

AGENDA

Nevada Site Specific Advisory Board Member Orientation Presentations

National Atomic Testing Museum
755 East Flamingo Road, Las Vegas, NV

October 8, 2014

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Environmental Management Site-Specific Advisory Board



Robert Boehlecke

Alternate Deputy Designated Federal Officer
Nevada Site Specific Advisory Board Orientation
October 8, 2014



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What is the Environmental Management Site-Specific Advisory Board? (SSAB)

- Group of volunteers convened by the U.S. Department of Energy's (DOE's) Environmental Management (EM) Program to provide citizen review and feedback to DOE on EM activities throughout the country
- Largest Federally-chartered advisory board in the country
- Made up of eight boards - including the Nevada Site Specific Advisory Board (NSSAB)



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Where are the Eight Local SSAB Affiliates?



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Why / How was the SSAB Formed?

- 1993 National Policy Dialogue – develop recommendations to improve the process for federal facility cleanup decision-making
 - DOE, other Federal agencies, Tribal governments, Native American organizations, and local governments participated
 - Recommended that a SSAB be established
- 1994 – EM SSAB Charter approved
 - Requires renewal every two years



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Oversight vs. Advisory

- Oversight – monitor progress toward completion according to specified milestones that are often reflected in law and/or agreements
- Advisory – independently create recommendations that address work within the EM purview of concern and interest to the board and the public

The Nevada Site Specific Advisory Board
is an *advisory* board



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Scope of the NSSAB

- Groundwater characterization
- Surface soil contamination/remediation
- Facility contamination/remediation
- Low-level waste disposal and transportation
- Environmental Management budget prioritization



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SSAB Operating Requirements

- Federal Advisory Committee Act
- EM SSAB National Charter
- DOE Guidance
- NSSAB Standard Operating Procedures

Documents available on the NSSAB website at www.nv.energy.gov/NSSAB under *Procedures*



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Nevada Site Specific Advisory Board



Barb Ulmer
Administrator

Nevada Site Specific Advisory Board Orientation
October 8, 2014



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Who Makes Up the Nevada Site Specific Advisory Board (NSSAB)?

- Members
- Liaisons
- Staff



Did you know the NSSAB used to be known as the Community Advisory Board for Nevada Test Site Programs?



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Board Members

- Appointed by Department of Energy's (DOE) Assistant Secretary for Environmental Management (EM)
- Serve two-year term which can be renewed by DOE two times (six year limit)
- Strive for 15-20 members



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Board Members

(continued)

- Responsibilities:
 - Attend and participate in regular meetings and training
 - Review EM issues within NSSAB's purview
 - Submit timely recommendations to DOE
 - Respond to NSSAB office communication in a timely manner



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Chair and Vice Chair

- Chair and Vice Chair
 - Elected for one-year terms beginning October 1
 - Support Board in balanced and unbiased manner
 - Attend EM SSAB biannual meetings and participate in bimonthly EM SSAB conference calls



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Chair and Vice Chair

(continued)

- Chair Responsibilities
 - Preside over Full Board meetings
 - Certify Full Board minutes within 45 days
 - Represent the NSSAB during media opportunities
- Vice Chair Responsibilities
 - Serve as Chair in his/her absence



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Liaisons

- Represent their parent organization
- Non-voting positions
 - Organizations are appointed by the DOE
 - Organizations are responsible for determining who will represent them on the Board
- Current representation:
 - Clark County (Phil Klevorick)
 - Consolidated Group of Tribes and Organizations (Richard Arnold)
 - Elko County Commission (Charlie Myers)



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Liaisons

(continued)

- Esmeralda County Commission (Ralph Keyes)
- Lincoln County Commission (Kevin Phillips)
- Nye County Commission (Dan Schinhofen/Frank Carbone)
- Nye County Nuclear Waste Repository Project Office (John Klenke)
- State of Nevada Division of Environmental Protection (Chris Andres)
- U.S. National Park Service (Jonathan Penman-Brotzman)
- White Pine County Commission (Mike Lemich)



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Liaisons

(continued)

- Responsibilities:
 - Define and communicate clearly to the NSSAB the respective decision-making processes of the entities they represent
 - Provide timely access to information pertinent to EM and associated environmental issues and related decision-making
 - Inform the NSSAB in a timely and proactive manner of entity processes, programs, projects, and activities pertinent to the Board's mission and purpose



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Liaisons

(continued)

- Provide a short, verbal report on parent organizations involvement in EM activities at each Full Board meeting
 - If liaison is unable to attend, a written report will be submitted to the NSSAB Office via email two days prior to the Full Board meeting



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Deputy Designated Federal Officer (DDFO)

Kelly Snyder

- Ensures the Board has opportunities for providing input to DOE
- Provides timely information to the Board relative to DOE and EM initiatives, decisions, and processes
- Provides suggestions to the Board regarding EM activities on which its input would be useful

*Rob Boehlecke is alternate DDFO



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Deputy Designated Federal Officer (DDFO)

(continued)

- Reviews Board input and ensures timely response
- Ensures that community and Board concerns related to EM are addressed
- Provides for adequate funding and staff support
- Attends all NSSAB meetings
- Approves meeting agenda and minutes
- Can adjourn meetings if it is in the public interest



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Administrator

Barbara Ulmer

- Arranges/facilitates meetings; prepares written summaries
- Provides day-to-day communications
- Coordinates travel activities
- Maintains complete files of NSSAB activities
- Works with NSSAB to finalize/format written recommendations



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Standard Operating Procedures

- Member Attendance
 - May not miss two consecutive Full Board meetings without an excused absence
 - Attendance is required at a minimum of 50% of regular meetings in any one-year period
 - To be considered “present,” must attend two-thirds of a meeting



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Standard Operating Procedures

(continued)

- Conflict of Interest
 - Board members are prohibited from participating as an NSSAB member in any matter in which they have financial interest
 - If aware of a conflict, Board members must refrain from discussions and recommendations
 - Members must report actual/potential Conflict of Interest to the DDFO in a timely manner



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Standard Operating Procedures

(continued)

- May not knowingly receive gifts or gratuities from persons having business with DOE EM, except if:
 - Less than \$20 (\$50 total per year)
 - Motivated by personal friendship
 - Result of outside activities and not enhanced by Board membership



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Standard Operating Procedures

(continued)

- Recommendations
 - Meetings are held to discuss information and perspectives and develop draft recommendations
 - Draft recommendation must be thoroughly reviewed and approved by Full Board
 - Minority Report can be included if consensus cannot be reached
 - Approved recommendation signed by the Chair and submitted to DOE within 15 days
 - Same process is used for EM SSAB recommendations



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Standard Operating Procedures

(continued)

- Voting
 - Meeting requires a quorum (at least 51% of voting members) for decision making
- Media
 - Only the Chair or Chair appointee may represent the Board with the press/media



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NSSAB Meetings

- The Board will meet as needed with length of meeting determined by agenda
- The DDFO, or appointed DOE representative, must be present at all NSSAB meetings
- Meetings follow agenda and conducted by the Chair with facilitation by the Administrator
- Voting is conducted according to Robert's Rules of Order



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NSSAB Meetings

(continued)

- Time and Location
 - Full Board typically meets the third Wednesday of selected months at 5 p.m. for two to three hours
 - Committees meet as needed (typically Monday through Thursday, day or early evening) to accomplish Work Plan tasks
 - Time and location must be accessible to the general public
 - While typically held in the Las Vegas area, meetings are also held in other southern Nevada communities



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NSSAB Meetings

(continued)

- Notices
 - 72-Hour Congressional Notice is required for all Full Board and committee meetings where a quorum will be present
 - Federal Register Notice is required for all Full Board meetings
 - Members and liaisons are sent notice of meeting with request for attendance response and draft agenda at least a week prior to meeting
 - News release (distributed to ~40 media outlets)
 - EM News Flash (distributed to more than 2,900 individuals)
 - Social media (i.e., FaceBook, Twitter, etc.)



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NSSAB Meetings

(continued)

- Agendas
 - Prepared by Chair, Vice Chair, DDFO, and Administrator
 - Provided to members the week prior to the meeting
 - Posted to the website
 - If available, items for vote are included with the Full Board agenda for review prior to the meeting



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NSSAB Meetings

(continued)

- Minutes
 - Prepared by Administrator
 - Provided to members and DDFO for review
 - Full Board minutes certified by Chair and DDFO and submitted to EM Headquarters within 45 days
 - Committee minutes reviewed by Committee Chair and submitted to EM Headquarters within 30 days
 - Posted to the website



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NSSAB Meetings

(continued)

- Public Participation
 - Meetings are open to the public
 - A section of the meeting space is available for public seating
 - Public comment is included in the agenda for oral comments
 - Written comments are always accepted
 - NSSAB/DOE does not respond to public comments (may choose to address comments during applicable agenda item)



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NSSAB Meetings

(continued)

- Alternative meetings
 - On-line meetings have been and are continuing to be pursued
- Refreshments
 - Any refreshments are self-funded by members/ liaisons
- Meetings at the Nevada Support Facility require:
 - Badging at the DOE Badge Office
 - Vehicle inspection at facility entry gate
 - No prohibited articles



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Work Plan

- Work Plan developed at September Full Board meeting
- Outlines all activities the Board will participate in during the fiscal year
- Ensures Board members and DOE understand each others' expectations
- Items suggested by DOE and NSSAB members in accordance with guidance from EM Assistant Secretary
- NSSAB selects work plan items and requests approval from DOE prior to October 1
- Modifications may be requested during the fiscal year with DOE approval



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Committees

- Membership is only standing committee
- Ad hoc committees are formed as needed in accordance with Work Plan requirements
- Committee Chairs for the fiscal year are elected by the Committee members
- Discussions held during committees that result in a draft recommendation must be rediscussed during a Full Board meeting to ensure all members have had the opportunity to fully understand all aspects of the recommendation



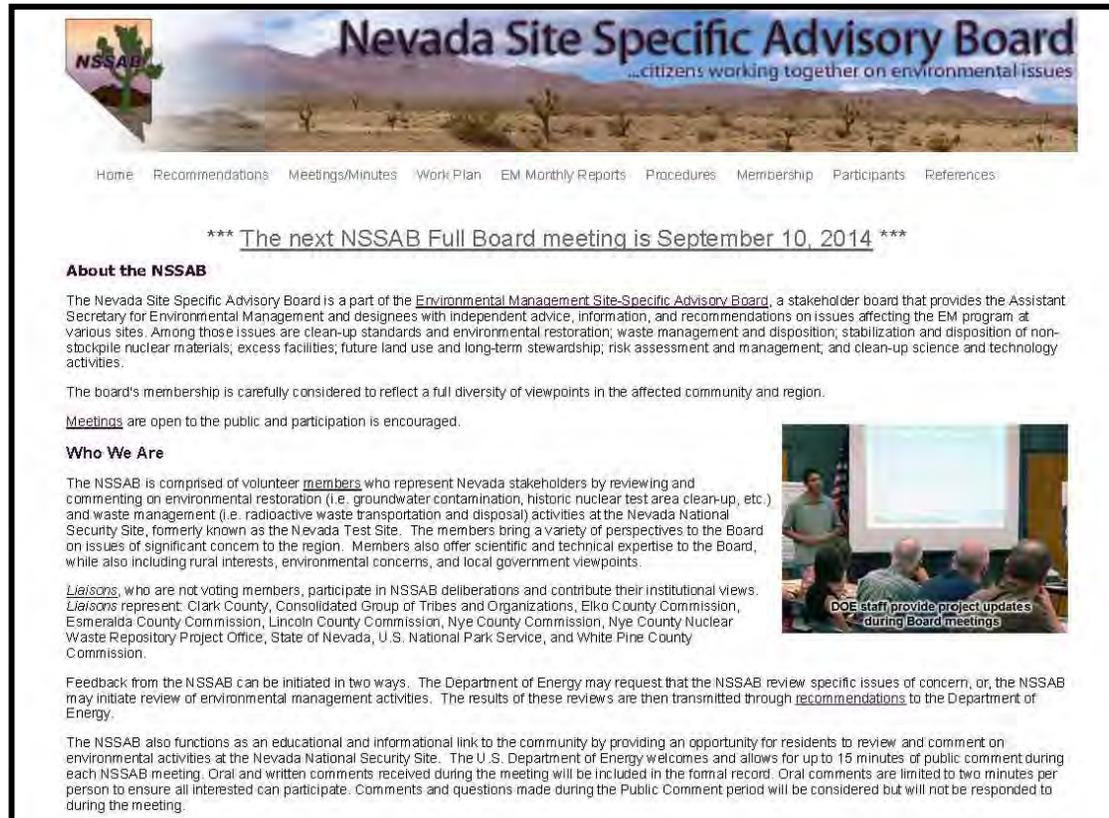
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NSSAB Website

www.nv.energy.gov/NSSAB



Nevada Site Specific Advisory Board
...citizens working together on environmental issues

Home Recommendations Meetings/Minutes Work Plan EM Monthly Reports Procedures Membership Participants References

*** The next NSSAB Full Board meeting is September 10, 2014 ***

About the NSSAB

The Nevada Site Specific Advisory Board is a part of the Environmental Management Site-Specific Advisory Board, a stakeholder board that provides the Assistant Secretary for Environmental Management and designees with independent advice, information, and recommendations on issues affecting the EM program at various sites. Among those issues are clean-up standards and environmental restoration; waste management and disposition; stabilization and disposition of non-stockpile nuclear materials; excess facilities; future land use and long-term stewardship; risk assessment and management; and clean-up science and technology activities.

