



U.S. DEPARTMENT OF
ENERGY

OFFICE OF
**ENVIRONMENTAL
MANAGEMENT**



Los Alamos National Laboratory's Chromium Project



ENVIRONMENTAL MANAGEMENT
SAFETY ♦ PERFORMANCE ♦ CLEANUP ♦ CLOSURE

ATTACHMENT A

Doug Hintze, Manager
Environmental Management Los Alamos Field Office
January 9, 2018



U.S. DEPARTMENT OF
ENERGY

OFFICE OF
ENVIRONMENTAL
MANAGEMENT

Presentation Outline

- **Frequently asked questions**
- **Chromium facts**
- **Background**
- **Where is the chromium plume?**
- **What is being done about it?**



ENVIRONMENTAL MANAGEMENT
SAFETY ♦ PERFORMANCE ♦ CLEANUP ♦ CLOSURE

ATTACHMENT A



- **Is the County's drinking water safe?**
- **Where did the chromium contamination come from?**
- **Is it still being released to the environment?**
- **Do we know where it is?**
- **What is the Laboratory doing about it?**
- **How does chromium treatment work?**
- **How will the contamination be fully remedied?**
- **What is the timeframe?**





➤ Chromium occurs naturally in two forms:

- “Trivalent”
 - Considered an essential nutrient (found in vitamins and food)
 - Doesn’t move in groundwater
- “Hexavalent”
 - “Dissolves” in water and can move in groundwater
 - Can change to trivalent chromium either naturally or using remediation approaches
 - LANL Chromium plume is hexavalent form



