

Holistic Cure for a Multi-Party Mine Site in Northern Nevada



Roy I. Thun
Managing Director
Bridge Environmental
roy.thun@bridgeenviro.com
www.bridgeenviro.com

Disclaimer

The opinions and views expressed herein are those of Mr. Thun and do not necessarily reflect the views of USEPA, Nevada Department of Environmental Protection, Nevada Department of Wildlife, US Forest Service, Atlantic Richfield Company/BP, Cleveland Cliffs, DuPont, Teck Cominco, Shoshone-Paiute Tribes or any other company, group or person(s) alive or dead.

Symptoms

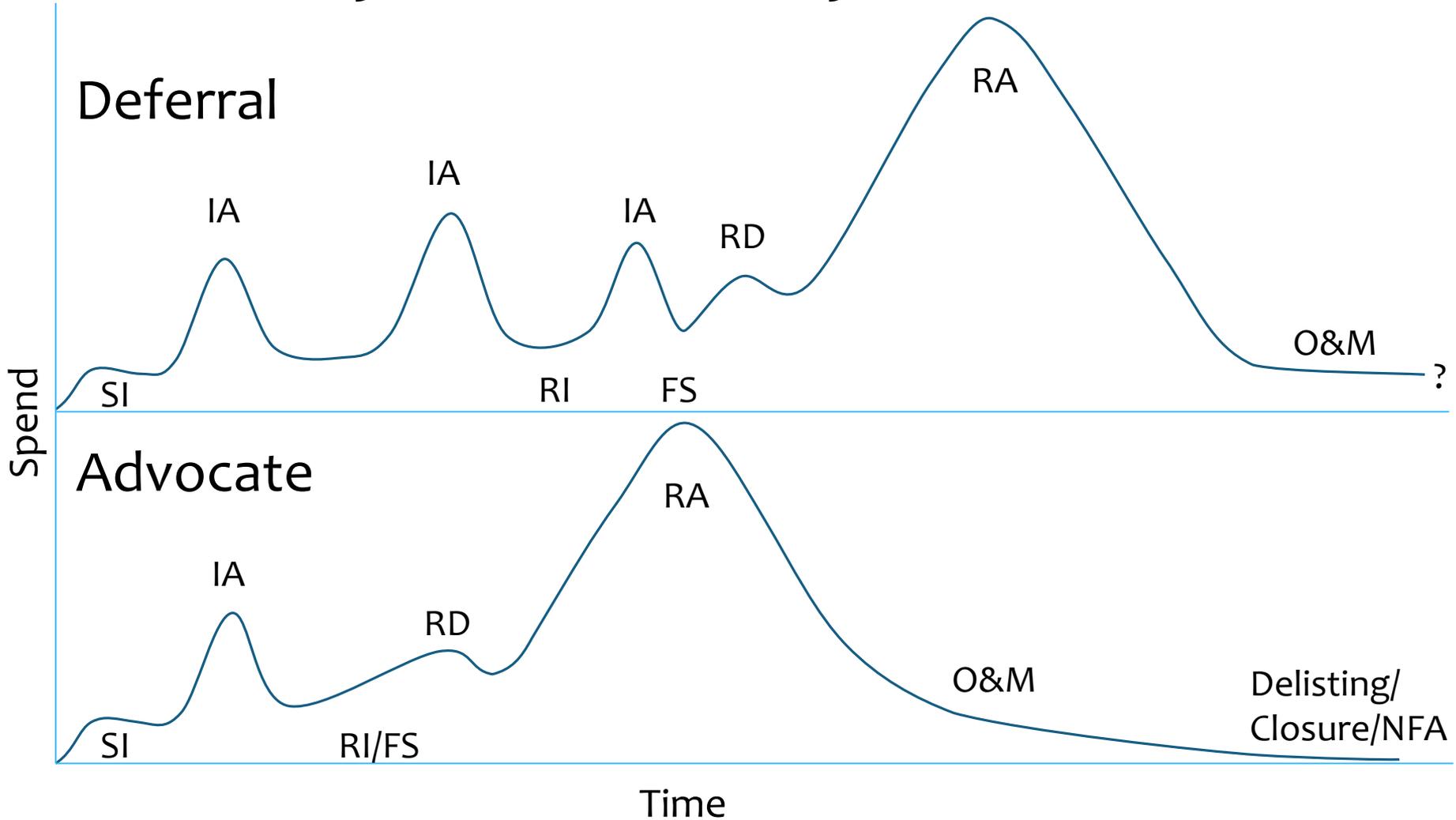
You might be in environmental hell
if ...

- ..there is endless characterization and data collection.
- ..there are multiple interim actions.
- ..there are constant stops and starts or direction changes.
- ..there are lots of private agency meetings with stakeholders.

