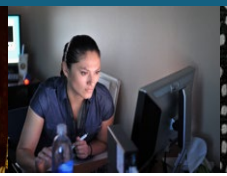
Burn Site Groundwater (BSG) Investigation



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Environmental Restoration Operations

October 2024

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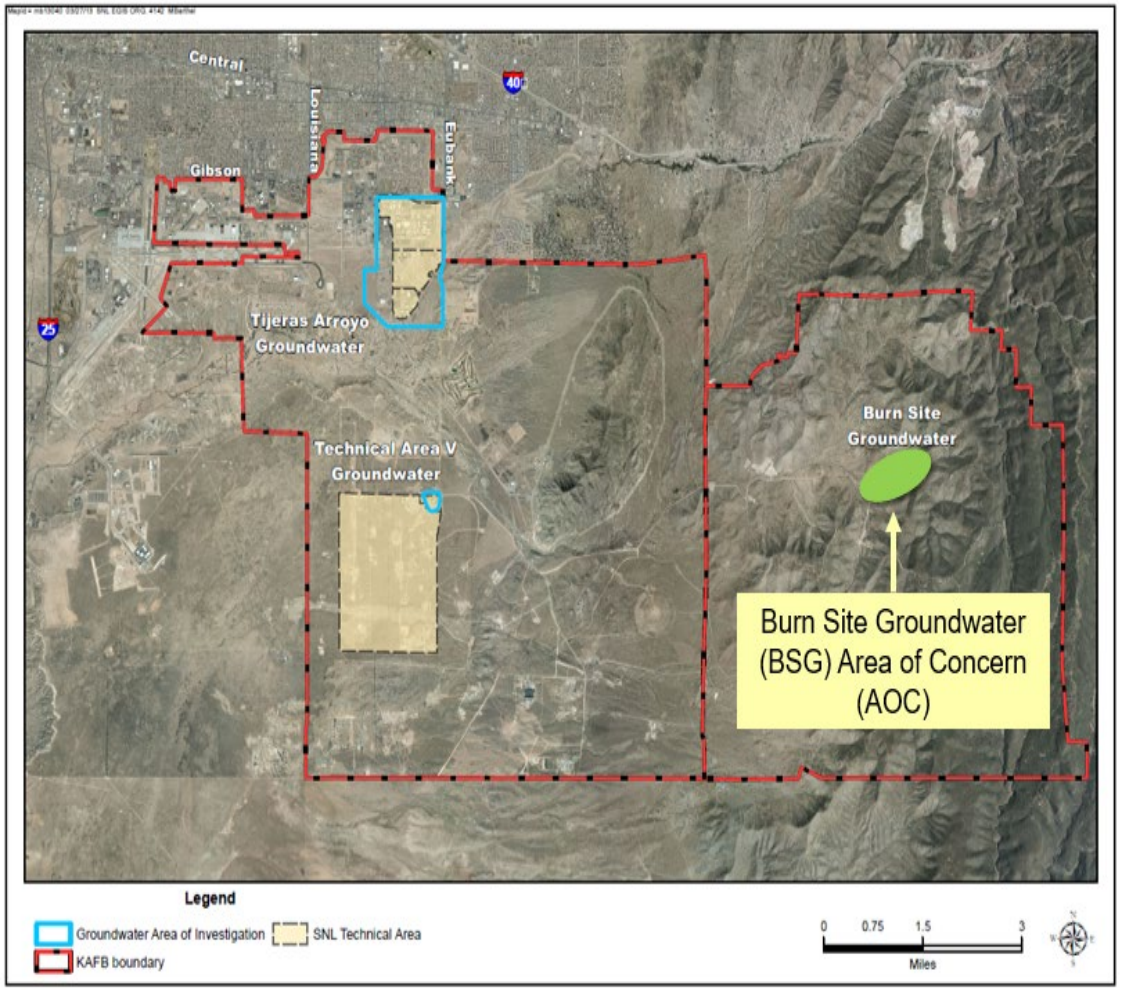
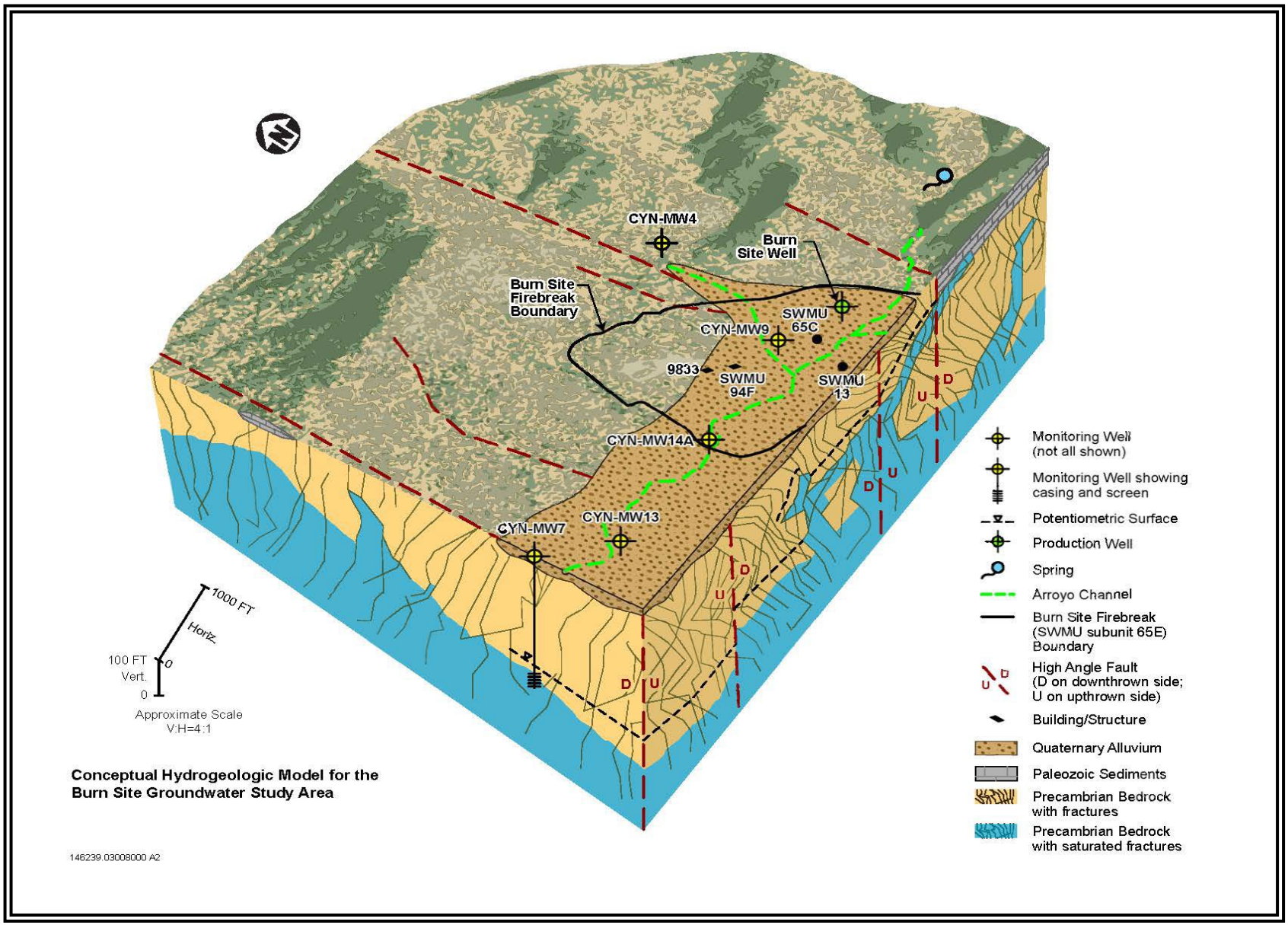
Site Description

