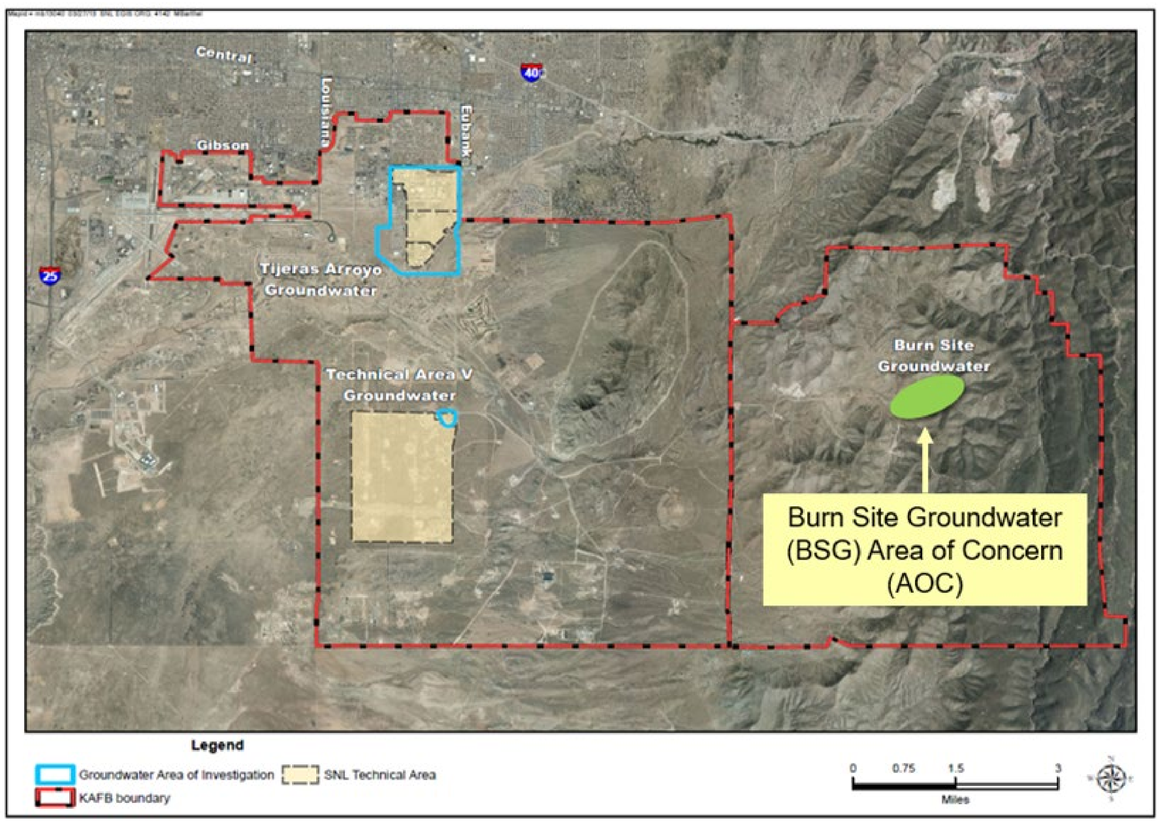
