles

To fill the analytical sample bottles for filtered sample splits, perform the following steps:

Step	Action
1	Place the plastic screen on top of the churn splitter. Use the second set of sample collection bottles. Take each bottle and, **without shaking it**, pour the water into the sample churn splitter; stop pouring when the sediment on the bottom is left in the bottle.
2	Set up the Geopump® on a suitable stand (e.g., upside-down tray or box) next to the churn splitter.

Steps continued on next page.

Processing storm water samples, continued

Step	Action
3	Using suitable lengths of silicone tubing, run a tube from the churn splitter through the Geopump® and into the first sample bottle. Place the filter in-line upstream of the pump (intake side). **WARNING**: If the filter is placed on the output side of the pump, pressure build-up can blow off the tubing when the filter becomes plugged. This will make a big mess.
4	Turn on the pump.
5	When the sample flow diminishes to less than about 1 ml per second, remove the intake tube from the sample water and hold the filter up until it is empty. Turn off the pump. Rinse and dry your hands and gloves to prevent getting unfiltered sample in the filter tubing. Replace the filter and re-start the pump.
6	After the last analytical bottle is filled, clean up the area as described below, record the information listed below, and repeat these steps for the next sample.

Clean up after each sample

For other than ISCO sampler "wedge" bottles, rinse the used sample collection bottles and dispose in the trash. **For the ISCO bottles**, rinse them and place in a bag to be collected for cleaning according to RCRA protocol.

After each sample is processed, wash the used equipment with "Alconox" and rinse with deionized water. Thoroughly clean the counters and sink. Change gloves and, if very dirty, aprons before handling the next sample.

Record work performed

Complete all required spaces on the SW Runoff Sample Processing form (attachment 2). Tape a copy of the field c-of-c form on the back.

Broken glass

In case glass is broken, use leather gloves to pick up the pieces and dispose of all glass ONLY in the special glass disposal container.

DRAFT

Acidifying the analytical bottles

Acid ampoules

Some samples require acid or base preservation. The labels on the analytical bottles identify the type of preservation necessary. The acid or base is supplied in glass vials (ampoules) and poured into the sample.

Preserve the samples

Arrange the filled analytical sample bottles on the counter according to which type to acid or other preservative they need (hydrochloric [HCl], sulfuric [H_2SO_4], nitric [HNO_3], or sodium hydroxide [NaOH]).

Ensure you are wearing the required **safety glasses, gloves,** and **long sleeves** (e.g., lab coat). Know where the eyewash and safety shower are located. Test the operation of the eyewash regularly.

Use 2 5-ml ampoules in the 1-gallon sample splits. Use 1 2-ml ampoule in all other samples.

Open the appropriate ampoule and pour it into the sample. Rinse out the empty ampoule in the sink and dispose in the special glass disposal container.

Place custody tape on bottles

Take a strip of custody tape, initial and date it, and wrap it around the bottle over the joint between cap and container.

Print corrected c-of-c form

Mark any needed corrections (e.g., in case any bottles were not filled) on the c-of-c form and reprint the c-of-c.

Packaging the samples for shipment

Overview

After processing, the samples are packed into coolers with frozen "Blue Ice" containers for shipment to the appropriate analytical laboratories.

Notify analytical labs of sample shipment

Before shipping the samples, call the analytical laboratory and notify them that samples are about to be shipped. Confirm that they will be available to receive and/or process the samples. If the laboratory cannot receive the samples, delay the packing so that they will arrive when the laboratory can receive them. Record this notification on the SW Runoff Sample Processing form.

Equipment and supplies needed

Collect the following supplies before packing samples:

- Coolers for shipping, at least one for each different analytical laboratory
- Frozen "Blue Ice" blocks
- Bubble wrap
- Clear shipping tape
- Scissors

Collect samples to ship

Group the analytical sample bottles according to the laboratory to which they will be shipped.

Steps to pack samples

To pack the samples for shipment to the analytical laboratories, perform the following steps:

Step	Action
1	Compare the samples that are to be shipped with those listed on the c-of-c forms and cross-check all sample identifiers and labels. Mark off the samples on a copy of the c-of-c form. Sign the original c-of-c form to verify the samples being shipped.
2	Have a second person verify the work in the step above and initial the original c-of-c form.
3	Make two photocopies of the c-of-c forms and place the originals in zip-lock bags. Keep the copies for the storm water project leader.
4	Cut strips of bubble wrap to the same width as the height of the glass bottles. Wrap the strips around the glass bottles and secure with tape.
5	Line the inside of the coolers with pieces of bubble wrap.

Steps continued on next page.

DRAFT

Packaging the samples for shipment, continued

Step	Action
6	Place the bubble-wrapped glass bottles in the middle of the cooler and pack the poly bottles around them.
7	Pack about a dozen frozen "Blue Ice" containers around and on top of the samples.
8	Place a layer of bubble wrap over the samples.
9	Place the original c-of-c forms in the zip lock bags inside the cooler and close the cooler.
10	Wrap tape around the cooler to keep it closed.
11	Take a strip of custody tape, initial and date it, and place it across the cooler opening (not on the strapping tape).
12	Go to a appropriate ESH-18 computer and open the file ESH-18 Files\Team SW SPCC\Shipping manifests\<*last file created*>. This will open an Acrobat form. Complete the shipping request form and save the file (Save As...) with the current date as part of the file name. Click the print button at the top of the form.
13	Deliver the coolers and the shipping manifest to BUS division for shipping. The deadline for same-day shipping is normally 1:30 p.m. though later delivery is possible if shipping is notified beforehand.

DRAFT

Chain-of-custody for samples

Maintaining custody of samples

A sample is physical evidence collected from a facility or the environment. Chain-of-custody must be documented for all samples used to demonstrate compliance. Verify that the possession and handling of samples is traceable at all times. A sample is considered in custody if it is one of the following:

In one's physical possession.
In one's view after being in one's physical possession.
In one's physical possession and then locked up so that no one can tamper with it.
Kept in a secure area where access is restricted to authorized and accountable personnel only.

