

ADEP Update

Northern New Mexico Citizens' Advisory Board

July 30, 2014

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LAUR 14-25740

Agenda

- I. LANL nitrate salts waste
- II. Chromium groundwater remediation
- III. Storm water
- IV. Other field work

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TRU Waste Program Recovery

- Technical investigation
- Causal analysis and corrective action
- Waste isolation
- Nitrate salt waste remediation

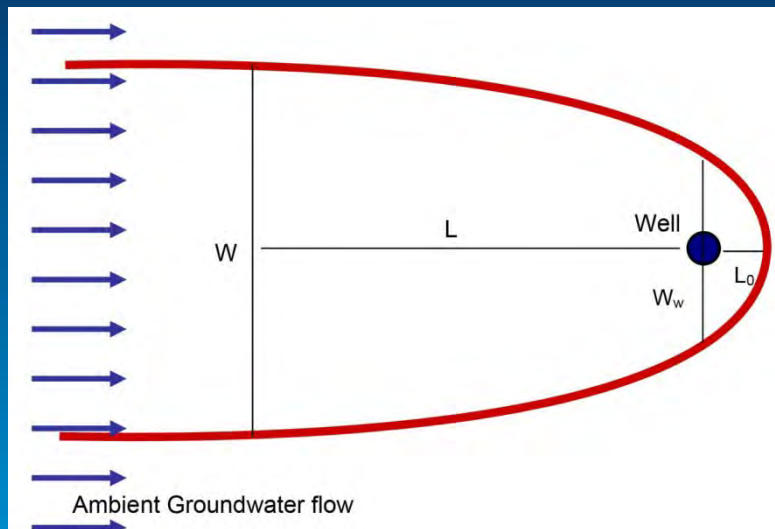


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2013 Field Activities

2013 Objectives:

- 1) Collect hydrologic data to support optimization of mass removal in centroid; and
- 2) Evaluate the potential for mass removal from the perched-intermediate zone



Aquifer tests at existing monitoring wells

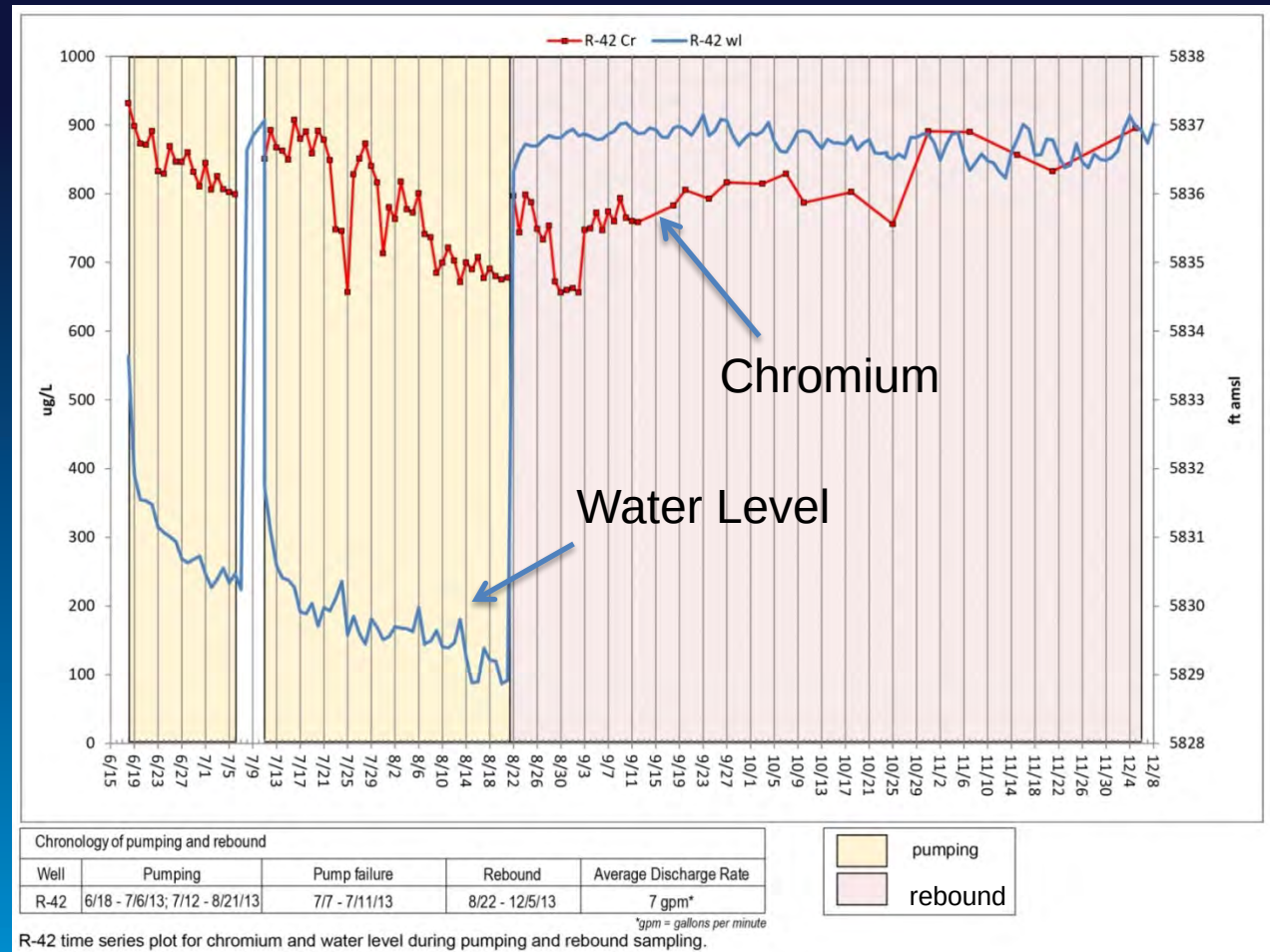
- Evaluate size of area of contaminated groundwater that can be captured by pumping; and
- Characterize behavior of contaminant concentrations during pumping