The board's membership is carefully considered to reflect a full diversity of viewpoints in the affected community and region.

Meetings are open to the public and participation is encouraged.

Who We Are

The NSSAB is comprised of volunteer members who represent Nevada stakeholders by reviewing and commenting on environmental restoration (i.e. groundwater contamination, historic nuclear test area clean-up, etc.) and waste management (i.e. radioactive waste transportation and disposal) activities at the Nevada National Security Site, formerly known as the Nevada Test Site. The members bring a variety of perspectives to the Board on issues of significant concern to the region. Members also offer scientific and technical expertise to the Board, while also including rural interests, environmental concerns, and local government viewpoints.

Liaisons, who are not voting members, participate in NSSAB deliberations and contribute their institutional views. Liaisons represent: Clark County, Consolidated Group of Tribes and Organizations, Elko County Commission, Esmeralda County Commission, Lincoln County Commission, Nye County Commission, Nye County Nuclear Waste Repository Project Office, State of Nevada, U.S. National Park Service, and White Pine County Commission.

Feedback from the NSSAB can be initiated in two ways. The Department of Energy may request that the NSSAB review specific issues of concern, or, the NSSAB may initiate review of environmental management activities. The results of these reviews are then transmitted through recommendations to the Department of Energy.

The NSSAB also functions as an educational and informational link to the community by providing an opportunity for residents to review and comment on environmental activities at the Nevada National Security Site. The U.S. Department of Energy welcomes and allows for up to 15 minutes of public comment during each NSSAB meeting. Oral and written comments received during the meeting will be included in the formal record. Oral comments are limited to two minutes per person to ensure all interested can participate. Comments and questions made during the Public Comment period will be considered but will not be responded to during the meeting.

DOE staff provide project updates during Board meetings



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Administrative

- NSSAB office hours are Monday through Thursday, 7:30 a.m. to 4:30 p.m.
- Majority of NSSAB communication conducted via e-mail NSSAB@nnsa.doe.gov or phone 702-630-0522
- Report changes regarding contact information and work status to the NSSAB office
- Kelly Snyder, DDFO, contact information is e-mail kelly.snyder@nnsa.doe.gov or phone 702-295-2836
- Rob Boehlecke, alternate DDFO, contact information is e-mail robert.boehlecke@nnsa.doe.gov or phone 702-295-2099



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Travel Overview

- Authorized Travel
 - NSSAB meeting notices sent via e-mail
 - NSSAB members *must* send a “**reply e-mail**” which will serve as your “Travel Request”
 - Members cannot receive reimbursement unless a Travel Request is submitted and DOE approval is given in advance of travel



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Travel Overview

(continued)

- Traveler Information Form
 - One-time form is completed and returned to the NSSAB Office for processing
 - Establishes your account within the federal government travel system
 - Reimbursement is paid through direct deposit
 - No checks are generated or mailed
 - Emergency contact information is required



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Travel Overview

(continued)

- NSSAB members must follow Federal Travel Guidelines
- NSSAB members responsible for payment of travel expenses with DOE reimbursement after travel completion
- Lodging and per diem reimbursement are dependent upon location and time of meeting



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Travel Overview

(continued)

- Travel reimbursement is based on approved federal per diem rates for hotel and food/incidentals
 - Rates vary from city to city
 - Per diem is daily allowance for food and incidentals
 - Rates may change each fiscal year

Las Vegas	Hotel	Full-Day Per Diem	Partial-Day Per Diem
Oct. 1, 2014 – Sep. 30, 2015	\$96	\$ 71	\$ 53.25



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Travel Overview

(continued)

- Mileage
 - Roundtrip mileage is always calculated from your *residence* to the *meeting location* and *back*
 - Mileage reimbursement is offered if meeting location is more than 30 miles one-way from residence
 - Reimbursed at \$0.56 per mile (*current rate*)



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Travel Overview

(continued)

- Receipts
 - E-mail or fax (702-295-5300) all receipts to the NSSAB office
 - Do not submit receipts for food (this is covered by your per diem, if applicable)
 - Vouchers cannot be processed without receipts
- Payment
 - Made via direct deposit
 - Usually within one week of voucher submittal



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Travel Overview

(continued)

- Nevada Travel
 - NSSAB members are responsible for own hotel reservations
 - Government room rate must be requested (per guidelines)



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Travel Overview

(continued)



- Out-of-State Travel
 - All arrangements (air, hotel, transportation) for out-of-state NSSAB meetings are made by the NSSAB Office
 - Most cities have a government contracted airline and NSSAB members must travel via these carriers



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Environmental Management Complex Overview



Scott Wade

Assistant Manager for Environmental Management

U.S. Department of Energy, Nevada Field Office

Nevada Site Specific Advisory Board Orientation

October 8, 2014



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History of Environmental Management (EM)

- The U.S. nuclear weapons complex contaminated waste, water, soil, and structures that will remain radioactive for thousands of years
- U.S. Department of Energy (DOE) created the Office of EM in 1989 to clean-up legacy contamination resulting from this nuclear research and testing



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National EM Program Responsibility

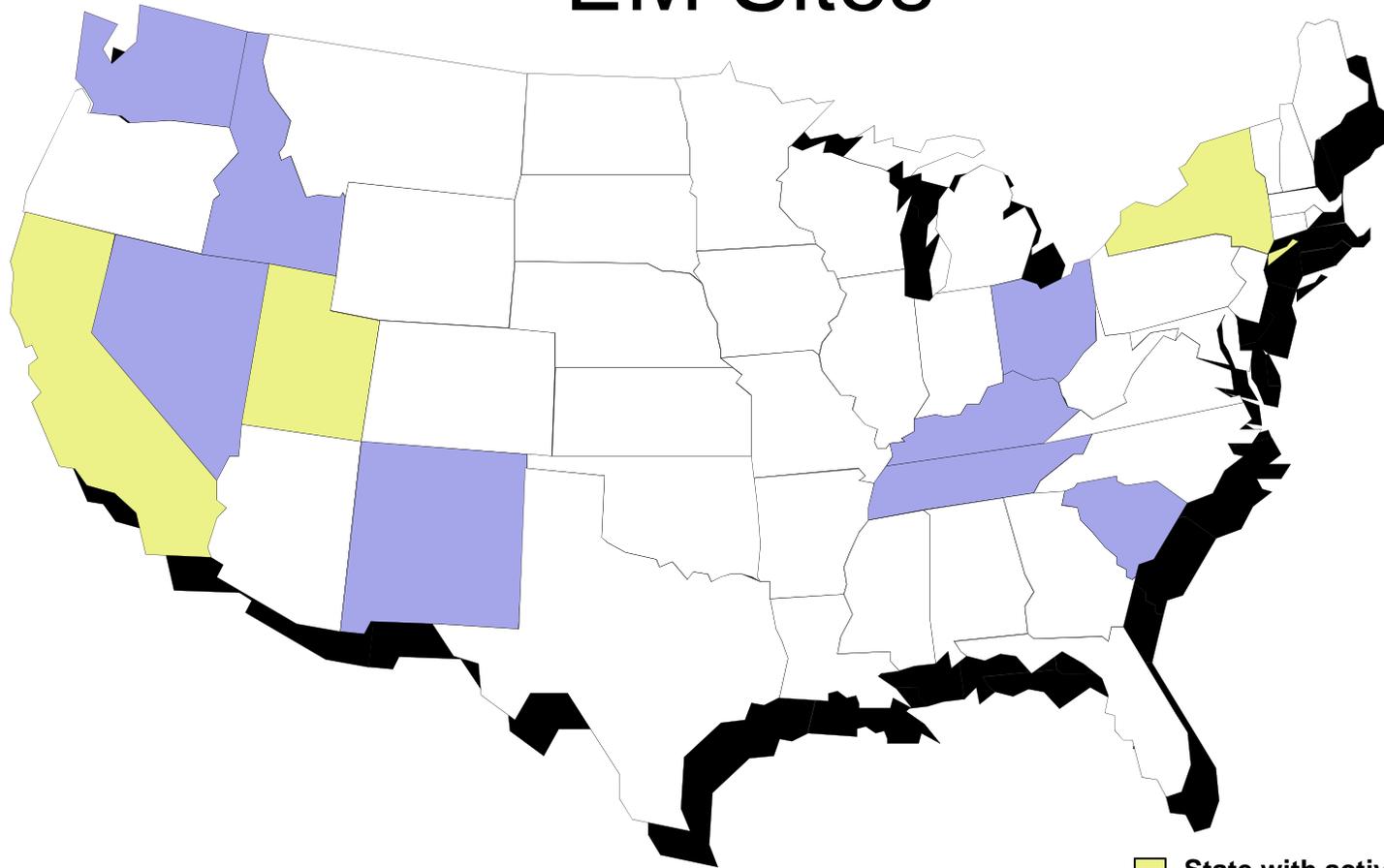
- EM is responsible for:
 - Remediating extensive surface and groundwater contamination
 - Safely disposing large volumes of nuclear waste
 - Decontaminating and decommissioning contaminated facilities no longer needed



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EM Sites



-  State with active EM site
-  State with active EM site and Site-Specific Advisory Board



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Hanford (Washington)



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Hanford (Washington)

(continued)

- Located in southeastern Washington State; Columbia River runs through the northern portion of the site; Richland is located on the southern border
- Established in 1943 for plutonium production, chemical processing, and research and development of nuclear weapons
- Current mission is to manage facilities and inventories of special materials, remediate contamination, and support national research efforts in environmental and other sciences



Decontaminating and Decommissioning
Hanford Plutonium Finishing Plant



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Idaho



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Idaho

(continued)

- Located in southeastern Idaho desert near northwest end of the Snake River Plain, 25 miles east of Idaho Falls
- Established in 1949 – missions included designing and testing nuclear reactors and reprocessing spent nuclear fuel
- Current missions include nuclear energy research, national security, and EM



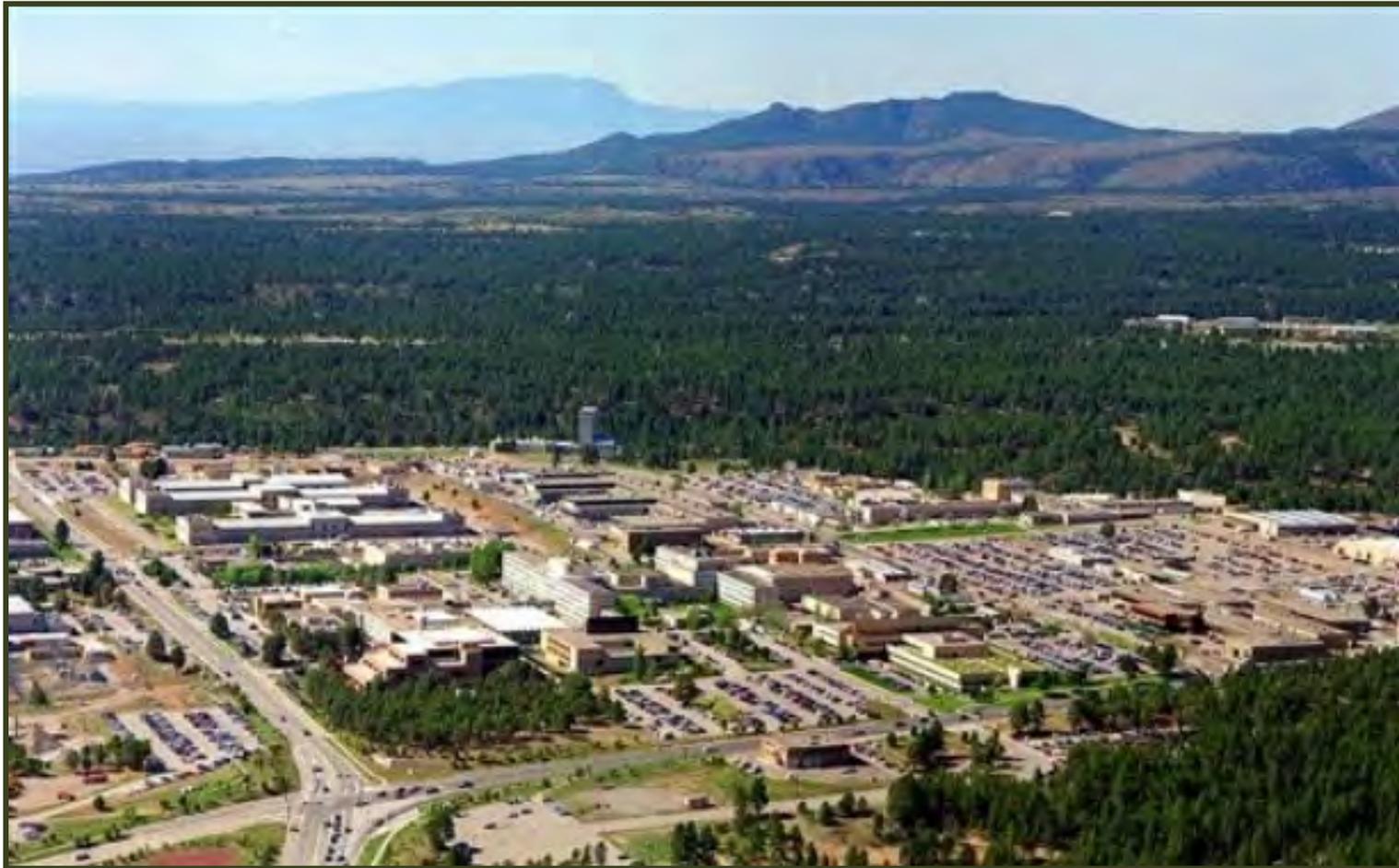
Tank removed at the Idaho Test Area North will be treated and prepared for disposal



