

Nevada Environmental Response Trust Site Project Status and Future Actions

Nevada Division of Environmental Protection (NDEP)
Nevada Environmental Response Trust (NERT)
ENVIRON International Corporation (Environmental
Consultant to NERT)

April 23, 2012

Nevada Environmental Response Trust (NERT) Site



- 450 Acre Site
- Located in Henderson, NV
- Active Industrial Facility (Tronox, LLC)
- Adjacent Active Industrial Facilities (Timet, L'Hoist, WAPA and Others)

Parties Involved

- NDEP: Nevada Division of Environmental Protection
- NERT: Nevada Environmental Response Trust
- ENVIRON: ENVIRON International Corporation
 - Environmental Consultant to NERT

Site History

- 1940s: Magnesium Production for WWII effort (US Gov't)
- 1950s-1960s: Manganese dioxide, sodium chlorate, perchlorates (WECCO, American Potash & Chemical Co., United States Navy)
- Early 1970s: elemental boron, boron trichloride and boron tribromide production began (Kerr-McGee)
- 1990s: Production ceased: boron tribromide (1994), sodium chlorate (1997), and ammonium perchlorate (1998)
- Perchlorate reclamation from on-site materials until 2002
- 2005: Kerr-McGee became Tronox LLC
- 2009: Tronox LLC filed for bankruptcy
- 2011: Tronox LLC reorganization; NERT established



Primary Contaminants of Concern

- Metals (e.g. arsenic, chromium VI, manganese)
- Perchlorate
- Dioxins/Furans

Accomplishments to Date

- Soil Characterization
- Large-Scale Soil Excavation and Off-Site Disposal
- Groundwater Characterization
- Groundwater Extraction and Treatment
- Groundwater Monitoring

Soil Removal Action

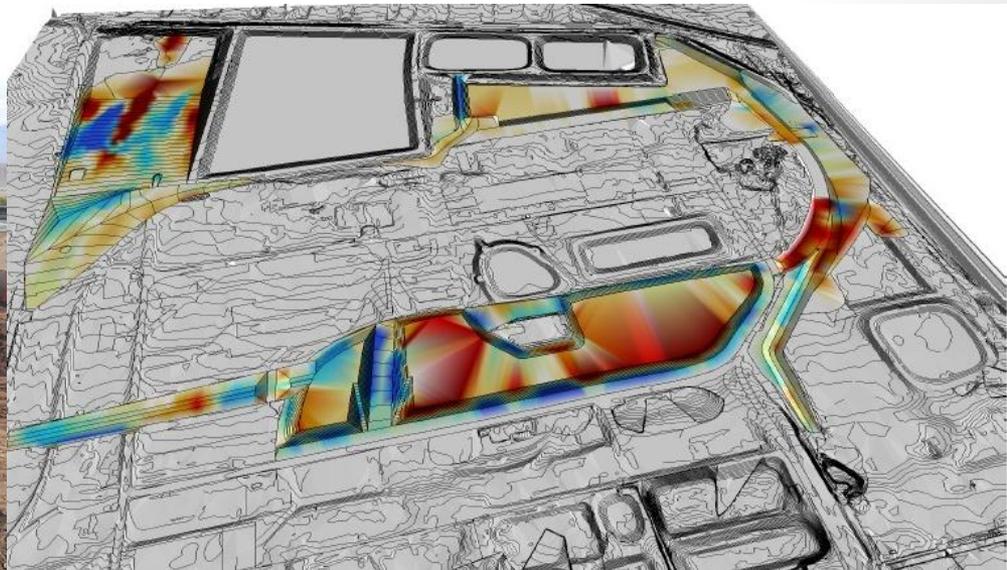
- 930,461 tons of contaminated soil removed
- ~115 acres
- Monitoring for worker and neighbor health/safety
- Disposal of impacted soil at Apex Landfill