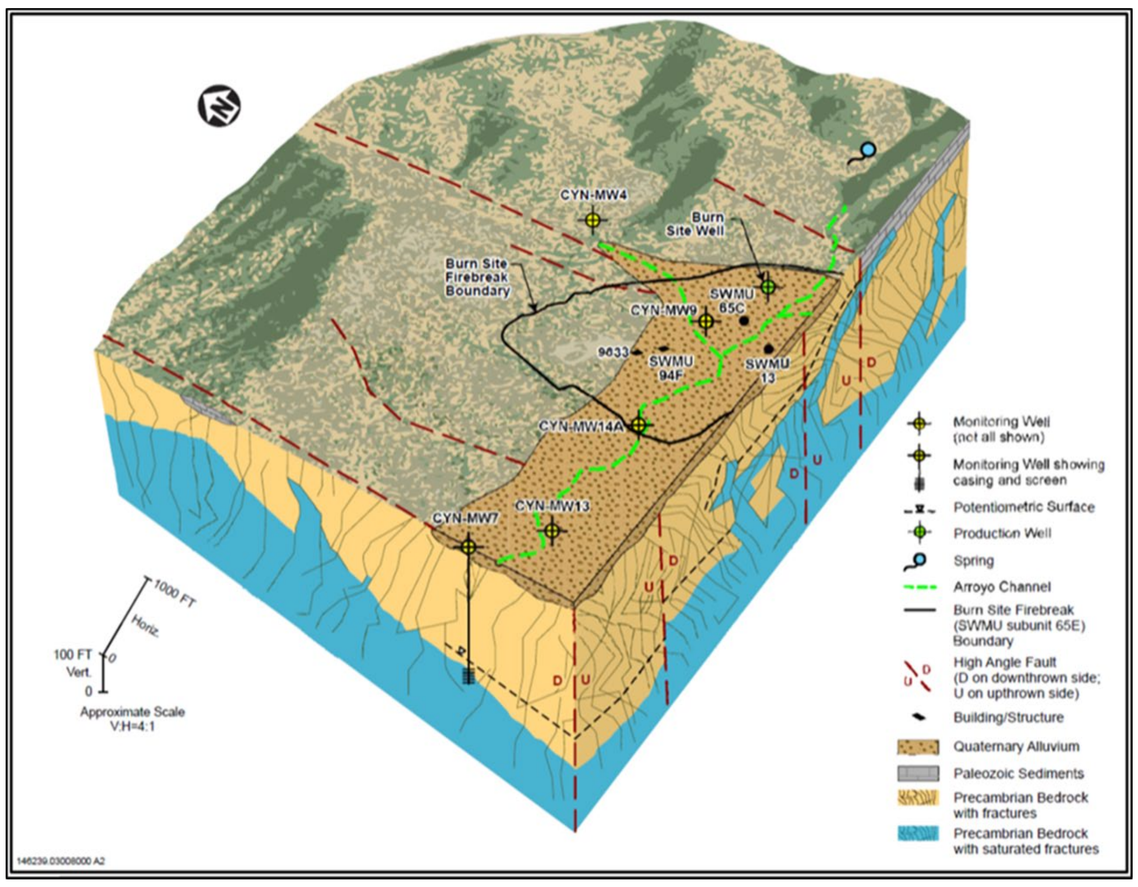
Burn Site Groundwater Investigation