NOTE: A secured area is an area that is locked, such as a room, cooler, vehicle, or refrigerator. If the area cannot be secured by locking, use a custody seal to secure the area or the sample container.

Transferring custody of samples

Whenever samples are transferred into the custody of another person or organization, complete the "relinquished by/received by" and "date" sections of the Chain of Custody Record. These sections of the form must provide a complete history of custody of the samples from collection to transfer to the analytical laboratory.

If chain-of-custody is broken

Whenever there is a break in the chain of custody of a sample, document the failure by completely describing the break in the appropriate logbook. Notify appropriate supervisors and team leaders affected by the problem.

Records resulting from this procedure

Records

The following records generated as a result of this procedure are to be submitted as records to the storm water sampling team leader:

- copy of chain-of-custody form(s)
- Storm Water Runoff Sample Processing form (Attachment 2)
- Shipping manifest

DRAFT

HAZARD CONTROL PLAN

Scope

The work to be performed is described in ESH-18-HCP-010.0, *Processing Storm Water Runoff Samples.*

Potential hazards

Potential hazards associated with the work are:

A. Electrical shock: water may be spilled on electrical cords or outlets and create a shock hazard.
B. Spraying water: When using electric pump to move filter water or transfer to other containers, water may be sprayed from hose that becomes disconnected.
C. Cuts from broken glassware: Some glass is used and could be dropped or broken.
D. Pinch injuries: pump mechanism or dropped heavy objects may cause pinch injuries.
E. Lifting injuries: heavy coolers and other containers with water need to be moved.
F. Acid/base burns: sulfuric, nitric, and hydrochloric acids and sodium hydroxide in ampoules will be used to preserve certain samples.
G. Pinch injuries between refrigerator and electrical panel: door of refrigerator opens past electrical panel and is too close for a hand or fingers on the door to fit past the panel.

Initial risk level

For each hazard, list the likelihood and severity, and the resulting initial risk level (before any work controls are applied, a determined according to LIR300-00-01, section7.2)

A. Electrical shock: improbable / catastrophic = medium
B. Spraying water: negligible / frequent = low
C. Cuts from broken glassware: moderate / occasional = medium
D. Pinch injuries: moderate / occasional = low
E. Lifting injuries: moderate / occasional = low
F. Acid/base burns: moderate / occasional = low
G. Pinch injury from electrical panel: moderate / probable = medium

Overall *initial* risk: ☐ Minimal ☐ Low ☒ Medium ☐ High

Operational requirements

List applicable Laboratory, facility, or activity operation requirements directly related to the work:

☒ None ☐ List: Work Permits required? ☒ No ☐ List:

HAZARD CONTROL PLAN, continued

Mitigating hazards

Describe how the hazards listed above will be mitgated (e.g., safety equipment, administrative controls, etc.):

No one will work alone in the sample processing room. All personnel will wear safety glasses with side shields.

A. Electrical shock: be aware of the possibility for shocks when electrical outlets or cords get wet. Clean up spilled water immediately. Unplug equipment that gets wet. All outlets in the room have GFCI protection.
B. Spraying water: be aware of pressure in the flexible lines, use caution when disconnecting hoses.
C. Cuts from broken glassware: Use care when handling glassware. Use leather gloves to pick up any broken glass.
D. Pinch injuries: use care and common sense
E. Lifting injuries: personnel will use proper lifting techniques and ask for help with heavy items.
F. Acid/base burns: the eye wash in the room will be tested daily prior to handling acid ampoules. Personnel handling acid ampules will wear gloves, safety glasses, and apron. All personnel in the room will know how to use the emergency shower (outside the room) and eye wash.
G. Pinch injury from electrical panel: foam will be taped to the edge of the electrical panel to cover the sharp edge. An external handle may be attached to the refrig door.

Training

List knowledge, skills, ability, and training necessary to safely perform this work (check one or both):

☒Group-level orientation and training to this procedure.
☒Other → See training prerequisites on procedure page 2.

Wastes, residual materials

Are there any wastes and/or residual materials? (check one) ☐None ☒List:

- Liquid wastes (left-over sample water) will be disposed in drains according to waste profile no._____.
- Solid wastes (used sample bottles) will be disposed in trash according to waste profile no._____.

Residual risk

Consider the administrative and engineering controls to be used, the residual risk level (as determined according to LIR300-00-01, section 7.3.3) is (check one):

☐Minimal ☒Low ☐Medium (requires approval by Division Director)

HAZARD CONTROL PLAN, continued

Emergency actions

Emergency actions to take in event of control failures or abnormal operation (check one): ☐None ☒List:

Step	Action
1	Administer first aid.
2	Contact the ESH-18 group office.
3	Contact EM&R at 667-6211.

Signatures

Signature of preparer of this HCP: This HCP was prepared by a knowledgeable individual and reviewed in accordance with requirements in LIR 300-00-01 and LIR 300-00-02.

Preparer(s) signature(s)	Name(s) (print) /Position	Date

Signature by group leader on procedure title page signifies authorization to perform work for personnel properly trained to this procedure. This authorization will be renewed annually and documented in ESH-18 records. Controlled copies are considered authorized. Work will be performed to controlled copies only. This plan and procedure will be revised according to ESH-18-HCP-000 (preparing proc) and distributed according to ESH-18-HCP-000(document distribution).

Water Quality Group

Storm Water Runoff Sample Processing

This form is from ESH-18-HCP-010

Instructions: complete all boxes; enter "N/A" if not applicable. **Form revised 9/29/00.**
Attach copy of field chain of custody form to back of this form.

