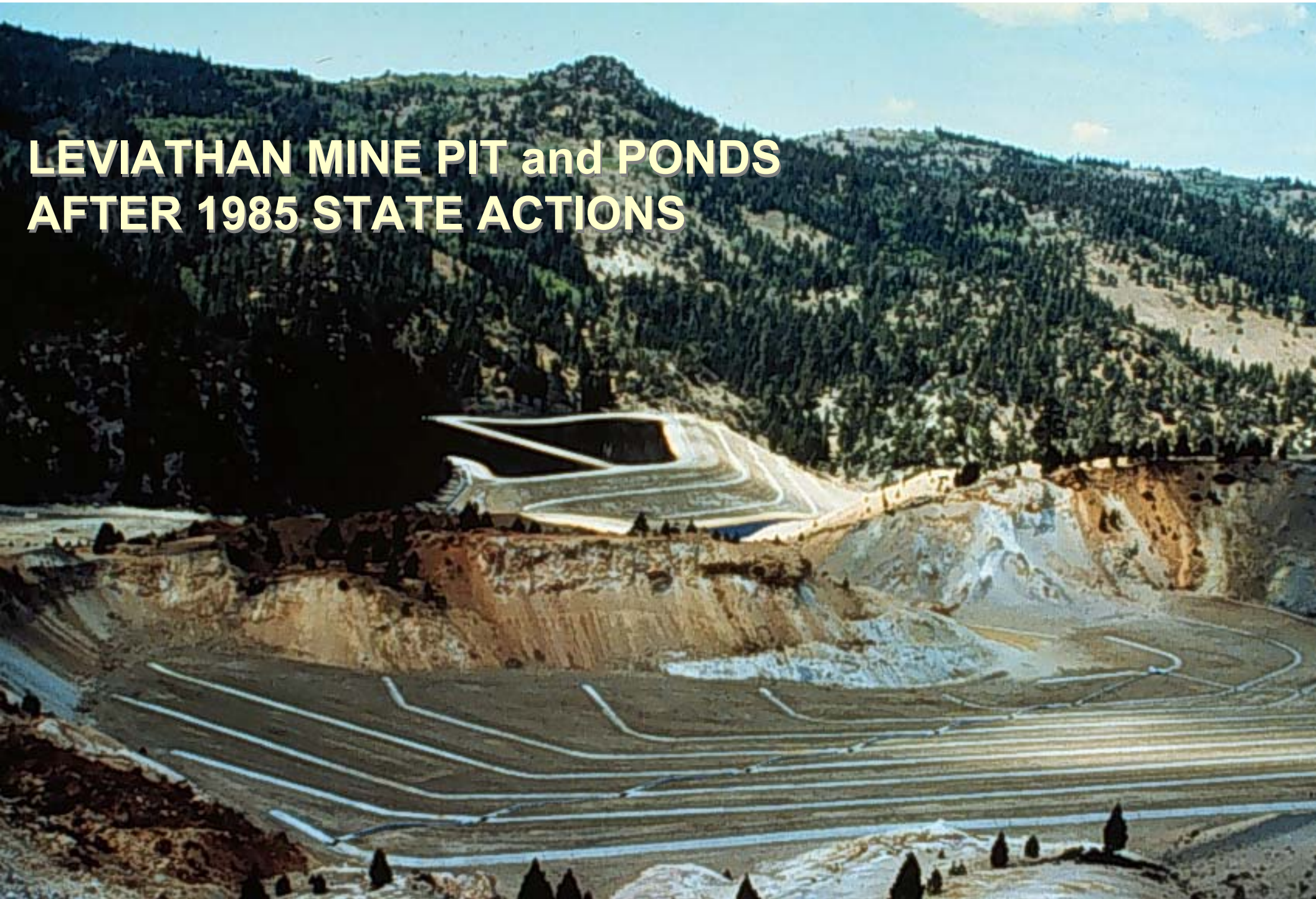




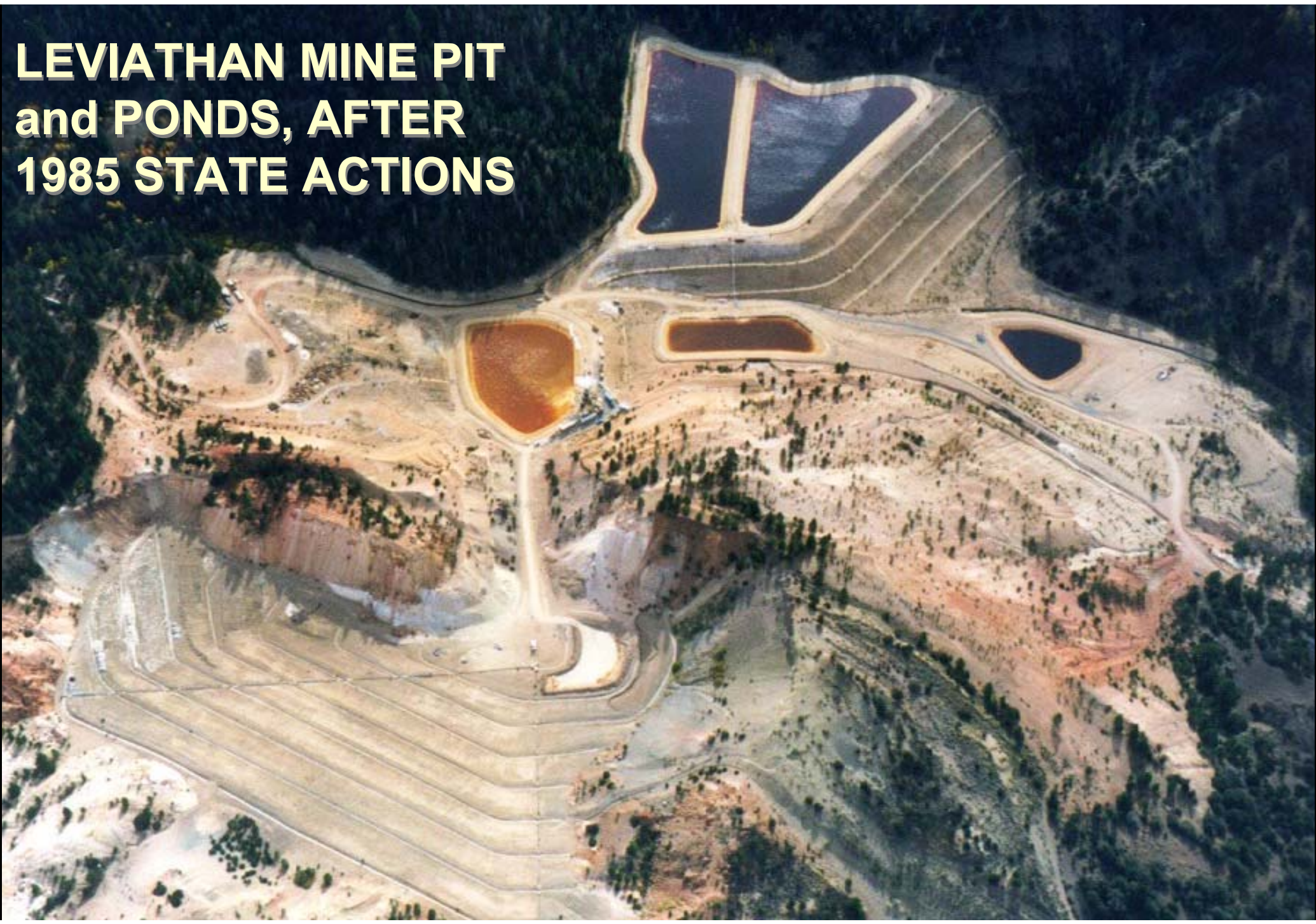
CONCRETE CHANNEL
Since 1985, Diverts
Leviathan Creek
through Mine Waste,
 $\frac{1}{2}$ Mile