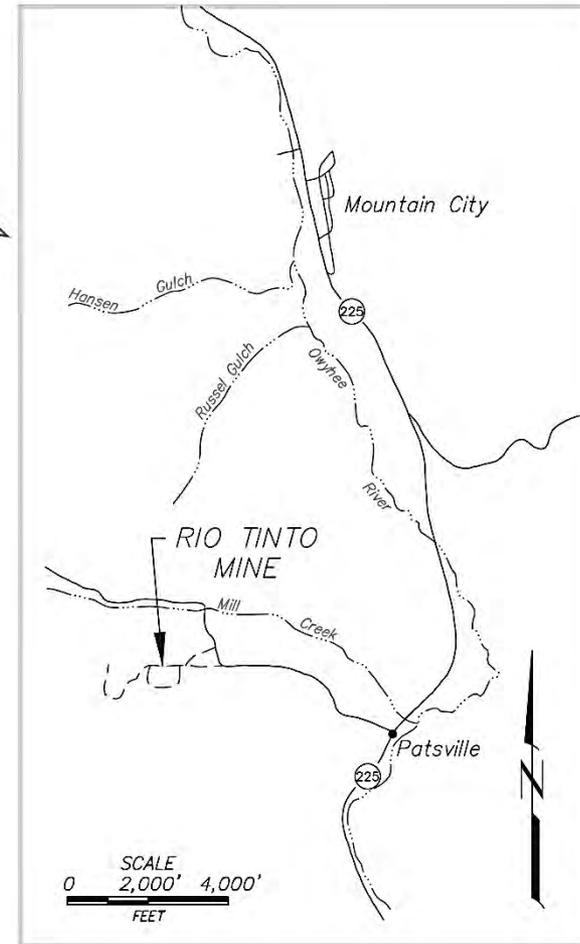
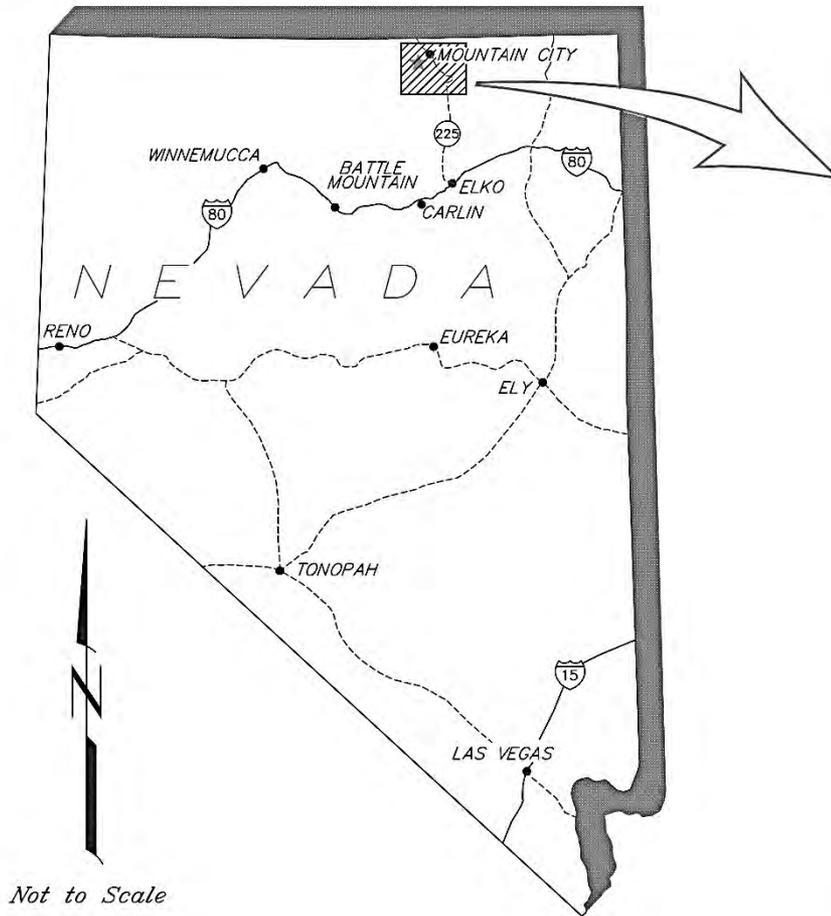
Interests

- * Agencies – policy, politics, funding
- * Tribes – duty, restoration, reparation
- * NGOs – duty, righteousness, politics
- * Elected Officials – duty, politics, reputation
- * Community – family, punishment, compensation
- * PRPs – cash flow, compliance, reputation

Pay Now or Pay Forever?