Site Description

- The Burn Site Groundwater (BSG) Area of Concern (AOC) is located in Lurance Canyon in a remote area of the Manzanita Mountains.
- Lurance Canyon is a west-flowing drainage deeply incised into Paleozoic and Precambrian bedrock in moderately to heavily wooded pinon-juniper forest.
- Sandia National Laboratories activities at the Burn Site began in 1967. Early activities included explosives testing; current activity is fire survivability studies (i.e., burn testing).
- Only the groundwater at the Burn Site requires corrective action.

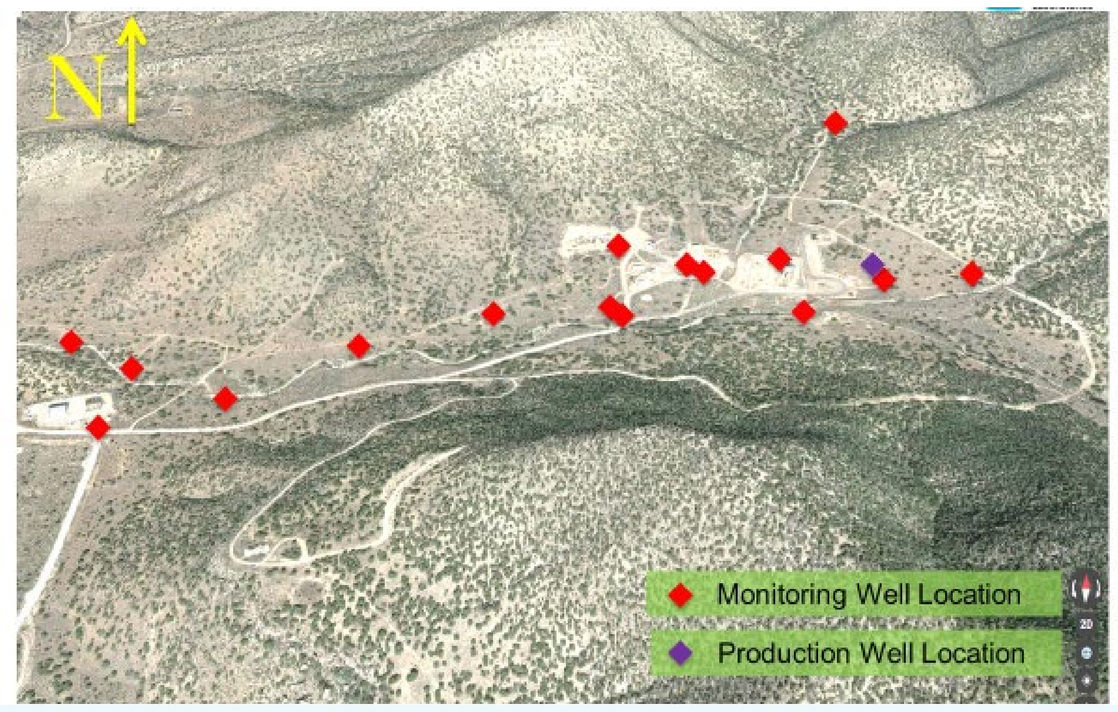




Conceptual Site Model for the BSG AOC Vicinity

- The groundwater occurs in fractured Precambrian bedrock that is recharged by infiltrating precipitation.
- Groundwater flow is controlled by changes in rock type and faults/fractures.
- Depth to groundwater ranges from 46 to 363 feet below ground surface.
- The groundwater flows to the west.
- The nearest downgradient drinking water supply well (KAFB-4) is 8.4 miles to the west.

- Groundwater monitoring at the Burn Site began in 1996.
- The current monitoring well network consists of 16 active wells and 1 inactive production well (Burn Site Well).
- Groundwater levels are measured quarterly.
- 13 monitoring wells are sampled semiannually.
- 3 monitoring wells are measured for water levels only.