➤ Chromium was once used to prevent corrosion in power plant cooling towers

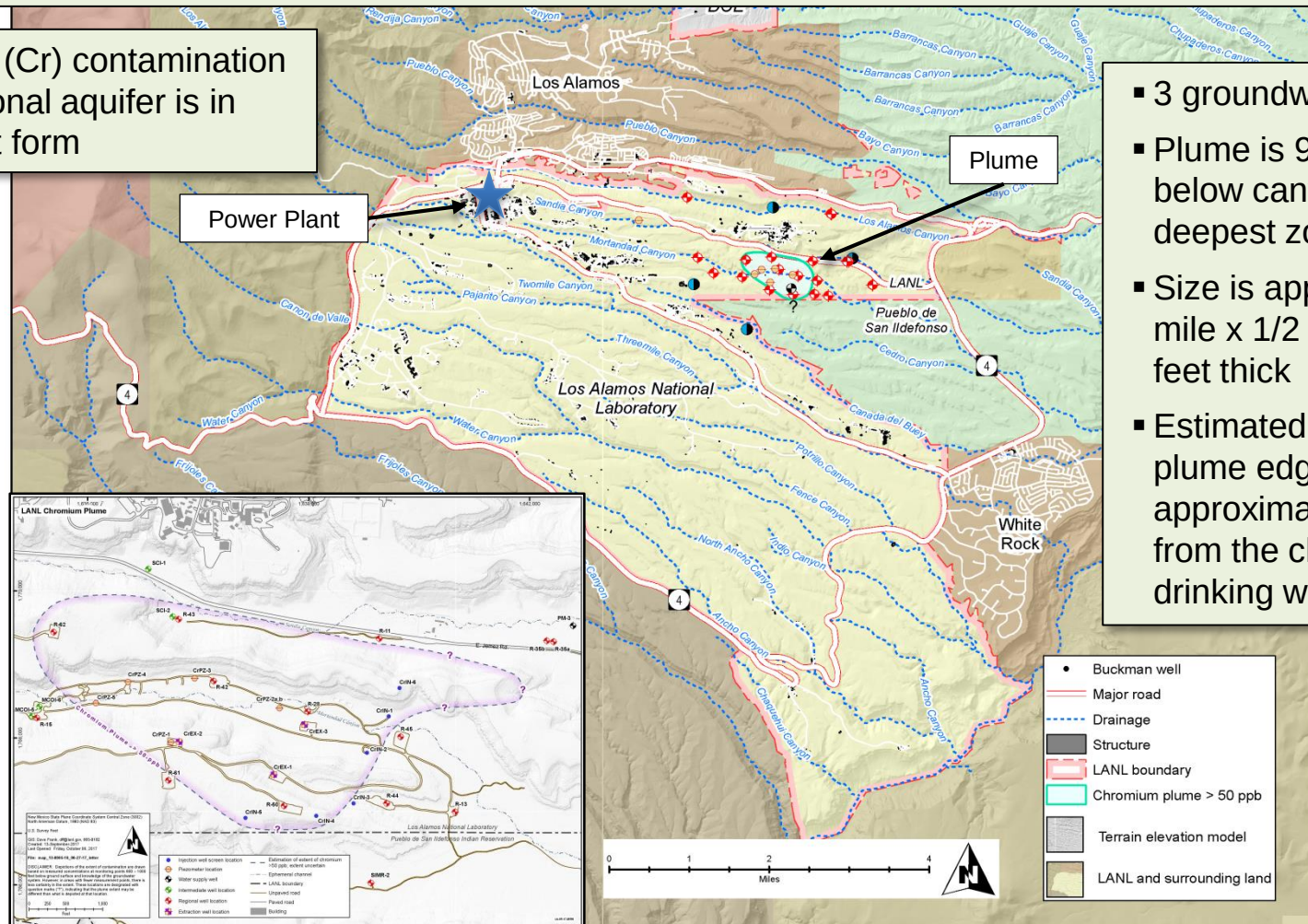




**OFFICE OF
ENVIRONMENTAL
MANAGEMENT**

Chromium in Groundwater Beneath LANL

- Chromium (Cr) contamination in the regional aquifer is in hexavalent form



- 3 groundwater zones
- Plume is 900–1,000 feet below canyon bottom in deepest zone
- Size is approximately 1 mile x 1/2 mile x <50 feet thick
- Estimated downgradient plume edge is approximately 1/4 mile from the closest drinking water well



Document Path: \\slp\gis\GIS\Projects\13-Projects\13-0065\mxd\other\powerpoint_6-2-15\lan1.mxd