- The 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 (SNL) 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.
- The groundwater occurs in fractured Precambrian bedrock that is recharged by infiltrating precipitation; flow is controlled by changes in rock type and faults/fractures.



Conceptual Site Model for the BSG AOC



Conceptual Hydrogeologic Model for the Burn Site Groundwater Study Area

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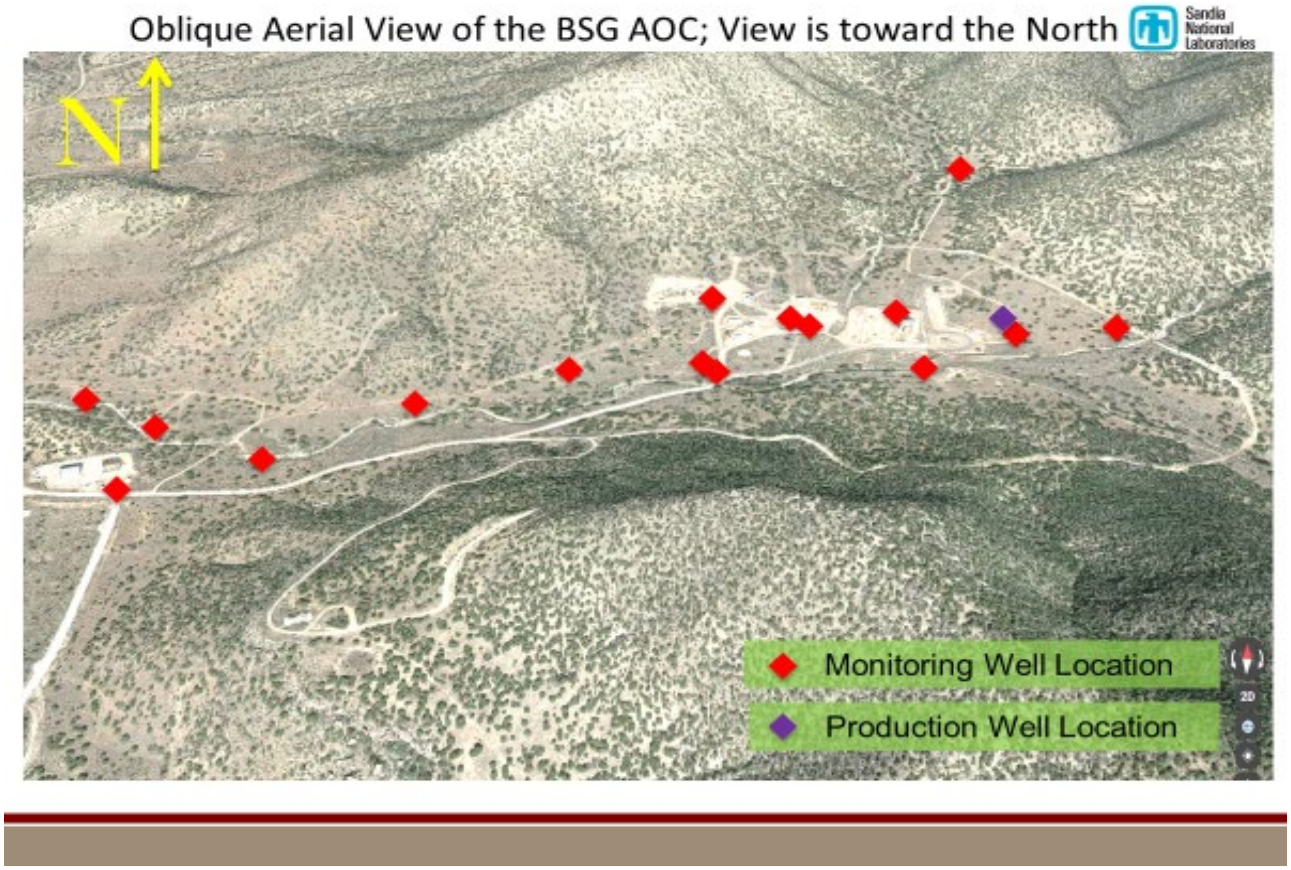
BSG AOC Groundwater Monitoring

- Groundwater monitoring began in 1996.
- Depth to groundwater ranges from 46 to 363 feet below ground surface, and the groundwater flows to the west.
- The monitoring well network consists of 16 active monitoring wells and 1 inactive production well (used for water elevation measurements), with the 4 newest wells installed in October/November 2019.

