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New Mexico Energy, Minerals and Natural Resources Department



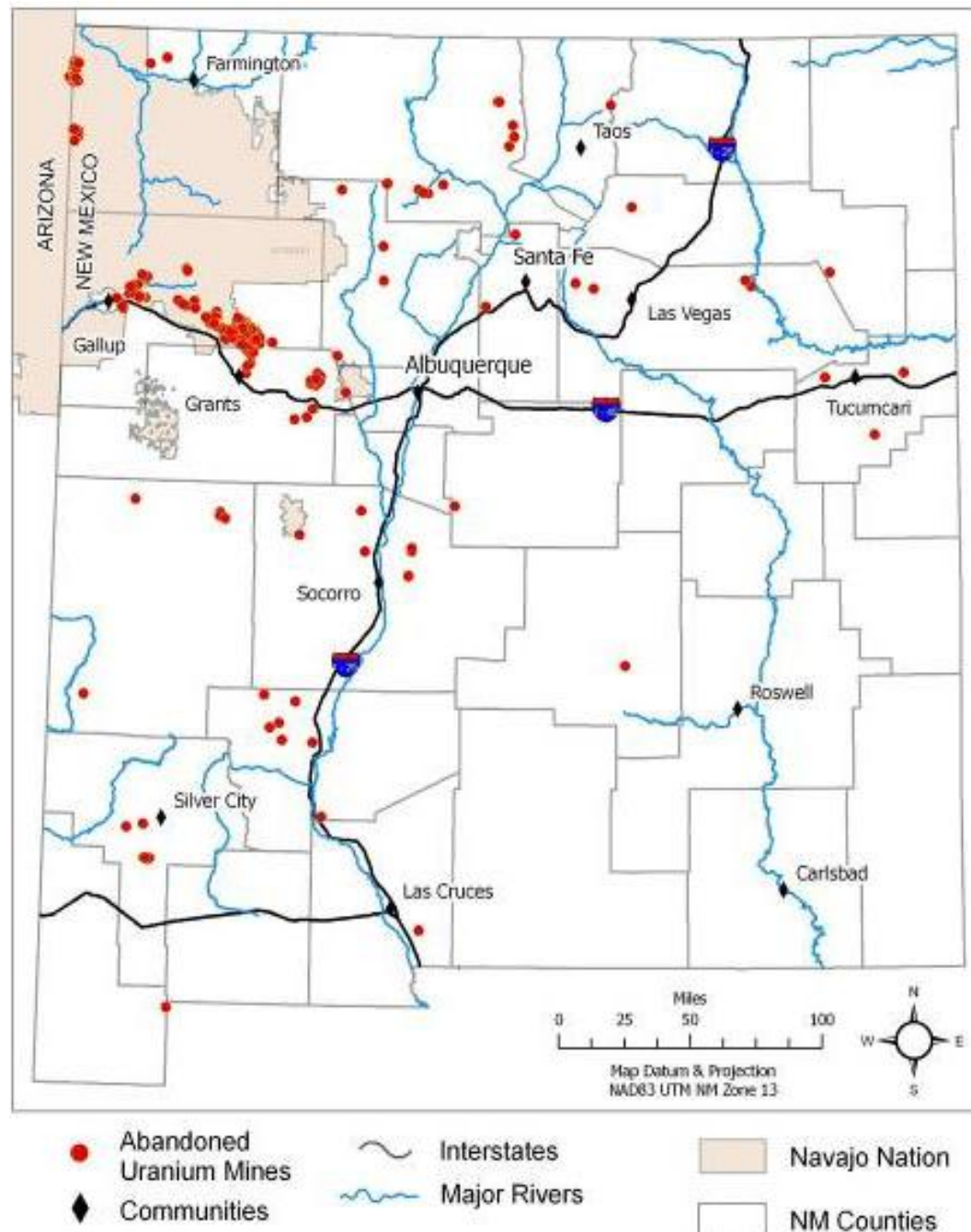
Legacy Uranium Mine Site Reconnaissance & Assessments

**Uranium Contamination Stakeholders Workshop
Abandoned Uranium Mines – Information Gathering
Tuba City, Arizona
September 15, 2010**

**Susan A. Lucas Kamat
New Mexico Mining & Minerals Division**

Legacy Uranium Mine (LUM) Inventory

- 207 out of 259 mines statewide have been assessed
- 98 out of 137 mines statewide have been assessed, excluding Navajo Nation, Laguna Pueblo, Zia Pueblo and Environmental Protection Agency (EPA) Region 9 5-Year Plan
- 62 out of 79 mines in the Grants Mineral Belt, excluding Laguna Pueblo and Zia Pueblo



Programs Performing & Overseeing LUM Field Work

- Mining Act Reclamation Program (MARP)
- Abandoned Mine Land (AML) Program
- Mine Registration & Reporting Program (Mine Reg)



