LA-UR-12-10158
Approved for public release; distribution is unlimited.

Title: LANL Individual Permit Public Meeting

Author(s): Lopez, Lorraine
Groffman, Armand R.
Lemke, Terrill W.
Walterscheid, J. C.

Intended for: IP Public Meeting, 2012-01-26 (Pojoaque, New Mexico, United States)
US EPA
Storm water
IP

LANL Individual Permit Public Meeting

January 26, 2012

Los Alamos NATIONAL LABORATORY EST.1943

Operated by the Los Alamos N

NNSA

Scope of Meeting

- Purpose of this meeting
  - Share information
  - Project status
  - Not designed to include
    - Discussions about the scope of the permit
    - LANL's programmatic priorities
- Focus is on permit compliance actions
- A Q&A session will be held the LANL presentations and after all presentations if time allows

Agenda

Time	Subject	Speaker
5:30	View Posters	
5:45	Meeting opening	Bruce MacAllister
5:55	Welcome	Steve Veenis
6:00	Introduction	Alison Dorries
6:10	Individual Permit Actions Update	
	Permit Activity Status	Terrill Lemke
	Monitoring Update	Armand Groffman
	Control Measures Progress	Jeff Walterscheid
6:45	Questions	
7:00	Low Impact Design and Interested Parties Activities	Erin English Rachel Conn
7:30	Meeting end	

General Ground Rules

- Please wait until the scheduled time to provide comments or to ask questions
- Please identify yourself before speaking
- Please keep your questions short
  - remember there may be others waiting to ask questions
- Please honor the process by keeping questions and comments civil and by using appropriate language
- Please yield the floor if requested by the facilitator
- Please help the participants and facilitator ensure that the agenda content and timeframes are met

Welcome

LANL Individual Permit Public Meeting

January 26, 2012

Steve Veenis

Project Leader

Welcome

- May 2011 Meeting
- Tonight's Speakers
- New Environmental Protection Division Leader

Introduction

LANL Individual Permit Public Meeting

January 26, 2012

Alison Dorries

Environmental Protection Division Leader

Individual Permit Commitments

We are committed to:

- Improving environmental protection and stewardship
- Mitigating transport of legacy contaminants by storm water
- Ongoing implementation of Permit requirements
- Meeting permit milestones
- Sharing results with the public

Public Meeting Overview

- Progress since the last public meeting:
- Permit activities
- Monitoring status
- Control measure planning & implementation