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What We Learned in 2013

Cr trends during pumping at R-42

- Concentrations declined by ~27% over about 1 month
- Rebound over about 2 months
- Important for optimizing pump and treat strategies



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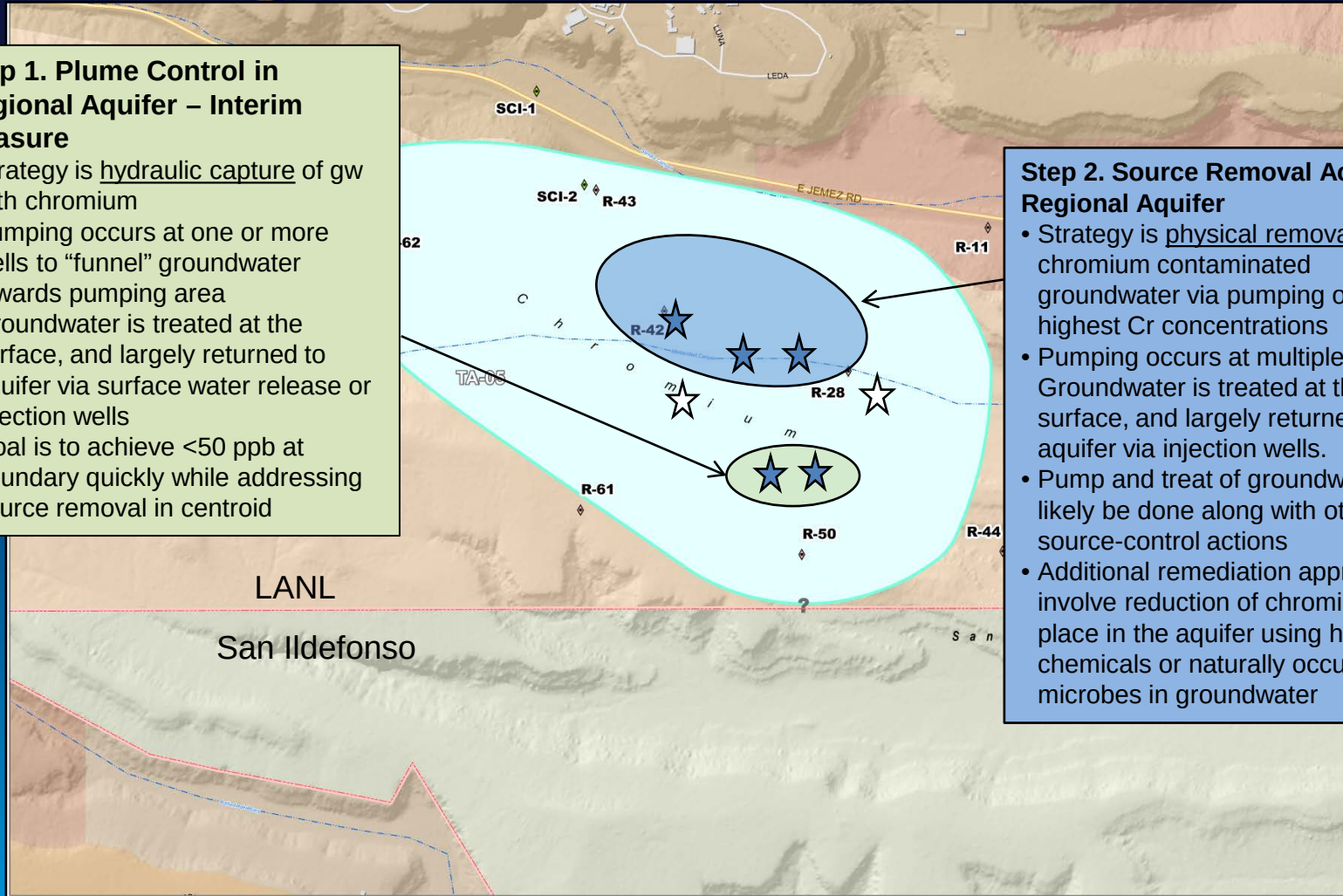
Remediation Strategy