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Los Alamos (New Mexico)



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Los Alamos (New Mexico)

(continued)

- Located in north-central New Mexico, approximately 60 miles northeast of Albuquerque and 25 miles northwest of Santa Fe
- Established in 1943 as Site Y of the Manhattan Project for a single purpose: to design and build an atomic bomb
- Current missions includes multi-program national laboratory with research and development programs in broad range of scientific and technical fields; and environmental risk reduction relative to current activity as well as remediation of legacy waste



Large industrial vacuum system being used in the Canyon Floor of the Los Alamos "Acid Canyon" to remove high volumes of contaminated soil



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Nevada National Security Site (NNSS)

- Located in the southern Nevada desert 65 miles northwest of Las Vegas
- Established in 1950 to conduct field testing of nuclear explosives
 - 100 total atmospheric tests (until 1962)
 - 828 total underground tests (until 1992)
- Current missions are National Security and EM



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Oak Ridge Reservation (Tennessee)



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Oak Ridge Reservation (Tennessee)

(continued)

- Located in east Tennessee; entirely within the city limits of Oak Ridge; and bordering the Clinch River
- “Secret City” established in early 1940s by the U.S. Army Corps of Engineers for the Manhattan Project to produce enriched uranium
- Current missions include energy and computing technologies and science research (Oak Ridge National Laboratory); national security (Y-12 National Security Complex); and EM of legacy contamination and waste



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Paducah Gaseous Diffusion Plant (Kentucky)



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Paducah Gaseous Diffusion Plant (Kentucky)

(continued)

- Located in rural western Kentucky, 15 miles from the city of Paducah near the Ohio and Mississippi rivers; sister-site to the Portsmouth plant in Piketon, Ohio
- Established in 1952 to produce enriched uranium for the Federal Government and commercial nuclear power and later for low-enriched uranium production
- Current missions include environmental cleanup, waste management, depleted uranium conversion, deactivation and decommissioning, re-industrialization, and long-term stewardship



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Portsmouth Gaseous Diffusion Plant (Ohio)



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Portsmouth Gaseous Diffusion Plant (Ohio)

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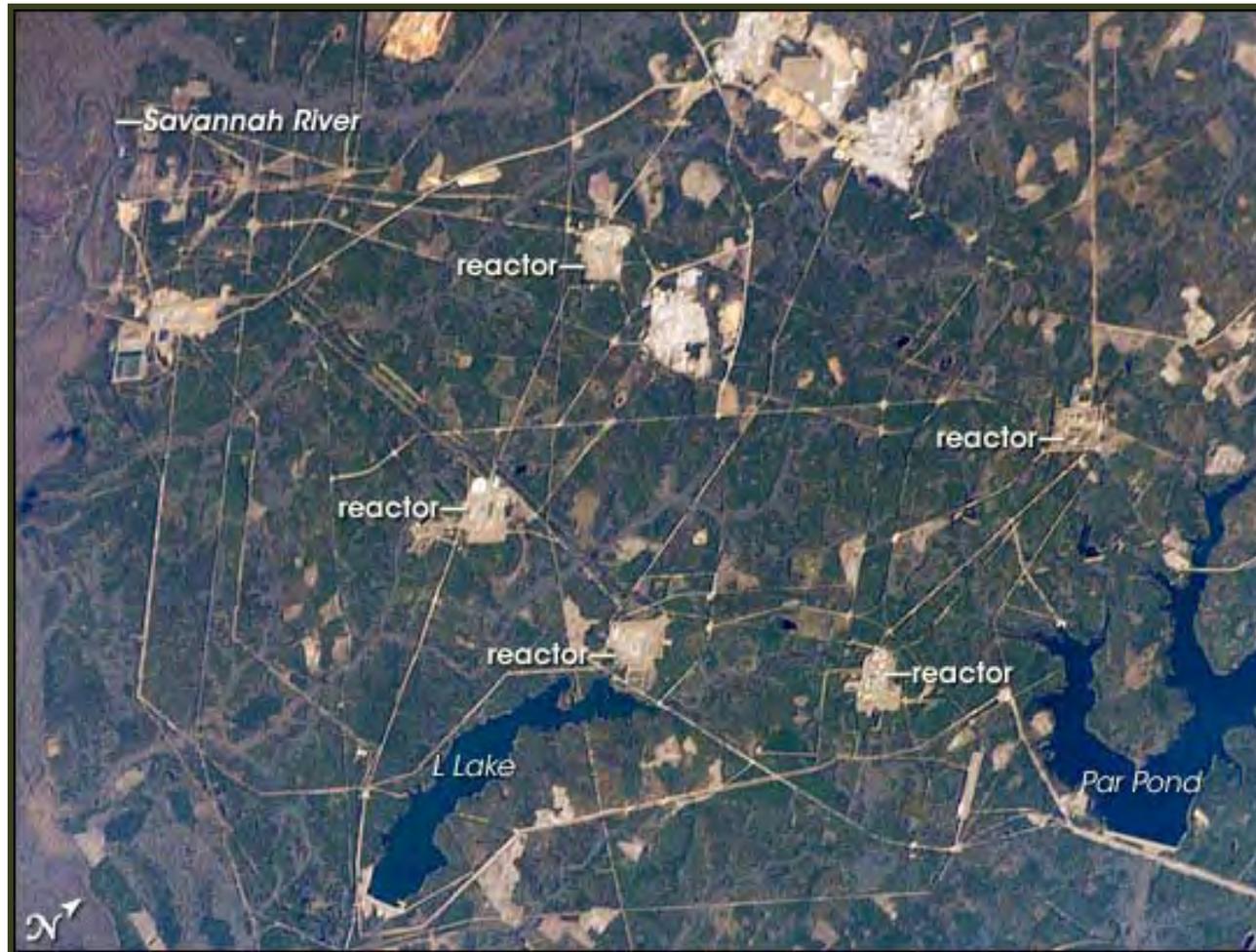
- Located in Piketon, Ohio along the Scioto River
- Established in 1954 to support expansion of highly-enriched uranium production for military reactors and nuclear weapons and later for low-enriched uranium production for nuclear power plants
- Current missions include decontamination and decommissioning of the former gaseous diffusion plant, conversion of the site's depleted uranium hexafluoride inventory, and other soil and groundwater remediation efforts



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Savannah River Site (South Carolina)



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Savannah River Site (South Carolina)

(continued)

- Located in South Carolina on the Savannah River which borders Georgia; close to Augusta, Georgia, and Aiken, South Carolina
- Established in the early 1950s to produce basic materials used to fabricate nuclear weapons, primarily tritium and plutonium-239
- SRS missions remain vital to the Nation
 - Support the Environmental Management priority to safely and efficiently clean up the environmental legacy, reduce risk and protect public health and the environment (Defense Waste Processing Facility)
 - Support National Nuclear Security Administration missions with key role in meeting nonproliferation objectives (MOX, H Canyon)
 - Support Office of Nuclear Energy goals to provide clean, reliable energy sources, reduce greenhouse gases and enhance national security (Biomass Cogeneration Facility)
 - Savannah River National Laboratory (Putting Science to Work – Underpinning of Site missions)



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EM Sites Working Together

- Sites offering essential complex-wide cleanup resources
 - Idaho National Laboratory – Central Characterization Facility for transuranic waste
 - NNSS – low-level and mixed low-level waste disposal
 - Oak Ridge – mixed waste treatment
 - Savannah River – transuranic waste consolidation in preparation for disposal at the Waste Isolation Pilot Plant
 - Waste Isolation Pilot Plant – transuranic/mixed transuranic waste disposal



**Fernald Before Cleanup
Began in 1991**



**Fernald After Cleanup
Completed in 2006**



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Environmental Management in Nevada



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Nevada Site Specific Advisory Board Orientation
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Federal Responsibilities

- Two federal entities responsible for activities
 - National Nuclear Security Administration is responsible for national security mission and overarching management of the Nevada National Security Site (NNSS) (not within the NSSAB's purview)
 - The Department of Energy's (DOE's), Office of Environmental Management (EM) is responsible for remediating historic locations on the NNSS and portions of the Nevada Test and Training Range (NTTR) (within the NSSAB's purview)



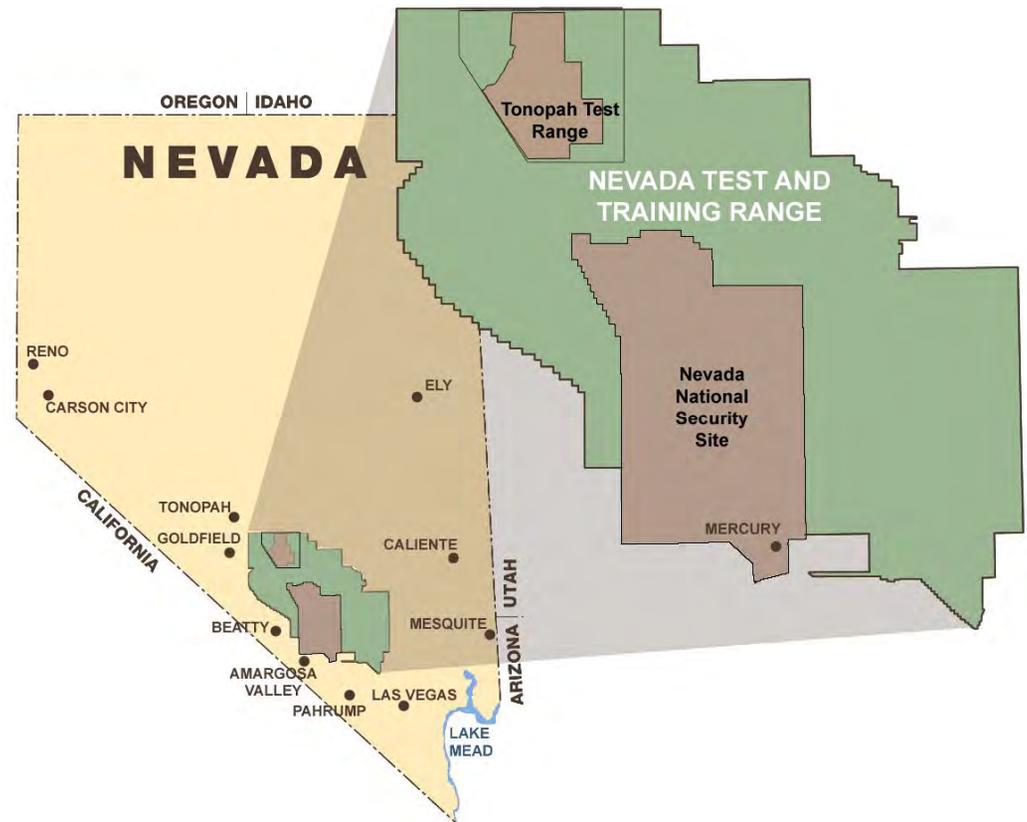
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The NNSS and NTTR

- Approximately 1,360 square miles of federally owned and controlled land – surrounded by approximately 4,500 square miles of federally owned and controlled land
 - Tonopah Test Range is approximately 275 square miles on the NTTR
- Located 65 miles northwest of Las Vegas