Permit Activities Status

LANL Individual Permit Public Meeting

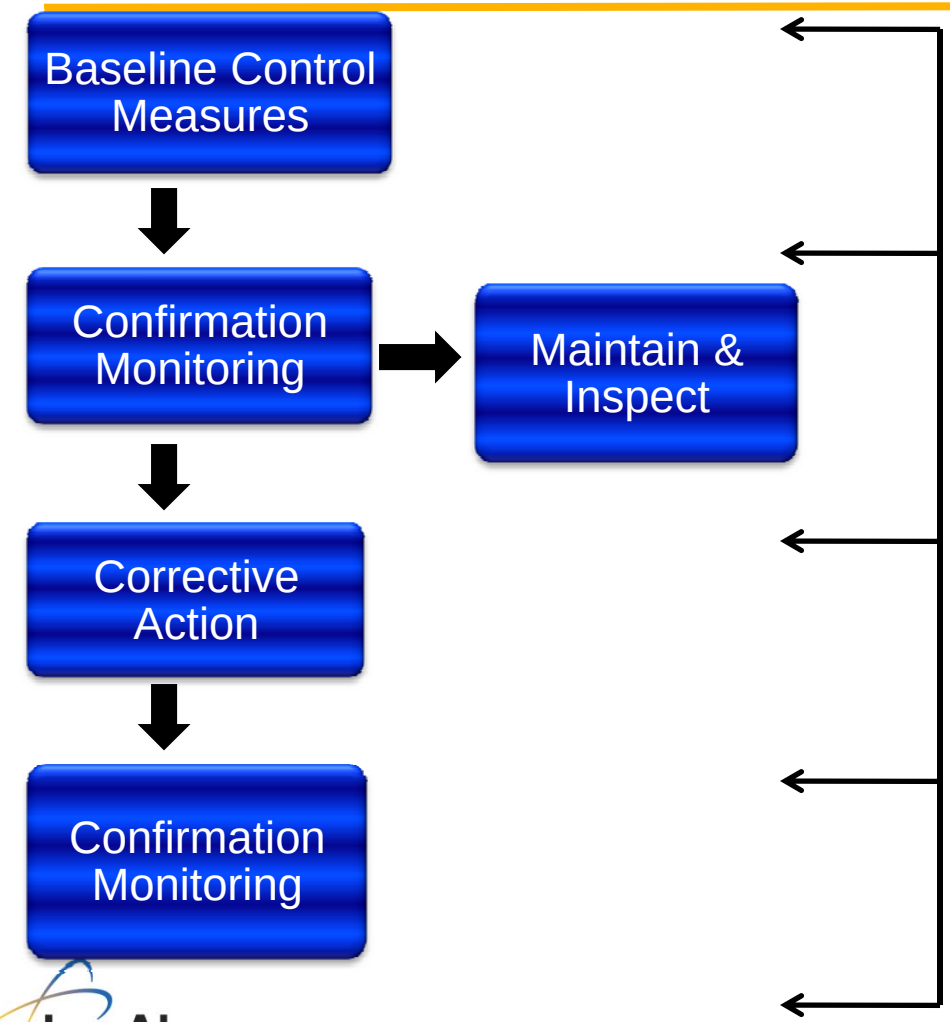
January 26, 2012

Terrill Lemke,

Storm Water Permitting/Compliance Team Leader

LANL Water Quality & RCRA Group

IP Implementation Process

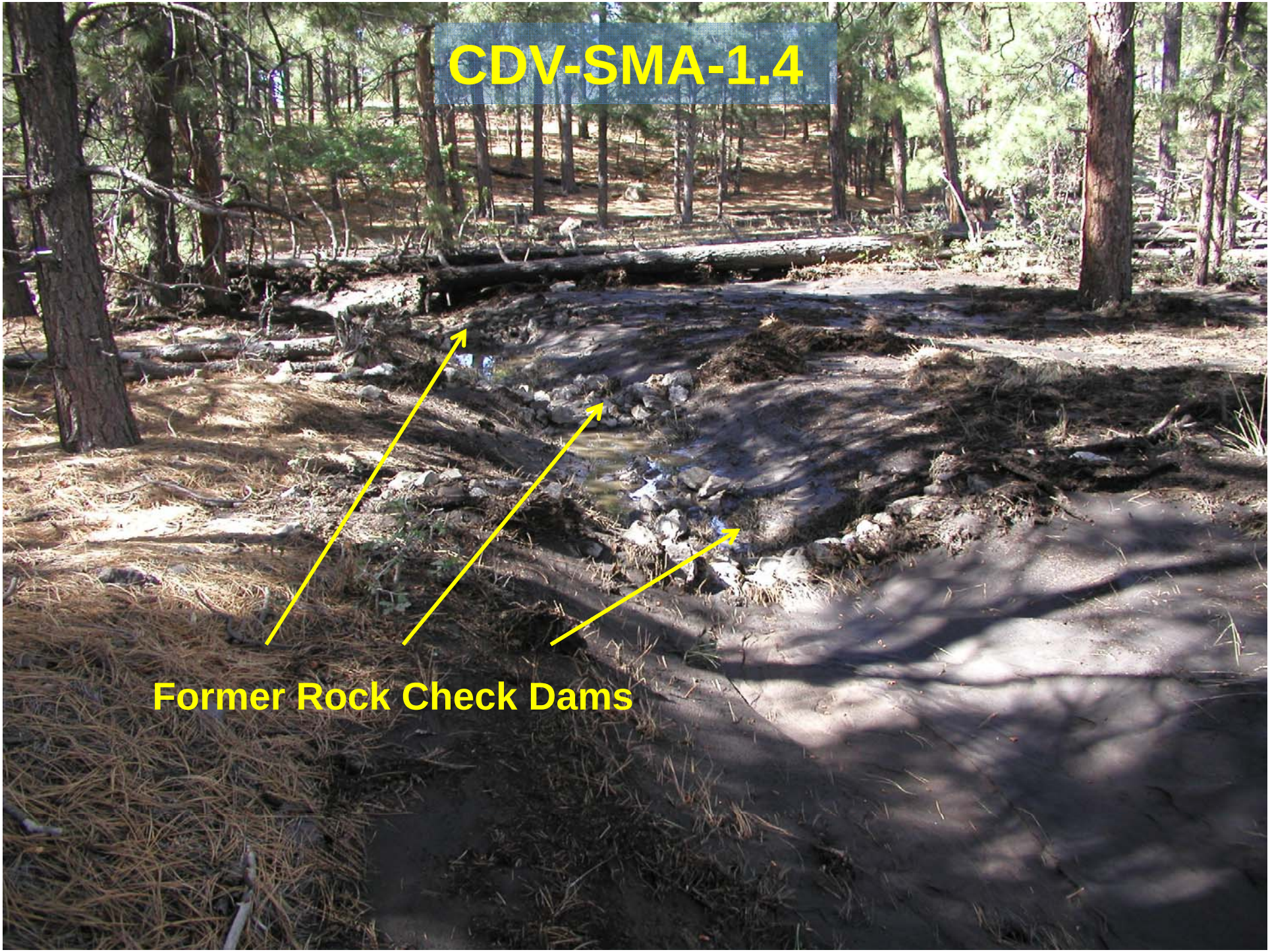


- SDPPP Implementation
- Inspections
- Maintenance of Controls
- Reporting
- Public Involvement

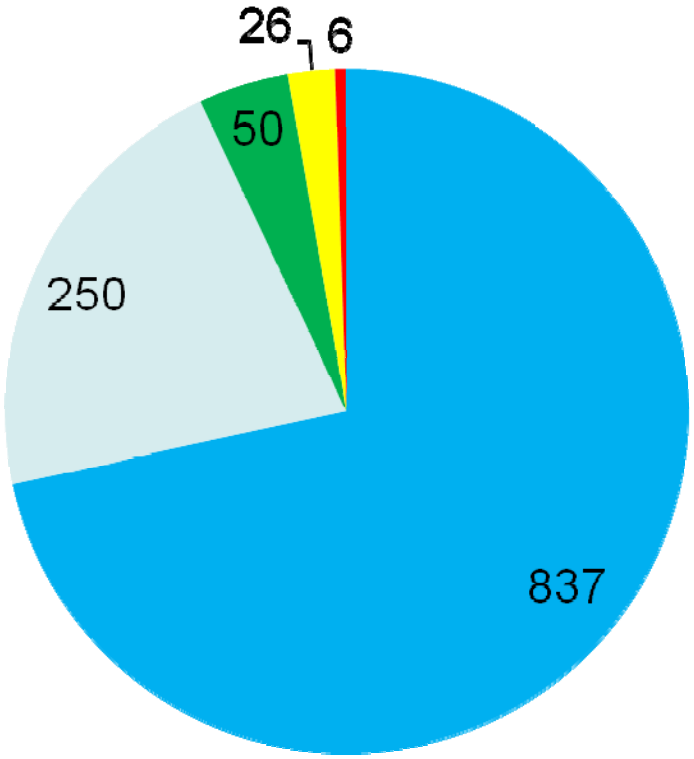
Las Conchas Fire Impacts

- No Direct Fire Impacts
- Some Post-Fire Flooding
- Little Impact to IP Locations
- 4 Fire-Related Significant Event Inspections
  - 2 for Fire Mitigation Activities
  - 2 for Post-Fire Flooding in Cañon de Valle


CDV-SMA-1.4


CDV-SMA-1.4
Former Rock Check Dams

Inspection Summary



1,169 Inspections

- Post-Storm Event
- Annual Erosion
- Construction Activity
- TAL Exceedance
- Significant Event