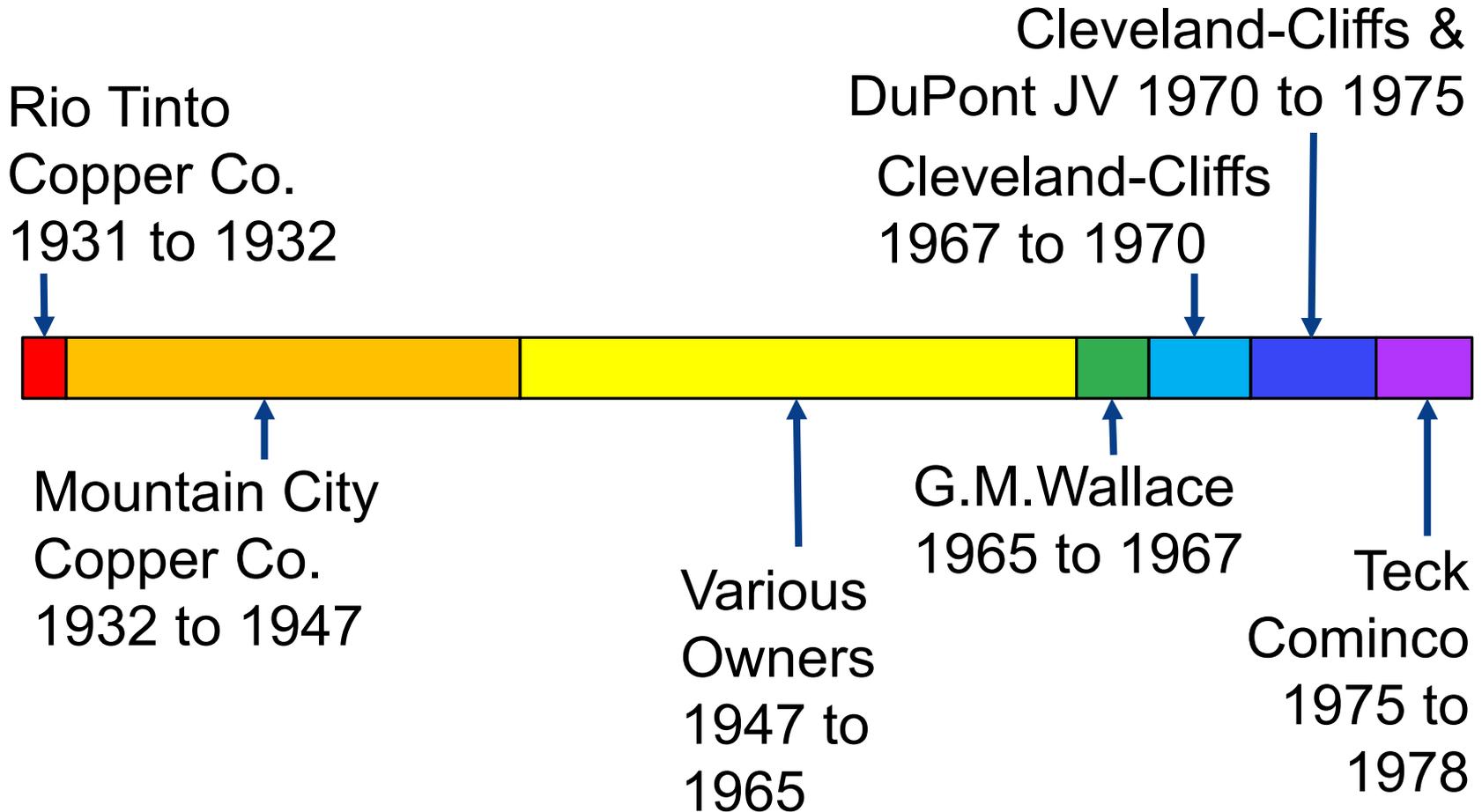


Site Location

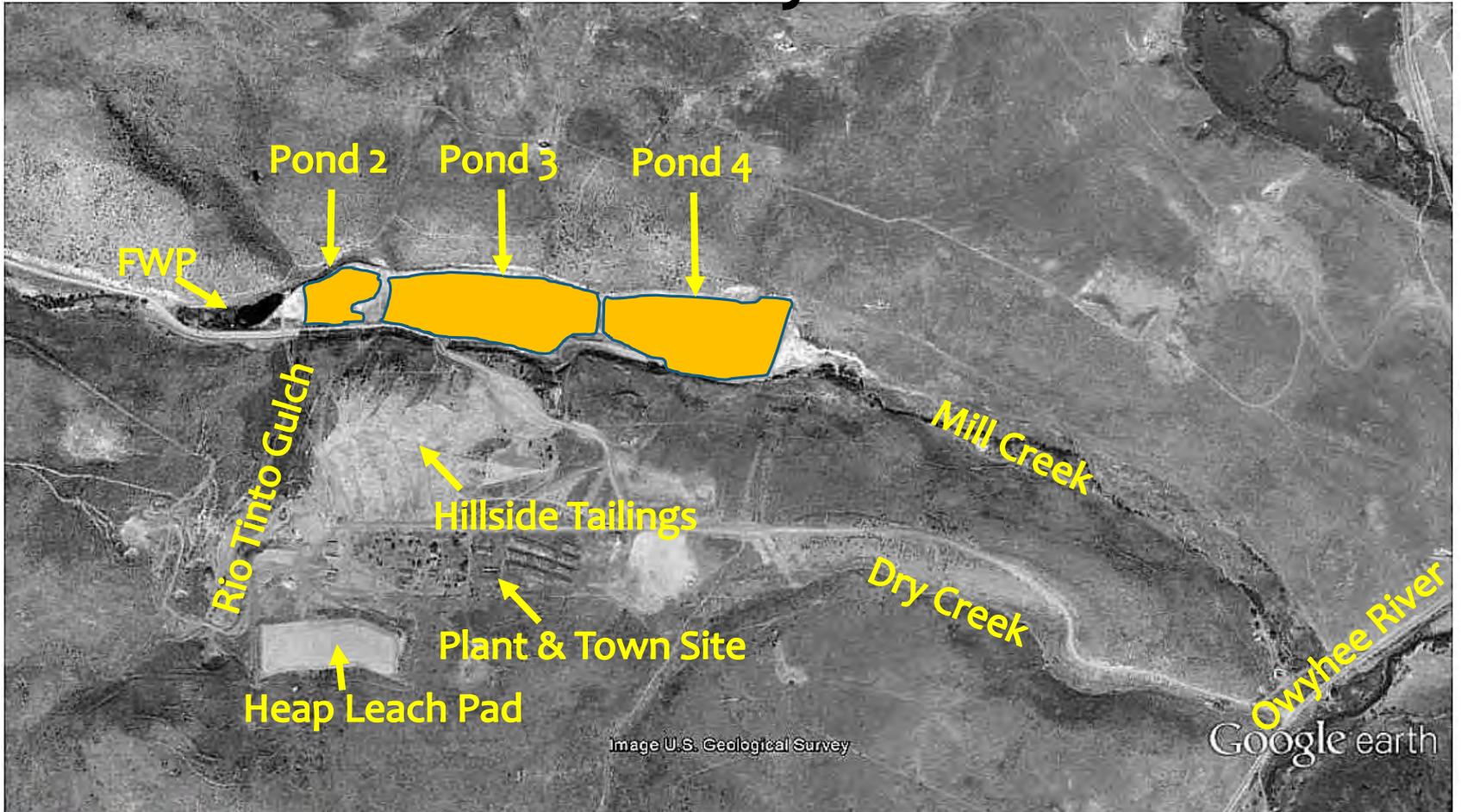


Rio Tinto Proposed Plan, October 2010

Operational History



Site Layout



Google earth



AMD



Tribal Successes and Challenges: Hazardous Waste Cleanup