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EM Activities

- Underground Test Area
- Industrial Sites
- Soils



- Low-Level Waste Transportation and Disposal

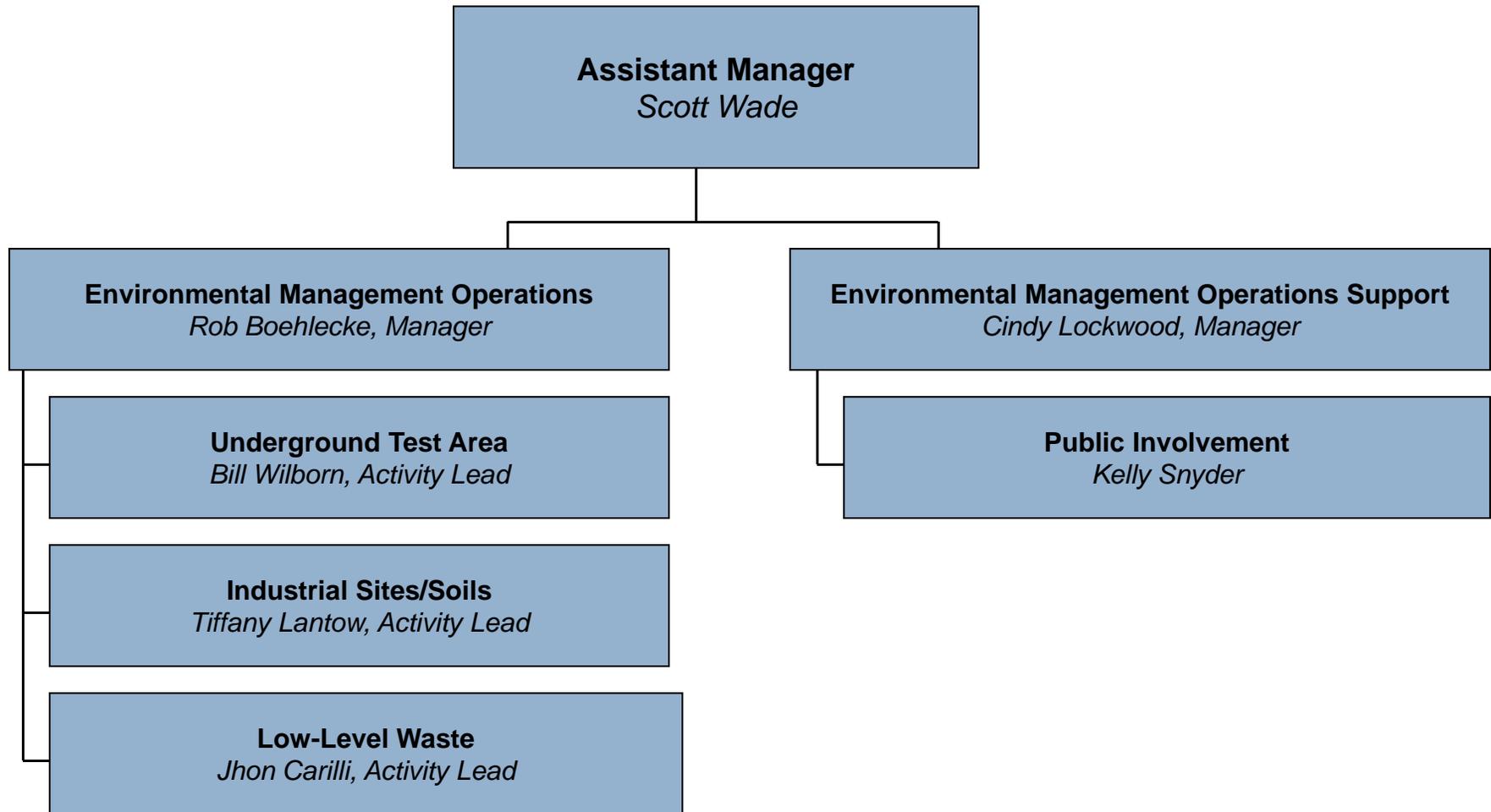


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EM Personnel Leads



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EM Baseline for Fiscal Year (FY) 2015

Scope	Baseline (\$K)
Soils	\$5,904
Underground Test Area	\$23,860
Industrial Sites	\$878
Low-Level Waste	\$24,330
Program Management	\$12,020
Agreements in Principle and Grants	\$3,800
EM Nevada Field Office Total	\$70,792



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State of Nevada's Role

- The State of Nevada's Division of Environmental Protection provides programmatic and regulatory oversight of Environmental Restoration and Waste Management activities conducted by the DOE's EM in the State of Nevada
- Participates as NSSAB liaison



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Key Documents

- Federal Facilities Agreement and Consent Order (FFACO)
- Federal Facility Compliance Act-Consent Order (FFCAct-CO)



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Soils Overview



Tiffany Lantow

Soils/Industrial Sites Activity Lead
U.S. Department of Energy, Nevada Field Office
Nevada Site Specific Advisory Board Orientation
October 8, 2014



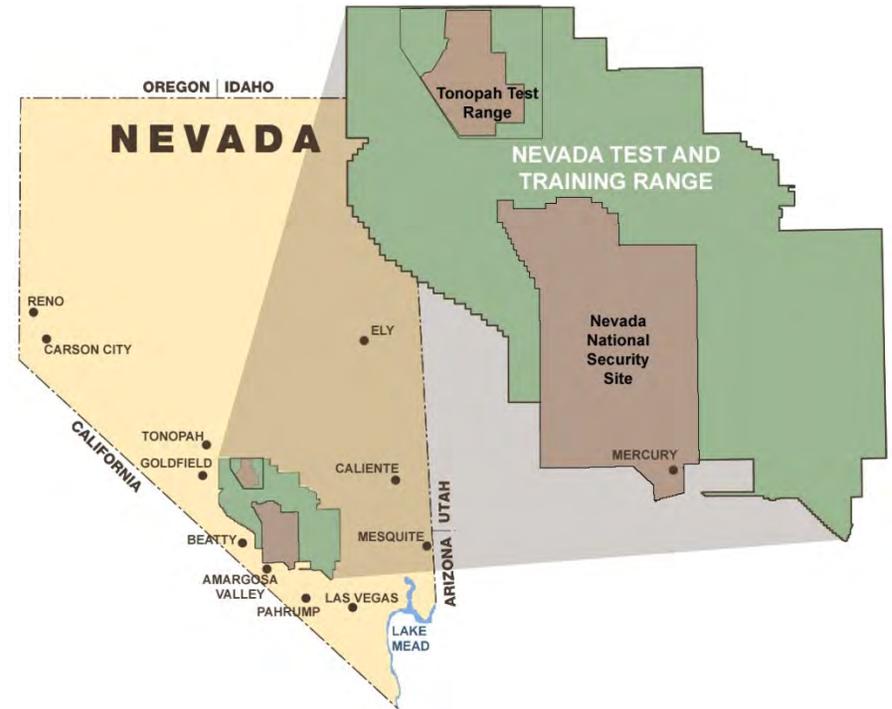
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Background

Atmospheric nuclear weapons tests, nuclear safety experiments, and evaluation tests for peaceful uses of nuclear explosives conducted at the Nevada National Security Site and Nevada Test and Training Range (operated by the U.S. Air Force) resulted in the radioactive contamination of surface and near surface soils



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818FY15 Log No. 2012-249 October 8, 2014 – Page 2

Background

(continued)

- The Soils activity is responsible for:
 - Characterizing and/or remediating surface soil contamination
 - Characterize means to identify the nature and extent of the contamination present
 - Remediating means to select a closure option (clean close, closure in place, etc)



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Background

(continued)

- Ensuring appropriate controls (i.e. postings, barriers, etc.) are in place at the sites with remaining contamination
- Conducting long-term monitoring of sites
- State of Nevada Division of Environmental Protection (NDEP) provides oversight under the Federal Facility Agreement and Consent Order



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Terminology

- Corrective Action Site - A site that has been identified as needing remediation
- Corrective Action Unit (CAU) - A grouping of Corrective Action Sites that are similar in remediation technique, type of contaminants or proximity to each other

There are 31 Soils CAUs
which consist of 130 Corrective Action Sites*

* As of 7/31/14



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Remediation Processes

- Corrective Action Investigation Plan - Details the investigation plan and provides information for planning investigation activities
- Site Investigation – Act of conducting field characterization activities
- Corrective Action Decision Document - Describes the results of the characterization, multiple corrective action alternatives, and the recommended corrective action alternative and the rationale for its selection
- Corrective Action Plan - Plan for implementing the selected corrective action



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Remediation Processes

(continued)

- Closure Field Work - Act of implementing the chosen corrective action in the field
- Closure Report - Provides an overview and results of the corrective actions implemented, closure verification information, and use restriction and monitoring requirements (when applicable)
 - All documents must be approved by NDEP

Note: Corrective Action Decision Document/Closure Report can be used when only “minor” corrective actions are needed as agreed to by NDEP



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Timeline

- 1981 to 1986 – Surveyed surface soils to identify the level and location of radioactive contamination
- 1996 to 1997 – Remediated surface soils at Double Tracks and Clean Slate I; closure under the Federal Facility Agreement and Consent Order was not achieved
- Challenges in closure decision processes led to a lull in completing Soils work



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Timeline

(continued)

- 2006 - Renewal of Soils work focusing on Nevada National Security Site; existing postings at Nevada Test and Training Range confirmed
- 2007 – Aerial radiological survey performed (Clean Slate sites and Double Tracks) and gross contaminant migration is not evident
- 2009 – First historic atmospheric weapons test location (T-4 in Area 4 at the Nevada National Security Site) received closure approval from the NDEP



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Timeline

(continued)

- 2009-2013 – 69 Corrective Action Sites received closure approval from NDEP
- 2014-2016 – Complete characterization for most of the remaining sites on the Nevada National Security Site
- 2014 – Begin addressing Nevada Test and Training Range sites

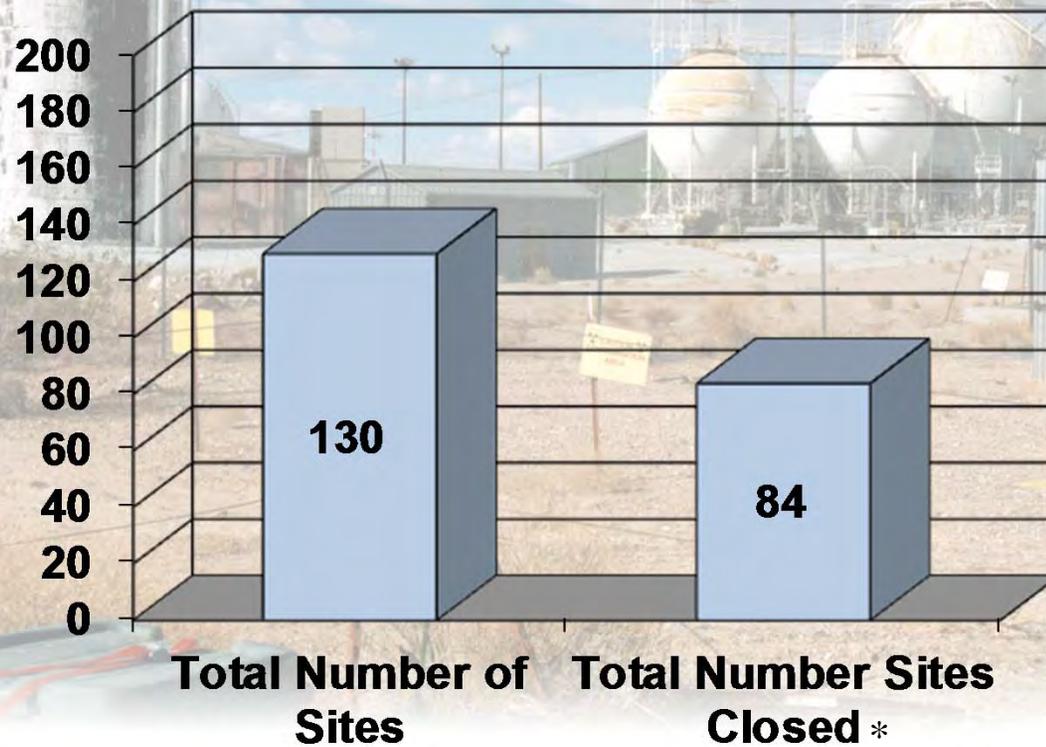


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Soils Sites Cleanup



* As of 7/31/14



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Industrial Sites



Overview



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Background

- Portions of the facilities and land at the Nevada National Security Site and Nevada Test and Training Range were used in direct support of nuclear testing
 - Facilities included such things as gas stations, motor pools, worker housing, and research buildings
- Activities resulted in hazardous and radioactive waste generation and subsequent environmental contamination



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Background

(continued)

- Nevada Field Office Environmental Management program established the Industrial Sites activity to remediate the contaminated sites
- Industrial Sites have included leach fields, sumps, disposal wells, tanks, contaminated waste piles, ordnance sites, etc.
- Contaminants of Concern may include hazardous chemicals, unexploded ordnance, and radionuclides
- Potential risks are to workers and the environment



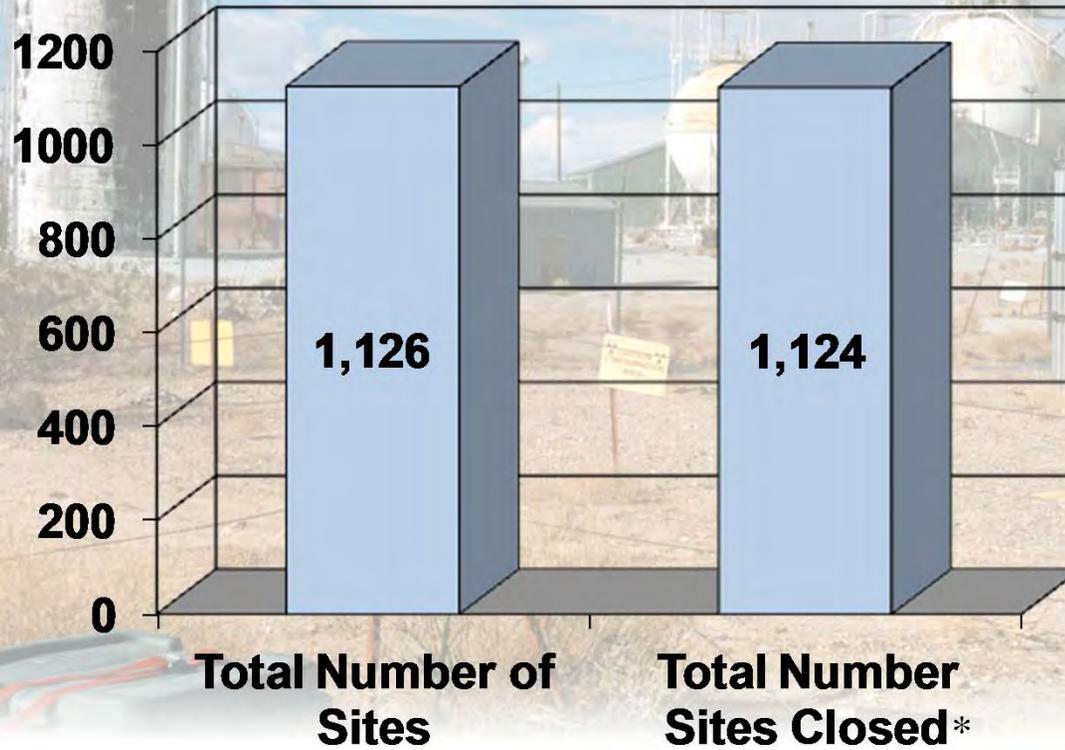
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Industrial Sites Cleanup