Backfill / Grading



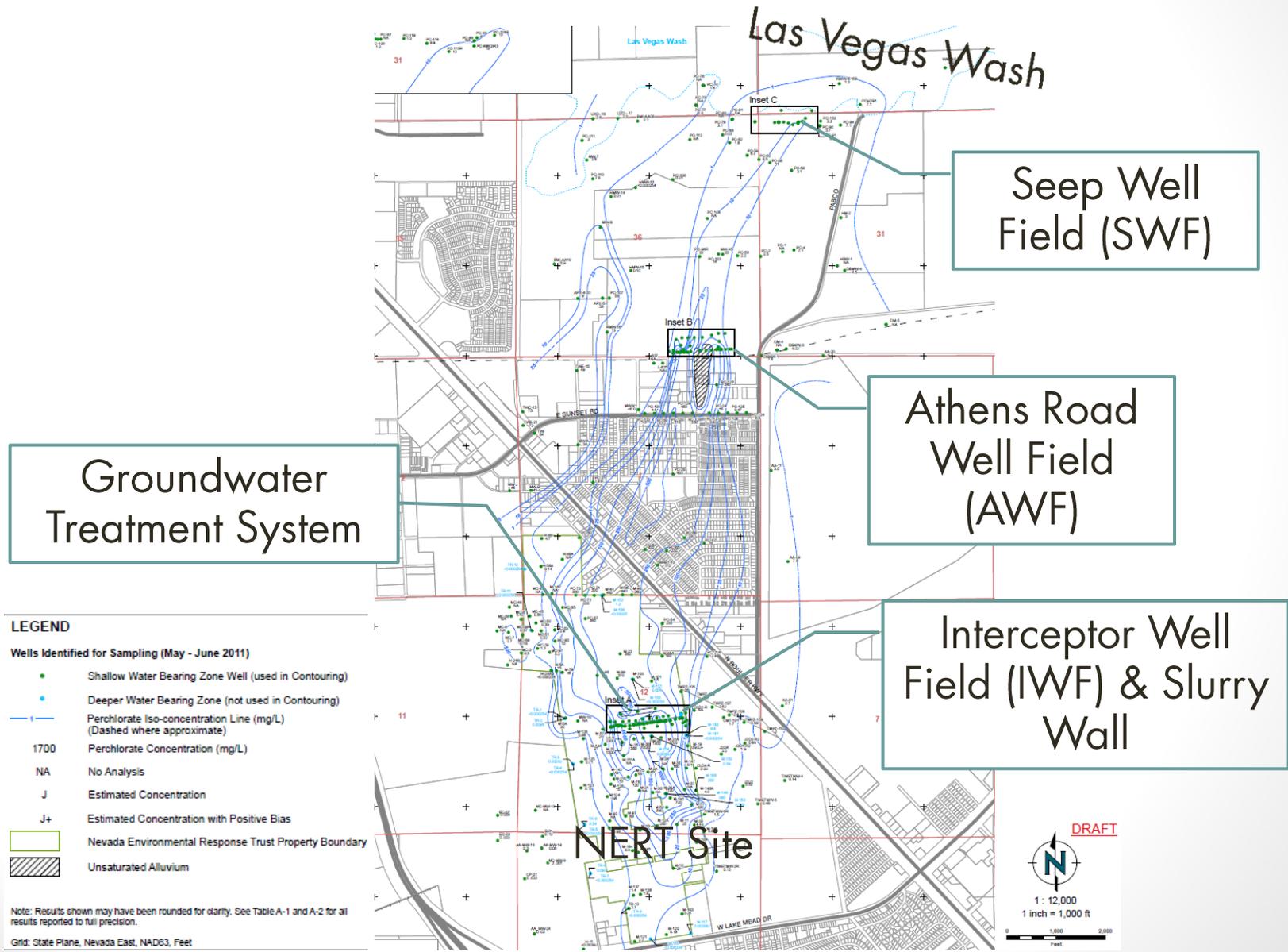
- 407,072 tons of clean imported backfill placed
- Site Grading
- Site Restoration



Site Management Plan

- Identifies Excavation Control Areas (ECAs)
 - Inaccessible contaminated soil
 - Unknown conditions and/or limited analytical information
 - Soils >10 ft below original grade
- Soil Management Protocols for:
 - ECA Soils
 - Previously Unknown Contaminated Soils
- Groundwater Risk Management Protocols

Perchlorate Plume and GWETS



Groundwater Extraction and Treatment System

- Three discrete extraction well fields
 - On-Site: Interceptor Well Field (IWF)
 - Galleria Drive: Athens Road Well Field (AWF)
 - Near Las Vegas Wash: Seep Well Field (SWF)
- On-site groundwater treatment facility - permitted discharge under the Clean Water Act (NPDES)
 - Carbon adsorption
 - Chemical precipitation
 - Fluidized-bed biological treatment
 - Discharge to Las Vegas Wash
- Stable operation and consistent compliance with NPDES permit limitations

Groundwater Monitoring

- ~300 Groundwater Wells monitored regularly
 - ~50 wells sampled monthly
 - ~150 wells sampled quarterly
 - ~300 wells sampled annually
- Treatment plant monitoring as required by permit
- Primary chemicals monitored are chromium and perchlorate
- Also monitoring for total dissolved solids (TDS), nitrate, chlorate, and pH

Site Remediation Strategy

Remediation Program – Primary Issues

- Groundwater plume containing perchlorate and other chemicals extending off-site to the north
 - Primarily in the shallow (alluvial) aquifer
- Residual Sources
 - Deep (>10 feet) vadose zone soils containing perchlorate and other chemicals
 - Inaccessible soils containing perchlorate and other chemicals

Remedial Investigation/Feasibility Study (RI/FS)

Plan for 2012-2013

- RI/FS Work Plan
 - Identify Data Quality Objectives
 - Identify Data Gaps
 - Preliminary Identification of Likely Response Scenarios and Remedial Action Objectives
- Remedial Investigation (RI)
 - Summary and Analysis of Existing Site Data
 - Capture Zone Evaluation and Groundwater Model Development
 - Data Gap Investigation (as required)
 - Treatability Study Work Plan and Implementation
 - Baseline Risk Assessment

Remedial Investigation/Feasibility Study (RI/FS)

Plan for 2012-2013

- Feasibility Study
 - Development of Remedial Action Objectives
 - Detailed Analysis of Remedial Alternatives
 - Proposed Remedy Selection
- Public Participation
 - Community Involvement Plan
 - Community Meetings
 - Public Comment Opportunities
 - Documentation/Information Available to the Community

Community Interview Questionnaire

- Would you like to receive additional information regarding the Nevada Environmental Response Trust Site or the remediation project described in the Fact Sheet? If so, how would you prefer to receive such information?
- What information about the Site or the remediation project would you most like to know?
- In your opinion, what information is most important and/or relevant to the community regarding the Site?
- You are free to respond anonymously, however, if you would like to be contacted directly, please provide your name, address, phone number and email address if applicable.

Questions/Comments