Retrieved from: <https://archive.epa.gov/region9/tribal/web/html/hazwaste.html>

Valley Tailings Impoundment 1950's

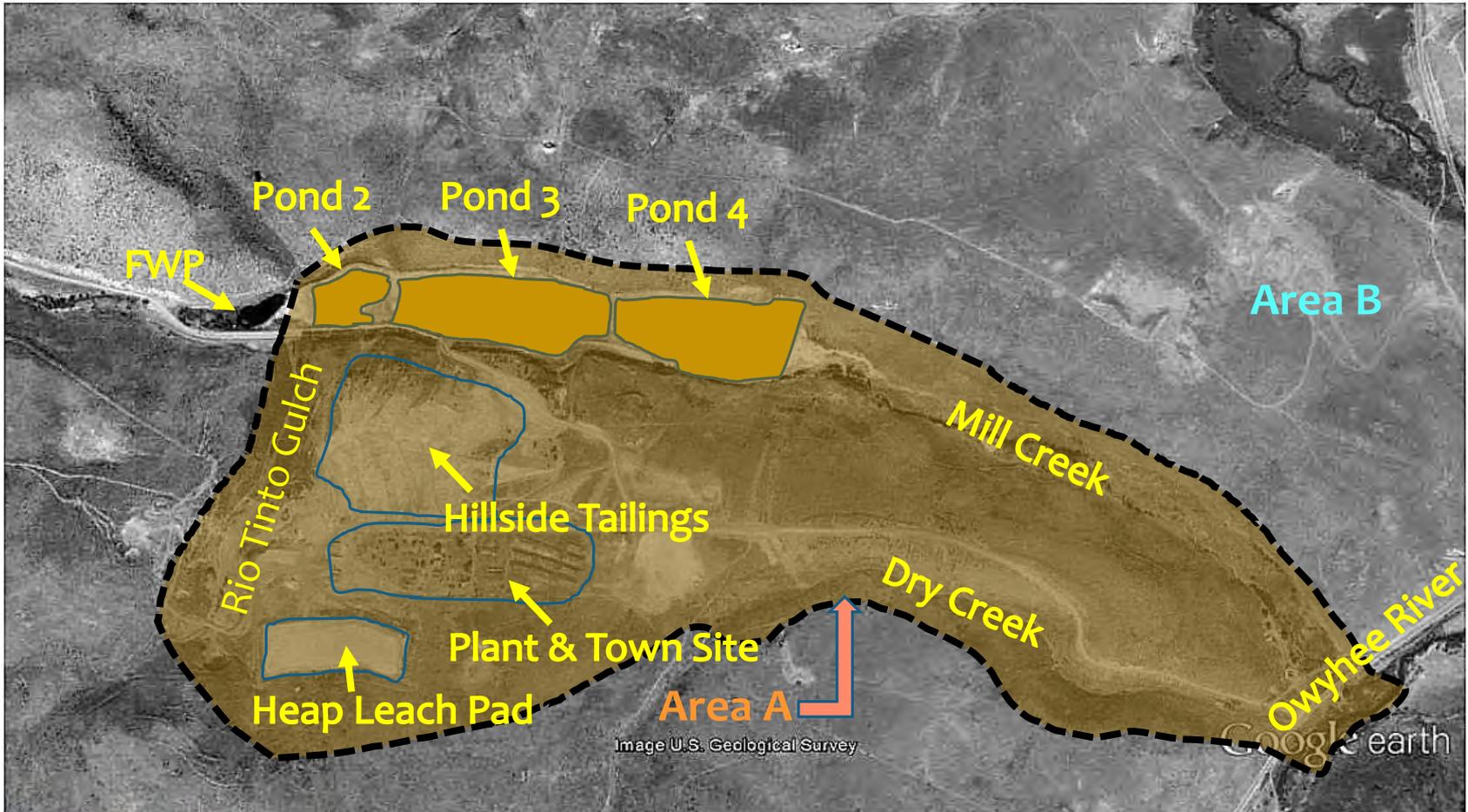


Intervention

- * 1986 consent order – fluvial tailings erosion control measures.
- * 1996 consent order – valley and hillside stormwater controls.