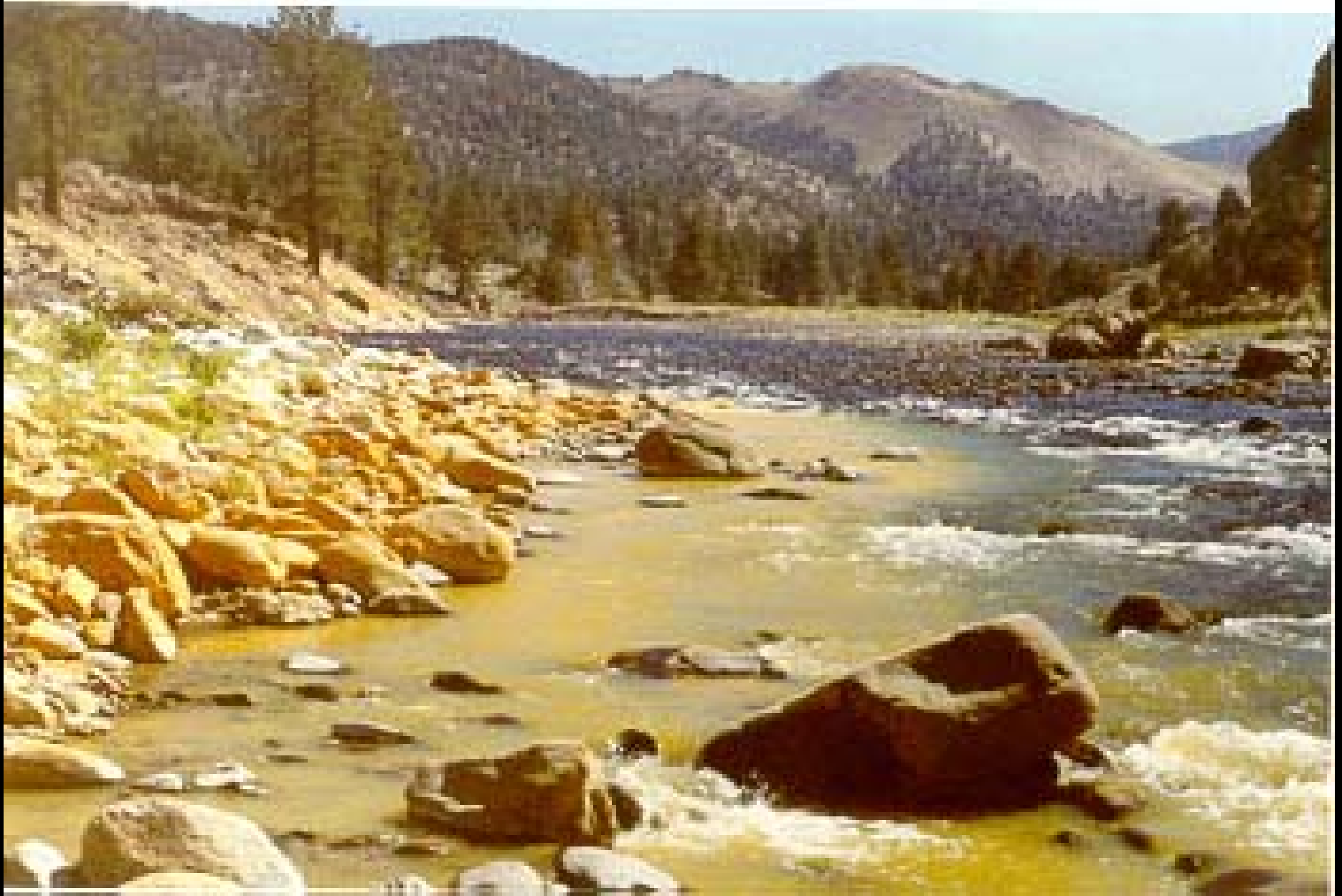


**LEVIATHAN MINE PIT and PONDS
AFTER 1985 STATE ACTIONS**



**LEVIATHAN MINE PIT
and PONDS, AFTER
1985 STATE ACTIONS**





September 23, 1969, East Fork Carson River at Bryant Creek



January, 1999, East Fork Carson River at Bryant Creek

