New Mexico Environment Department

Regulatory Update
White Sands Test Facility (WSTF) Corrective Action

Rick Shean, Division Director, Resource Protection Division

Water and Natural Resources Committee
of the New Mexico Legislature
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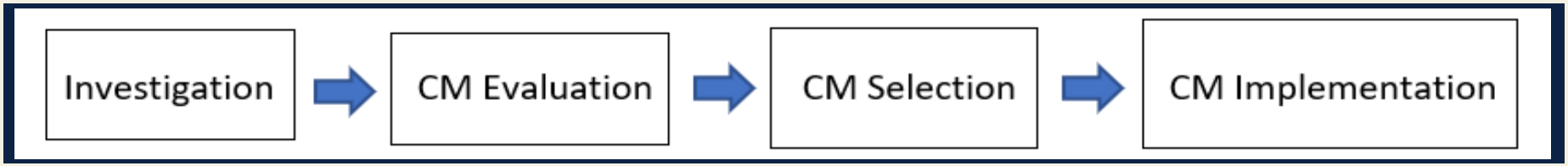
HWB Regulatory Authority

- Regulations
  - Federal Resource Conservation and Recovery Act (RCRA)
  - New Mexico Hazardous Waste Act (HWA)
  - New Mexico Hazardous Waste Permit and Corrective Action Fee Regulations [20.4.1 and 20.4.2 New Mexico Administrative Code (NMAC)]

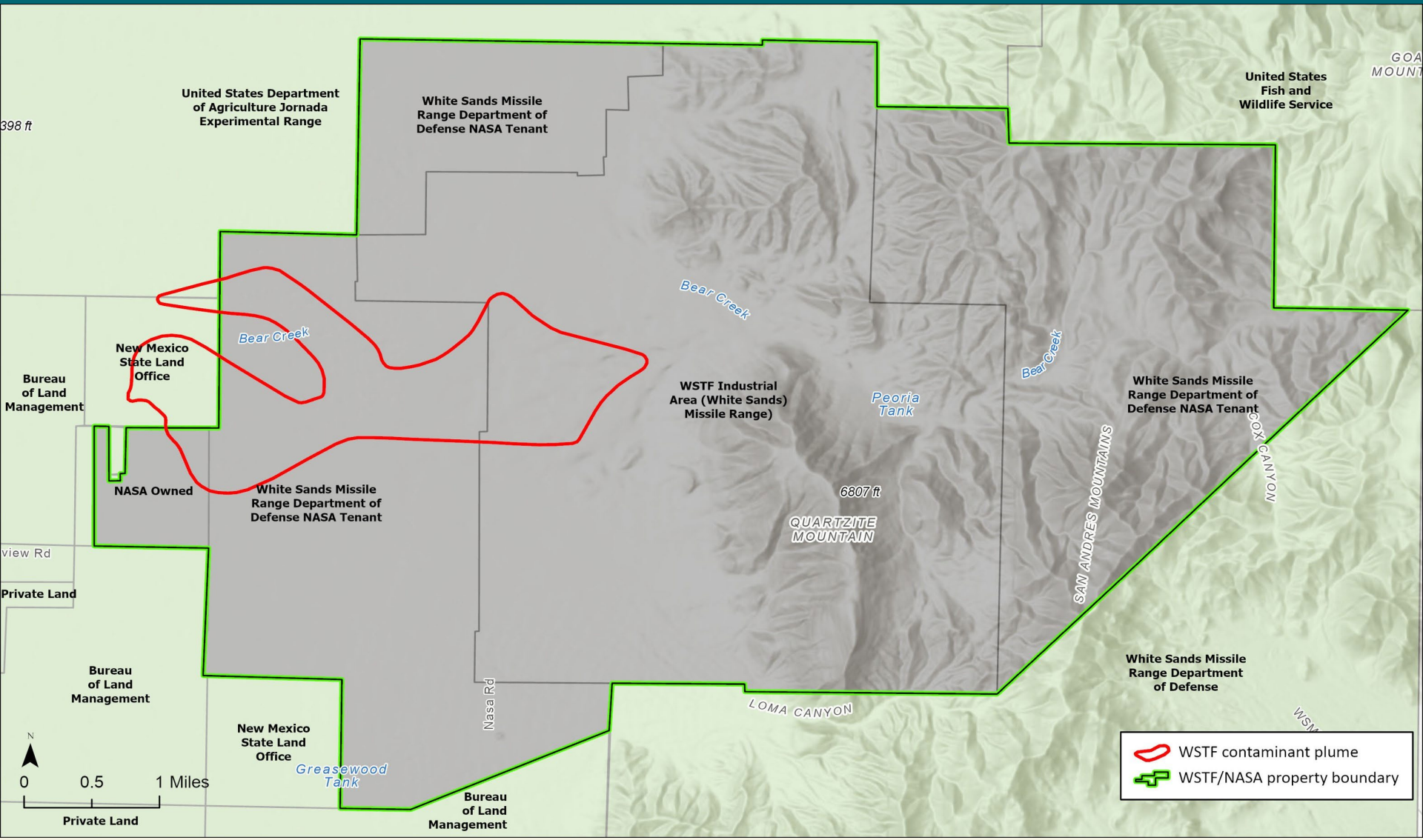
- WSTF Permit (EPA ID# NM08800019434)
  - Governs Corrective Action and Post-Closure Care at the Facility and Contains requirements for Corrective Action Process at WSTF