Sample location ID:	Location name:
Date samples retrieved from field:	Date of sample collection (runoff event):
Date sample processed:	Names of personnel processing sample:
Numbers of field bottles collected:	Approx. volume of sample collected (l):
Description of water: Color: Clarity:	Depth of sediment on bottom of bottles:
Other unique characteristics of sample or condition of bottles (partially filled, cracked, etc.):	
Lab sample IDs used on analytical bottles: (paste "Field book" bar codes here)	
Number of field bottle used for "max TSS" analytical sample split:	
Numbers of field bottles used in filtered composite:	
Numbers of field bottles used in unfiltered composite:	
Comments and additional information about the processing of this sample (deviations from procedure, problems encountered, etc.):	
Processing by: Signature / Name (print) / Date	
Date analytical lab notified of pending shipment:	Name of analytical laboratory and individual contacted:
Date sample packed for shipment:	Names of personnel packing sample:
Date c-of-c FAXed to analytical laboratory:	Shipping request number:
Delivery to shipping by: Signature / Name (print) / Date	

When complete, forward this form with copy of c-of-c and shipping request to Storm Water Team Leader.

APPENDIX K

EPA DISCHARGE MONITORING REPORT GUIDANCE DOCUMENT EXAMPLE LOS ALAMOS NATIONAL LABORATORY DISCHARGE MONITORING REPORTS

NPDES

REPORTING

REQUIREMENTS

HANDBOOK

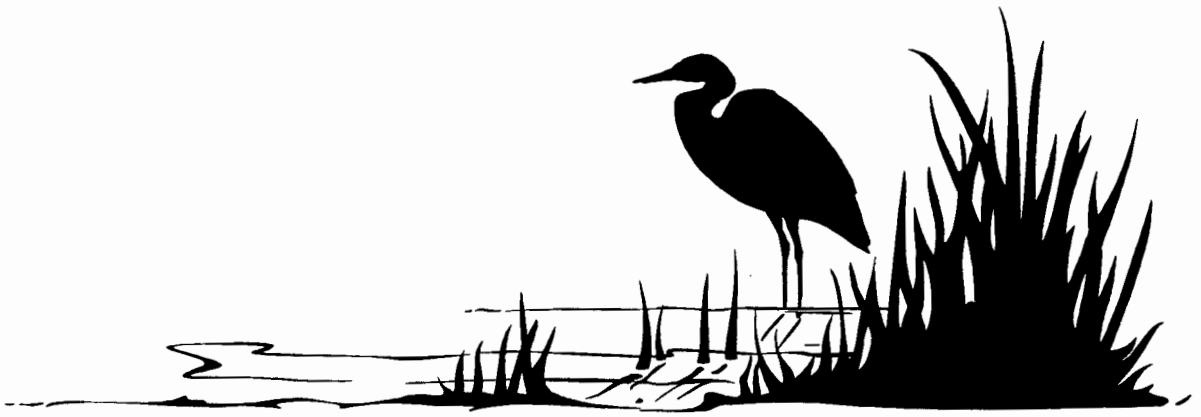
August 1, 1997

Environmental Protection Agency
Region 6 (6EN-WC)
1445 Ross Avenue
Dallas, TX 75202

This booklet is designed to assist the permittee in complying with the reporting requirements in the NPDES permit. We will take you step-by-step in filling out the Discharge Monitoring Report (DMR) and submitting non-compliance and other reports. We have listed the most commonly asked questions with the answers. You will also find helpful information in the form of commonly used math formulas and acceptable abbreviations for filling out the DMR.

PROGRAM AUTHORITY

Facilities that discharge wastewater to receiving waters of the United States must apply for a National Pollutant Discharge Elimination System (NPDES) permit for that discharge. Program Authority is in accordance with Sections 301, 302, 308, 402 and 503 of the Federal Water Pollution Control Act of 1972, as amended by the Clean Water Act of 1977. The Permittee is responsible for understanding and meeting all permit requirements and submitting complete, accurate and legible self-monitoring data.



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VI. MOST COMMONLY ASKED QUESTIONS

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2. Frequency of Analysis

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DISCHARGE MONITORING REPORTS (DMRS)

The required sample collection and analytical results must be reported to the EPA/NPDES State Agency through the submission of DMRs (EPA Form 3320-1). These DMRs are to be submitted on the date specified in the permit. It is extremely important that the data reported on the DMR be accurate and timely. The reported data will be compared with the current limits contained in the permit or any enforcement order to determine facility compliance.

SEE PAGES 4-6 FOR

FIGURE 1 INSTRUCTIONS FOR

COMPLETION

Figure 1

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)
NAME (1)
ADDRESS
FACILITY LOCATION (2)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

(3) PERMIT NUMBER | (4) DISCHARGE NUMBER

(5) MONITORING PERIOD
FROM YEAR (20-21) MO (22-23) DAY (24-25) TO YEAR (26-27) MO (28-29) DAY (30-31)

(6) ☐ Check here if No Discharge

NOTE: Read Instructions before completing this form

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

PARAMETER (32-37)		(3 Card Only) (46-53) QUANTITY OR LOADING (54-61) AVERAGE	MAXIMUM	UNITS	(4 Card Only) (38-45) QUALITY OR CONCENTRATION (46-53) MINIMUM	AVERAGE	MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
(7)	SAMPLE MEASUREMENT	(8)							(8A)	(8B)	(8C)
	PERMIT REQUIREMENT	(9)									
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
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	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

(10)

TYPED OR PRINTED

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 GATHER AND EVALUATE 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. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. (Penalties under these statutes may include fines up to $10,000 and/or imprisonment of between 6 months and 5 years.)