Adapted from NDEP Record of Decision (2012)

The Site Defined



2006 Area A Alternatives Study

Alternative 1 - No Further Action

Alternative 2 - Water Treatment

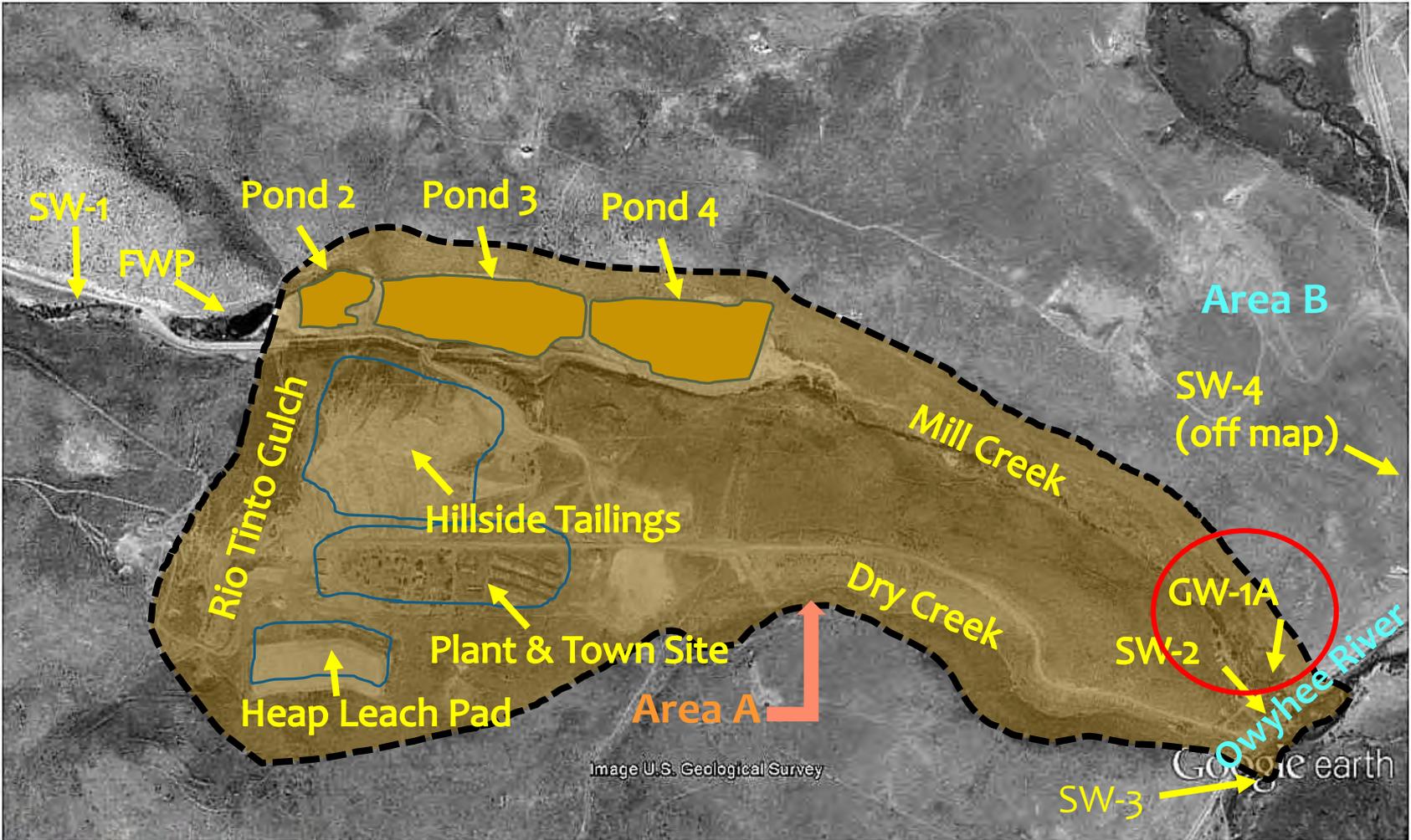
Alternative 3 - Remove Valley Mining Materials
+ Long Term Water Treatment

