

Tuba City Open Dump RI/FS and RA Work Plan

September 3, 2009

One Team. Infinite Solutions



Stantec

RI/FS Process

**Preliminary Assessment
And Limited Investigations**

**RI/FS Work Plan
Baseline RA Work Plan**

**RI/FS
Baseline Risk Assessment**

**Proposed Plan
Community Comment**

Record of Decision

**Remedial Design and
Implementation**

Interim Actions

- Fence Old Dump
- Background Surveys
- Hot Spot Investigation/
Removal Action
- Installation of Additional Wells
- Aquifer Testing
- Water Supply Studies

■ Remedial Investigation/Feasibility Study (RI/FS)

- The RI serves as the mechanism for collecting data to:
 - characterize site conditions;
 - determine the nature of the waste;
 - assess risk to human health and the environment; and
 - conduct treatability testing to evaluate the potential performance and cost of treatment and closure technologies.
- The FS is the mechanism for the development, screening, and detailed evaluation of alternative remedial actions.

■ Baseline Risk Assessment (BRA)

- The BRA analyzes potential adverse health effects (current or future) caused by hazardous substances in the absence of any actions to control or mitigate these releases (i.e., under an assumption of no action).

Baseline Health Risk Assessment

- Hazard Identification-Evaluate data and identify COPCs.
- Exposure Assessment-Evaluate sources, affected media, transport mechanisms, receptors, and exposure routes
- Toxicity Assessment-COPC toxicity
- Risk Characterization-Evaluate carcinogenic and non-carcinogenic risks
- Uncertainty Analysis

Ecological Risk Assessment

- Ecological Characterization
- Characterization chemicals of concern
- Endpoint Assessment
- Conceptual Ecological Model
- Exposure Assessment
- Ecological Effects Characterization
- Risk Characterization
- Uncertainty Analysis

Scope of RI/FS

- Dump Waste
 - Uranium Screening
 - Statistical characterization
- Air Contaminants
 - Ambient Air
 - Landfill Gas
 - CH₄, VOCs, CO, CO₂, O₂, H₂S
 - 12–16 perimeter permanent gas monitoring probes
 - 20–35 semi-permanent gas monitoring points

Scope of RI/FS

■ Groundwater

- Four additional shallow Groundwater Wells
- Two Deep Groundwater Wells

■ Plants

- Consult tribal authorities on plant use
- Identify key plants for human and animal uptake.
- Sample plant elements (Conduct prior to Interim Actions)

Scope of RI/FS

- Surface Water
 - Stock Tank Berm
 - North Gully highway culvert outfall
- Near Surface Sediment Assessment
 - Radiological Surveys
 - Soil Sampling
 - Dump cells, North and South Gullies, Stock Tank Berm sediments, west side of Pasture Canyon, Pasture Canyon, East of MW-30

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Schedule

- November 30, 2009
 - RI/FS Work Plan
 - Community Involvement Plan
 - Quality Assurance Project Plan
 - Baseline Health Risk Assessment and Ecological Risk Assessment Work Plan