IP Corrective Action Process

- Two sampling periods:
  - First sampling period (12 month) ended on October 31, 2011
    - 63 SMAs in first sampling period
  - Second sampling period (18 month) ends on April 30, 2012
    - 187 SMAs in second sampling period
- Two or more confirmation samples to be collected
- Use single sample if only one sample collected
- No samples - continue monitoring until 1 sample collected

Corrective Action Process

- First Sampling Period (ended Oct. 31, 2011)
  - 1 or more samples > TALs → Corrective Action
  - 1 or more samples < TALs ↛ Corrective Action
  - No samples → continue monitoring until 1 sample collected

Corrective Action Process

- Second Sampling Period (ends April 30, 2012)
  - 2 samples > TALs → Corrective Action
  - 2 samples < TALs ⊗→ Corrective Action
  - 1 sample:
    - Continue monitoring until 4/30/2012; OR
    - > MTAL and mathematically certain to exceed ATALs → Corrective Action
  - No samples → continue monitoring until 1 sample collected

2011 Monitoring Summary

Sampling Group	Monitoring deadline	Count of SMAs				
		Total	SMAs sampled	1 Sample	2 Samples	No Sample
First	10/31/2011	63	20	7	13	43
Second	4/30/2012	187	54	34	20	133
Totals:		250	74	41	33	176

Corrective Action Status

- First Monitoring Period:
  - 20 SMAs with 1 or 2 samples
    - 18 SMAs > TALs ⟶ Corrective Action

Corrective Action Status

- Second Monitoring Period:
  - 54 SMAs with 1 or 2 samples
    - 19 SMAs with 2 samples > TALs → Corrective Action
    - 34 SMAs with 1 sample
      - 21 SMAs > MTALs & ATALs → Corrective Action
      - 13 SMAs → continue monitoring

Corrective Action Status

- 58 SMAs ⟶ Corrective Action
- Corrective Action work/controls initiated at 7 SMAs
- Additional Corrective Action in design & planning stage

Corrective Action Options

- Permit Corrective Action Options:
  - Enhanced controls with confirmation monitoring
  - Total retention of storm water
  - No exposure of pollutants to storm water
  - Certificate of Completion under NMED's Consent Order

Upcoming Reports

- Annual Report (March 1, 2012)
- Compliance Status Report (March 1, 2012)
- Annual SDPPP Update (May 1, 2012)