SHORT-TERM APPROACH

Capture and Treat Identified Sources

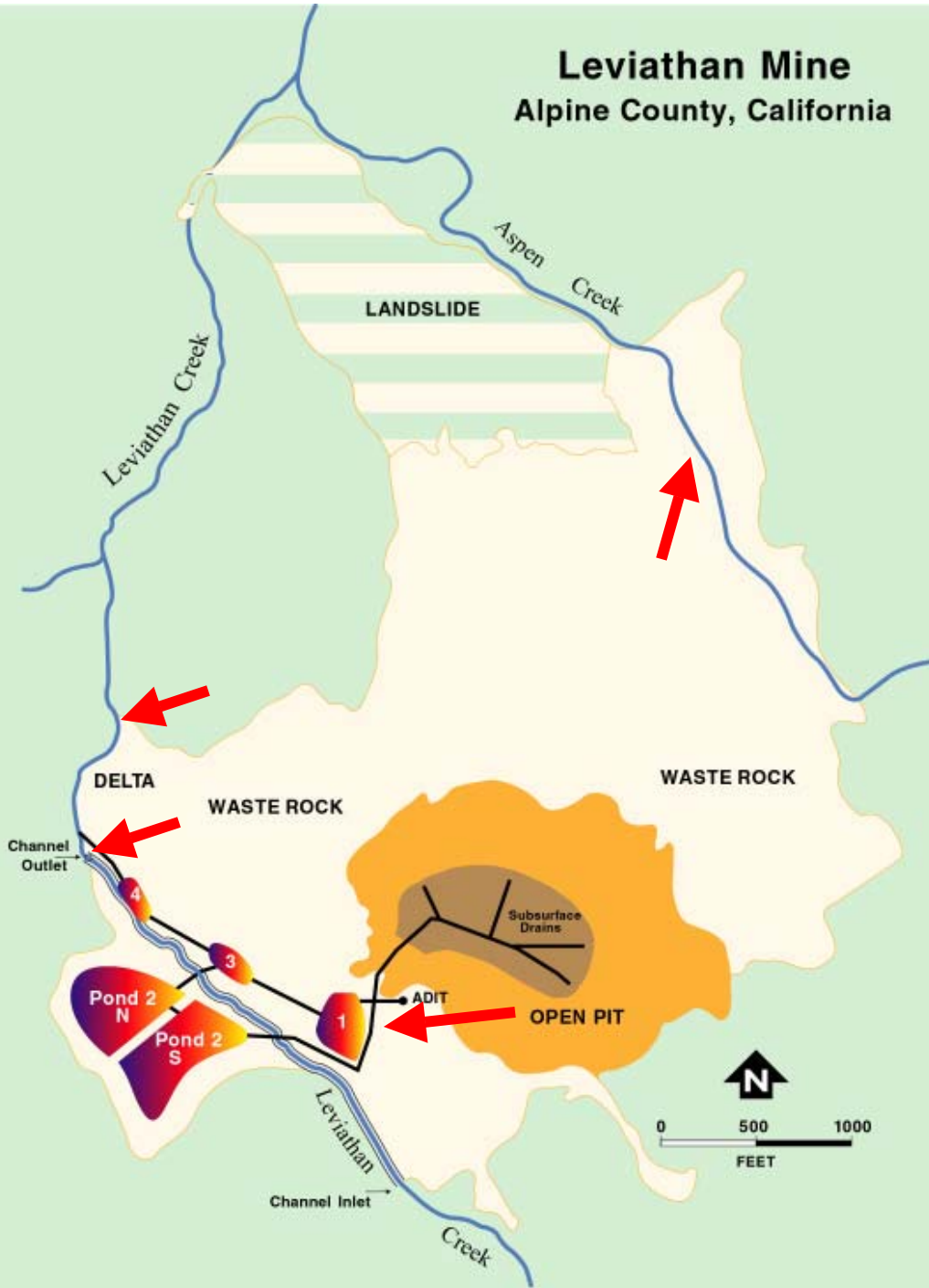
Test and Improve Treatment Methods

Collect Existing Data

**Increase Data Gathering as Creeks
Improve to Assess Remaining Risk**