Schmidt decline, Dog Mine

LUM Assessment Protocol: Mining Act Reclamation Program



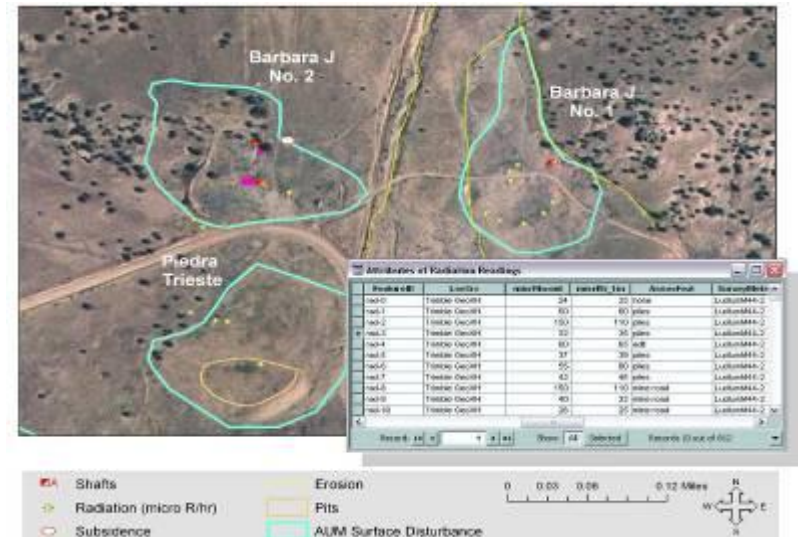
Mount Taylor Mine

- LUMs that had 2 years of production after January 1, 1970.
- Permits require a Reclamation Close-out/Closure Plan (CCP) and financial assurance based on gamma survey(s) and soil samples.

LUM Assessment Protocol: Abandoned Mine Land Program

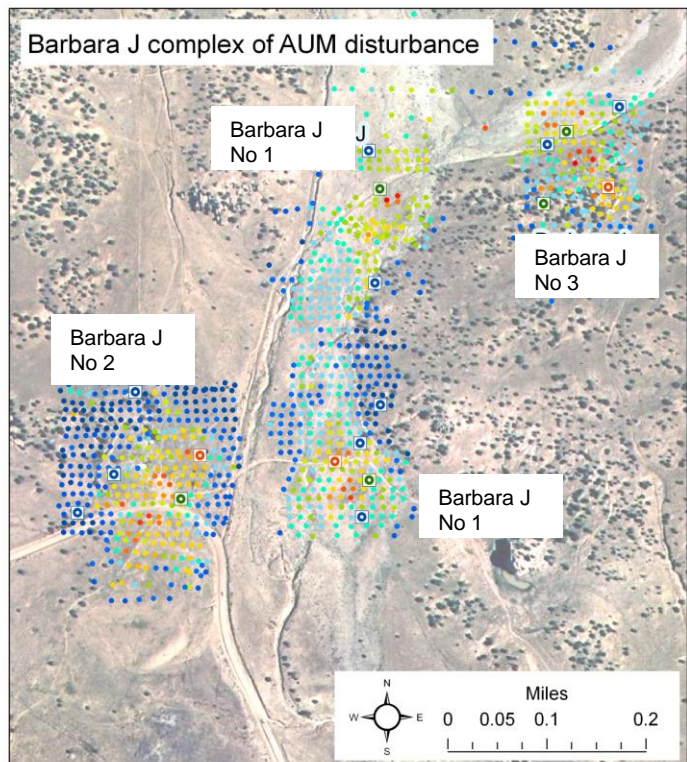
Reconnaissance Phase

- Establish realty
- Locate (with GPS) all mine features, rock piles, cultural sites, access roads, and residential/commercial structures and wells within a mile
- Gamma readings ($\mu\text{R}/\text{hr}$) at ground and 1 meter (random survey)
- Narrative report including geology, hydrology, mining history, land use, vegetation and maps/tables of collected data



Field data from Poison Canyon Area, Ambrosia Lake

LUM Assessment Protocol: Abandoned Mine Land Program



Engineering/Design Phase

- Gamma readings ($\mu\text{R/hr}$) (grid survey)
- Surface soil data ($\rho\text{C/g}$) of rock piles and soils
- Photogrammetry to produce topographic contours (2 ft contours)