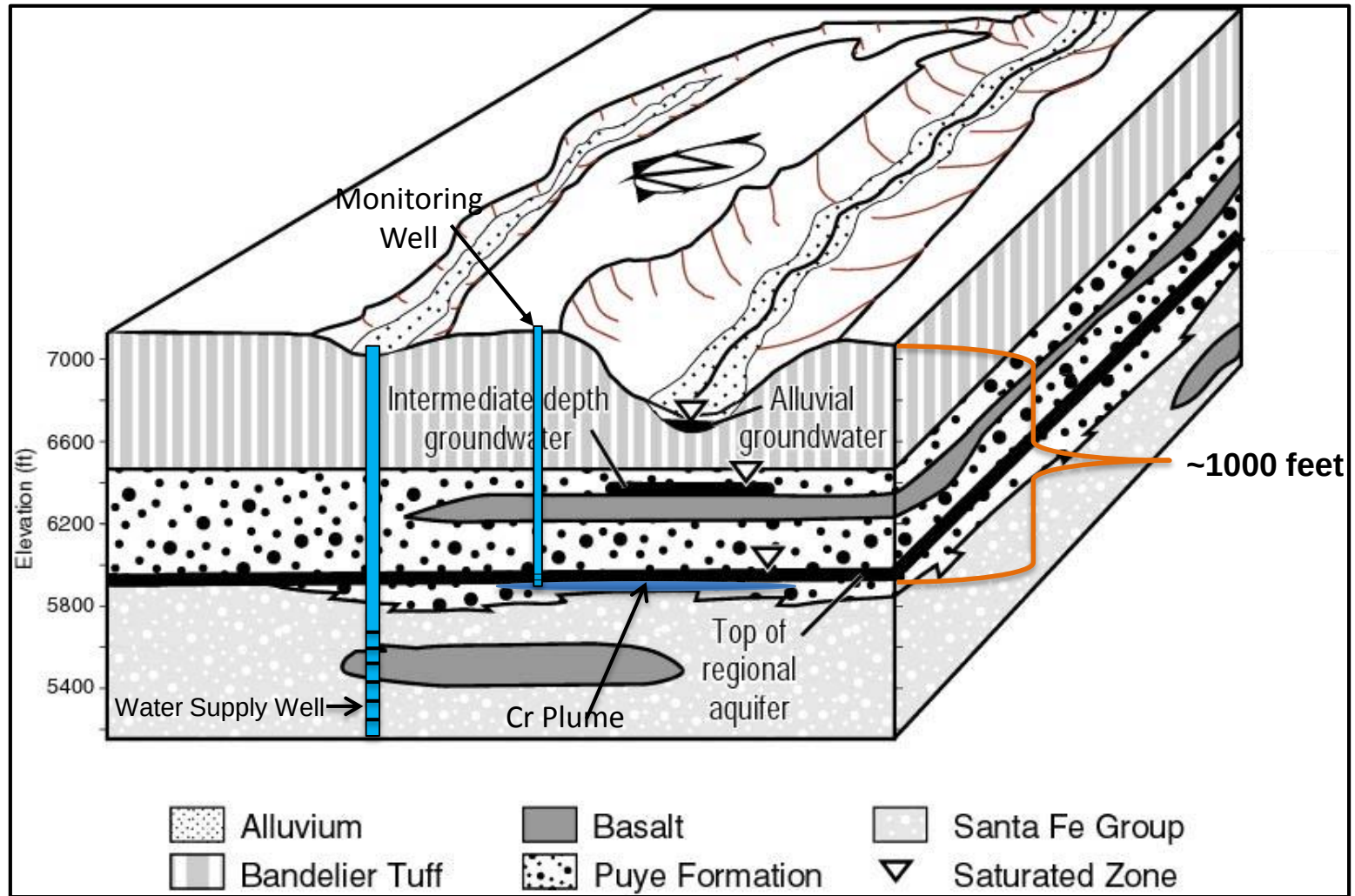
ENVIRONMENTAL MONITORING

SAFETY ♦ PERFORMANCE ♦ CLEANUP ♦ CLOSURE

ATTACHMENT A

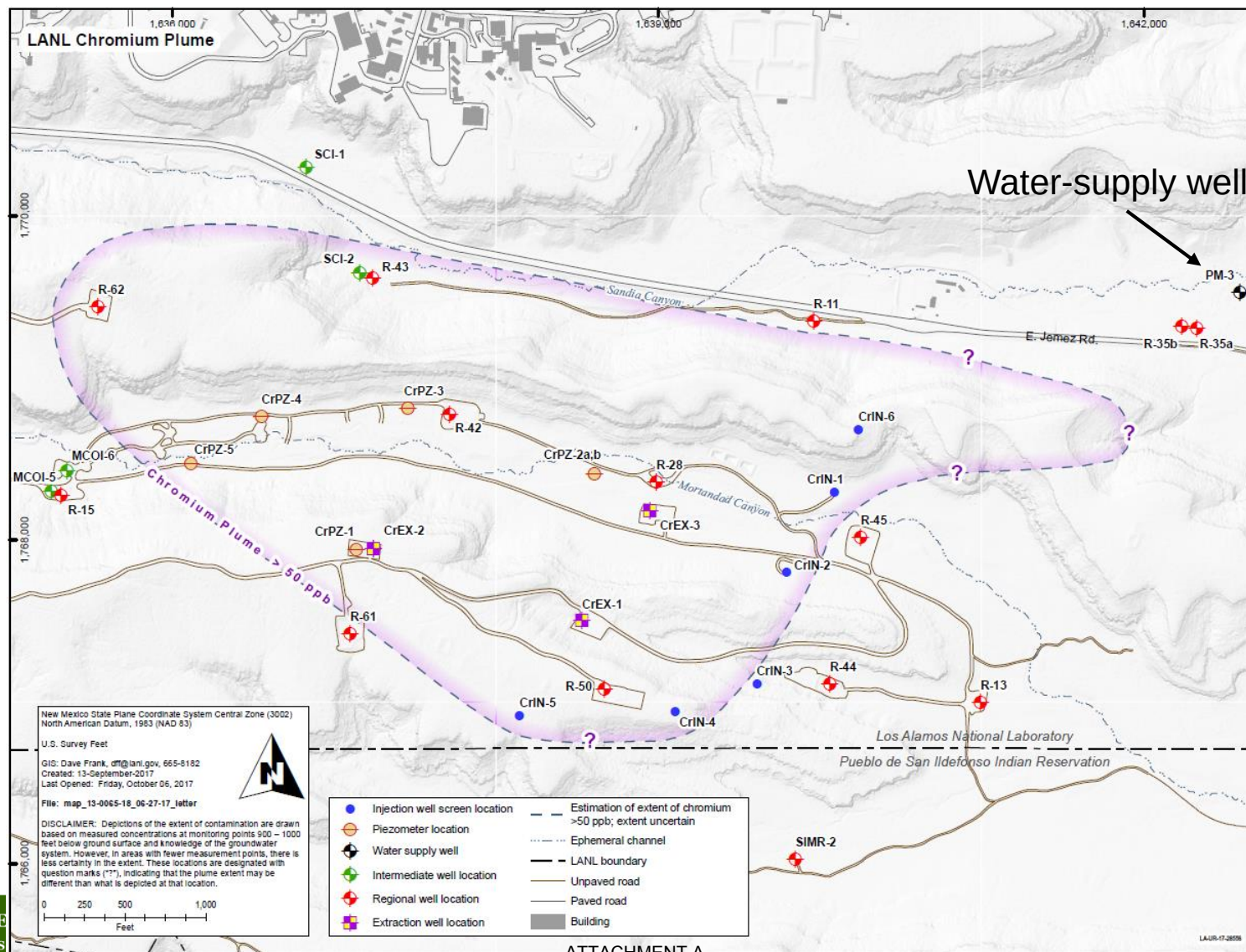


Where is the plume?



