Moab UMTRA
Uranium Mill Tailings Remedial Action

Looking north, July 16, 2019

MTPSC Status Update
by Russ von Koch
Grand County UMTRA Liaison
Highlights

- Continued 4 trains per week to CJ (July 68,000 tons, August 82,000 tons and September 78,000 tons)
- Reached 10 million tons on September 16 (62.5% of est. total)
- Shipped 41,000 tons of mixed mill debris/RRM FY19 (Oct-Sept)
- Groundwater extraction planned through mid-November. Injection off for replacement of filter media.

Observations provided by Grand County UMTRA Liaison on behalf of the Moab Tailings Project Steering Committee, as established by Grand County Resolution 3170.
Moab Regular Funding
(Million $)

FY 18: Moved 469 K tons
FY 19: Moved 742 K tons = + 58%

FY 19 $144 m for four other non-defense sites. Moab has second highest $ of five non-defense sites.

ARRA* American Recovery and Reinvestment Act of 2009, aka “Stimulus” Funding

Tailings Removed & Budget History
(Millions of Tons & Dollars per Year)

Tailings shipment and funding information provided by Moab UMTRA. Other observations provided by Grand County UMTRA Liaison on behalf of the Moab Tailings Project Steering Committee, as established by Grand County Resolution 3170.
August 2019 Shipments
Highest Since September 2014

Tailings Removed (000 tons per month)

- Tailings shipment and funding information provided by Moab UMTRA. Other observations provided by Grand County UMTRA Liaison on behalf of the Moab Tailings Project Steering Committee, as established by Grand County Resolution 3170.
Main Project Goals

- Move tailings away from Colorado River
- Protect river by intercepting ground water contaminants
- Remediate vicinity properties (VP)
- Reclaim project sites at Moab and Crescent Junction

FY2018 tonnage averaged 39 K/month; July thru Sept = 76 K

Continuation of 2019 funding could result in earlier tailings removal (2027?) and site reclamation (2029?) than depicted above.

Move Tailings
GW Remediation
VP Remediation
Site Reclamation

2/4/19
Project doubles trains shipped.

July thru Sept shipments were 95% over the 2018 average.

ACTIVE REMEDIATION
1 remaining of 15
Impacts Around Moab: 18Q3-19Q2

- **Radon Level**: Offsite radon not to exceed 3.0 pCi/L above background.
- **Background**: 0 pCi/L
- **Guideline**: 3.7 pCi/L

**Per Cent of Allowable Impact**
- **Radon**
- **Gamma**
- **Particulate**

**Average for last 4 quarters**
- **S-118**: 2 (+30)
- **S-129**: 14 (+PND 19Q2)
- **MEI**: 23 (±30)
- **S-128**: 11 (+PND 19Q2)
- **S-127**: 55 (±37)
- **S-122**: 0 (±25)
- **S-123**: 15 (±11)
- **S-121**: 0 (±17)

**Notes**:
- pCi/L = picoCuries per Liter, radiation from Radon gas in the air, L4Q average.
Guideline: Gamma not to exceed 100 mREM/yr above background. Gamma total for last 12 months at nearest home was 114 mREM, or 24% above CJ background of 92 mREM.

Impacts Around CJ: 18Q3-19Q2

mREM = milli-Roentgen Equivalents in Man, biological dose equivalent, sum of L4Q
Airborne Radioparticulates

Total DCG for 18Q3 – 19Q2

Total mREM L4Q multiple vertical axis by 10 to convert to % of alim. i.e., 4 = 40%

Particulates roughly track rate of tailings shipments during ARRA

SHIPMENTS CURTAILED Dec’12-Feb’13

Started reporting top 6 (prev top 4); no comparable background or guideline.

DCG = Derived Concentration Guideline, a calculated estimate of radiation levels from radioparticulates

Environmental monitoring data provided by Moab UMTRA. Other observations provided by Grand County UMTRA Liaison on behalf of the Moab Tailings Project Steering Committee, as established by Grand County Resolution 3170.
**Ground Water Remediation**

- Extraction wells between pile and river intercept contaminated ground water
- Fresh water “curtain” injected when river is low
- Side channel habitat protected seasonally with added fresh water
- Suspended during CO River Flooding

- Project totals of over 925,000 pounds of ammonia & more than 5,050 pounds uranium extracted through Sept, 2019 (kept out of river)

- ACTIVE ground water remediation could continue 1-2 years after pile removed. Supplemental standards may be applied for PASSIVE remediation.

Well field data provided by Moab UMTRA. Other observations provided by Grand County UMTRA Liaison on behalf of the Moab Tailings Project Steering Committee, as established by Grand County Resolution 3170.
The 2019 flood
June 12, 2019
Residual Flood Water
August 26, 2019
July 11, 2019
(41,000 tons of mixed mill debris and RRM moved in Fed FY 2019 – 5.8% of total tons)
Conditioning Residual Radioactive Material to Facilitate Container Transport

- Excavate, mix, and dry RRM in “windrows” on the “face”
- Push and further mix RRM down the face through pile layers for loading
- Mix RRM multiple times at conditioning areas by grading and harrowing for additional drying
- Mix again when loading for transport by loading vertically from the conditioning beds
Excavation & conditioning areas
Pushing RRM into "windrows" for drying while mixing across pile layers
Pushing RRM down while mixing for transport to a conditioning area
July 2, 2019
Loading with a trackhoe takes about a minute
Moving RRM to a conditioning area
July 8, 2019
Dumping RRM at one of the multiple conditioning areas
Grading and mixing the RRM
Harrowing the RRM
August 26, 2019
Building-up a multi-layered conditioning area
On-going conditioning supports current and future winter transport from multiple conditioning areas
To Learn More

- **Online**
  - https://gjem.energy.gov/moab/
  - GrandCountyUtah.net ("Moab UMTRA Project")

- **Public meetings**
  - *Moab Tailings Project Steering Committee, quarterly (Jan, Apr, July and Oct)*
  - *Site Futures Committee, 2013 and 2018*

- **UMTRA Reading Room (Library)**

- **Chat with Grand County’s Liaison**
  - 259-1795 (normally at courthouse Tue, Thu)
  - rvonkoch@grandcountyutah.net