



State of New Mexico  
**ENVIRONMENT DEPARTMENT**  
**DOE OVERSIGHT BUREAU**  
 P.O. Box 1663, MS/J-993  
 Los Alamos, New Mexico 87545



General Storm water

GARY JOHNSON  
 GOVERNOR

MARK E. WEIDLER  
 SECRETARY

May 5, 1998

Mr. Mat Johansen, AIP POC  
 U.S. Department of Energy  
 Los Alamos Area Office  
 528 35<sup>th</sup> Street, MS A316  
 Los Alamos, NM 87544

RECEIVED  
 MAY 11 1998  
 DOE OVERSIGHT BUREAU

RE: Storm and surface water sampling at LANL

Enclosed please find copies of our Sampling and Analysis Plan (SAP) for the collection of surface water samples during storm and storm and runoff events during Calendar Year 1998. Each SAP contains a list of planned locations that we would like to sample. As per an e-mail request made by ESH-18, we are willing to split all samples obtained via our automated samplers and would like to meet with the appropriate ESH-18 personnel in order to determine an appropriate method for splitting these samples. Our staff is in the process of coordinating with the appropriate Facility Management Units (FMU's) in order to conform to the work and safety requirements for each location. In addition, the DOE OB requests splits of all samples located at LANL's permanent storm water monitoring stations.

Thank you for time and assistance in this matter. If you have any questions regarding this information, please do not hesitate to contact Dennis Romero of our staff at 672-0459.

Sincerely,

*Steve Yanicak*

Steve Yanicak, LANL POC  
 Department of Energy Oversight Bureau

SY/dr

Enclosures

- cc: John Parker, NMED, Chief, DOE OB
- Michael Dale, NMED, DOE OB, MS J-993
- Ralph Ford-Schmid, NMED, DOE OB
- Barbara Hoditschek, NMED, SWQB
- Bonnie Koch, DOE - LAAO, MS A-316
- Steve Rae, ESH-18, MS K-497
- Michael Alexander, ESH-18, MS K-497
- Dave Shaull, ESH-18, MS K-497
- Ken Mullen, ESH-18, MS K-497

LANL/ES - misc



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MARK E. WEIDLER  
SECRETARY

**MEMORANDUM**

**TO:** Steve Yanicak, NMED, DOE OB, LANL POC

**FROM:** Dennis Romero, NMED, DOE OB

**THROUGH:** Michael Dale, NMED, DOE OB

**DATE:** March 25, 1998

**SUBJECT:** **Sampling and Analysis Plan (SAP) for storm-water sampling during the 1998 calendar year**

**PURPOSE**

NMED DOE Oversight Bureau (DOE OB) personnel plan to collect storm-water and snow-melt runoff samples at several onsite and offsite locations during the 1998 calendar year.

The primary purpose of this effort is to assess water quality and contaminant transport within several watersheds at LANL. This type of sampling is vital, as it provides an early warning of any current environmental releases and identification of legacy plumes from the laboratory to ground-water pathways and watersheds of the Rio Grande. In addition, the sampling will also aid in evaluating the effectiveness of best management practices (BMPs) employed by LANL at its PRSs.

Data derived from this sampling will be released to DOE, NMED, LANL, EPA, Native Americans, etc., as prescribed by the Agreement-in-Principle Umbrella Protocol. Following the data release, a formal report will be submitted.

**PROCEDURES**

OB personnel will collect both grab and ISCO-type samples in accordance with Section IV of DOE OB Standard Operating Procedures for Sampling and Analytical Activities, Revision 2.

Filtered and unfiltered water samples will be collected for laboratory analyses of inorganics, radionuclides and organics ( Tables 1 and 2). Samples to be analyzed for inorganics will be collected in open-mouth, plastic, 1-L bottles. Samples to be analyzed for organic compounds will be collected in 1-L, amber, glass bottles. Samples for analysis of total metals and non-metal inorganics will be acidified in the field or as soon as possible with nitric and sulfuric acid respectively. Those for analysis of dissolved metals and radionuclides will be filtered through a 0.45  $\mu\text{m}$  filter and acidified with nitric acid in the field or as soon as possible. Anions and organic-compound samples will not

be acidified or filtered. Random, in-house duplicate samples (approximately 15 separate constituents) will be submitted during the sampling season for QA/QC. All samples will be shipped via overnight carrier to a contract laboratory at an approximate temperature of 4 °C. Samples will be analyzed in accordance with the latest edition of U.S. Environmental Protection Agency (EPA) SW-846 methods and within EPA's method-detection limits.