* As of 7/31/14



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Industrial Sites Wrap-up

- Almost all Industrial Sites activity is complete
- Remaining Corrective Action Sites at Engine Maintenance, Assembly and Disassembly will not be addressed for a few years
- Continue to conduct *Resource Conservation and Recovery Act* (RCRA), Non-RCRA, and Tonopah Test Range post-closure inspections and submit monitoring reports to NDEP



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Groundwater Overview



Bill Wilborn

Underground Test Area Activity Lead
U.S. Department of Energy, Nevada Field Office
Nevada Site Specific Advisory Board Orientation
October 8, 2014



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Historic Nuclear Testing Impacts on the Groundwater

- 828 underground nuclear tests conducted at the Nevada National Security Site from 1951 to 1992
- Underground tests conducted at depths ranging from approximately 90 to 4,800 feet below the ground surface
- One-third of these tests occurred near, below, or in the water table
- Some radioactive contamination detected in groundwater on the Nevada National Security Site and the Nevada Test and Training Range



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Nevada National Security Site Groundwater Program Objectives

- Because of the significant worker safety concerns and cost associated with any type of active remediation, the Department of Energy in consultation with the State of Nevada Division of Environmental Protection has selected an end state that requires modeling and monitoring strategy that is documented in the Federal Facilities Agreement and Consent Order; this strategy is supported with the activities described below:
 - Tackle challenges using investigative methods, such as drilling wells to investigate the hydrology and geology (Underground Test Area [UGTA])



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Nevada National Security Site Groundwater Program Objectives (continued)

- Sample wells, analyze samples, and build computer models from gathered data (UGTA)
- Implement controls to prevent access to contaminated groundwater (UGTA and National Nuclear Security Administration)
- Ongoing monitoring of wells on and off the Nevada National Security Site (National Nuclear Security Administration)
- Establish a comprehensive long-term monitoring network to ensure public protection (UGTA)

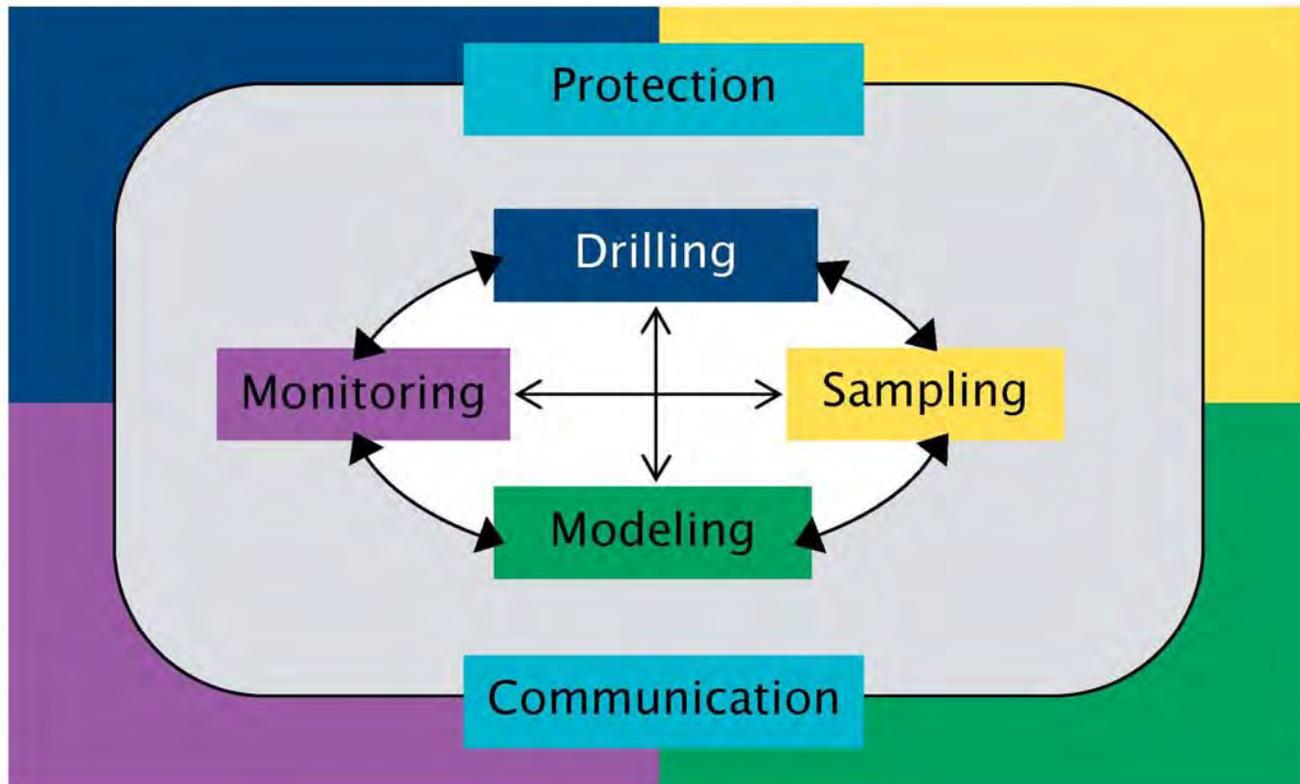


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Understanding Groundwater... an Integrated Approach



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Technical Working Group

- Federal staff continually work with outside organizations to ensure a collaborative approach to understand the nature and extent of groundwater contamination
 - Lawrence Livermore National Laboratory
 - Los Alamos National Laboratory
 - Desert Research Institute
 - United States Geological Survey
 - State of Nevada, Division of Environmental Protection (NDEP)
 - National Security Technologies, LLC
 - Navarro Research and Engineering, Inc.



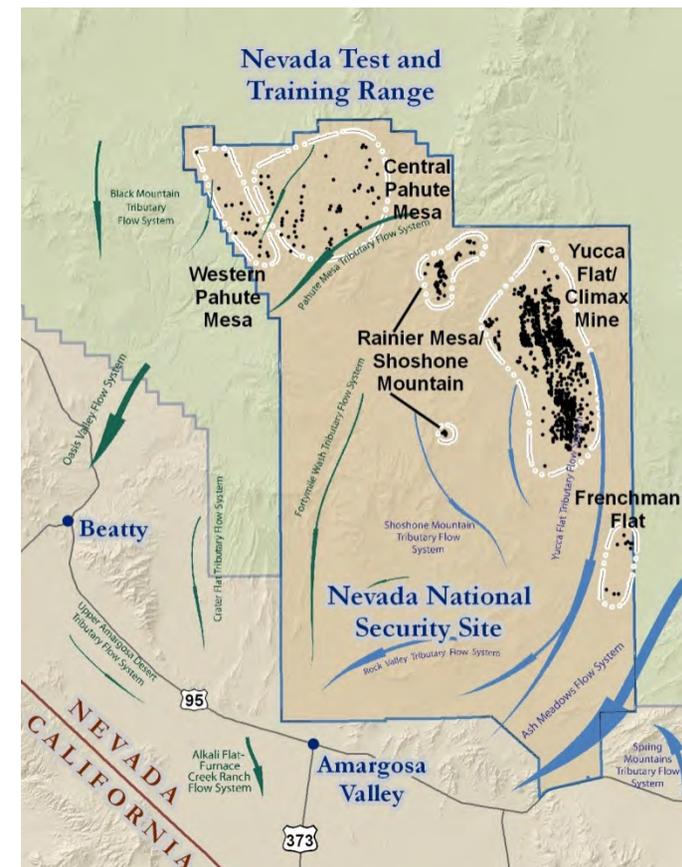
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Corrective Action Units

- There are five Corrective Action Units that make up the UGTA activity
 - Corrective Action Units are determined by location and geologic conditions



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UGTA Closure Strategy

(see figure of strategy in binder)

- Outlined within the Federal Facility and Consent Order
- Corrective Action Investigation (some Corrective Action Units may require a Phase I and II)
 - Corrective Action Investigation Plan (CAIP)
 - Data collection
 - Modeling
 - Contaminant boundary
 - Peer review



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UGTA Closure Strategy

(continued)

- Corrective Action Decision Document/Corrective Action Plan (CADD/CAP)
 - Model evaluation
 - Use restriction boundary
 - Regulatory boundary negotiations with NDEP



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UGTA Closure Strategy

(continued)

- Closure
 - Closure Report
 - Address regulatory boundary changes if necessary
 - Closure in place with long-term monitoring
 - Institutional controls



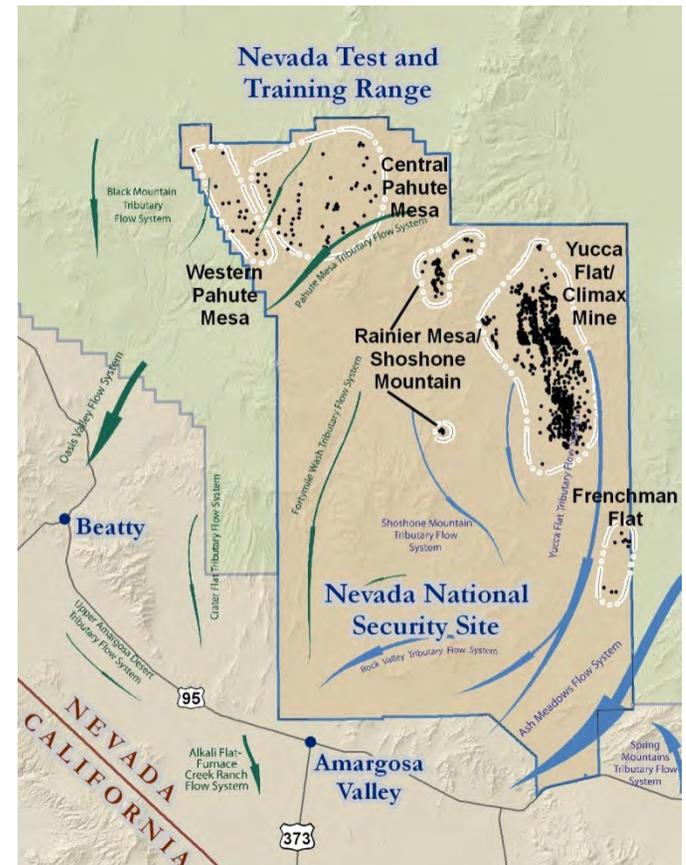
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Corrective Action Units (CAUs) Standing

- UGTA CAUs
 - Frenchman Flat (CAU 98)
Completing CADD/CAP, Model Evaluation completed, moving into Closure
 - Yucca Flat/Climax Mine (CAU 97)
CAIP almost complete, model currently in External Peer Review
 - Rainier Mesa/Shoshone Mountain (CAU 99)
Completing CAIP, model currently in last Internal Review, then to External Peer Review
 - Central Pahute Mesa* (CAU 101)
Phase II CAIP
 - Western Pahute Mesa* (CAU 102)
Phase II CAIP



**Western and Central Pahute Mesa are managed as one entity*



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Why Do We Drill?

- Provides access to the complex subsurface for sampling
 - More than 300 different geologic units (types of rock) representing more than 500 million years of geologic history
- Gives access to groundwater and surrounding geology
- Provides multiple/ongoing opportunities to sample and monitor
- In addition to recent groundwater studies, the UGTA team is tapping into, and expanding upon, approximately 50 years of groundwater research



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Geology/Hydrology 101

(see cross section figure in binder)

- Rocks are categorized according to their hydrologic properties (e.g., aquifer or aquitard [confining unit])
 - An aquifer is a *permeable* unit of rock through which water moves (could be single or dual porosity)
 - An aquitard is a unit of rock which is confining in its nature and generally *impermeable* to water movement (no porosity or a single porosity)



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Geology/Hydrology 101 (continued)

- Units are then grouped into larger hydrostratigraphic units (colored layers on the cross sections)
 - Hydrostratigraphic units, together with faults, form the three dimensional Hydrostratigraphic Framework Models
 - Faults are structural breaks in the rock units with significant continuity and typically displacing the units



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Why Do We Sample?