Corrective Action Process



- Investigation – Determine the nature and extent of the contamination in all media at the site
- Corrective Measures Evaluation – Evaluate the potential methods to remediate the site
- Corrective Measures Selection – Cleanup technology is chosen by NMED with input from public, stakeholder, and facility
- Corrective Measures Implementation – Selected remedy installed, operated, and maintained

National Aeronautics and Space Administration (NASA) White Sands Test Facility (WSTF) Location



NASA WSTF RCRA Regulatory History

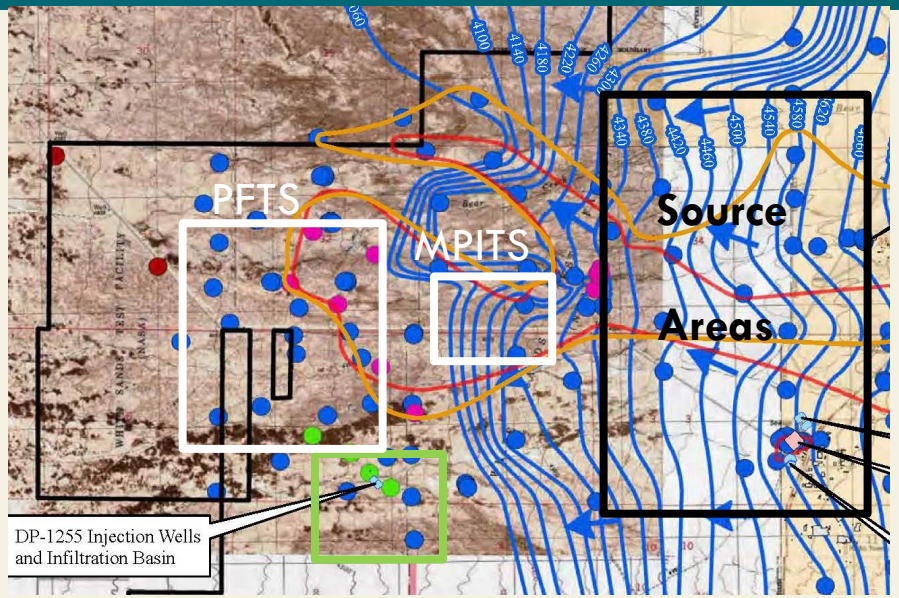
- Initial RCRA permits issued for WSTF
  - Feb. 1993 - Treatment, Storage, and Disposal Facility (TSDF) Permit
  - Sept. 1994 - Post-closure Permit for five closed Hazardous Waste Management Units (HWMU) located at WSTF Industrial Areas
  - RCRA Permits are issued for a period of 10-years but remain in effect until a Permit update is issued by NMED
- NMED reissued a RCRA Permit in 2009 for:
  - TSDF operations
  - Treatment of hazardous waste at an Evaporation Treatment Unit (ETU) and Fuel Treatment Unit (FTU)
  - Corrective action at facility Solid Waste Management Units (SWMU), Areas of Concern (AOC), and closed-HWMUs, and post-closure care for HWMUs
- NASA has ceased TSDF operations as documented in NASA's June 2019 RCRA Permit Renewal Application