Leviathan Mine
Alpine County, California

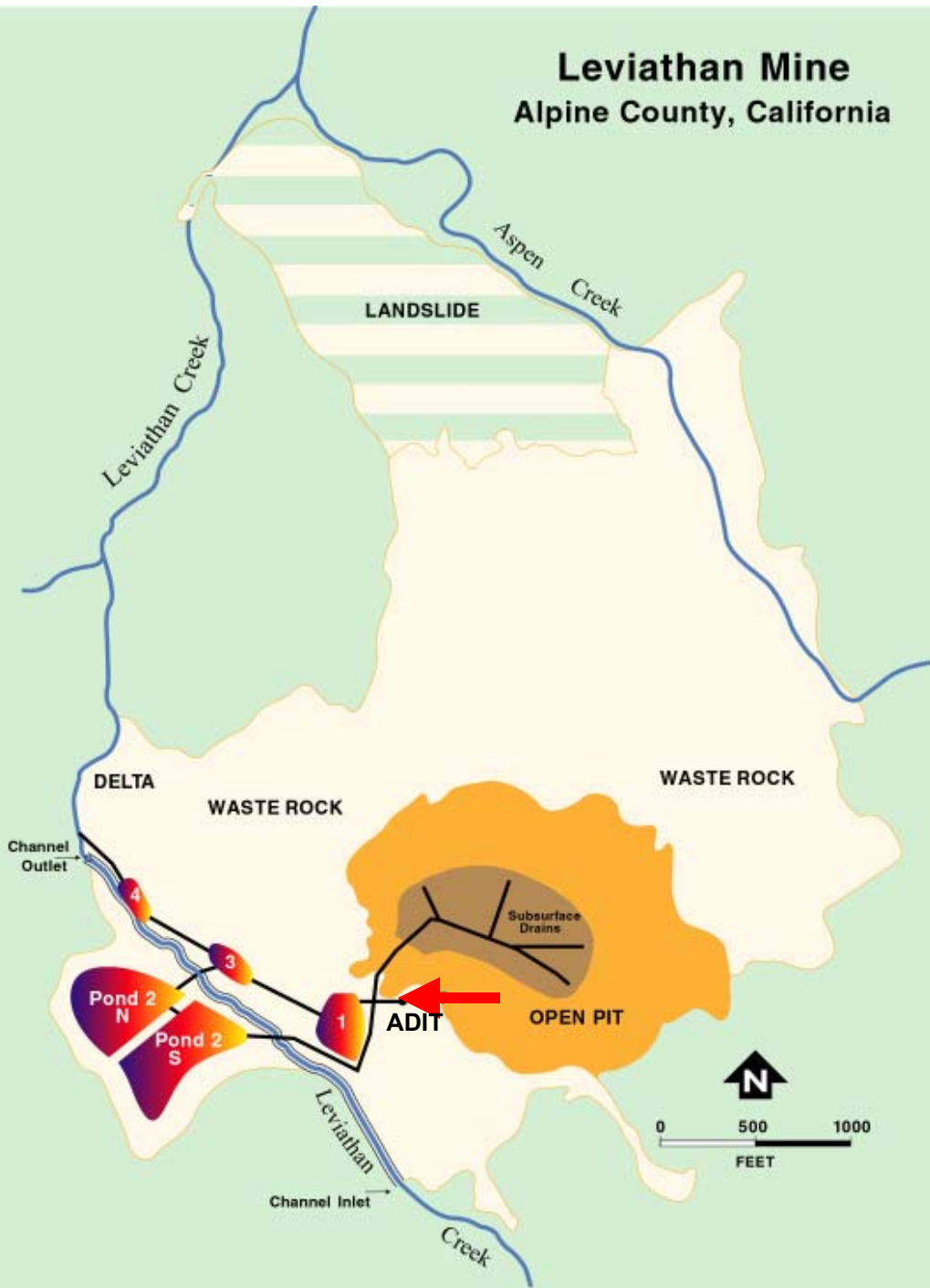


Identified Contaminant Sources

- ADIT – Ponds
- Channel Underdrain
- Aspen Seep
- Delta Seep



Leviathan Mine
Alpine County, California

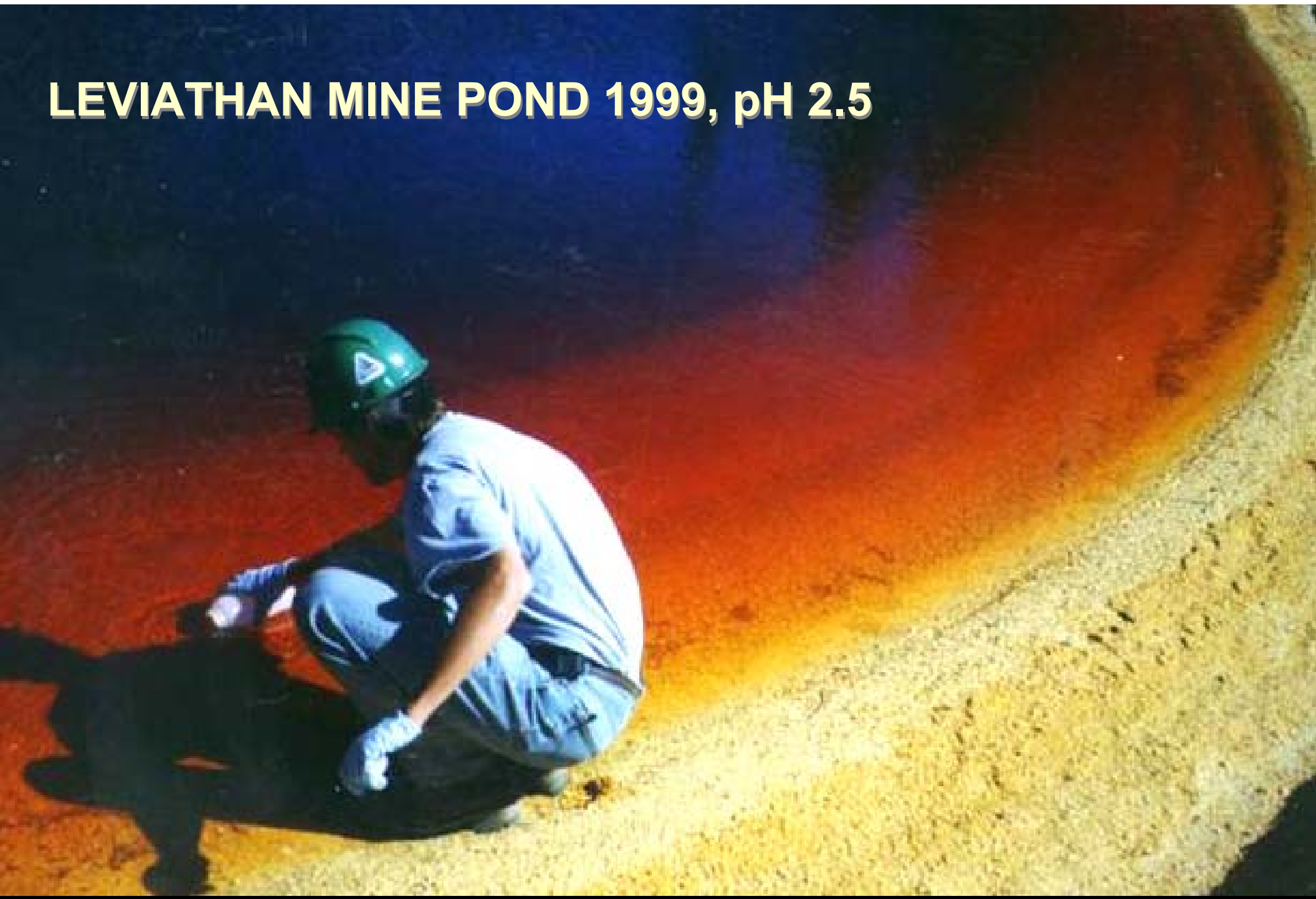


Contaminant Sources

- ADIT Drainage
- Pond Overflow
- Worst Source
- Evaporation



LEVIATHAN MINE POND 1999, pH 2.5





EARLY ACTION – ADIT and PONDS

- **Lahontan Regional Board**
- **Two-Phase Lime Neutralization**
- **Summers of 1999 through 2004**