- Identify the natural conditions of groundwater and geology in the subsurface, and constituents introduced by nuclear testing
- Acquire data used as building blocks for computer models
- Obtain laboratory results for regulatory compliance, stakeholder communications, and additional subsurface investigations



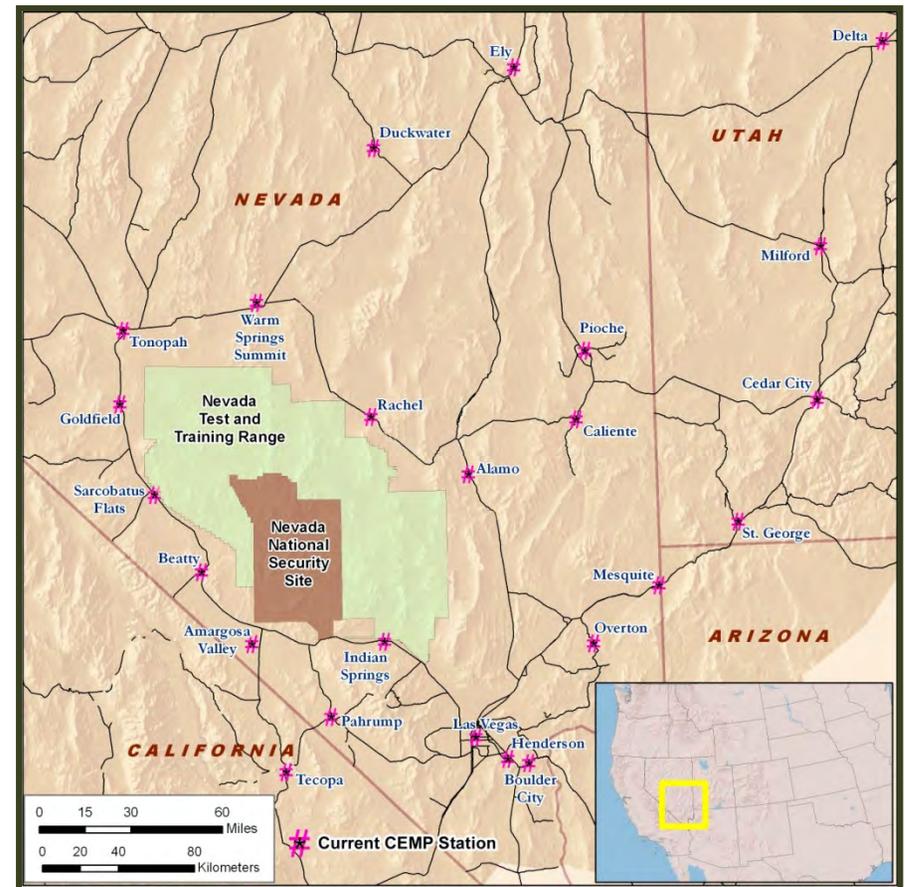
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Why Do We Monitor?

- Helps protect the public by providing a system of continuous detection
- Provides baseline to establish existing conditions
- Identifies trends and verifies compliance with regulatory standards
- Community-based monitoring done by the public provides a level of independence



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Why Do We Model?

- Creates 3-dimensional representations of otherwise inaccessible subsurface
- Helps forecast where contamination is moving and how far over a period of time
- Provides flexibility for integrating available data
- Provides basis for regulatory compliance and risk decisions



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What Do We Know Today?

- Groundwater affected by historic Nevada National Security Site activities has not reached public water sources
- Groundwater models are providing output that is key to enhancing current and developing future monitoring strategies
- No forecasted threat to public

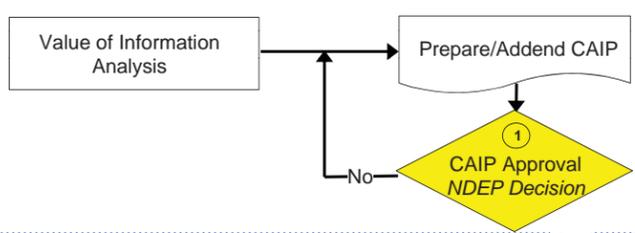


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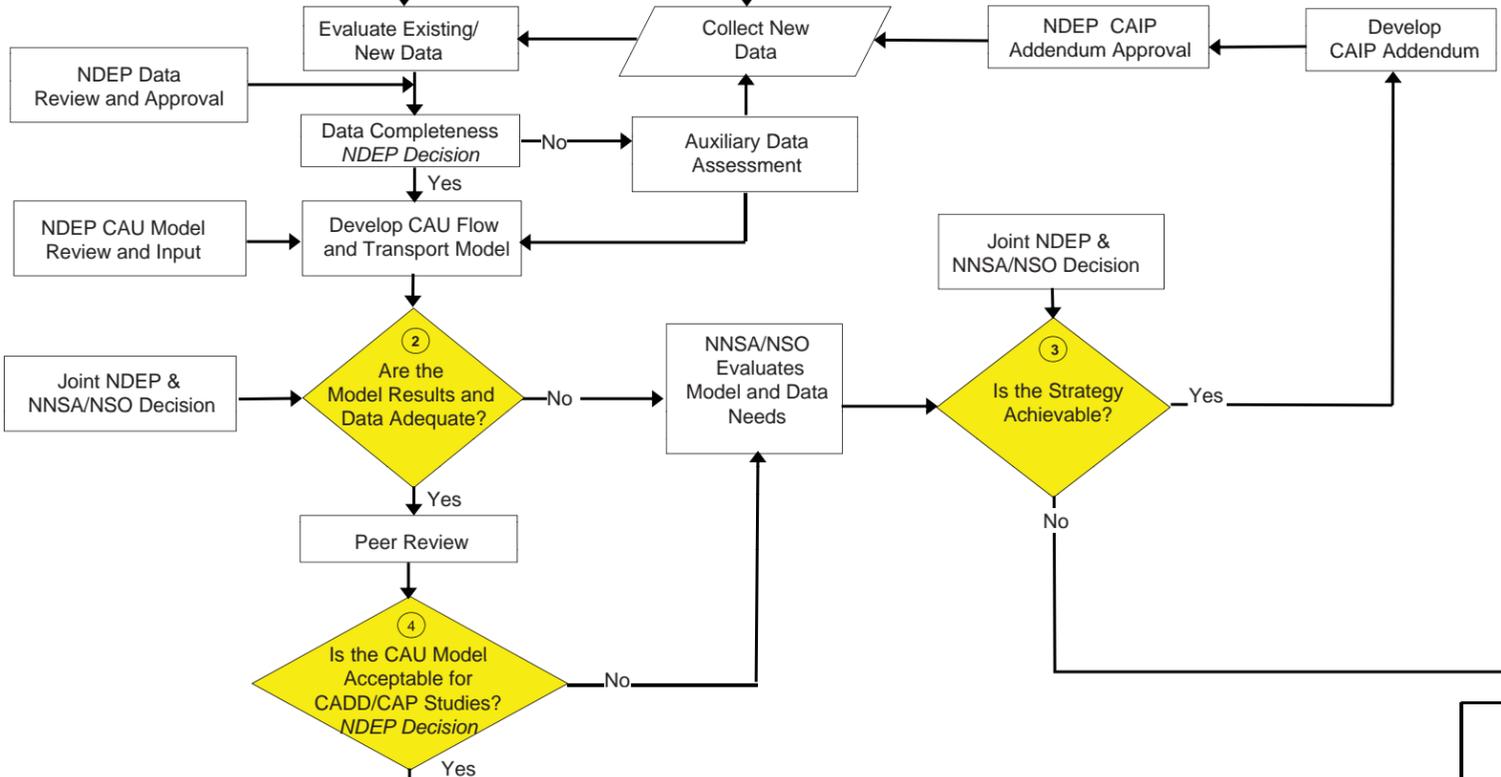
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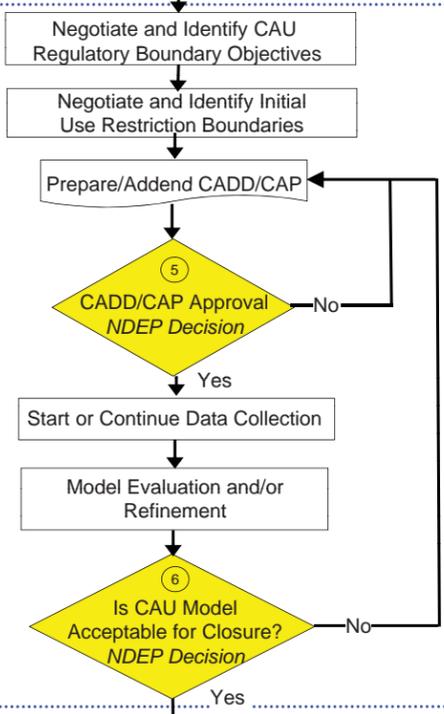
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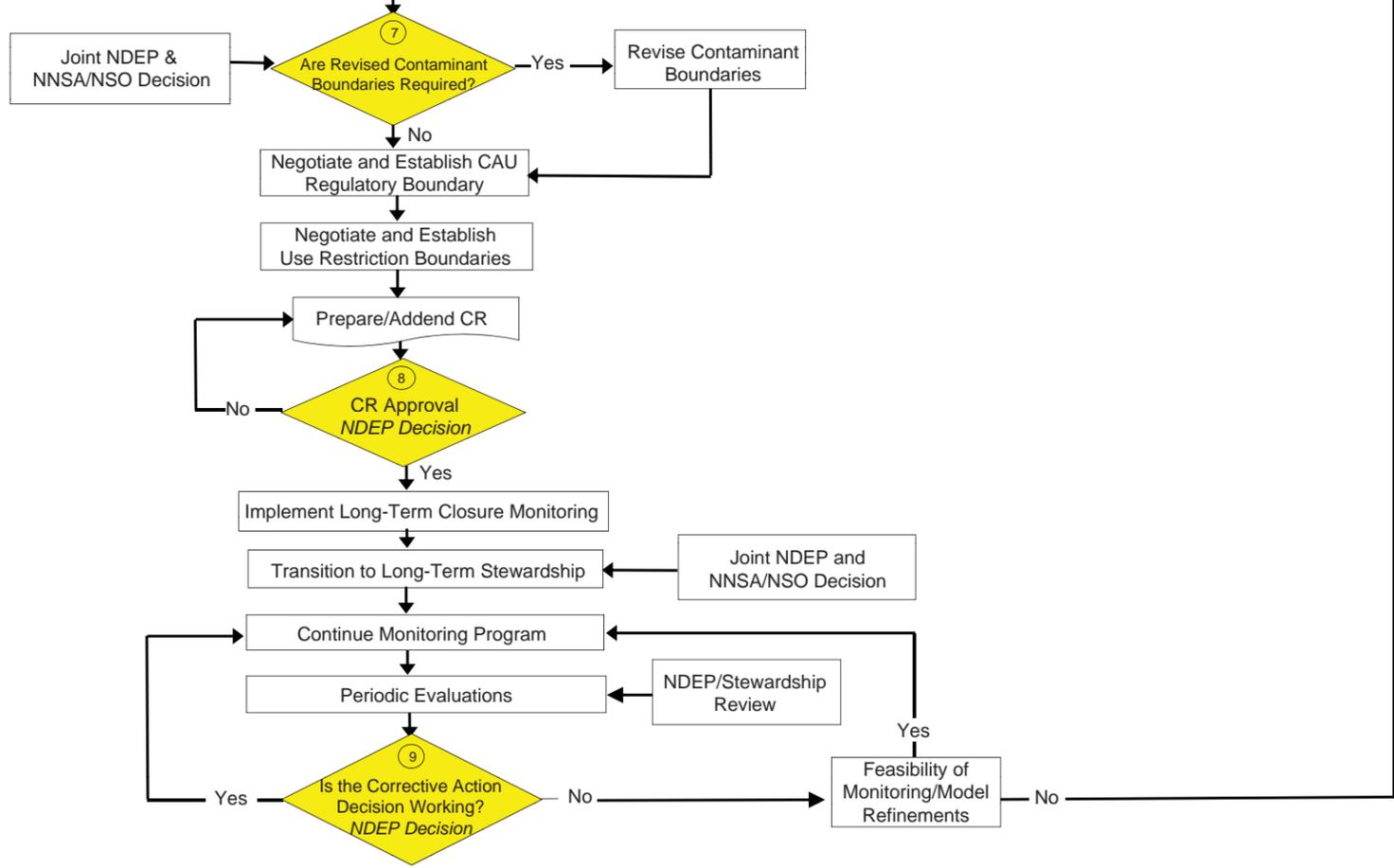
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Low-Level Waste Disposal Overview



Jhon Carilli

Low-Level Waste Activity Lead
U.S. Department of Energy, Nevada Field Office
Nevada Site Specific Advisory Board Orientation
October 8, 2014



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What is Low-Level Waste?