Final Draft Area A Alternatives Study. URS 2006

Just a bit more... 2007 AOC

- * Added cover materials and revegetated the Heap Leach Pad and Hillside Tailings.
- * Regraded Waste Rock Pile, installed cover and revegetated.
- * Improved Heap Leach Pad, Hillside Tailings and Waste Rock Pile drainages.

Adapted from NDEP Record of Decision (2012)



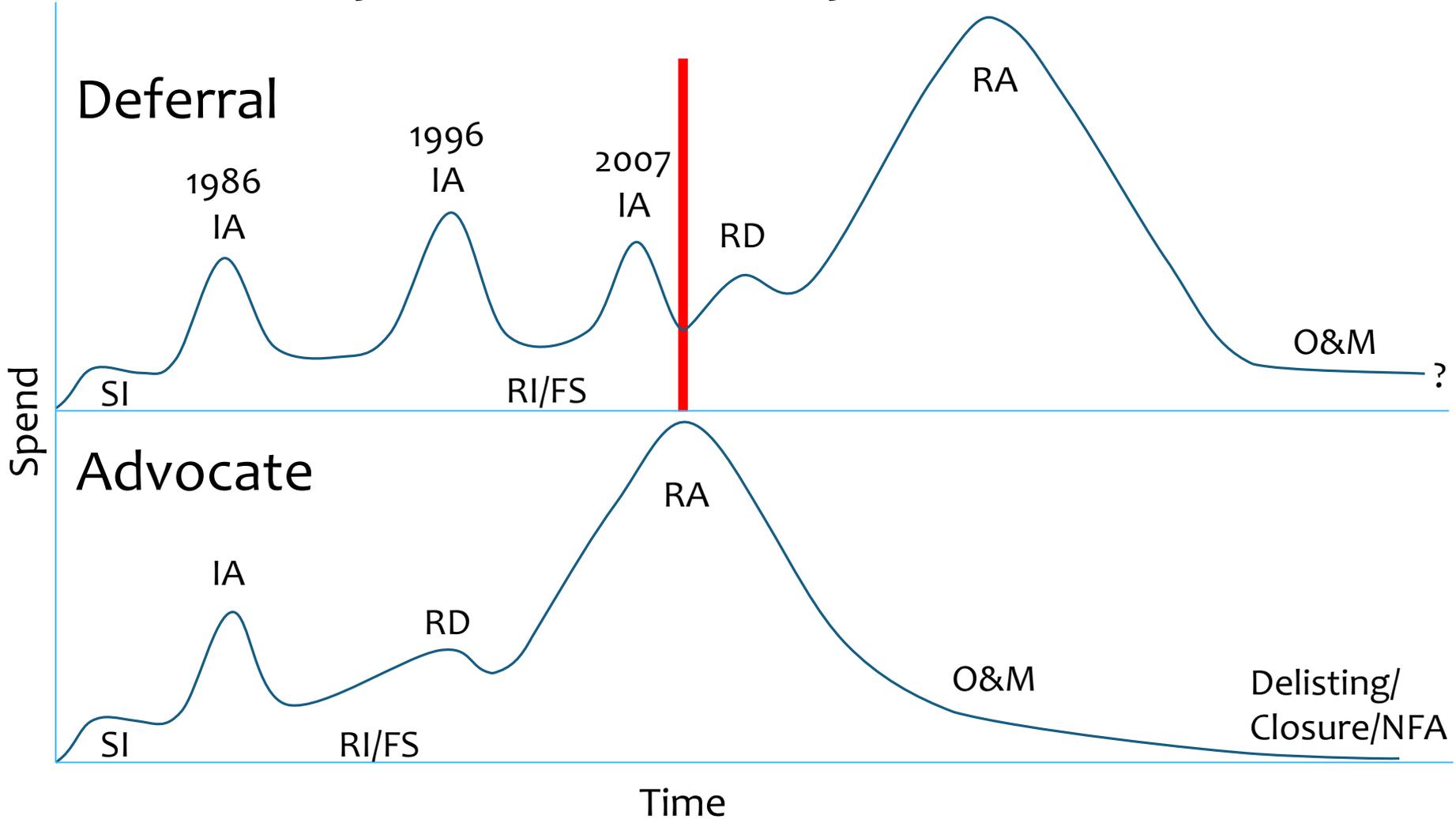
Time to Celebrate?