2011 Monitoring Update

LANL Individual Permit Public Meeting

January 26, 2012

Armand Groffman

Technical Oversight

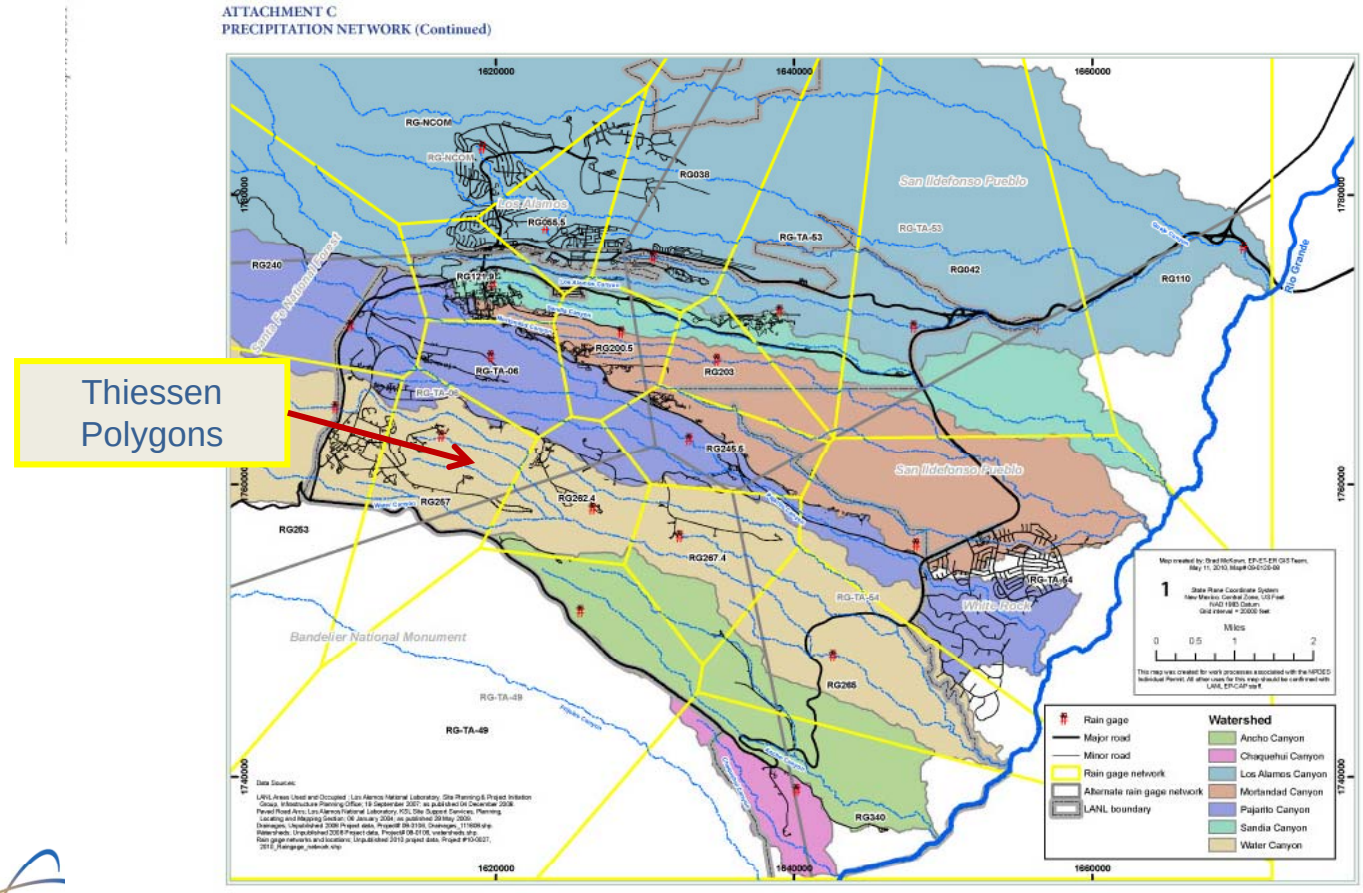
Los Alamos NATIONAL LABORATORY EST.1943

Operated by the Los Alamos National Security, LLC for the DOE/NNSA

NNSA

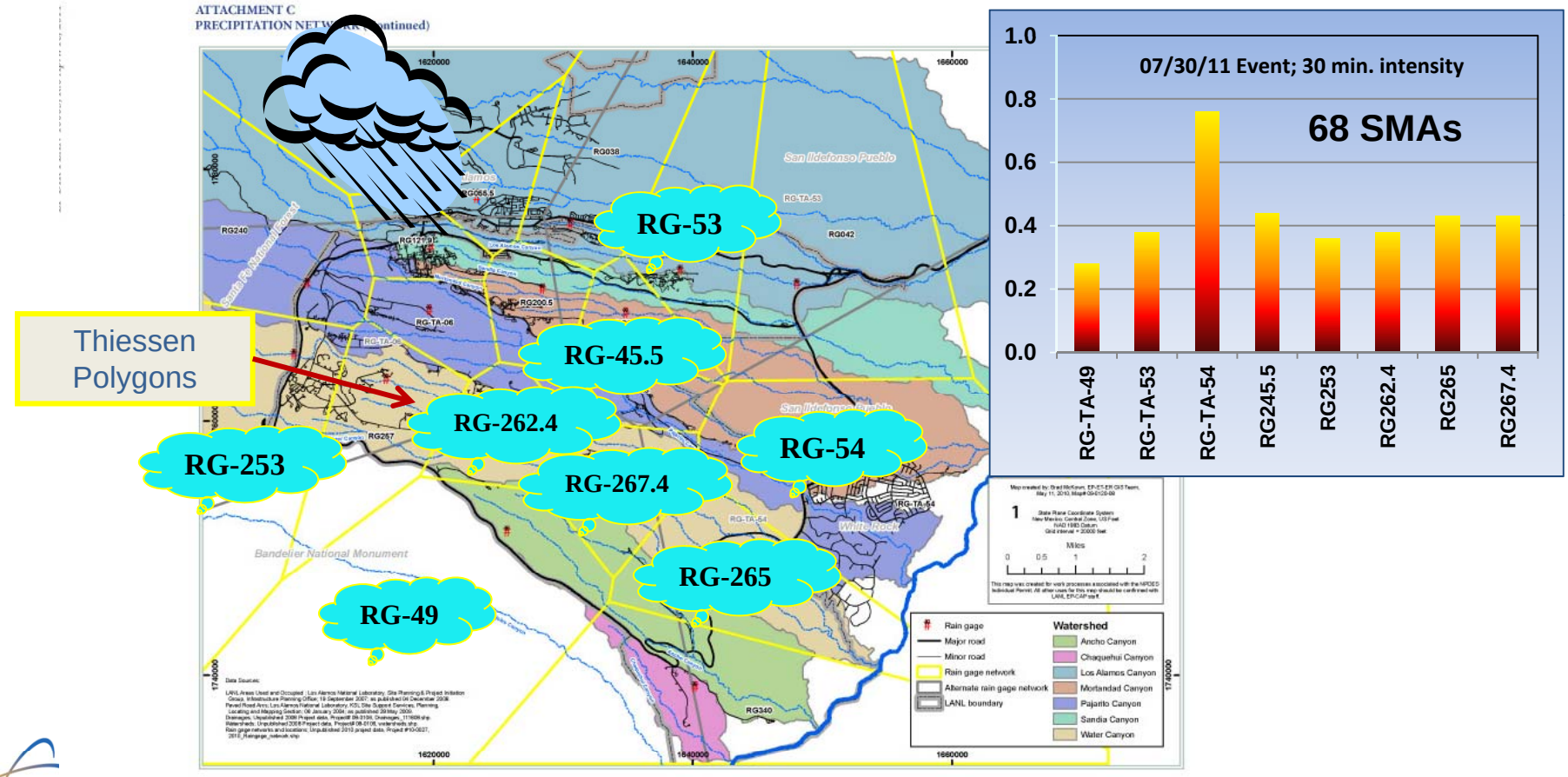
IP Monitoring

Site inspections are triggered by precipitation threshold exceedances of 0.25 inch within 30 minutes in respective Theissen polygons. Sample retrieval is triggered by a tiered approach (0.1 to 0.25 inch).



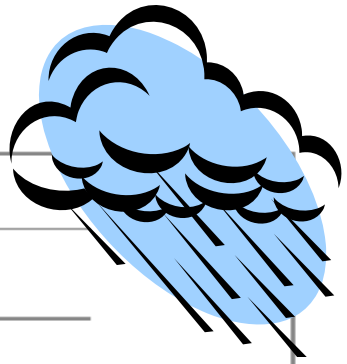
IP Monitoring

Site inspections are triggered by precipitation threshold exceedances of 0.25 inch within 30 minutes in respective Theissen polygons. Sample retrieval is triggered by a tiered approach (0.1 to 0.25 inch).