Step 1. Plume Control in Regional Aquifer – Interim Measure

- Strategy is hydraulic capture of gw with chromium
- Pumping occurs at one or more wells to “funnel” groundwater towards pumping area
Groundwater is treated at the surface, and largely returned to aquifer via surface water release or injection wells
- Goal is to achieve <50 ppb at boundary quickly while addressing source removal in centroid

Step 2. Source Removal Actions in Regional Aquifer

- Strategy is physical removal of chromium contaminated groundwater via pumping of gw with highest Cr concentrations
- Pumping occurs at multiple wells
Groundwater is treated at the surface, and largely returned to the aquifer via injection wells.
- Pump and treat of groundwater will likely be done along with other source-control actions
- Additional remediation approaches involve reduction of chromium in place in the aquifer using harmless chemicals or naturally occurring microbes in groundwater



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Remediation Strategy

- **Step 1: Interim Measure - Plume Control**

- Goal is to use hydraulic capture of chromium contaminated groundwater to achieve and maintain <50 ppb at Laboratory boundary
 - Performed as an interim measure until source control is obtained
 - Will require one or more extraction wells
 - Requires disposition of treated water, including injection wells and surface water release – goal is to get treated water back into aquifer

- **Step 2: Source Removal/Control**

- Strategy includes physical removal of contaminated groundwater in area with highest concentrations
 - Piloted as part of interim measure and incorporated into integrated final remedy
 - Will likely require several extraction wells
 - Requires disposition of treated water, including injection wells and surface water release – goal is to get treated water back into aquifer
 - Additional remediation approaches will likely be required and involve reduction of chromium in place in the aquifer using harmless chemicals or naturally occurring microbes

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Storm Water: Post-Flood Recovery

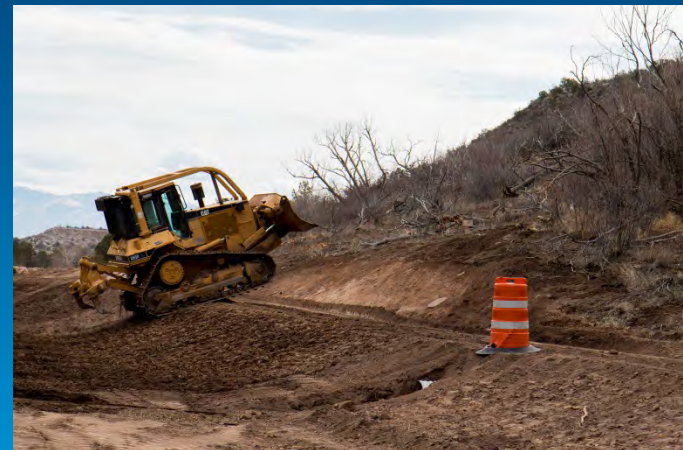
January-June

- Mild winter and spring allowed for the continuation of field work
- Flood recovery efforts to date:
 - SMA work is 100% complete
 - Gage work is 75% complete
 - Watershed controls are 90% complete
 - Access road work is 100% complete
- Enhanced control installations ongoing
- Routine Best Management Practice (BMP) inspections and maintenance are ongoing following a qualifying storm event