Not So Fast

- * EPA still does not view water treatment as a viable final remedy.
- * Trustees still want Mill Creek Valley restored.

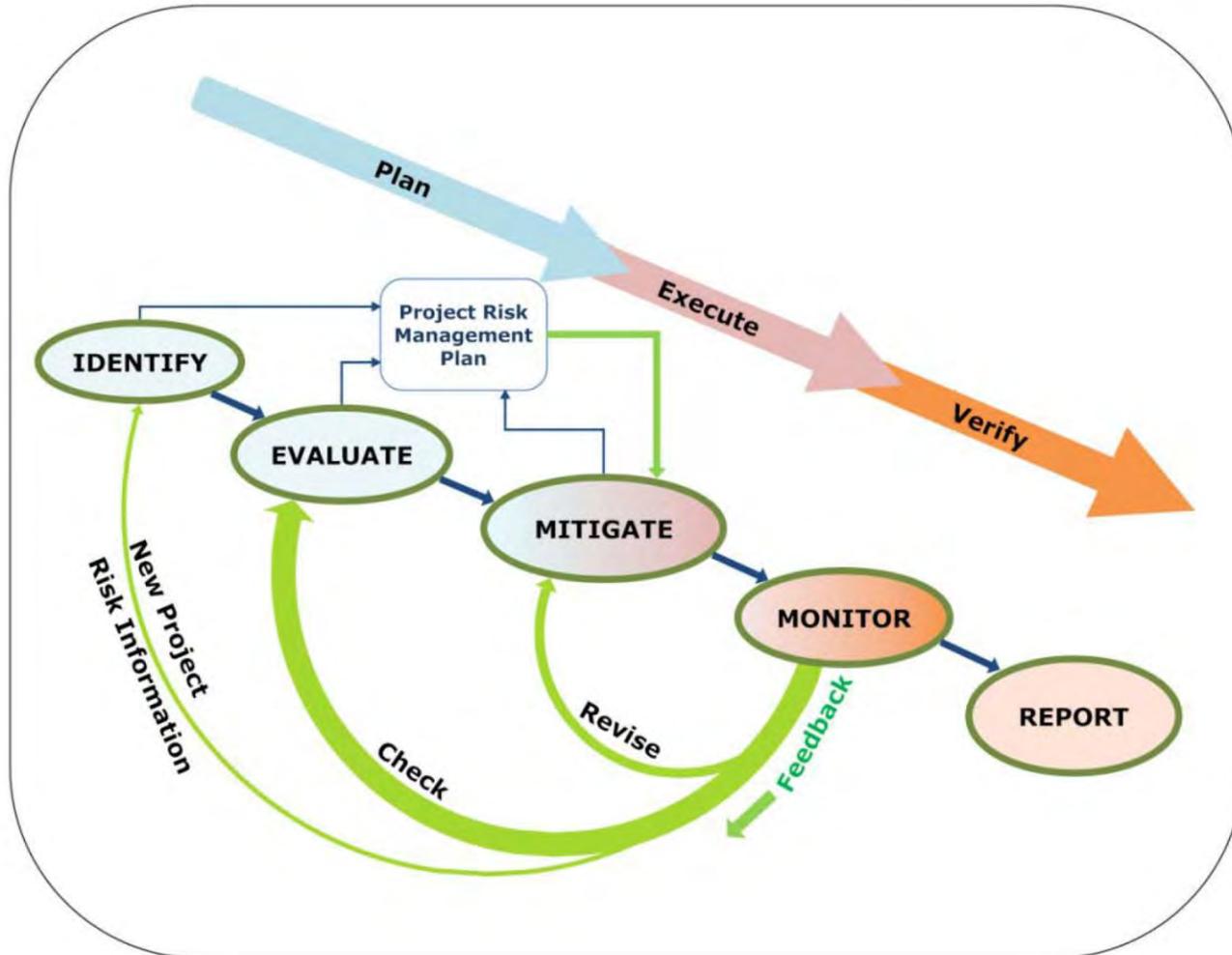
Pay Now or Pay Forever?