Previous Assessment Work

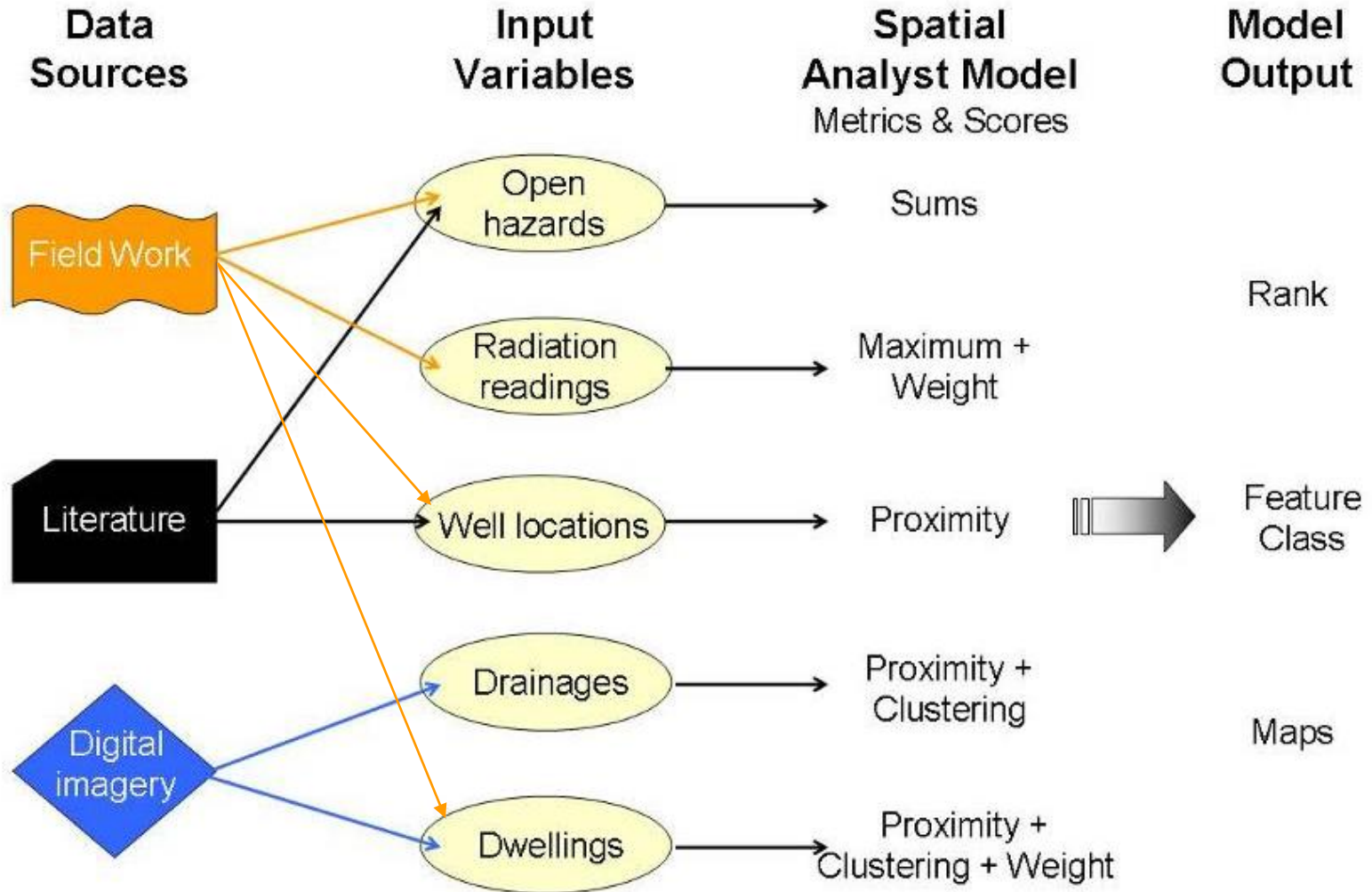
- ❑ Project assessment and maintenance of previous New Mexico Abandoned Mine Land (AML) projects.
Surveyed 14 mines in the Poison Canyon area north of Milan.
 - ❑ Reconnaissance of mines for possible inclusion in future New Mexico Abandoned Mine Land (AML) projects.
Surveyed 14 mines on federal and private lands located throughout New Mexico.
 - ❑ 2008 federal and state lands field survey.
Industry-sponsored survey of 22 mines on Federal and State lands located throughout New Mexico.
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Current Assessment Work

- AML and Mine Reg field work
 - MARP permit activities (reclamation and close-out plan approval)
 - Professional Services Contract with INTERA Engineering to assess 65 mines on private, state and federal lands in New Mexico (approximately 17 mines left)
 - Future contract to complete engineering reclamation design assessments for all LUMs on Bureau of Land Management lands
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LUM Prioritization Model

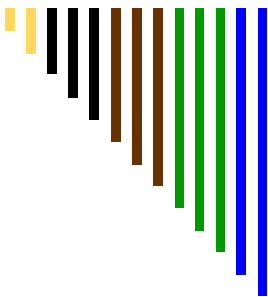


Safeguarding & Surface Reclamation



T-20 Mine

- Engineered closures of physical hazards.
- Avoidance of cultural resources.
- On-site engineered cover.



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1220 South St. Francis Drive

Santa Fe, New Mexico 87505

(505) 476-3400

<http://www.emnrd.state.nm.us/MMD/index.htm>



John Pfeil, Uranium Point of Contact

John.Pfeil@state.nm.us

Susa Lucas Kamat, Uranium Data Manager

Susan.LucasKamat@state.nm.us