LEVIATHAN MINE POND - 1999

STATE BI-PHASIC LIME TREATMENT



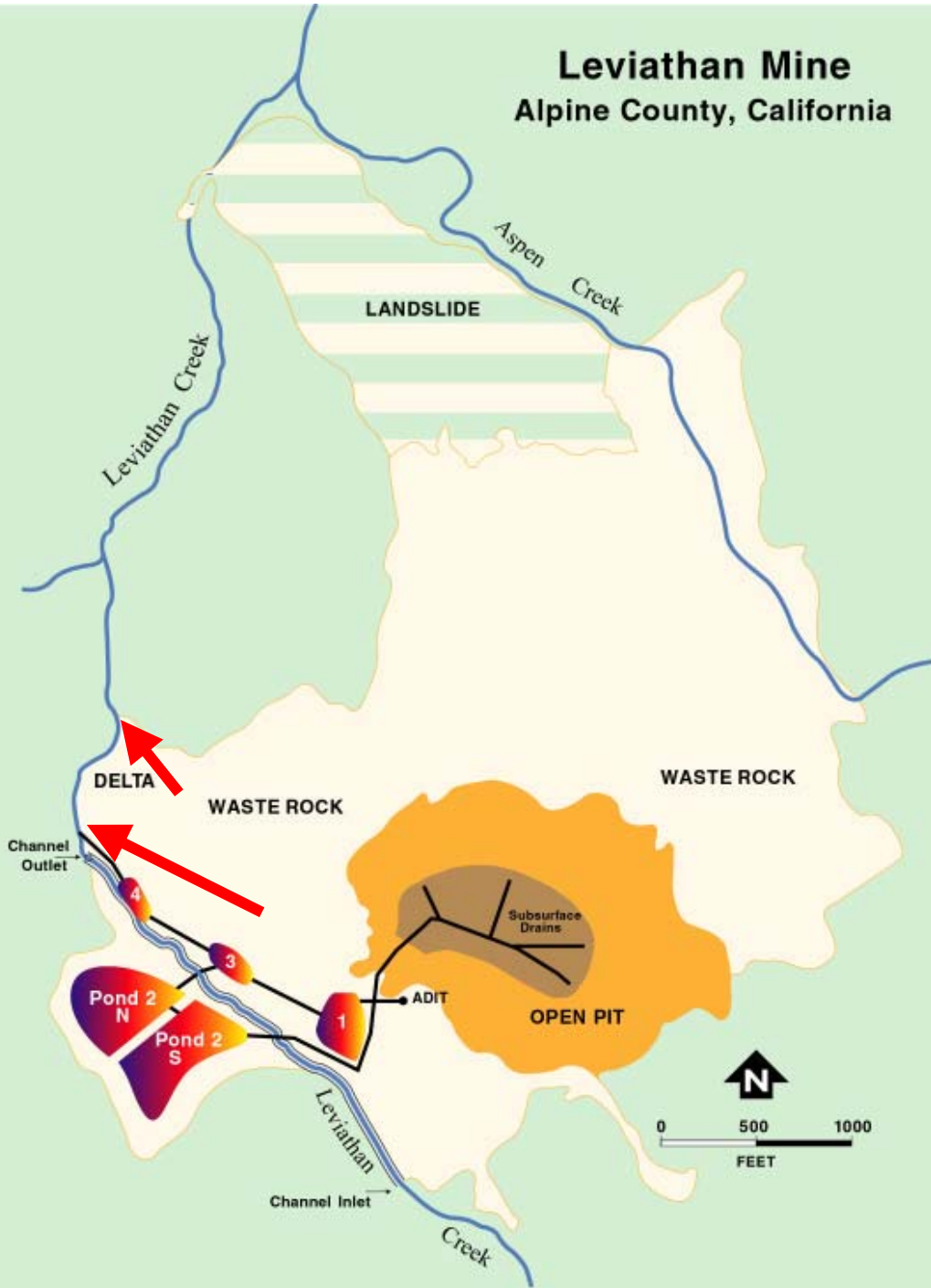


Leviathan Pond 2S

August 2001



Leviathan Mine
Alpine County, California

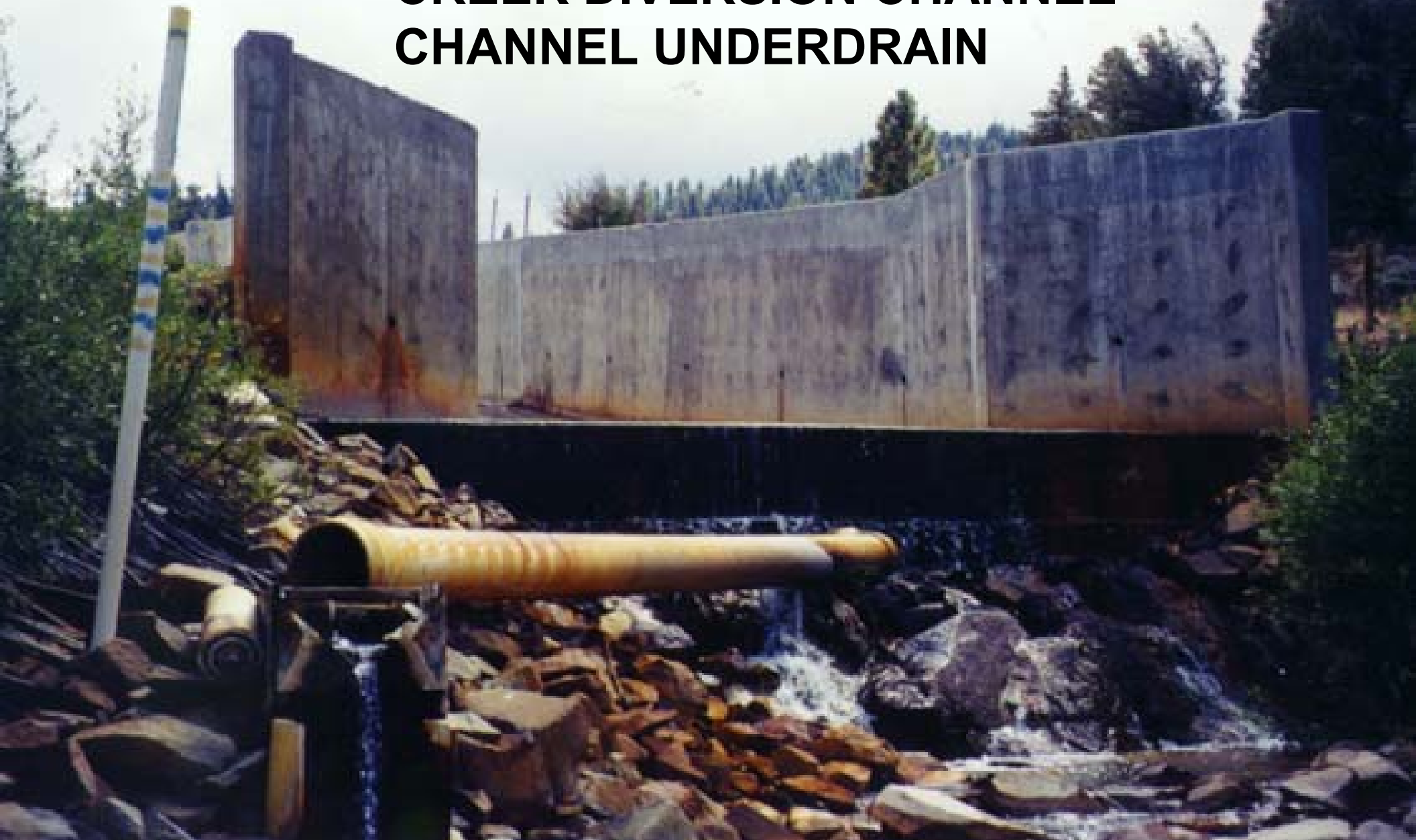


Contaminant Sources

- Channel Underdrain and Delta Seep
- Not Captured by Ponds
- Atlantic Richfield :
Lime Lagoon, 2001-04
Combined Flow, 2003-04



**LEVIATHAN MINE – 1999
CREEK DIVERSION CHANNEL
CHANNEL UNDERDRAIN**





**LEVIATHAN MINE 1999
DELTA SEEP**

**LEVIATHAN MINE – 2002
LIME NEUTRALIZATION
CUD and DELTA SEEPS**