(11)

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: (12) AREA CODE | NUMBER

DATE: (13) YEAR | MO | DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

(14)

EPA Form 3320-1 (10-96) (REPLACES EP A FORM T-40 WHICH MAY NOT BE USED.) PAGE OF

DMR Instructions

(from back of DMR)

PAPER WORK REDUCTION ACT NOTICE

Public reporting burden for this collection of information is estimated to vary from a range of 10 hours as an average per response for some minor facilities, to 110 hours as an average per response for some major facilities, with a weighted average for major and minor facilities of 18 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

GENERAL INSTRUCTIONS

1. If form has been partially completed by preprinting, disregard instructions directed at entry of that information already pre-printed.

2. Enter "Permittee Name/Mailing Address (and facility name/ location, if different)," "Permit Number," and "Discharge" where indicated. (A separate form is required for each discharge.)

3. Enter dates beginning and ending "Monitoring Period" covered form where indicated.

4. Enter each "Parameter" as specified in monitoring requirements of permit.

5. Enter "Sample Measurement" data for each parameter under "Quantity" and "Quality" in units specified in permit. "Average" is normally arithmetic average (geometric average for bacterial parameters) of all sample measurements for each parameter obtained during "Monitoring Period"; "Maximum" and "Minimum" are normally extreme high and low measurements obtained during "Monitoring Period". (Note to municipals and secondary treatment requirement: Enter 30-day average of sample measurements under "Average", and enter maximum 7-day average of sample measurements obtained during monitoring period under "Maximum.")

6. Enter "Permit Requirement" for each parameter under "Quantity" and "Quality" as specified in permit.

7. Under "No Ex" enter number of sample measurements during monitoring period that exceeded maximum (and/or minimum or 7-day average as appropriate) permit requirement for each parameter. If none, enter "0".

8. Enter "Frequency of Analysis" both as "Sample Measurement" (actual frequency of sampling and analysis used duringmonitoring period) and as "Permit Requirement" specified in permit. (e.g. Enter "Cont," for continuous monitoring, "1/7" for one day per week, "1/30" for one day per month, "1/90" for one day per quarter, etc.)

9. Enter "Sample Type" both as "Sample Measurement" (actual sample type used during monitoring period) and as "Permit Requirement", (e.g. Enter "Grab" for individual sample, "24HC" for 24-hour composite, "CONT" for continuous monitoring, etc.)

10. Where violations of permit requirements are reported, attach a brief explanation to describe cause and corrective actions taken, and reference each violation by date.

11. If "No Discharge" occurs during monitoring period, check the box for "No Discharge".

12. Enter "Name/Title of Principal Executive Officer" with "Signature of Principal Executive Officer or Authorized Agent", "Telephone Number", and "Date" at bottom of form.

13. Mail signed Report to Office(s) by date(s) specified in permit. Retain copy for your records.

14. More detailed instructions for use of this Discharge Monitoring Report (DMR) form may be obtained from Office(s) specified in permit.

15. Facilities using the digital form of the DMR must first obtain approval from the NPDES authority in their state. The parameters and data on the form must be mono-spaced (e.g. Courier) and have a size of 10 pitch (12 points). Approval for EPA Region 6 can be obtained by contacting Cathy Bius at (214)665-6456. Permitees holding a storm water general permit in New Mexico, Texas, or Oklahoma do not need approval if they use the correct type as specified above. THE FORM MAY NOT BE ALTERED IN ANY MANNER.

LEGAL NOTICE

This report is required by law (33 U.S.C. 1318; 40 C.F.R. 125.27). Failure to report or failure to report truthfully can result in civil penalties not to exceed $11,000 per day of violation; or in criminal penalties not to exceed $27,500 per day of violation, or by imprisonment for not more than one year, or by both.

DISCHARGE MONITORING REPORTS (DMRS)

Instructions for Completion

See Figure 1
DISCHARGE MONITORING REPORT

1. Permittee Name/Address - Name and mailing address of permittee.

2. Facility/Location - Enter if different from mailing address.

3. Permit Number - State abbreviation and permit number as it appears on the NPDES permit, which consists of two alpha and seven numeric characters. In the case of General Permits, the first three characters will be alpha with the last six numeric.

4. Discharge Number (Outfall Number) - Consists of a combination of four alpha and numeric characters. (EX: 001A, 002Q, 003S, 004Y).

   Some exceptions include, but are not limited to, biomonitoring/toxicity. The first two characters are TX, indicating toxicity testing. The last two characters are usually an assigned code used for Agency tracking purposes (EX: TX1A, TX1S, TX1Y, etc.).

5. Monitoring Period - From first day of monitoring period through last day of monitoring period. The dates should be displayed as YR MO DAY. Applicable monitoring periods will be specified in each permit. Some examples include but are not limited to:

Monthly	-	96	01	01	to	96	01	31
Quarterly	-	96	01	01	to	96	03	31
Semi-annual	-	96	01	01	to	96	06	30
Annual	-	96	01	01	to	96	12	31

6. No Discharge - If facility has no flow/no discharge for a specific outfall and/or monitoring period, "NO DISCHARGE" must be indicated for that outfall and monitoring period.

7. Parameters - Specified in the permit as effluent characterists for each discharge number (outfall), one parameter per box. Each box must display the parameter name and corresponding storet code number. (EX: BOD (00310), pH (00400), TSS (00530), flow (50050)). The parameters should display on the DMR form in numeric order by storet code number.

8. Sample Measurement - Sample measurement data for each parameter under "Quantity or Loading" or "Quality or Concentration" in accordance with permit limitations. Indicate units (lbs/day, mg/l, su, etc) as specified in the permit. It may be necessary to do calculations to convert data to the units required in the permit. "Average" is normally arithmetic average (geometric average for bacterial parameters) of all sample measurements for each parameter obtained during the monitoring period. "Maximum" and "Minimum" are normally the highest and lowest measurements obtained during the monitoring period. (See **TABLE 1 - MATH FORMULAS**.)