Pueblo Canyon –
September
13, 2013

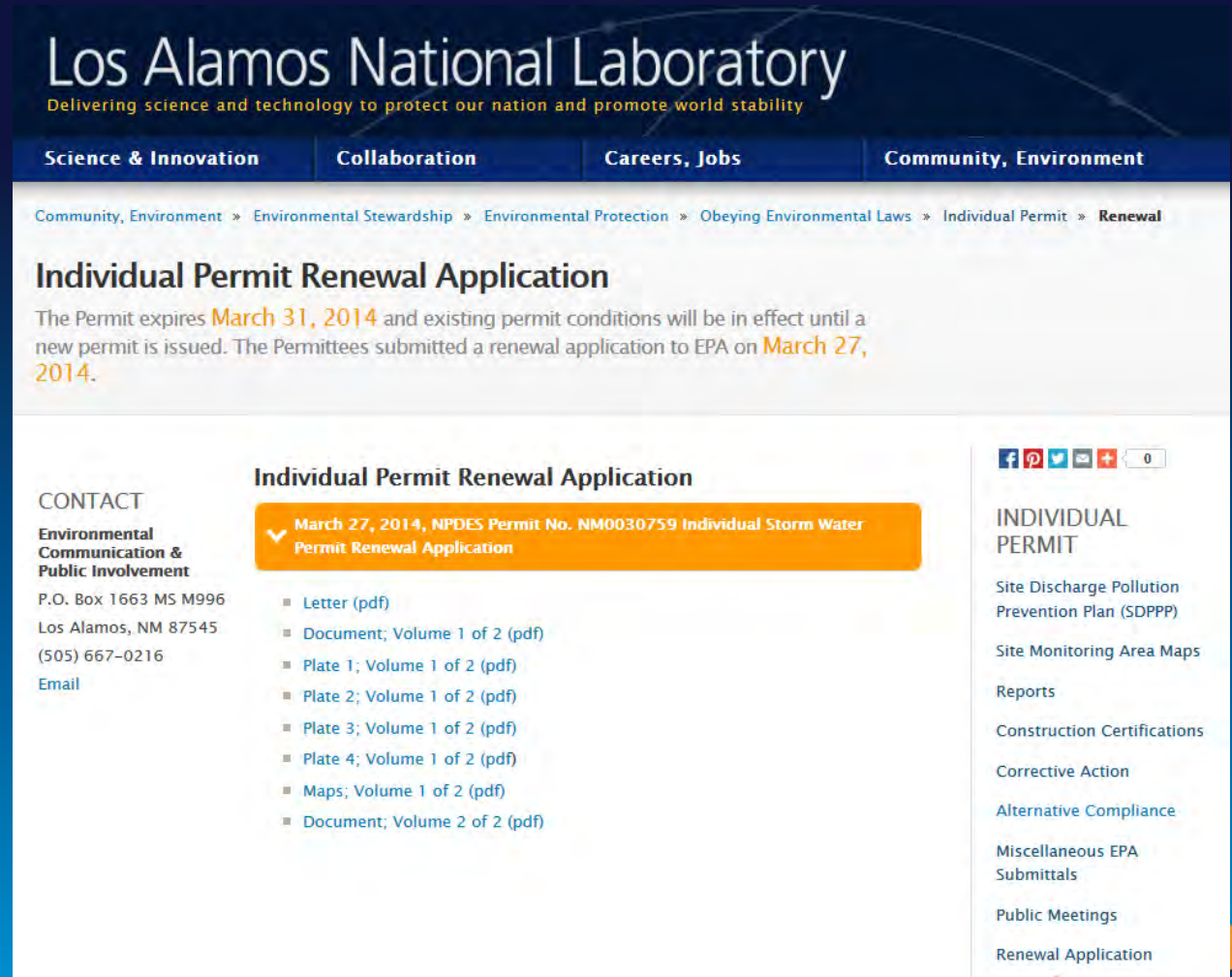
Floods
damaged some
roads which
had to be
repaired



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IP Renewal Application

- Submitted a renewal application package to EPA on March 27, 2014
- Available on the public website



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Community, Environment » Environmental Stewardship » Environmental Protection » Obeying Environmental Laws » Individual Permit » **Renewal**

Individual Permit Renewal Application

The Permit expires **March 31, 2014** and existing permit conditions will be in effect until a new permit is issued. The Permittees submitted a renewal application to EPA on **March 27, 2014**.

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Individual Permit Renewal Application

▼ **March 27, 2014, NPDES Permit No. NM0030759 Individual Storm Water Permit Renewal Application**

- Letter (pdf)
- Document; Volume 1 of 2 (pdf)
- Plate 1; Volume 1 of 2 (pdf)
- Plate 2; Volume 1 of 2 (pdf)
- Plate 3; Volume 1 of 2 (pdf)
- Plate 4; Volume 1 of 2 (pdf)
- Maps; Volume 1 of 2 (pdf)
- Document; Volume 2 of 2 (pdf)



INDIVIDUAL PERMIT

- Site Discharge Pollution Prevention Plan (SDPPP)
- Site Monitoring Area Maps
- Reports
- Construction Certifications
- Corrective Action
- Alternative Compliance
- Miscellaneous EPA Submittals
- Public Meetings
- Renewal Application

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Other Field Work



A technical geophysics study is underway to determine the conductivity of the ground around a site contaminated with RDX, a high explosive. The test will help Laboratory experts determine where to drill wells to remove RDX from subsurface and groundwater.



10,000 willows were planted in the Sandia Canyon wetlands

CAP RCTs entered TA-21, building 257 in order to ensure that it is safe for future D&D walk downs (left).



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Soil sampling began at TA-57, also known as Fenton Hill, with the eventual goal to release the property to the U.S. Forest Service.