Oblique Aerial View of the BSG AOC

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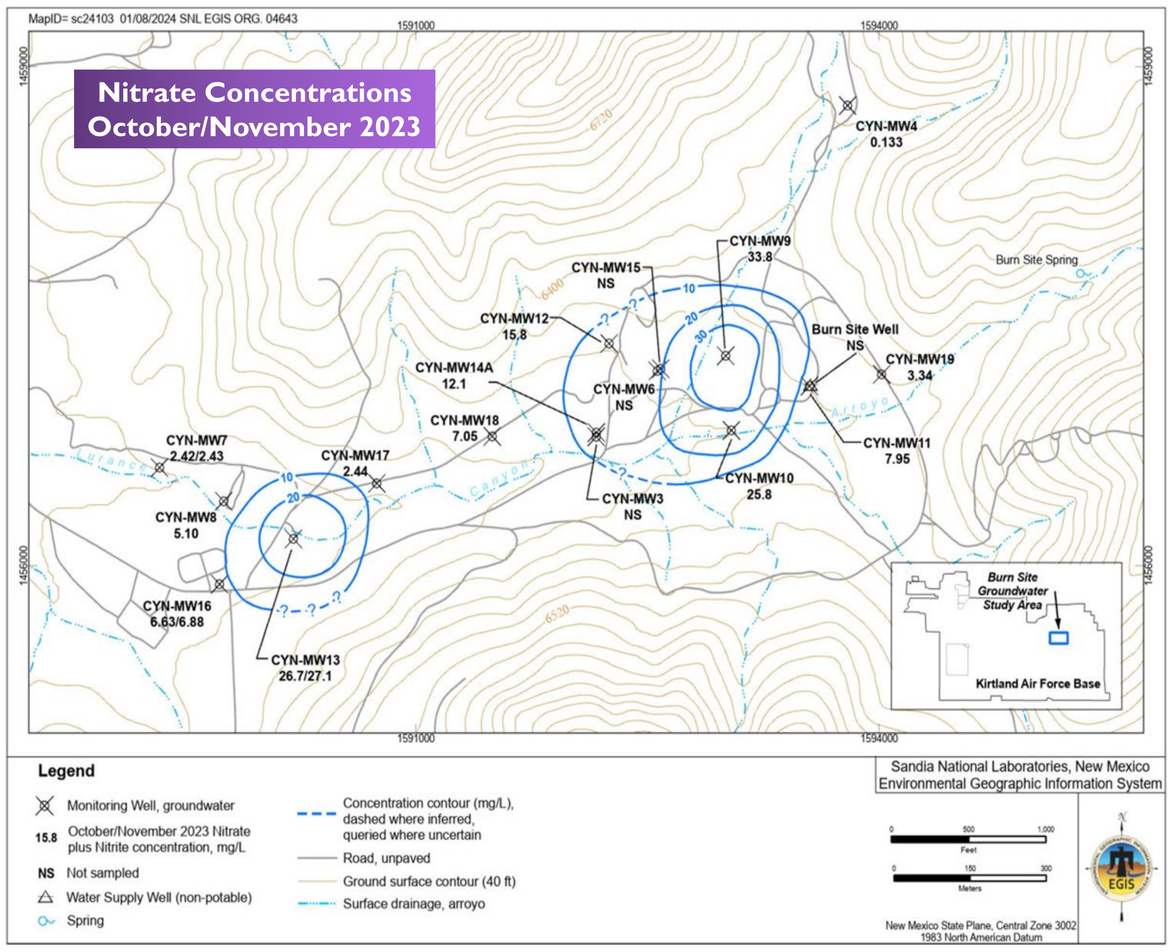
Burn Site Groundwater Investigation

Site Description (concluded)

- The groundwater at the Burn Site is contaminated with nitrate (the constituent of concern) at concentrations above the U.S. Environmental Protection Agency maximum contaminant level (MCL) for drinking water.
- Nitrate is derived from both manmade and natural sources, including ammonium nitrate slurry, wastewater discharges, and degraded explosive compounds.
- In 2023,
  - Nitrate above the MCL was detected in five monitoring wells.
  - The two nitrate plumes combined cover approximately 41 acres.
- The groundwater is not used for any beneficial purpose; no one is drinking contaminated groundwater.



Constituent of Concern	Maximum Concentration in 2023	MCL
Nitrate	33.8 milligrams per liter (well CYN-MW9)	10 milligrams per liter

Current Status and Recent Activities

- The BSG AOC is in the corrective action process.

2004 Compliance Order on Consent → Additional Site Investigation → 2023 CCM/CME Report → 2024 CMIP

  - CCM = current conceptual model
  - CME = corrective measures evaluation
  - CMIP = corrective measures implementation plan
- The New Mexico Environment Department (NMED) selected Long-Term Monitoring as the final remedy for the BSG AOC in May 2024.
- Submitted the 2024 CMIP in December 2024.
  - The NMED is reviewing the CMIP.

- Measured groundwater levels quarterly.
- Will sample monitoring wells for nitrate and total petroleum hydrocarbons (diesel range organics and gasoline range organics) in May/June 2025.
- For more information, please see the *Annual Groundwater Monitoring Report, Calendar Year 2023,* available at www.sandia.gov | Environmental Responsibility | Environmental Reports |

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