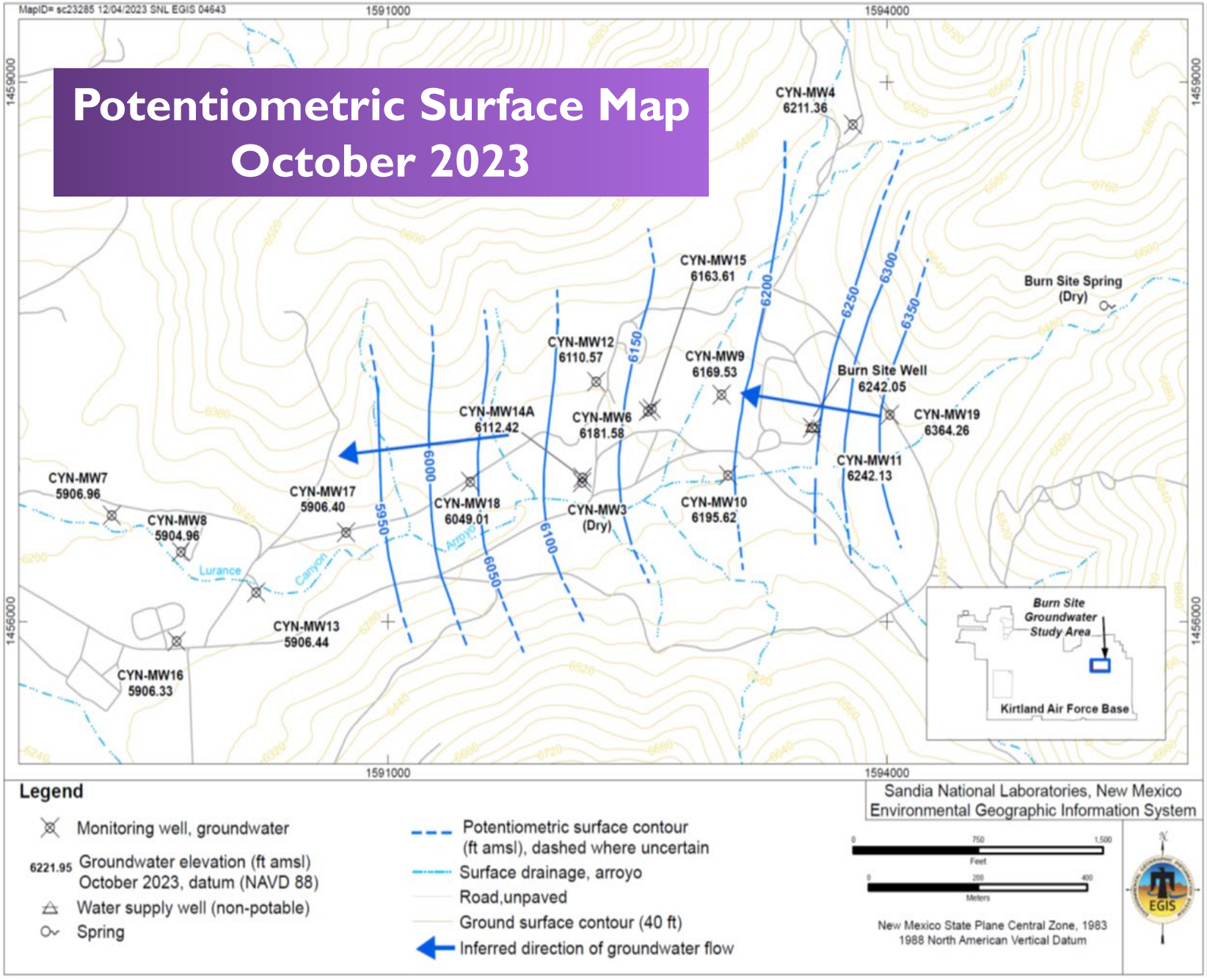


BSG AOC Groundwater Monitoring (concluded)