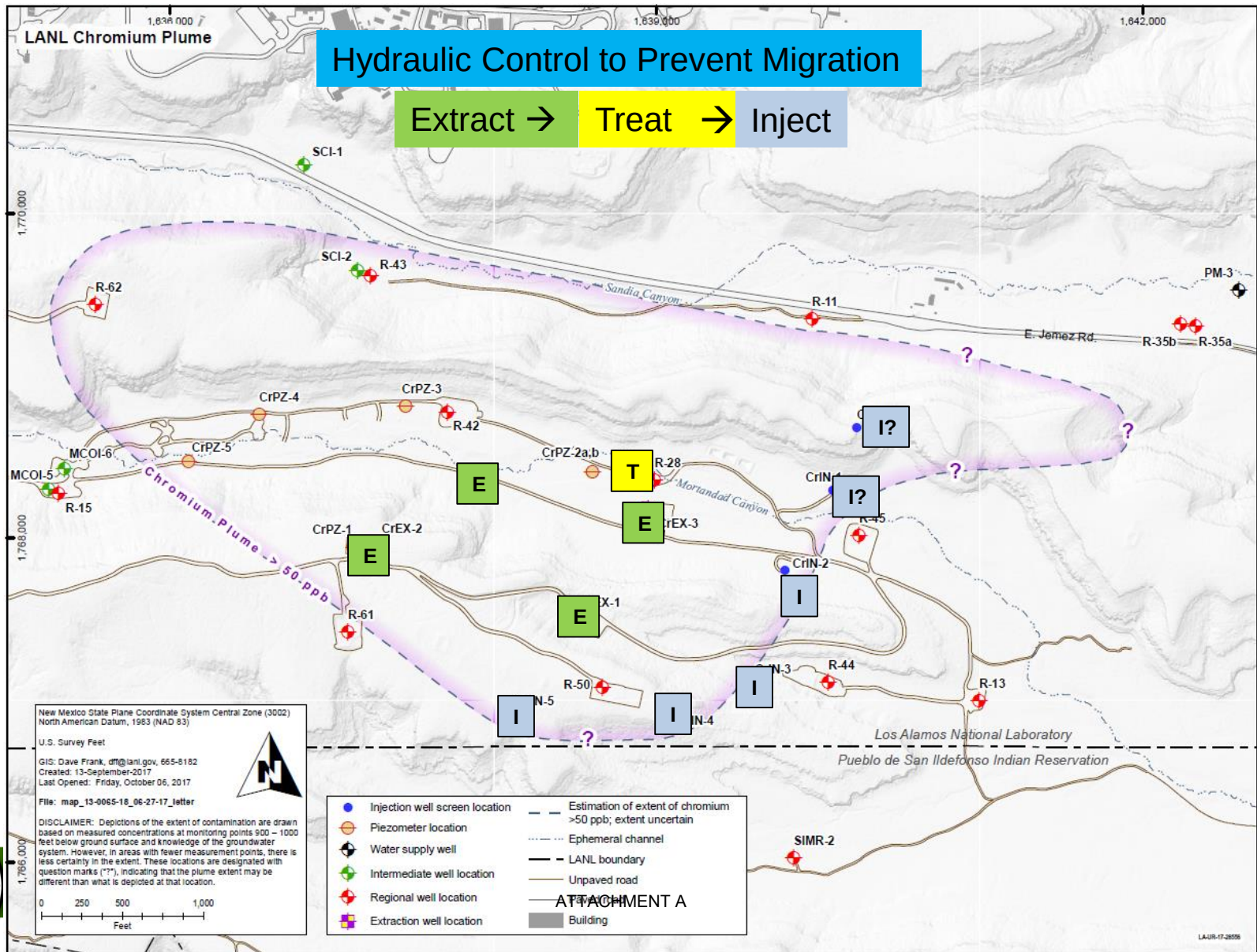


Where is the plume? (cont.)