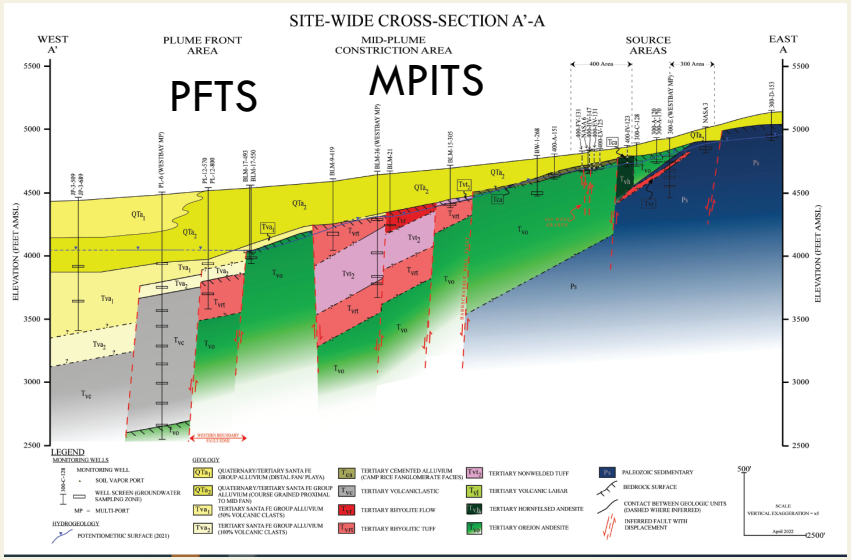
NASA WSTF RCRA Regulatory History (2)

- Current Permit (March 2023) includes NASA WSTF RCRA Post-Closure Care Permit
- Requires corrective action at SWMUs, AOCs, and closed-HWMUs and continued post-closure care of the 200, 300, 400, and 600 Industrial Area HWMU Closures.
- NASA WSTF currently manages hazardous waste generated during routine facility operations as a RCRA large quantity generator that does not require a permit

NASA WSTF Groundwater Flow

- Annual groundwater sampling at 215 monitoring locations
- NASA has two Interim Measure pump and treatment remediation systems:
  - 2005 - Plume Front Treatment System (PFTS)
  - 2011 - Mid-Plume Interception Treatment System (MPITS)
- 150 million gallons of treated groundwater from the PFTS and MPITS combined annually.
- Reinjection authorized under discharge permit DP 1255, issued May 17, 2023