- Radioactive waste not classified as high-level waste, transuranic waste, spent fuel, or by-product material
- Typical waste includes metal, debris, soils, clothing, tools, etc.
- Mixed Low-Level Waste contains Low-Level Waste and a hazardous component (i.e. toxic, corrosive, reactive, ignitable or is listed by U.S. Environmental Protection Agency as a hazardous waste)
- Nuclear Regulatory Commission does not regulate the U.S. Department of Energy's (DOE's) radioactive materials and/or waste



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Background

- Cold War-related activities and nuclear research generated Low-Level Waste at sites across the country
- DOE is responsible for consolidating and disposing Low-Level Waste generated by DOE clean-up activities
 - Ensures the safety of the public
 - Allows for the permanent closure of these sites



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Background

(continued)

- The Nevada National Security Site (NNSS) was chosen due to its isolated location and arid climate
 - No groundwater pathways
 - Deep groundwater (~700 feet – 1,600 feet)
 - Low precipitation (5-7 inches per year)
- Currently, the NNSS is the only federal site disposing off-site generated Low-Level Waste



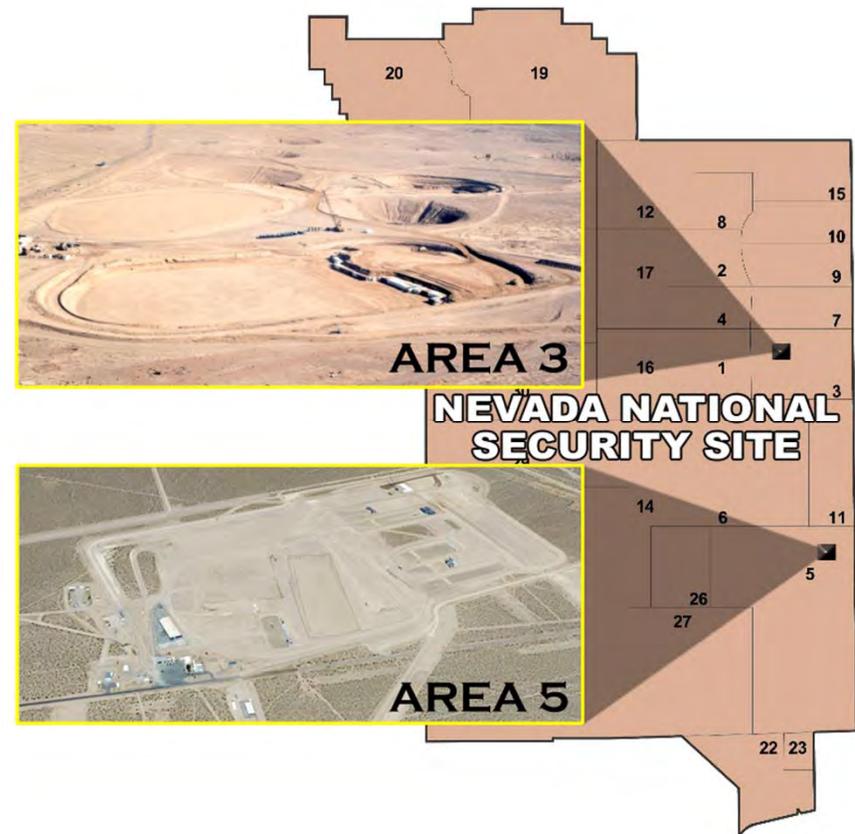
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Activity Locations

- Low-Level Waste can be disposed at two disposal sites at the NNSS
 - Area 3 uses subsidence craters created by past underground nuclear tests to dispose of bulk and containerized waste
 - Area 5 uses engineered shallow-land burial to dispose of containerized waste



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Activity Locations

(continued)

- Area 3 Radioactive Waste Management Site
 - Seven craters, representing five disposal cells
 - Total disposed volume is nearly 19 million cubic feet
 - Currently in cold stand-by (not active)



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Activity Locations

(continued)

- Area 5 Radioactive Waste Management Site
 - 38 disposal cells
 - 32 total closed cells
 - ✓ six operationally closed
 - ✓ 26 permanently closed in 92-acre area
 - Five active Low-Level Waste cells
 - One active Mixed Low-Level Waste cell
 - Total current disposed volume is more than 25 million cubic feet



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Area 5 Monitoring Activities

- Monitoring activities
 - Verifies the continued safety of workers and the public
 - Provides a measure of performance
- Continuous and ongoing

Monitor (Type)	Number of Locations
Air	2
Groundwater	3
Meteorology	1
Radon	1
Evapotranspiration	2
Soil Moisture	6
Soil Temperature	7
TLD*	12

* Thermoluminescent Dosimeters

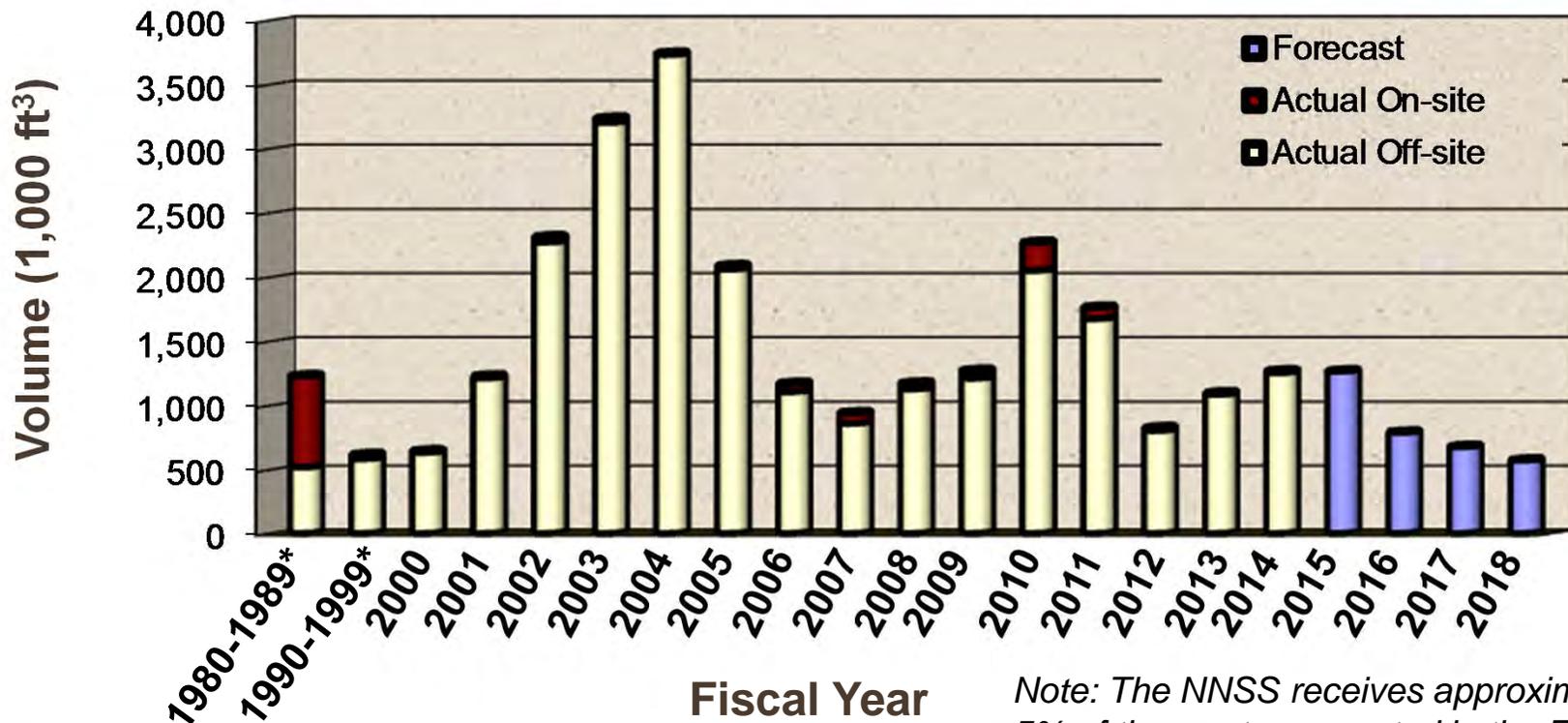


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NNSS Low-Level and Mixed Low-Level Disposal Volumes



Note: The NNSS receives approximately 5% of the waste generated in the EM program



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Disposal Fee Surcharge

- Since 2000, generators that ship Low-Level and Mixed Low-Level Waste to the NNSS for disposal are charged an additional \$0.50 per cubic foot to fund a rural county emergency preparedness grant
 - Over \$11 million distributed through 2013



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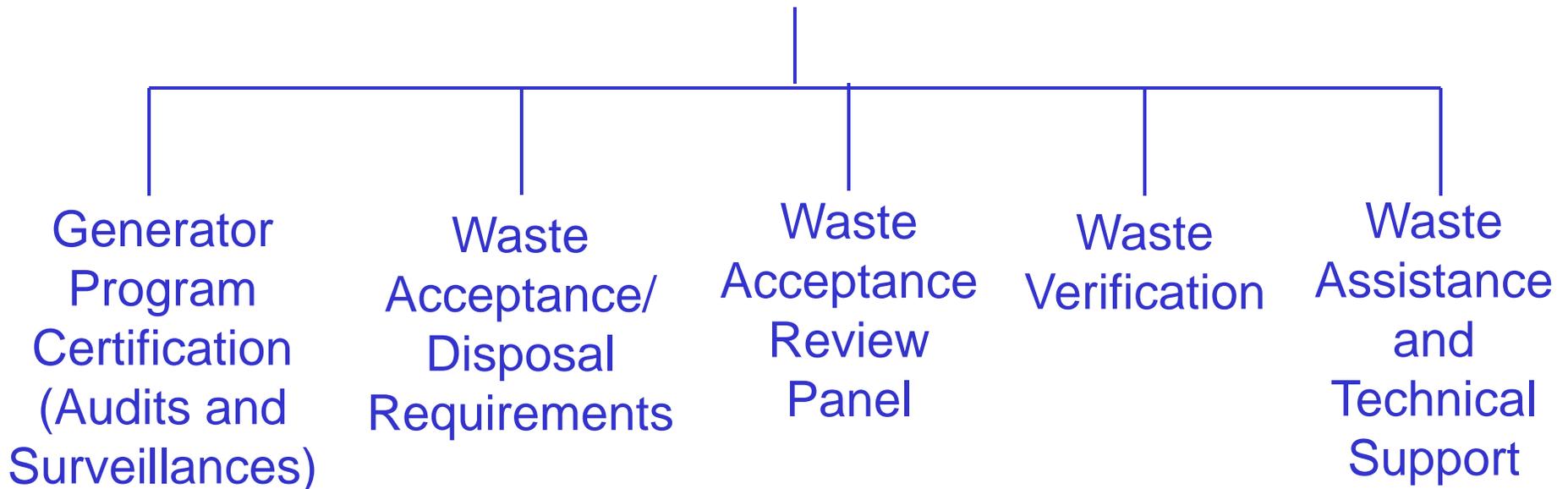
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Radioactive Waste Acceptance Program

The Radioactive Waste Acceptance Program consists of five programs below:

Radioactive Waste Acceptance Program (RWAP)



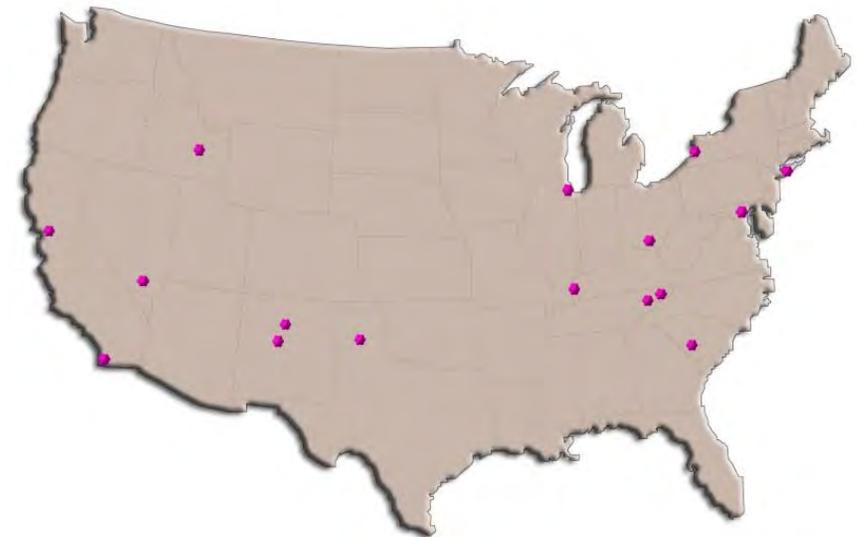
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Generator Program Certification (Audits and Surveillances)

- Approved generators undergo an initial audit to ensure their waste program conforms to NNS requirements
- After a waste generator obtains approval status, periodic announced and unannounced surveillances are conducted to ensure the waste program maintains compliance



◆ Approved Waste Generators



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Waste Acceptance/ Disposal Requirements

- Waste disposed at the NNSS must meet a rigorous disposal acceptance criteria
 - Waste must be generated at a DOE facility or defense-affiliated site
 - NNSS and its stakeholders expect absolute compliance with the Waste Acceptance Criteria and noncompliance results in adverse impacts to the generator's program until compliance is ensured
 - Waste may not contain free liquids
 - All waste must be containerized
 - Examples of containers include 55-gallon steel drums, cargo containers, burrito wraps, soft-sided containers, and carbon steel boxes



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Waste Acceptance Review Panel

- Reviews waste streams to ensure it meets waste acceptance criteria
- Waste Acceptance Review Panel consists of following:
 - Radioactive Waste Acceptance Panel
 - State of Nevada Division of Environmental Protection (Resource Conservation and Recovery Act and Joint Oversight)
 - Operations
 - Performance
 - Safety Basis Team
 - Nuclear Criticality Team
 - Eligibility Team