2011 Summary of Precipitation Events

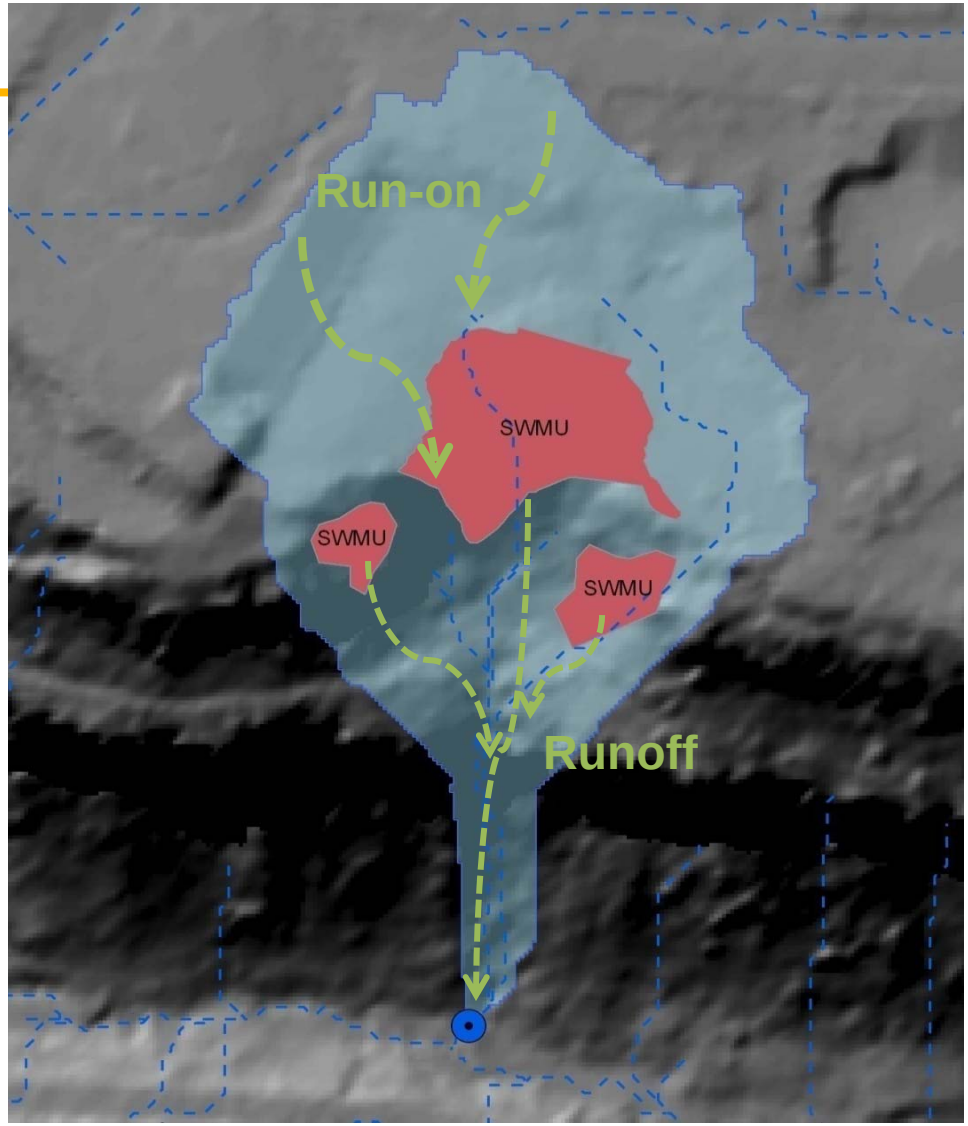
2011-- La Niña precipitation pattern



- **Monitoring season from April 1 through October 31**
- **Most samples collected during the summer monsoon**

Monitoring: Site Monitoring Areas (SMA)

- **SMA area defined by hydrology**
- **Sampler collects water flowing over SWMUs**
- **What is the run-on composition?**



Conceptual Map Example

SMA Monitoring Location - Automated

SMA Monitoring Location - Setup

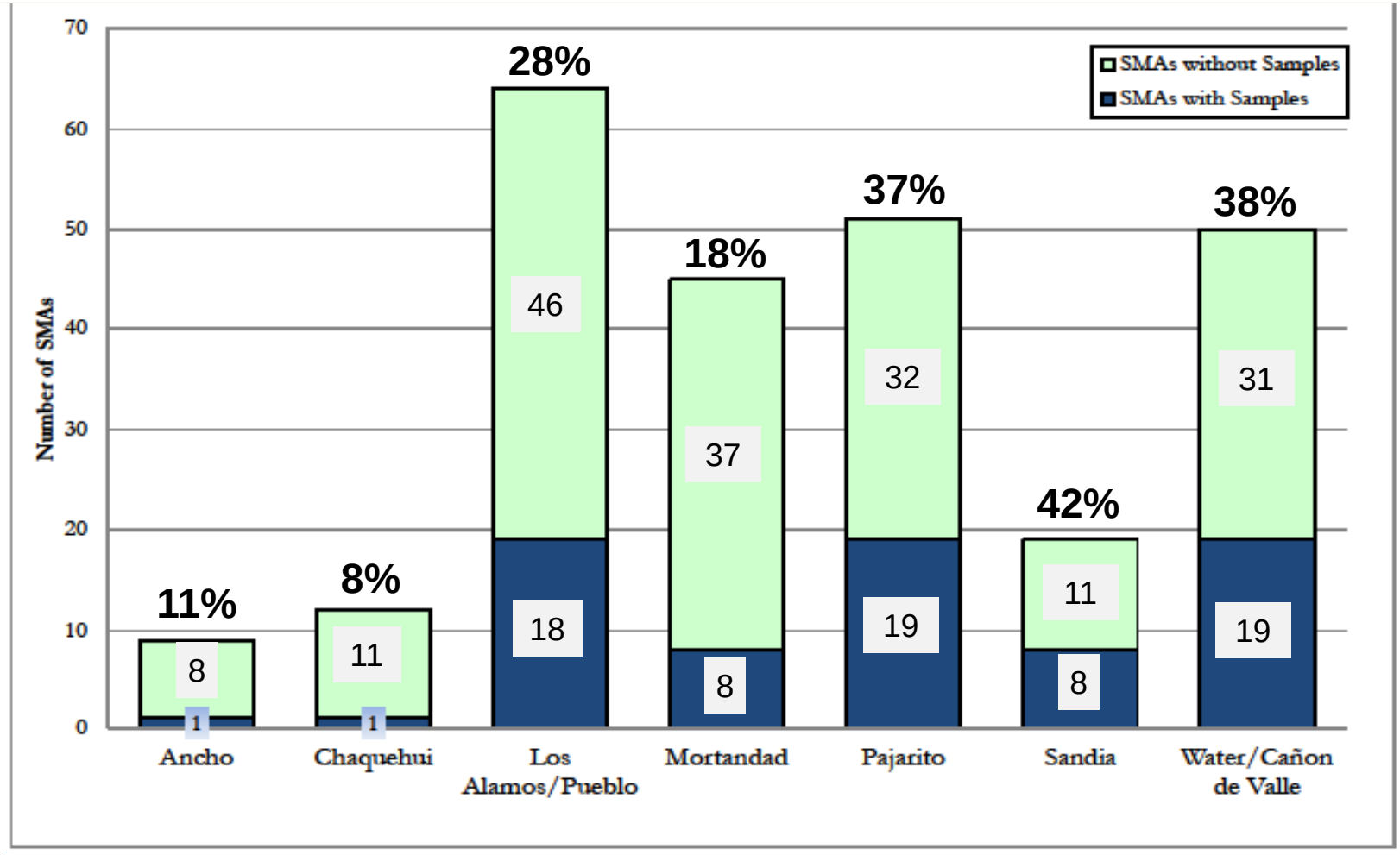
- Samplers
  - 24-liter poly bottles
  - 12-liter glass and poly bottles