Field water-quality meters, such as pH, specific conductance, nitrate as nitrogen, etc. will be calibrated by OB personnel at beginning of each day and checked with a known standard at the end of each day. All data, observations, etc., will be documented.

DOE OB staff have reviewed, and will adhere to LANL's Health and Safety Plan; all associated forms have been signed, and are on file with LANL's ESH Division in addition to being maintained in the White Rock office project file. The DOE OB sampling staff all have 40 hour Hazardous Waste Operations training specific to the collection of environmental samples for the LANL ER Project. Additionally, all staff have completed Radiation Worker 2 Training and are Q-Cleared.

#### ESTIMATED COST

The analytical cost for the referenced sampling will be approximately \$20,000 (Table 1). The selection of sampling stations and associated analytical suite is based on past and present contaminant-release sources/areas and the interpretation of historical LANL and OB hydrochemical data. The specific sampling locations are listed in Table 1.

If you have any comments or suggestions regarding our planned activities, please do not hesitate to contact either Michael Dale or myself.

DR:dr

#### ATTACHMENTS

cc: J. Parker, NMED, Chief, DOE Oversight Bureau  
S. Ortiz, NMED, DOE Oversight Bureau  
File, White Rock DOE OB Office

c:\...198storm.sap

## **TABLE 1 - Storm water sampling stations**

### **Locations of ISCO Automated Samplers**

**CDBST-0.1** (ISCO to be located in TA-46 southern tributary to Canada del Buey, just downstream of the SWCS facility)

**PTC- 1.82** (ISCO to be located in Potrillo Canyon at State Road 4)

**ANNT-0.1** (ISCO to be located at TA-39, northern tributary to Ancho Canyon)

**VA-0.01** (ISCO to be located just east of confluence with Water Canyon)

**PRT-0.01** (ISCO to be located at the mouth of Pratt Canyon)

### **Grab Samples**

1. **ACST-0.01** (southern tributary downstream from TA-45 outfall at the confluence with Acid Canyon)
2. **BC- 3.6** (Bayo Canyon, downstream from TA-10 fence line)
3. **BC-0.05** (Bayo Canyon at State Road 4, if the flow is continuous from BC-3.6)
4. **PU-2.1** (Pueblo Canyon just west of treatment plant outfall)
5. **DP-0.01** (ES station DPS-4, mouth of DP Canyon)
6. **LANT-0.01** (TA-21 tributary to Los Alamos Canyon just south of TA-21)
7. **Hillside 137 Drainage at LA**
8. **Hillside 138 Drainage at LA**
9. **Hillside 140 Drainage at LA**
10. **SA-3.48** (Sandia Canyon at State Road 4, if the flow is continuous up to TA-53)
11. **SA-7.0** at culvert
12. **MC-2.6** (Mortandad Canyon at State Road 4)
13. **CDB-2.01** (Cañada del Buey at State Road 4, gage E230)
14. **CDB-4.0** (Cañada del Buey at USGS gaging station E225)
15. **PA-2.08** (Pajarito Canyon at State Road 4)
16. **FN-0.64** (Fence Canyon at State Road 4)
17. **WC-3.23** (Water Canyon at State Road 4)
18. **AN-2.9** (Ancho Canyon 20' west of confluence with Ancho North Tributary)
19. **GC-5.0** (Guaje Canyon above Guaje Well Fields or 100' upstream of road switchback across channel)

Estimated cost: \$25,752.00



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**M E M O R A N D U M**

**TO:** Steve Yanicak, NMED, DOE OB, LANL POC

**FROM:** Michael Dale, NMED, DOE OB

**DATE:** March 19, 1998

**SUBJECT:** **Sampling and Analysis Plan (SAP) for split-sampling of ground and surface waters during the 1998 calendar year**

**PURPOSE**

NMED DOE Oversight Bureau (DOE OB) personnel plan to collect split-samples of ground and surface water (wells, springs and surface waters) at Environmental Surveillance (ES) and Environmental Restoration (ER) stations during the 1998 calendar year.