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Waste Verification

- Mixed waste permit, issued by State of Nevada Division of Environmental Protection, requires verification
- Verification Types
 - Physical
 - Visual inspection
 - Real-time-radiography
 - Chemical
 - Field chemical screen
 - Split sample



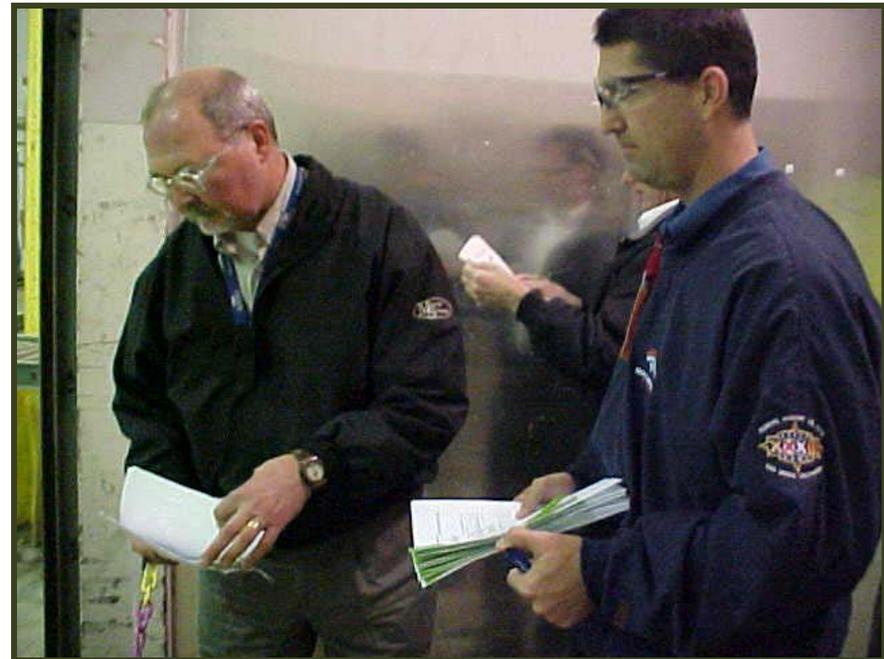
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Waste Assistance and Technical Support

- Performs:
 - Site visits to generators
 - Assist generators to be compliant with NNSS Waste Acceptance Criteria



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Questions?



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Environmental Management Outreach Initiatives



Dona Merritt
Environmental Management Public Involvement
Navarro-Intera
Nevada Site Specific Advisory Board Orientation
October 8, 2014



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Environmental Management (EM) Outreach Initiatives

- Variety of methods and tools used to engage stakeholders in EM activities:
 - Operation Clean Desert
 - Social Media (Facebook, Twitter, Flickr, YouTube)
 - Articles
 - Open Houses/Events
 - Fact Sheets
 - Educational Demonstrations
 - Displays
 - Kiosks
 - NNSS Remediation Sites Map
 - Other Website Links/Contact Information



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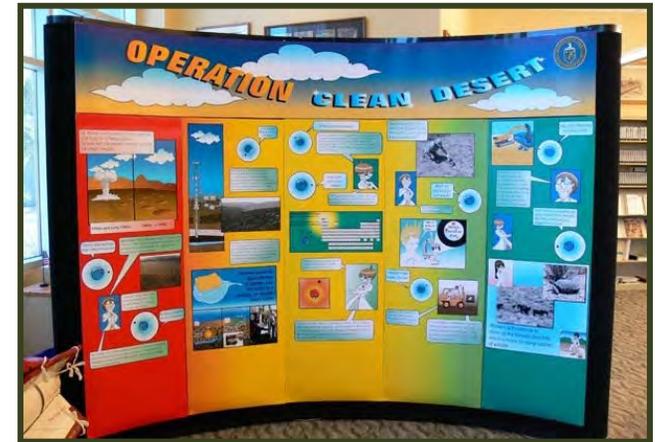
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Operation Clean Desert



- Geared toward educating 6th to 8th grade students (based on science curriculum objectives) on EM activities
- Offers teachers free materials:
 - Student Activity Book
 - Teacher's Guide
 - Display
 - Interactive Computer Game (on-line only)
- Distributed ~26,000 activity books, computer games, and teacher guides



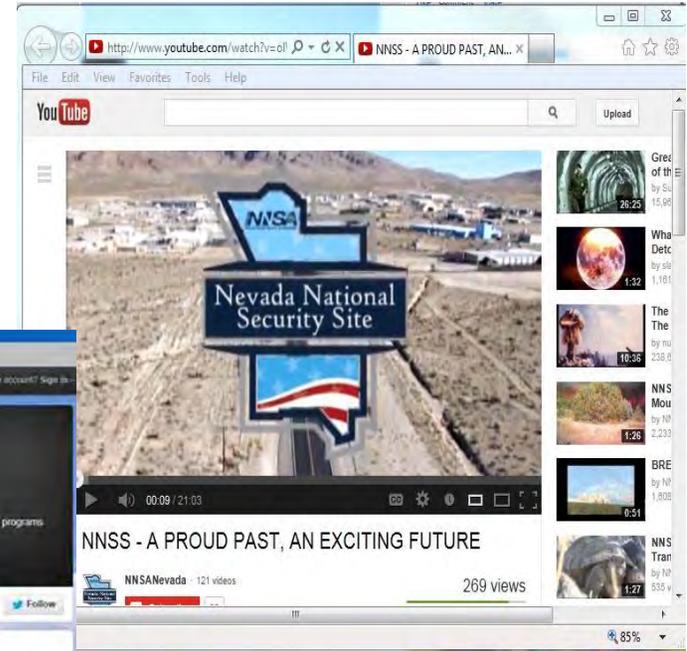
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Social Media

- Facebook
- Twitter
- YouTube
- Flickr



Articles

From: NNSS News <NNSSNews@public.govdelivery.com>
 To: Merritt, Dona (CONTR)
 Subject: News Flash: Cultural Artifacts Cross Eras at the NNSS
 Sent: Thu 4/24/2014 2:58 PM

April 24, 2014

U.S. Department of Energy Nevada Field Office

EM NEWS FLASH

Cultural Artifacts Cross Eras at the Nevada National Security Site

It is well known that the Nevada National Security Site (NNSS) is home to many artifacts from the Cold War. Few people may be aware of the older important cultural resources that exist throughout the site as well.

Artifacts ranging from hundreds to thousands of years old are part of the NNSS cultural inventory. The NNSS Cultural Resources Management Program has documented tools and dwellings associated with mining and ranching from the 1800s and 1900s. Also on record are numerous prehistoric artifacts, including rock shelters, fire pits, stone tools, petroglyphs, pottery, and arrow points — some dating back to over 10,000 years.

"The NNSS is extremely unique in that the site contains so many different kinds of artifacts representing so many different eras," said Linda Cohn, Federal Cultural Resources Program Manager. "And these are significant items that really tell a story about human history."

The NNSS Cultural Resources program, led by the [Desert Research Institute](#) (DRI), works to document and protect these sensitive resources in keeping with historic preservation laws, and the input of State of Nevada representatives and American Indian Tribes with prehistoric affiliation to the region.

In addition to approximately 300 nuclear testing-related structures or objects, DRI has completed cultural resources inventories of more than 1,300 archaeological sites at the NNSS.

* Under the National Historic Preservation Act, federal agencies must consider the eligibility of sites (any object, building, structure, or landscape over 50 years old for listing on the National Park Service's National Register of Historic Places — an official list of significant historical and archaeological sites in America.

Bower Cabin

Bower Cabin, on the NNSS, is a dwelling associated with mining dating to the early part of the Twentieth Century.

During the 1920s, writer B.M. Bower wrote 11 of her many popular novels while living in this cabin with her family. She was posthumously inducted into the Western Writers of America Hall of Fame in 1994.

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U.S. Department of Energy,
 National Nuclear Security Administration
 Nevada Field Office Environmental Management

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- Publish articles as an EM News Flash and/or in OneVoice (NNSS newsletter) and/or in HQ's EM Update newsletter
- Distribute via e-mail to 2,953 NNSS news subscribers (public, employees and media) and published to Nevada Field Office website (www.nv.energy.gov)
- NSSAB members are automatically subscribed to receive via e-mail



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Open Houses/Events

To encourage an open dialogue with stakeholders, EM:

- Hosts periodic Groundwater and Waste Management Open House events with posters, discussions, demonstrations, status and handouts
- Organizes public meetings to gain community perspectives on specific issues or the release of documents/information
- Conducts sessions at teacher conferences on EM-related curriculum opportunities
- Hosts Operation Clean Desert display at back-to-school fairs



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Fact Sheets

Stakeholders can learn about all EM activities from a wide selection of fact sheets and brochures, available in:

- Electronic version:
 - Nevada Field Office website (www.nv.energy.gov)
 - EM Kiosks
- Hard copy:
 - Public Reading Room (across lobby from Atomic Testing Museum)
 - Upon request in single or group quantities



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Educational Demonstrations

- Feature topics, such as:
 - *Groundwater*: Scientists use a cross-section model to show how sub-surface attributes affect water movement
 - *Radiation*: Scientists explain naturally occurring vs. man-made forms of radiation and how radiation detection works
- Geared for:
 - Classrooms
 - Science fairs
 - Open houses (e.g., Groundwater Open House)
- Provide based upon availability of resources



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Displays

- Operation Clean Desert, Groundwater, Waste Disposal, and Transportation displays have been located at:
 - Public Reading Room
 - Pahrump Library
 - Caliente Library
 - Beatty Library
 - Amargosa Library
 - Esmeralda County Repository Oversight Office (Goldfield)
 - Central Nevada Museum (Tonopah)
 - White Pine County Library (Ely)



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Kiosks

- Interactive, touch-screen system that connects to:
 - Nevada Field Office Internet and social media websites
 - Related government websites
 - The NNSS Remediation Sites (Desert Research Institute)
- Two EM kiosks rotate on 3-4 month cycles at community facilities throughout Southern Nevada



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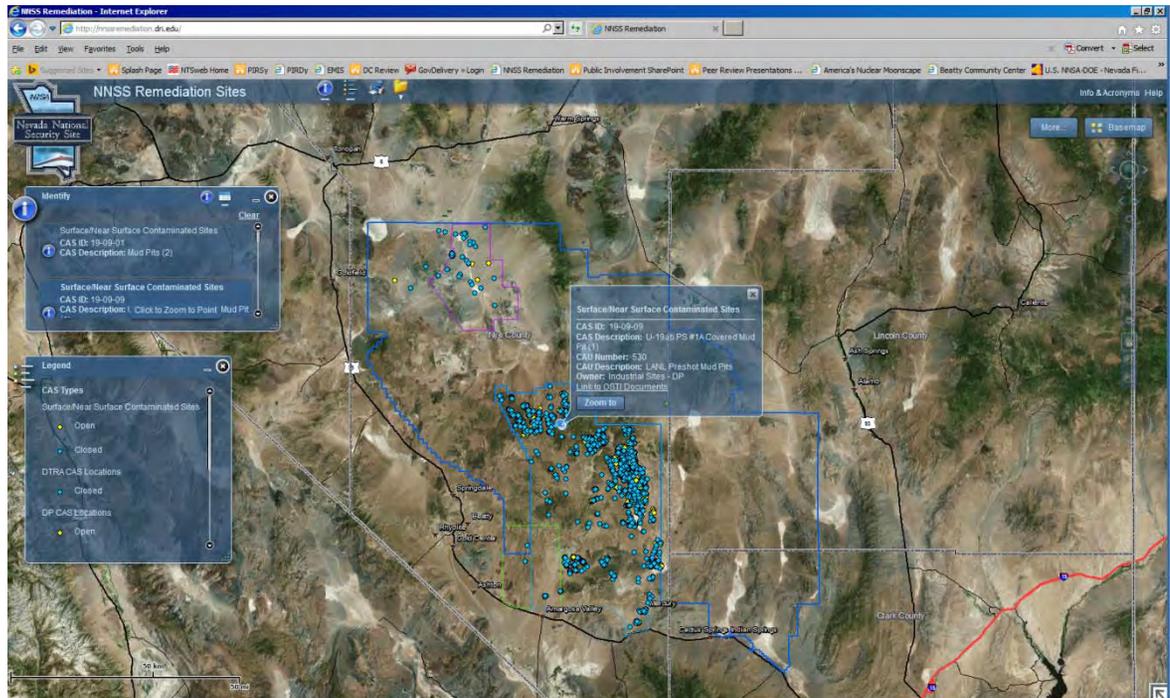
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NNSS Remediation Sites Map

(<http://nnsremediation.dri.edu/>)

- Interactive, on-line map that provides a cleanup status for every NNSS Corrective Action Site (CAS)
- Features direct links to NNSS cleanup site documents (submitted via OSTI Office of Scientific and Technical Information)



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EM Wants to Hear from You!

We encourage stakeholder feedback and invite your requests, questions, and suggestions. Feel free to contact us via:

- Email envmgt@nnsa.doe.gov
- Phone 702-295-3521
- Social media messaging
 - www.facebook.com/NNSANevada
 - www.twitter.com/NNSANevada

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