   A. No. EX (Number of Exceedances) - Total of sample measurements that exceed the daily maximum, daily minimum, 7-day (weekly) average permit limit. **DO NOT** include monthly average or daily average violations in this field. If none, enter "0". Permittees with continuous pH, or temperature monitoring requirements should consult the permit for what constitutes an exceedance and report accordingly.

   B. Frequency of Analysis - **Actual** frequency of analysis used during the monitoring period; the minimum requirement is as specified in the permit. Enter "CONT" for continuous monitoring, "01/07" for one day per week, "01/30" for one day per month, "01/90" for one day per quarter, etc. Some examples are included in **TABLE 2**.

   C. Sample Type - **Actual** sample type used during monitoring period. Enter "GRAB" for individual sample, "24HC" for 24-hour composite, "CONT" for continuous monitoring. Some examples are included in **TABLE 3**.

9. Permit Requirement - Effluent limitations for each parameter as specified in the permit are displayed on the DMR under "Quantity or Loading" and/or "Quality or Concentration". Monitoring requirements for frequency of analysis and sample type as specified in the permit are also displayed. The DMR must reflect the most current monitoring and reporting requirements.

10. Name/Title Principal Executive Officer or Authorized Agent - See the permit for qualifications of Principal Executive Officer and signature authorization.

11. Signature - Original legible signature of authorized Principal Executive Officer or Authorized Agent. Every page of the DMR must have an original signature.

In the event a revised or corrected DMR is necessary, an original authorized signature and date of signature is required on each page. The word **REVISED** should be clearly visible on each page of the form.

12. Telephone - Telephone number of Principal Executive Officer.

13. Date - **Actual date** of signature certifying authenticating data submitted on DMR.

14. Comments - May contain any clarifying information by either Agency or Permittee.

NOTE: The results of any additional monitoring of parameters at the location(s) designated in the permit, using approved analytical methods, must be included on the DMR (see Part III.D.5 of permit).

MOST RECENT VERSION OF DISCHARGE MONITORING REPORT CAN BE FOUND ON THE INTERNET AT:

http://www.epa.gov/earth1r6/6en/w/forms.htm

REVISED/CORRECTED DMRS

Sometimes it will be necessary for the facility to submit a revised or corrected DMR either because the Agency has requested it or the facility has discovered an error. Some reasons for submitting a revision/correction are:

1. Missing original or unauthorized signature
2. Missing NPDES Permit Number, Discharage Number (Outfall Number) and/or Monitoring Period
3. Missing sample measurements
4. Parameters not reported
5. Loading measurements not correctly calculated
6. Missing Frequency of Analysis, Sample Type and/or Number of Excursions

When a revised/corrected DMR is submitted, it **must**:

1. Have an original authorized signature
2. Date of new signature
3. Be clearly marked as a revised or corrected DMR

SELF-GENERATED DMR FORMS

In order to receive approval for use of a facility-generated (self-generated) DMR form, a facility must submit an approval request with sample DMRs reflecting permit requirements for each monitoring period and discharge number. The forms submitted for approval must be an exact replica of the DMRs provided by the Agency. The font size for the Permit Number, Discharge Number, Parameters and Sample Measurements should be 10 point, 12 characters per inch. These facility-generated forms must not be used until Agency approval has been obtained. If there is a change in monitoring or reporting requirements (EX: reissued permit), it will be necessary for the facility to revise their forms to reflect the changes and resubmit for approval.

NON-COMPLIANCE REPORTS

The Permittee shall report any instances of non-compliance with their permit. See your permit for specific requirements for reporting anticipated non-compliance, 24-hour reporting of conditions which may endanger health and the environment (via phone or fax) and other non-compliances which must be reported. The 24-hour Hot Line phone number is (214) 665-6595.

This report must include the following information as indicated on Figure 2, **SAMPLE NON-COMPLIANCE REPORT**:

1. Type of violation
2. Date of violation
3. Duration of violation
4. Cause of violation
5. Corrective action taken

Non-compliance Reports can also be submitted using the following Internet address:

hhtp://www.epa.gov/earthlr6/6en/w/cwareprt.htm

SAMPLE NON-COMPLIANCE REPORT

Permit Number:

Facility Name:Month/Year: Authorized Signature/Date:_____

Type of Violation (Avg/Max,,Bypass Overflow, Etc.)	Permit Limit	Date of Violation	Duration of Viol.	Cause of Violation	Corrective Action or Other Narrative
EXAMPLE: TSS, daily max 67 mg/l	45 mg/l	3/16/95	1 day	Failure of sludge pump	Repaired pump, wasted sludge
Bypass, 100 gals at		3/23/95	2 hrs	Line blockage	Line cleared and cleaned
138 Pike St.					

Figure 2

SCHEDULES/REPORTS REQUIRED BY PERMITS

In addition to DMRs and non-compliance reports (NCRs), the permit may contain additional reporting provisions, with their own reporting requirements. These provisions could include compliance schedules with progress reports, pretreatment requirements, toxicity, sludge, stormwater, etc. The actual completion date of any scheduled activity must be included in the submitted report. See the permit for specific reporting dates and requirements.

MOST COMMONLY ASKED QUESTIONS

1. How do I report "too numerous to count" coliform samples?

   Report **TNTC** on the DMR form. A TNTC reported on the DMR exceeds the permit limit and is considered a permit violation. Actual numbers are required by the permit and should be reported when possible.

2. How do I count number of exceedances?

   If daily maximum/daily minimum, count each sample that is below and/or above the minimum/maximum limit.

   If a 7-day average or weekly limit, every 7-day average which exceeds the limit in the permit shall be counted as one exceedance.

DO NOT INCLUDE 30-DAY AVERAGES OR DAILY AVERAGES AS EXCEEDANCES ON DMR. This exceedance is already included in the above calculations.

