

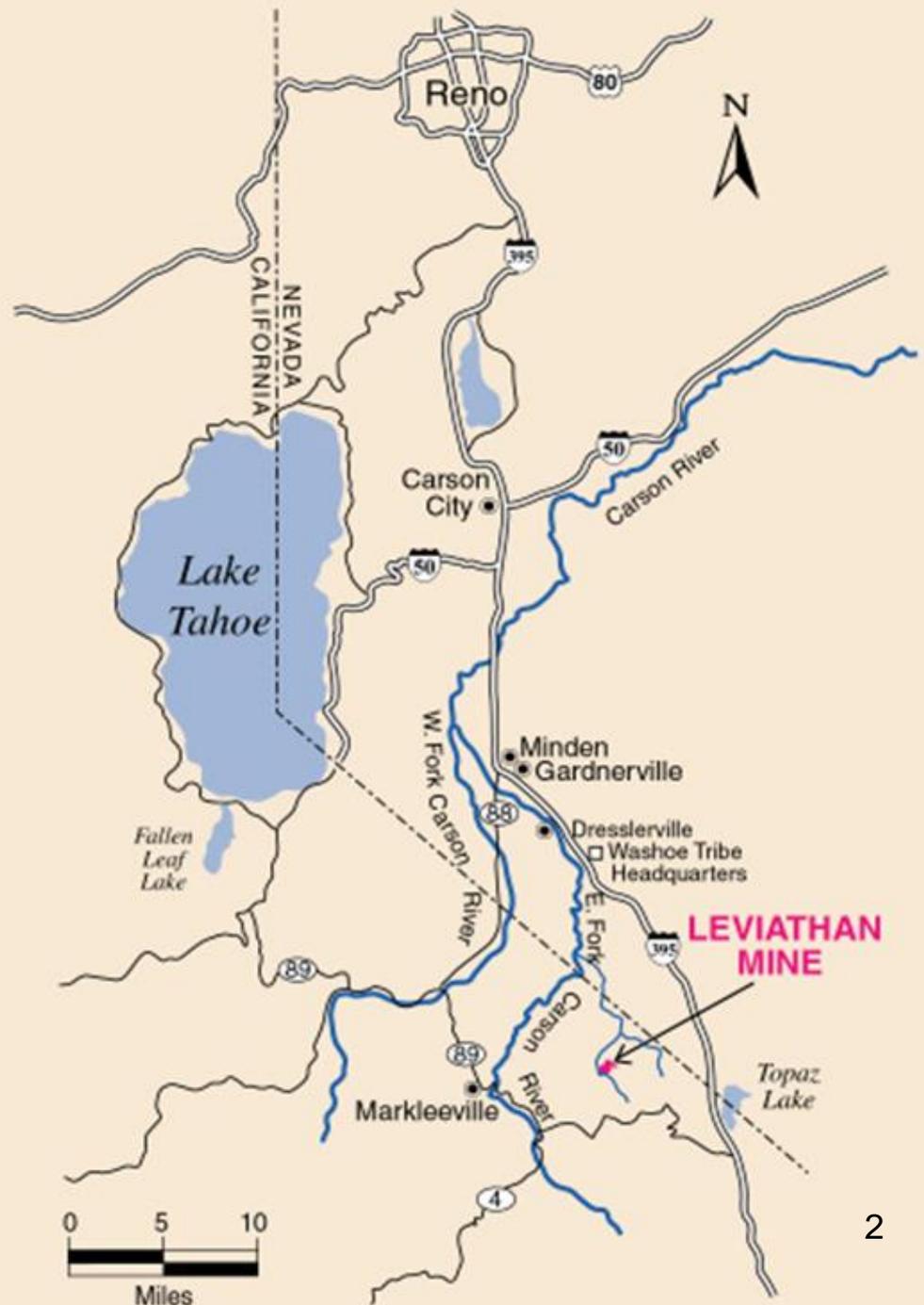
LEVIATHAN MINE PROJECT UPDATE

Item 7

Chuck Curtis
Supervising Water Resource Control Engineer
Water Board meeting of July 16, 2014



Located in
Alpine County
about one hour
SE of Lake
Tahoe; elevation
7,000 feet; dirt
road access
difficult in winter





Leviathan Mine

- Limited mining 1860s
- Tunnel mining in 1930s
- Open pit mining 1952-62
- State bought site in 1983 to abate pollution
- Lahontan Water Board manages site
- EPA Superfund site 2000





Leviathan Creek through mine waste ~1983



Waste piles and creek delta ~1983

A photograph of a creek in a wooded area. The foreground shows a large, turbulent area of yellowish, turbid water, likely due to sediment runoff. Further upstream, the water is clearer and flows over rocks, creating white rapids. The surrounding vegetation includes green bushes and trees.

Mountaineer Creek

Leviathan Creek

circa 1983



Pond 2S

Pond 2N

Pond 1

Pond 3

Pond 4

Tunnel #5
(the Adit)

Pit Underdrain

1984 Pollution Abatement Project Features

CERCLA Removal Actions

- Water Board collection and treatment
 - Year-round collection of AMD
 - Summer treatment since 1999
 - Spring treatment as necessary
- ARCO collection and treatment
 - Late-Spring through mid-Fall collection and treatment; uncontrolled discharges when not collected
 - Aspen Seep Bioreactor continuous collection and treatment

A photograph of a water treatment facility. In the foreground, a large pond of reddish-brown water reflects the sky and the structures. The water is very still, creating a clear mirror image. In the middle ground, there are several large, cylindrical, light-colored storage tanks on metal stands. To the left of the tanks are several white rectangular buildings or containers. A white pickup truck is parked near the buildings. In the background, there is a sandy hillside with some green trees and a clear blue sky. The overall scene suggests a water treatment plant in a semi-arid or mountainous region.

Summer Treatment



Spring treatment in April and May 2011

Crusher Road Seep



Stream Quality Improvement

ESTIMATED FISH POPULATION						
	Lower Leviathan Creek			Bryant Creek		
Year	Rainbow	Brook	Brown	Rainbow	Brook	Brown
1998	0	0	0	64	16	0
2006	17	17	0	320	272	0
2013	72	521	0	728	528	1657



Data courtesy US Fish & Wildlife Service

RI/FIS Activities

- ARCO Remedial Investigation / Feasibility Study
- Disturbed area, downstream area and reference areas
- Record of Decision about 2020?
- Implement Final Remedy about 2022?

Settlement w/ ARCO

- 2007 litigation over 1983 agreement
- 2012 settlement-in-principle
- ARCO completes RI/FS
- WB takes over Interim Combined Treatment
- WB does Remedial Design, constructs Remedy and operates Final Remedy
- ARCO pays 75% (70% O&M)



Additional Resources Added by 2014-15 Budget Act

- 1.5 Positions – new Senior WRCE, 0.5 WRCE (5.1 total)
- \$575,000 contracts (\$1.5 million total)
- Additional contract funds needed in future for design, construction, operation and maintenance



Settlement Challenges and Opportunities

- ARCO/WB communication and cooperation on plans and priorities
- WB Design, Construction, and Operation tasks
- Quicker restoration of affected creeks and mine site
- Settlement details and accounting for reimbursement

Questions?