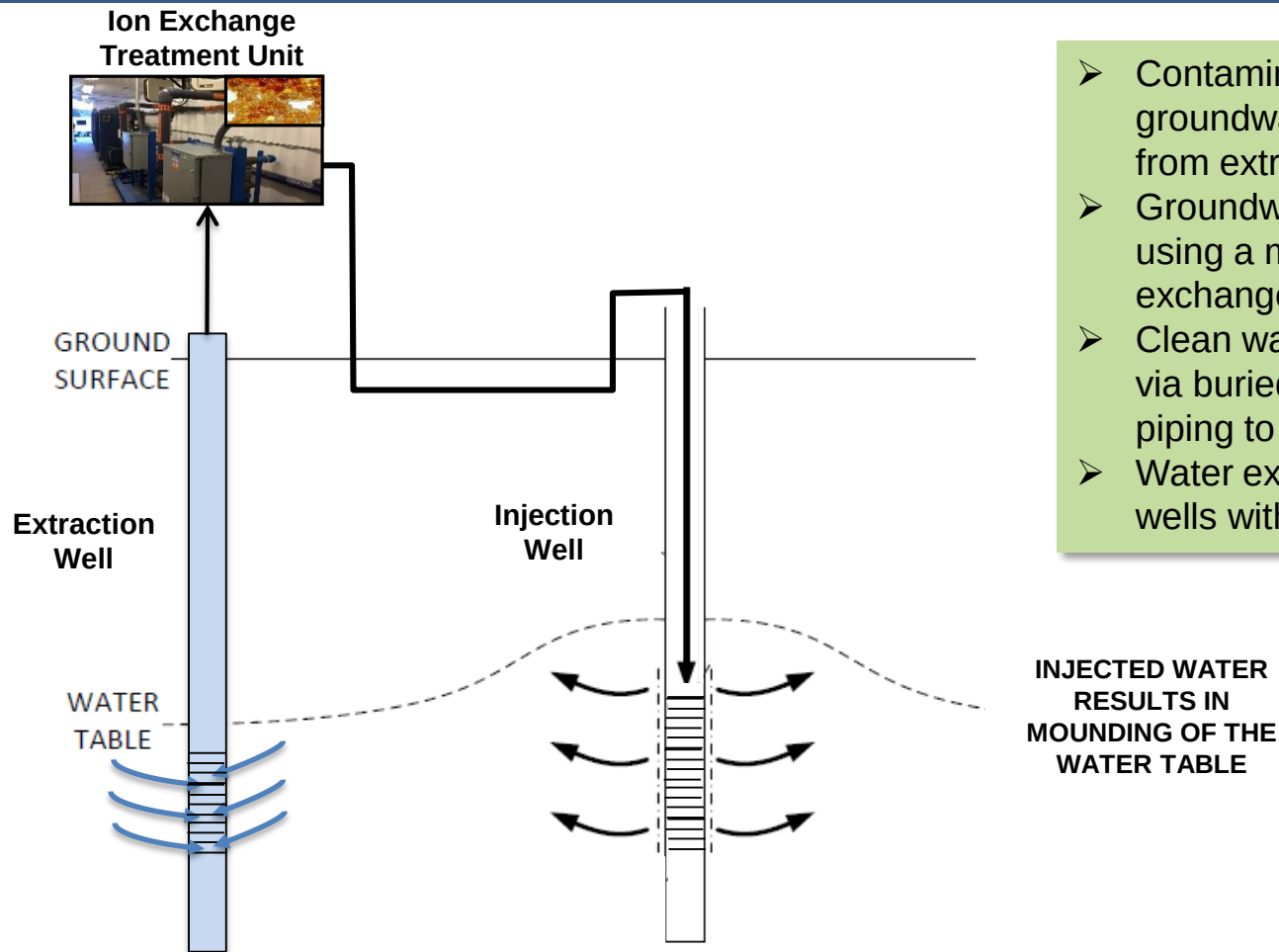


What is being done about it?





Extraction, Treatment & Injection Loop



- Contaminated groundwater is pumped from extraction wells
- Groundwater is treated using a method called ion exchange
- Clean water is delivered via buried thick-walled piping to injection wells
- Water exits the injection wells within the aquifer





U.S. DEPARTMENT OF
ENERGY

OFFICE OF
ENVIRONMENTAL
MANAGEMENT

What's next?

- **Restart operations along Laboratory boundary with Pueblo de San Ildefonso in January**
- **Full system operation summer/fall**
- **Continued studies to evaluate final remedy**



ENVIRONMENTAL MANAGEMENT
SAFETY ♦ PERFORMANCE ♦ CLEANUP ♦ CLOSURE

ATTACHMENT A

A landscape photograph of a sunset or sunrise. The sky is filled with soft, wispy clouds in shades of orange, pink, and blue. The sun is low on the horizon, creating a bright glow. In the foreground, there are dark, silhouetted mountains and hills. The overall mood is serene and contemplative.

Questions?