Monitoring 2010-2011

SMA Monitoring

- Metals, radioactivity, organics – per Appendix B of the IP
- 250 SMA locations with samplers installed
- 74 SMAs have collected samples
- 107 samples collected, 34 SMAs collected two samples
- Validated samples compared to Target Action Levels (TALs)
- Al, Cu, Zn, Gross Alpha, PCBs – generally found

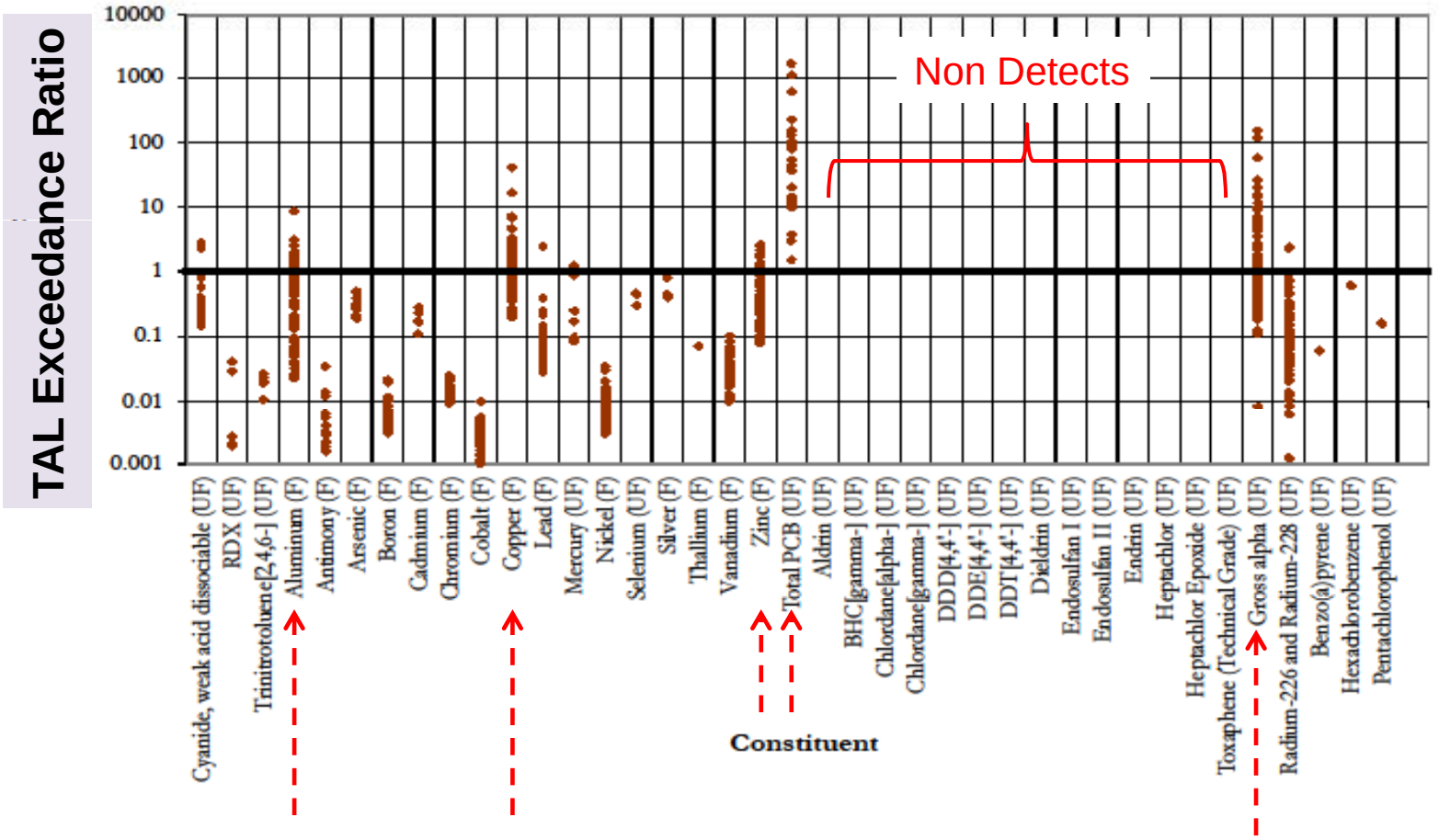
Summary of 2011 IP SMAs With Samples Collected



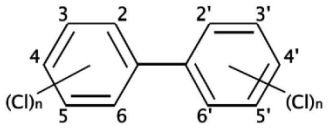
LA-UR-12-10158

$\frac{\text{Result}}{\text{TAL}}$ = TAL Exceedance Ratio

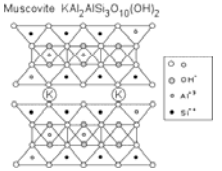
2011 IP Exceedance Ratios



Frequent Exceedances



- PCBs
  - Target Action Limit of 640 pg/L (Human Health Criteria).
  - A pico gram is one trillionth of a gram (1/1,000,000,000,000 gram) or think of it as one second in 31,546 years.
  - PCB drinking water standard is 500,000 pg/L.
- Aluminum
  - Thought to be natural background mineral bound aluminum.
  - Aluminum is not soluble at circum neutral pH.