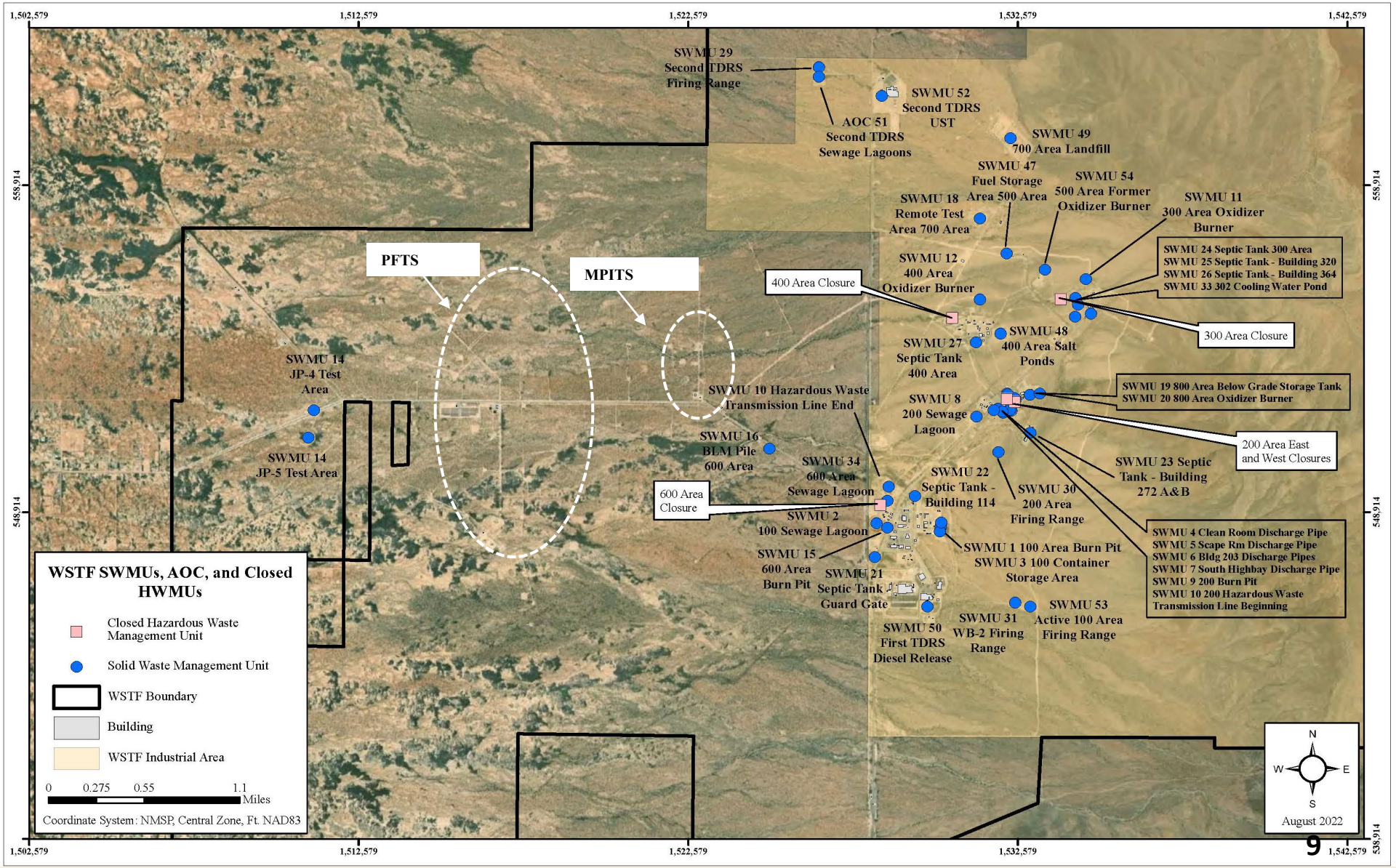




Source of WSTF Contamination

- Historic release of hazardous waste generated by propulsion and materials testing associated with space exploration projects beginning in 1964
- Releases of hazardous waste to the environment likely occurred during early 1960's through the mid-1980's
- Primary contaminants of concern released to the environment at WSTF include N-nitrosodimethylamine (NDMA), trichloroethene (TCE), tetrachloroethene (PCE), trichlorofluoromethane (Freon 11), and 1,1,2-trichloro-1,2,2-trifluoroethene (Freon 113)

SWMU, AOC, and Closed-HWMU Locations



NASA WSTF Corrective Action

- Investigations since 2012 include:
  - 31 SWMUs, one AOC, and the five closed-HWMUs and groundwater data collection and remediation system monitoring and maintenance
- Three HWMUs have been the subject of investigation and have subsequently been "clean-closed" and do not require post-closure care

- Ongoing subsurface investigations characterize the nature and extent of contamination at the various units and identify additional sources
- About 21 projects have been initiated or are ongoing at Industrial Areas

Current Status

- Corrective action at WSTF is still in the investigation phase of the corrective action process at various SWMUs, AOC, and closed-HWMUs
- NMED will continue to require NASA to submit work plans and investigation reports for SWMUs, AOCs, and closed-HWMUs
- WSTF groundwater monitoring program will continue for the foreseeable future under the authority of the RCRA Permit
- Groundwater remediation and post-closure care at five closed-HWMUs will continue as required by the current RCRA Permit for the foreseeable future

Path Forward

- NASA will continue with subsurface investigations and the delineation of source zone contamination at WSTF
- Additional site and source zone investigation may result in the need for additional subsurface investigation and site risk assessment
- If needed, NMED will consider future corrective action status determinations for WSTF contamination sites under their RCRA Permit
- NASA will continue to operate the PFTS and MPITS to ensure that WSTF contaminant plumes do not migrate further
- The discovery of emerging contaminants of concern issues at WSTF may require the need for additional investigation

Questions?