<table>
<thead>
<tr>
<th>Title:</th>
<th>Surface Water Monitoring at Los Alamos National Laboratory, ADEP Surface Water and Canyons Investigations Program, Poster, Individual Permit for Storm Water, NPDES Permit No. NM0030759</th>
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<td>Author(s):</td>
<td>Veenis, Steven J.</td>
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<td>Intended for:</td>
<td>Public</td>
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<td>Purpose:</td>
<td>This poster was prepared for the December 2012 Individual Permit for Storm Water (IP) public meeting. The purpose of the meeting was to update the public on implementation of the permit as required under Part 1.I (7) of the IP (National Pollutant Discharge Elimination System Permit No. NM0030759). The poster will be available on Los Alamos National Laboratory’s (LANL’s) public website.</td>
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Introduction

Los Alamos National Laboratory (LANL or the Laboratory) is located in northern New Mexico on the Pajarito Plateau, on the east flanks of the Jemez Mountains. The Laboratory monitors perennial and ephemeral surface water discharge at approximately 50 locations on and off Laboratory property, a typical gage station is shown in Figure 1. The predominant discharge events are in response to summer monsoon rain that are typically intense, short-lived convective storms (Figure 2). Select drainages support snowmelt runoff for several months in the spring as well.

Monitoring Objectives

Surface water is monitored to evaluate water quality and identify and quantify types and amounts of LANL-derived contaminants transported in stormwater runoff within, at, or near the LANL boundary.

Methods

Surface water samples are obtained using automated samplers that collect across the hydrograph. Stage discharge is measured by gas purge pressure system (bubblers), shaft encoder, and ultrasonic probes depending upon channel configuration. Analytical suites address each watershed inventory of constituents of concern including radiological constituents, metals, select organics (i.e., PCBs, dioxins/furans), and suspended solids.

Regulatory Framework

Monitoring supports

(1) March 1, 2005, Compliance Order on Consent (modified June 2008), requirements for Los Alamos/Pueblo monitoring (Figure 3)

(2) Memorandum of understanding between the Buckman Direct Diversion Board and the DOE, Emergency Notification System monitoring for the drinking water treatment plant (Figure 4a)

(3) U.S. Department of Energy (DOE) Order 436, Departmental Sustainability, Environmental Surveillance Monitoring (Figure 4b)

The surface water monitoring program is transitioning to telemetry networks to provide environmental data via radio frequency (RF) ultra-high frequency (UHF) transmissions (Figure 4). This is a more cost-effective, efficient, and safer method of data acquisition. Valuable resources will be conserved when the transition is complete.