3. How do I calculate and report 7-day averages?

   We recognize that calendar weeks and calendar months rarely coincide. Therefore, for the purpose of calculating and

reporting 7-day averages, you should follow the process below:

a. Define your week (SUN-SAT, MON-SUN, etc.).

b. Calculate the averages of all sample data obtained for each week.

c. The highest calculated weekly average will be reported on the DMR for the month in which (1) the week ends or (2) the week begins, or (3) the month which contains the greatest number of days. It is the choice of the facility. However, the choice should be consistent month to month, year to year. SET A RULE AND STICK WITH IT.

4. Who can sign a DMR?

See permit for authorized signatory official. An authorization for anyone other than the person designated in the permit must be on file with the Regulatory Agency and signed by the permit signatory authority.

5. Do I have to sign each page of my DMR?

Yes. Each page must be signed. If any revisions are submitted, that revised page must also have an original signature and new signature date.

6. Do I send copies of State DMRs to EPA (Texas only)?

No, and you do not need to send copies of EPA DMRs to TNRCC.

7. Do I have to send a copy of a non-compliance report for my state permit to EPA?

No. Copies of state required reports are not required to be submitted to EPA.

8. I received a letter from EPA telling me that the State has NPDES authority. Do I have to send any more reports to EPA?

Once you have received a letter from EPA transferring <u>enforcement</u> authority for your facility to an approved NPDES state, you no longer need to send DMRs, non-compliance reports, etc., to EPA, unless you receive a specific request or action from EPA.

Tables

TABLE 1

MATH FORMULAS

CONVERSION FACTORS:

1 gallon	=	8.34 lbs.
1 cu. ft.	=	7.48 gallons
1 acre	=	43,560 sq. ft.
1 ft. head	=	.43 PSI
π	=	3.14

FORMULAS:

1. Area of a Rectangle (square units)

   Length X Width = Area

2. Area of a circle (square units)

   π X radius^2 = Area or .785 X Diameter^2 = Area

3. Volume of rectangular or circular container (clarifier, pond, pipe, etc.)

   Surface Area X Depth = Volume (cu. units)

4. Volume in Gallons

   Volume in cu. ft. X 7.48 = gallons

5, Detention Time

   $$\frac{\text{Volume (gals.)}}{\text{Flow (gpm)}} = \text{Detention Time (in minutes)}$$

   NOTE: If flow is in gpd, detention time is in days.)

6. Circumference of a Circle

π X Diameter = Circumference

7. BOD (mg/l)

$$\frac{(\text{Initial D.O.} - \text{Final D.O.}) \times 100}{\%\ \text{Dilution}} = \text{BOD (mg/l)}$$

OR

(Initial D.O. - Final D.O.) X Dilution Facor = BOD

$$\text{Dilution Factor} = \frac{\text{TOTAL VOLUME}}{\text{SAMPLE VOLUME}}$$

8. Suspended Solids (mg/l)

$$\frac{\text{Weight}_2\ \text{(mg)} - \text{Weight}_1\ \text{(mg)} \times 1000}{\text{ml of Sample Filtered}}$$

9. Pounds of BOD, Solids, Chemicals

Concentration (mg/l) X Quantity (million gals.) X 8.34 = lbs.

NOTE: Quantity, Volume or Flow must be in million gals.

10. Weir Overflow Rate

$$\frac{\text{GPD}}{\text{Length of Weir}} = \text{gal./ft./day}$$

11. Surface Loading Rate

$$\frac{\text{GPD}}{\text{Surface Area}} = \text{gal./sq.ft./day}$$

METRIC SYSTEM

Prefix		Value	Example		
Kilo	-	1000	1 Kilogram	=	1000 Grams
Hecto	-	100	1 Hectogram	=	100 Grams
Deka	-	10	1 Deckagram	=	10 Grams
(Unit)	-	1	1 Gram	=	1 Gram
Deci	-	0.1 (1/10)	1 Decigram	=	0.1 Gram
Centi	-	0.01 (1/100)	1 Centigram	=	0.01 Gram
Mili	-	0.001 (1/1000)	1 Miligram	=	0.001 Gram
Micro	-	0.000001 (1/1,000,000)	1 Microgram	=	0.000001 Gram

METRIC SYSTEM CONVERSION FACTORS

1 pound	=	454 grams
1 ounce	=	28 grams
1 gallon	=	3.785 litres
1 quart	=	0.946 litre
1 inch	=	25.4 milimeter
1 foot	=	0.305 meters
1 mile	=	1.609 kilometers

POPULATION EQUIVALENT

$$\text{Population Equivalent} = \frac{\text{Average BOD (mg/l)} \times \text{Average Flow (MGD)} \times 8.34}{.17 \text{ lbs/person/day}}$$

Average BOD will consist of a minimum of four (6 hour composite) samples taken at least 5 days apart.

Average flow will be the average of at least 20 days within a 30-day period.

Example: If your average BOD is 200 mg/l and your average flow is 1.0 MGD

$$\text{Pop. Eq.} = \frac{200 \times 1.0 \times 8.34}{.17} = 9{,}812 \text{ people}$$