The primary purpose of this effort is to check 5 - 10% of LANL's hydrochemical data, and to evaluate water quality at the Laboratory and surrounding area. The annual data collected by ES and ER and their verification by the DOE OB are important because it continues to provide early warning of any current environmental releases and identification of legacy plumes from the laboratory to ground-water pathways and watersheds of the Rio Grande.

**PROCEDURES**

Sampling of wells, springs and surface waters will be performed by ES and ER personnel so that a true split sample is obtained; hence, OB personnel will not be following DOE OB SOP's for water sampling. LANL SOP's include # 06.13 for the collection of surface-water samples, and # 06.01 for the collection of ground-water samples.

Filtered and unfiltered water samples will be collected for laboratory analyses of inorganics, radionuclides and organics (see Tables 1 and 2 attached). Samples for inorganic analyses will be collected in open-mouth, plastic, 1- and/or 4-L bottles. Organic compounds will be collected in 1-L, amber, glass bottles. Samples for analysis of total metals and non-metal inorganics will be acidified in the field or as soon as possible with nitric and sulfuric acid respectively. Those for analysis of dissolved metals and radionuclides will be filtered through a 0.45  $\mu\text{m}$  filter and acidified with nitric acid in the field or as soon as possible. Anions and organic-compound samples will be unpreserved and unfiltered. Random, in-house duplicate samples (approximately 15 separate constituents) will be submitted during the sampling season for quality-control/assurance purposes.

All samples will be shipped via overnight carrier to a contract laboratory at an approximate temperature of 4° C. Samples will be analyzed in accordance with the latest edition of U.S. Environmental Protection Agency (EPA) SW-846 methods and within EPA's method-detection limits.

Field water-quality meters, such as pH, specific conductance, nitrate as nitrogen, etc. will be calibrated by OB personnel at beginning of each day and checked with a known standard at the end of each day. All data, observations, etc., will be documented.

LANL ES and ER personnel will be following their Health and Safety Plan; the DOE OB staff have reviewed, and will adhere to LANL's Health and Safety Plan; all associated forms have been signed, and are on file with LANL's ESH Division in addition to being maintained in the White Rock office project file. The DOE OB sampling staff all have 40 hour Hazardous Waste Operations training specific to the collection of environmental samples for the LANL ER Project. Additionally, all staff have completed Radiation Worker 2 Training and are Q-Cleared.

#### ESTIMATED COST

The analytical cost for the referenced sampling will be approximately \$49,160 (Tables 1 and 2). Approximately \$19,160 will be dedicated to ES split-sampling and the remaining \$30,000 will be for ER splits. The selection of ES sampling stations and associated analytical suite is based on past and present contaminant-release sources/areas and the interpretation of historical LANL and OB hydrochemical data. Specific ER sampling stations cannot be determined at the present time due to the fact that LANL has not submitted their SAP for the 1998 season. ER event-specific SAP's will be developed as needed in 1998, and will follow ER SOPs.

Please contact Dennis Romero or me if you have any questions concerning this SAP.

SY:mrd

#### ATTACHMENTS

cc: J. Parker, NMED, Chief, DOE Oversight Bureau  
S. Ortiz, NMED, DOE Oversight Bureau  
File, White Rock DOE OB Office

c:\...198eres.sap

**TABLE 1 - Ground-water ES split-sampling stations**  
**Regional Wells**

TW-1  
TW-2  
TW-3  
TW-4  
TW-8  
DT-5A  
DT-9  
DT-10

**Intermediate Wells**

TW-1A  
TW-2A

**Alluvium Wells**

APCO-1  
LAO-2  
LAO-6  
MCO-4B  
MCO-7.5  
SCO-1  
PCO-3  
CDBO-6  
CDBO-7

**White Rock Canyon Springs**

Approximately 8 springs

Estimated cost: \$12,858

**TABLE 2 - Surface-water ES split-sampling stations**

**Onsite**

**Mortandad at GS-1**

**DPS-1**

**DPS-4**

**Water Canyon at Beta Hole**

**Offsite**

**Acid Weir**

**Pueblo 3**

**Pajarito Canyon (@ E245)**

**White Rock Canyon**

**Five stations**

**Estimated cost: \$6,302**