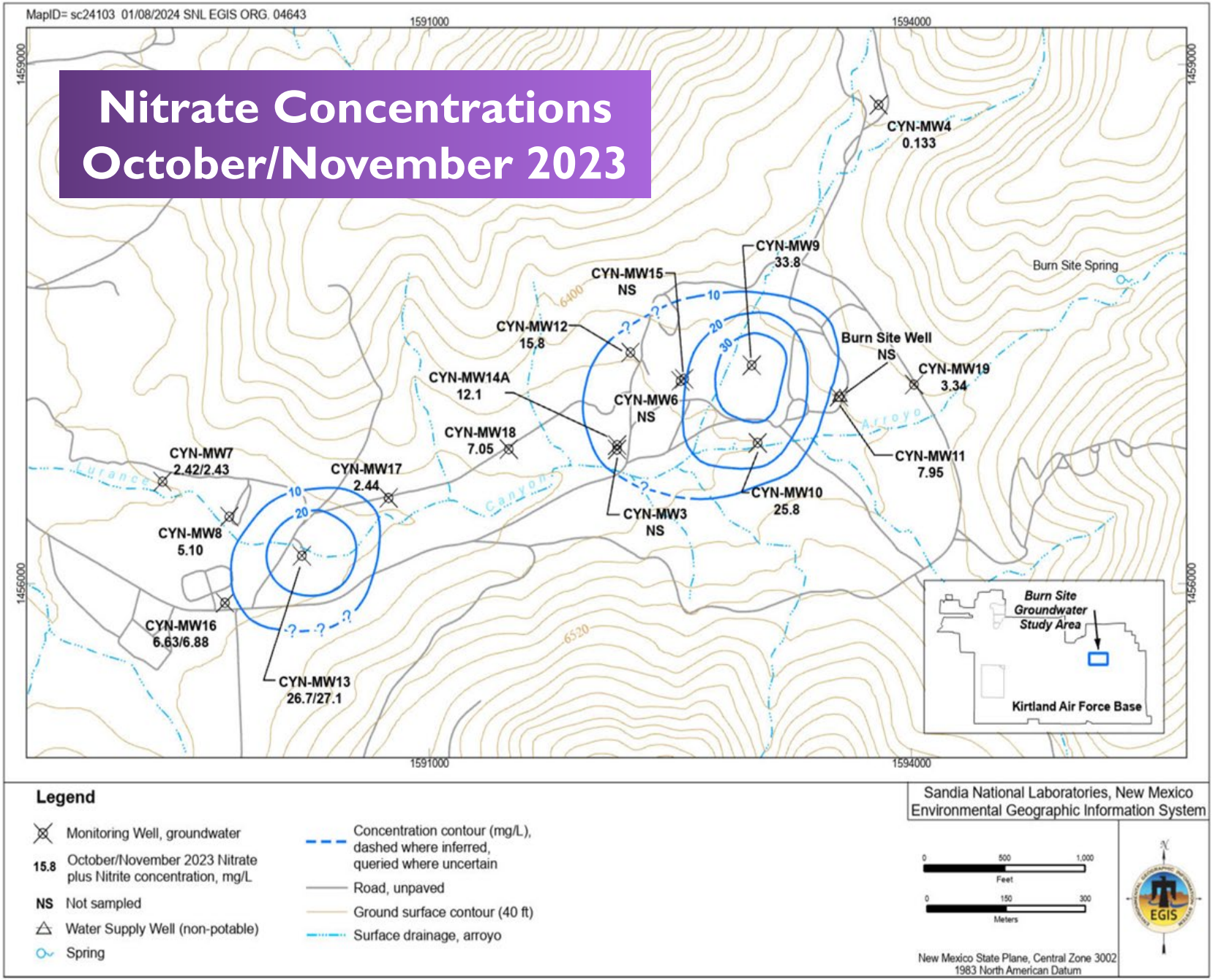
- The groundwater is contaminated with nitrate (the constituent of concern) at concentrations above the U.S. Environmental Protection Agency maximum contaminant level (MCL) for drinking water.
- Nitrate above the MCL has been detected in approximately half the monitoring wells.
- The two nitrate plumes combined cover approximately 41 acres.
- The nitrate is derived from both manmade and natural sources, including ammonium nitrate slurry, wastewater discharges, and degraded explosive compounds.
- The groundwater is not used for any beneficial purpose; no one is drinking contaminated groundwater.
- The nearest downgradient drinking water supply well (KAFB-4) is 8.4 miles to the west.
- No other constituents in the groundwater exceed the MCLs.

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

Potentiometric Surface Map October 2023



Nitrate Concentrations October/November 2023



Current Status and Recent Activities

- The BSG AOC is in the corrective action process.
- SNL personnel performed quarterly water level measurements and semiannual groundwater sampling and presented the results in the *Annual Groundwater Monitoring Report, Calendar Year 2023* submitted to the NMED HWB in July 2024.
- SNL submitted the *Burn Site Groundwater Area of Concern Current Conceptual Model and Corrective Measures Evaluation Report* to the NMED HWB in January 2023. The NMED HWB approved the Long-Term Monitoring strategy and the report in May 2024.
- SNL will submit the *Burn Site Groundwater Corrective Measures Implementation Plan* to the NMED HWB in December 2024.