TABLE 2

FREQUENCY OF ANALYSIS

FREQUENCY	DESCRIPTION	FREQUENCY	DESCRIPTION
N/A	NOT APPLIC	01/5Y	ONCE/5 YEARS
N/R	NOT REPORTD	01/60	ONCE/2 MONTHS
N/V	NOT VALID	01/7M	ONCE/7 MONTHS
CL/OC	CHLRNTN/OCCURS	01/90	QUARTERLY
DL/DS	DLY WHNDISCHRG	01/99	INSTNT
REPRT	REPORT	02/BA	TWICE/BATCH
WH/DS	WHEN DISCHRG	02/DS	TWICE/DISCH
WH/MN	MEASRD WHN MON	02/DW	TWICE/DSCHWK
01/BA	ONCE/BATCH	02/SH	TWICE/SHIFT
01/DD	ONCE/DSCHDY	02/YR	SEMI-ANNUAL
01/DM	ONCE/DSCHMN	02/01	TWICE/DAY
01/DQ	ONCE/DSCHQTR	02/07	TWICE/WEEK
01/DS	ONCE/DISCHG	02/12	TWICE/12 DAYS
01/DW	ONCE/DSCHWK	02/30	TWICE/MONTH
01/RN	ONCE/RN EVNT	02/90	TWICE/QTRLY
01/SH	ONCE/SHIFT	02/99	SEE PERMIT
01/SN	ONCE/SEASON	03/BA	THREE/BATCH
01/YR	ANNUAL	03/DS	THREE/DISCHG
01/01	DAILY	03/DW	3 DAYS/WEEK
01/02	ONCE/2 DAYS	03/YR	THREE/YEAR
01/03	ONCE/3 DAYS	03/01	THREE/DAY
01/04	ONCE/4 DAYS	03/05	THREE/5 DAYS
01/05	ONCE/5 DAYS	03/07	THREE/WEEK
01/06	ONCE/6 DAYS	03/08	THREE/8 DAYS
01/07	WEEKLY	03/30	THREE/MONTH
01/08	ONCE/8 DAYS	03/5Y	THREE/5 YEARS
01/09	ONCE/9 DAYS	03/99	SEE PERMIT
01/10	ONCE/10 DAYS	04/BA	FOUR/BATCH
01/11	ONCE/11 DAYS	04/01	FOUR/DAY
01/12	ONCE/12 DAYS	04/07	FOUR/WEEK
01/13	ONCE/13 DAYS	04/30	FOUR/MONTH
01/14	ONCE/2 WEEKS	04/99	SEE PERMIT
01/21	ONCE/3 WEEKS	05/BA	FIVE/BATCH
01/28	ONCE/4 WEEKS	05/DW	5 DAYS/WEEK
01/30	ONCE/MONTH	05/WK	5 TIMES/WEEK
01/4M	ONCE/4 MONTHS	05/01	5 TIMES/DAY
01/5M	ONCE/5 MONTHS	05/07	WEEK-DAYS

FREQUENCY	DESCRIPTION	FREQUENCY	DESCRIPTION
05/08	FIVE/8 DAYS	09/99	SEE PERMIT
05/30	5 TIMES/MONTH	10/30	TEN/MONTH
05/90	FIVE/QRTLY	10/99	SEE PERMIT
05/99	SEE PERMIT	12/01	TWELVE/DAY
06/SH	SIX/OPRSHIFT	12/30	12 PER MONTH
06/01	SIX/DAY	15/30	FIFTEEN/MONTH
6/07	SIX/WEEK	16/01	SIXTEEN/DAY
06/30	6 TIMES/MONTH	16/30	SIXTEEN/MONTH
06/99	SEE PERMIT	18/01	EIGHTEEN/DAY
07/30	7 TIMES/MONTH	18/30	EIGHTEEN/MONTH
07/99	SEE PERMIT	24/01	HOURLY
08/BA	EIGHT/BATCH	48/01	EVERY ½ HR
08/01	EIGHT/DAY	66/66	WPC PLAN
08/30	EIGHT/MONTH	77/77	CONTIN-GENT
08/99	SEE PERMIT	88/88	CLEANING
09/01	NINE/DAY	99/99	CONTINUOUS
09/30	NINE/MONTH		

TABLE 3

SAMPLE TYPES

SAMPLE	DESCRIPTION	SAMPLE	DESCRIPTION
CA	CALCTD	RD	RNG-DA
CN	CONTIN	RF	RCDFLO
CP	COMPOS	RG	RANG-C
CR	CK REQ	RP	REPRES
CS	CORSAM	RT	RCOTOT
CT	CERTIF	R4	RNG-4A
CU	CURVE	SR	SGLRDG
DA	DAILAV	SS	STAT-SH
DS	DISCRT	ST	STATIC
ES	ESTIMA	TI	TIMEMT
FI	FLOIND	TM	TOTALZ
GH	5GR24H	VI	VISUAL
GM	GRAB10	01	COMP-1
GR	GRAB	02	COMP-2
G2	GRAB-2	03	COMP-3
G3	GRAB-3	04	COMP-4
G4	GRAB-4	05	COMP-5
G5	GRAB-5	06	COMP-6
G6	GRAB-6	08	COMP-8
G7	GRAB-7	1H	AVG-1H
G8	GRAB-8	10	COMP10
G9	GRAB-9	12	COMP12
IM	IMERSN	16	COMP16
IN	INSTAN	2H	AVG-2H
IS	INSITU	20	COMP20
IT	IMRSTB	22	BATCH
MC	MATHCL	24	COMP24
MP	MATHCP	28	COMP28
MS	MEASRD	3G	3GR/HR
MT	METER	4C	4DA24C
NA	NOT AP	4H	AVG-4H
NR	NOTRPT	5G	5GR45M
OC	OCCURS	72	COMP72
PC	PMPCRV	96	COMP96
PL	PMPLOG	SB	SEQBAR
RC	RCORDR		

This document was produced by the following staff members of the Compliance Assurance and Enforcement Division, NPDES Compliance Monitoring Section, of the Environmental Protection Agency, Region 6:

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Compliance Assurance and Enforcement Division (6EN-W)
Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, TX 75202

DMR WITH FLOW AND SAMPLE COLLECTION

PERMITTEE N. ADDRESS (Include Facility Name/Location if Different)
NAME University of California
ADDRESS Los Alamos National Laboratory
PO Box 1663, Mail Stop K497
Los Alamos, NM 87545

FACILITY LOCATION SAME

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Sector K-Hazardous Waste TSDFs (SWMUs)

(2-16) PERMIT NUMBER	(17-19) DISCHARGE NUMBER
NMR05A509	E122

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	00	7	1	TO	00	9	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