- Copper and Zinc
  - Thought to be natural background at most locations, some SMs have contamination; urbane runoff as well.

- Gross alpha
  - Thought to be natural background uranium and thorium minerals.

Storm Water Control Decision Process

LANL Individual Permit Public Meeting

January 26, 2012

Jeff Walterscheid

Context for Storm Water Control Decisions

- IP Preparation
  - A conservative, table top review completed for all IP Sites to assess potential runoff issues
  - Site visits of SMAs were conducted to determine:
    - Run-on and runoff concerns
    - Erosion control measures, site features, boundary info
    - Potential pollutant sources
    - Baseline control requirements

Context for Storm Water Control Decisions

- Execution of the IP
  - Baseline controls installed at all IP Sites within six months of permit issuance
  - Second review completed to determine need for augmented controls or engineer review
  - Categorization and prioritization of controls

	Baseline sufficient	Augmented Controls	Engineer Review
High Priority PCB SMAs	7	9	17
Moderate Priority PCB SMAs	25	11	13
Moderate Priority SMAs	79	47	38

Baseline & Augmented Control Types

- Seed and Mulch (e.g. wood or hydromulch, erosion control blanket)
- Establish Permanent Vegetation
- Berms (e.g. earthen, rock, log, wattle, curbing)
- Channel/Swale (e.g. earthen, concrete, rock, vegetated)
- Sediment Traps
- Check Dam (e.g. rock, log, juniper bale)
- Gabions
- Caps (e.g. rock, concrete)

Seed / Matting / Mulch

Seed, erosion control blankets, and mulch are used to stabilize areas of disturbance.

Permanent Vegetation

Combination of controls (earthen berm, hydromulch , erosion control blankets) have established permanent vegetation, stabilized the area and reduced the potential for sediment migration.

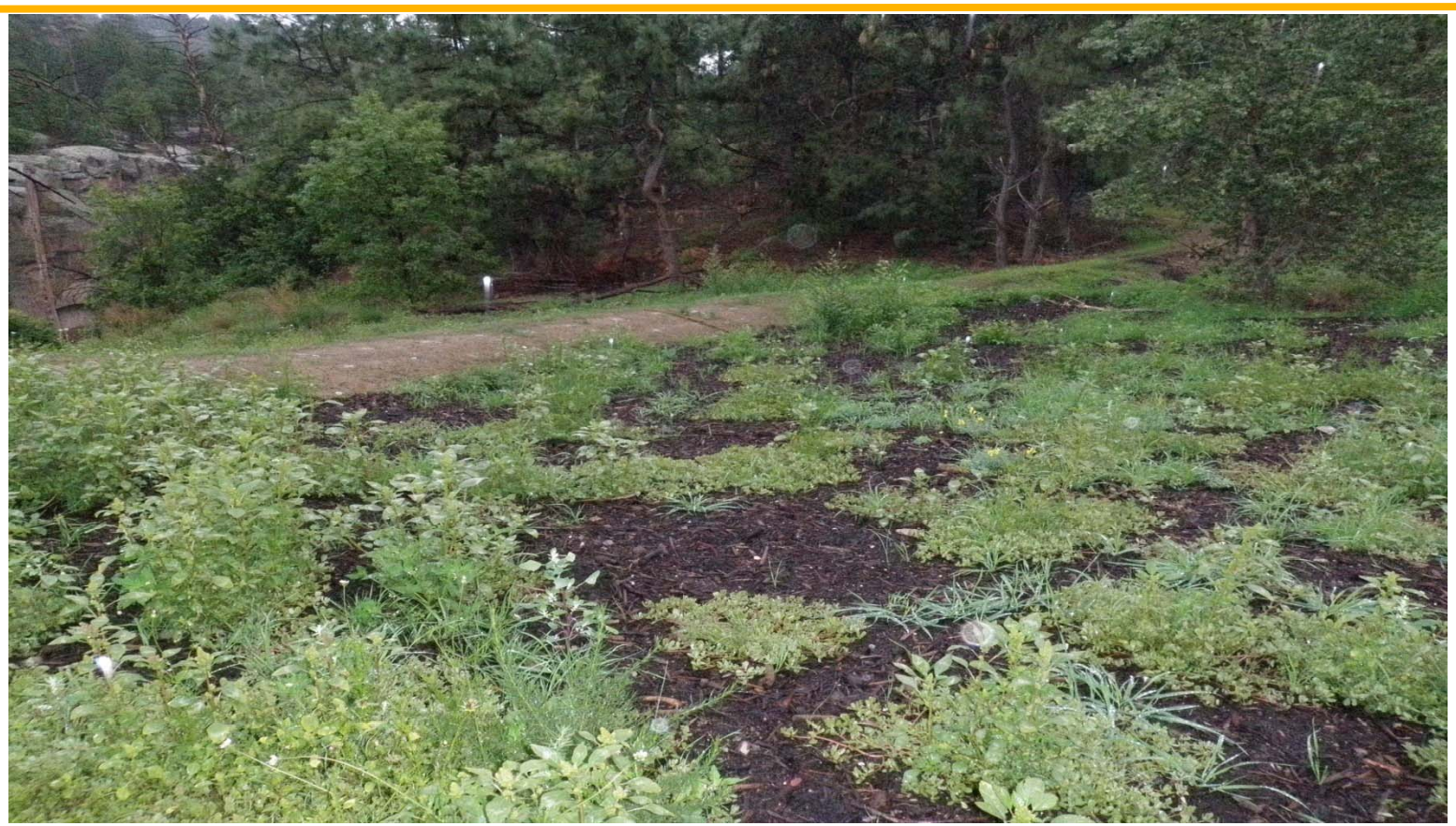
Establishing Vegetative Buffers

Planting willow cuttings to establish vegetative buffers, cattail migration from upstream.