☐ Check here if No Discharge

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
July 17, 2000 2.05 Hr. Storm Time 0.03 Mo. Since Prev.	SAMPLE MEASUREMENT		0.16	in.			342548	gal.			
	PERMIT REQUIREMENT										
COD 00340 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT						60	mg/L	0	04/yr	Grab
	PERMIT REQUIREMENT										
TSS 00530 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT						740	mg/L	0	04/yr	Grab
	PERMIT REQUIREMENT										
TKN 00625 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT						1.7	mg/L	0	04/yr	Grab
	PERMIT REQUIREMENT										
nitrate + nitrite (as N) 00630 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT						0.71	mg/L	0	04/yr	Grab
	PERMIT REQUIREMENT										
cyanide 00720 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT						0.01	mg/L	0	04/yr	Grab
	PERMIT REQUIREMENT										
magnesium, tot. recover. 00921 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT						2.2	mg/L	0	04/yr	Grab
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

Steven Rae
ESH-18 Group Leader

TYPED OR PRINTED

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 GATHER AND EVALUATE 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 PENALTITIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS. SEE 18 U.S.C. S 1001 AND 33 U.S.C. S 1319. (Penalties under these statutes may include fines up to $10,000 and or maximum improsonment of between 6 months and 5 years.)

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE AREA CODE	NUMBER	DATE YEAR	MO	DAY
505	665-0453			

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here) July 17, 2000

With this significant increase in the number and volume of samples collected and analyzed, a limited sample volume obtained by automated samplers resulted in the inability to analyze all parameters on the expanded analyte list due to an inadequate sample volume. The 72-hour storm event interval was not met for this sampling event. This is due to the sporadic and infrequent nature of storm events that occur at this time of year at the Laboratory.

PERMITTEE NAME / ADDRESS (Include Facility Name/Location if Different)

University of California
Los Alamos National Laboratory
PO Box 1663, Mail Stop K497
Los Alamos, NM 87545

FACILITY LOCATION: SAME

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Sector K-Hazardous Waste TSDFs (SWMUs)

(2-16) PERMIT NUMBER	(17-19) DISCHARGE NUMBER
NMR05A509	E122

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	00	7	1	TO	00	9	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

☐ Check here if No Discharge

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
arsenic, tot. recover.	SAMPLE MEASUREMENT						0.0043	mg/L	0	04/yr	Grab
00978 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT										
selenium, tot. recover.	SAMPLE MEASUREMENT						0.005	mg/L	0	04/yr	Grab
00981 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT										
iron	SAMPLE MEASUREMENT						5	mg/L	0	04/yr	Grab
01045 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT										
silver, tot. recover.	SAMPLE MEASUREMENT						0.00078	mg/L	0	04/yr	Grab
01079 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT										
zinc	SAMPLE MEASUREMENT						0.5	mg/L	0	04/yr	Grab
01092 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT										
aluminum, tot. recover.	SAMPLE MEASUREMENT						5.3	mg/L	0	04/yr	Grab
01104 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT										
cadmium, tot. recover.	SAMPLE MEASUREMENT						0.00149	mg/L	0	04/yr	Grab
01113 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

Steven Rae
ESH-18 Group Leader

TYPED OR PRINTED

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 GATHER AND EVALUATE 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 PENALTITIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS. SEE 18 U.S.C. S 1001 AND 33 U.S.C. S 1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE AREA CODE	TELEPHONE NUMBER	DATE YEAR	MO	DAY
505	665-0453			

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here) July 17, 2000

For Cd, and Pb were analyzed by method SW-846:6020 and are reported as such.

PERMITTEE NAME ADDRESS (Include Facility Name/Location if Different)

NAME University of California
ADDRESS Los Alamos National Laboratory
PO Box 1663, Mail Stop K497
Los Alamos, NM 87545

FACILITY LOCATION SAME

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Sector K-Hazardous Waste TSDFs (SWMUs)

PERMIT NUMBER (2-16)	DISCHARGE NUMBER (17-19)
NMR05A509	E122

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	00	7	1	TO	00	9	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

☐ Check here if No Discharge

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
lead, tot. recover.	SAMPLE MEASUREMENT						0.0468	mg/L	0	04/yr	Grab
01114 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT										
ammonia (as N)	SAMPLE MEASUREMENT						0.5	mg/L	0	04/yr	Grab
61574 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT										
mercury	SAMPLE MEASUREMENT						0.000078	mg/L	0	04/yr	Grab
71900 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

Steven Rae
ESH-18 Group Leader

TYPED OR PRINTED

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 GATHER AND EVALUATE 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 PENALTITIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS. SEE 18 U.S.C. S 1001 AND 33 U.S.C. S 1319. (Penalties under these statutes may include fines up to $10,000 and or maximum improsonment of between 6 months and 5 years.)

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE AREA CODE	TELEPHONE NUMBER	DATE YEAR	DATE MO	DATE DAY
505	665-0453			

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here) July 17, 2000

DMR WITH NO FLOW

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME University of California

ADDRESS Los Alamos National Laboratory
PO Box 1663, Mail Stop K497
Los Alamos, NM 87545

FACILITY LOCATION Same

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved:
OMB No. 2040-0004
Approval expires 05-31-98

PERMIT NUMBER (2-16)	DISCHARGE NUMBER (17-19)
NMR05A509	E122

Sector D-Asphalt Paving, Sector K-Hazardous Waste TSDFs (SWMUs), Sector O-Steam Electric Power, Sector AA-Fabricated Metals

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	99	10	1	TO	99	12	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

[X] Check here if No Discharge

NOTE: Read Instructions before completing this form

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
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	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Steven Rae ESH-18 Group Leader	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 GATHER AND EVALUATE 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. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	505	6650453			
TYPED OR PRINTED			AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)
No storm water discharge was recorded at this monitoring station for the monitoring period listed