Berms

Earthen berms with erosion control blankets installed in series to capture sheet flow.

Berm with Compost



Combination of controls including: earthen berm, compost, seed, and erosion control blankets, have stabilized the area and reduced the potential for sediment migration .

Swale with Berm

Swale and earthen berms installed in series to capture sheet flow.

Check Dams

Rock check dams installed in former outfall drainage to assist with site stabilization.

Juniper Bale Check Dams

Juniper bales installed in drainage to assist with site stabilization.

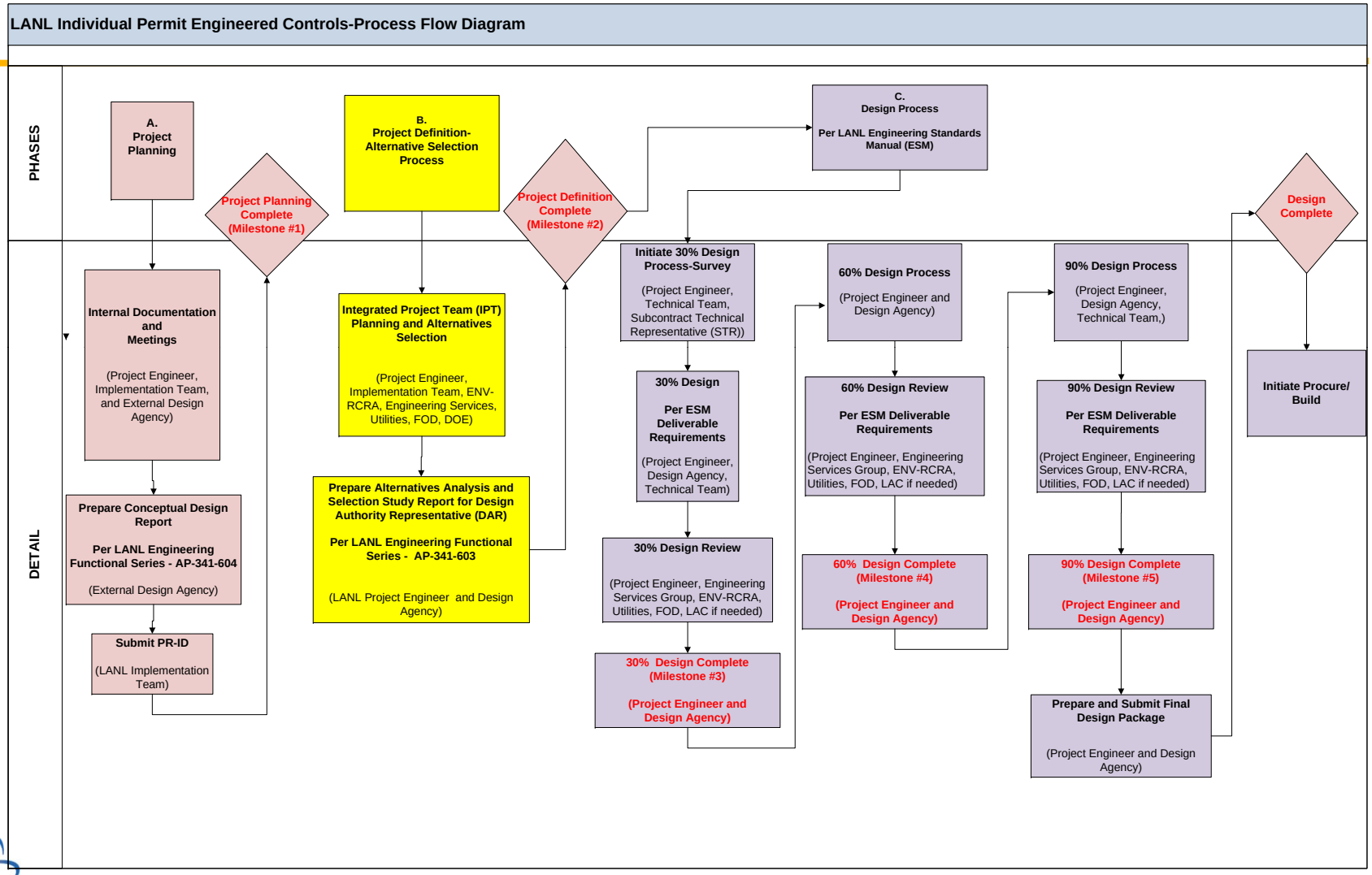
Combining Controls for Run-on

Managing flow generated from impervious areas minimizes the potential for erosion and sediment migration. Combination of hydromulch, erosion control blankets, and angular rock have helped stabilize the berms and bare areas adjacent to the SMA.

Engineered Controls

- Assign project engineer and environmental professional
- Review site history
  - SWMU report
  - Current and historical actions
  - Meet with Consent Order Project Manager
- Complete site walk down
- Formulate control options

Engineer Review Process



Engineered Control Types

- Detention/Retention Basins
- Grade Control Structures
- Diversion
- Sediment Basins
- Weirs
- Engineered Wetlands
- Capping
- Low Impact Design

Detention Basins

Managing flow in accessible areas minimizes the potential for erosion and sediment migration.

Grade Control Structures

Managing flow with grade control structures in accessible areas minimizes the potential for erosion and sediment migration.

Diversion

Asphalt berm is designed to redirect pavement run-off away from sites located adjacent to the roadway. Diverting storm water run-on has reduced the erosion potential and minimized the possibility for sediment migration into the canyon.

Sediment Basin

Sediment basin is designed to capture sediment from upstream flow.

Gabion Low Head Weir

Gabion low head weir is designed to attenuate flow, capture low flow events and assist in dropping the sediment load from storm water. Gabions are also used to stabilize channel banks.

Run-on Challenges

Storm water run-on from private land owners

Run-on Challenges

Storm water run-on from private land owners

Questions