The Tipping Point

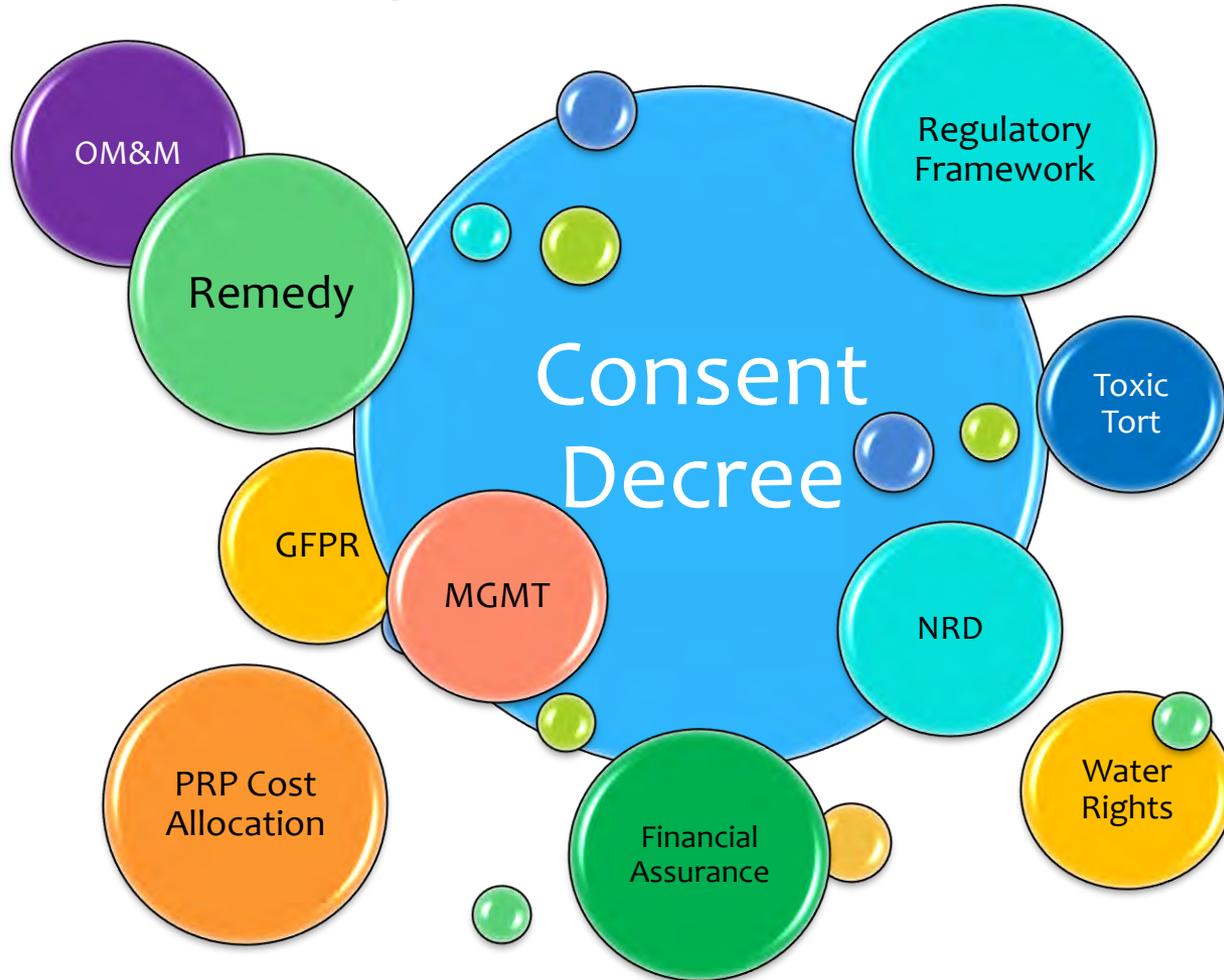
- * PRPs - Don't Blame Me!
- * Agencies – Who's driving the bus?
- * Trustees – Restore Mill Creek Valley and resolve NRD claim.
- * Property Owner – Who's going to compensate me?
- * Ranchers – We need access to clean water.

Endless Risk Management

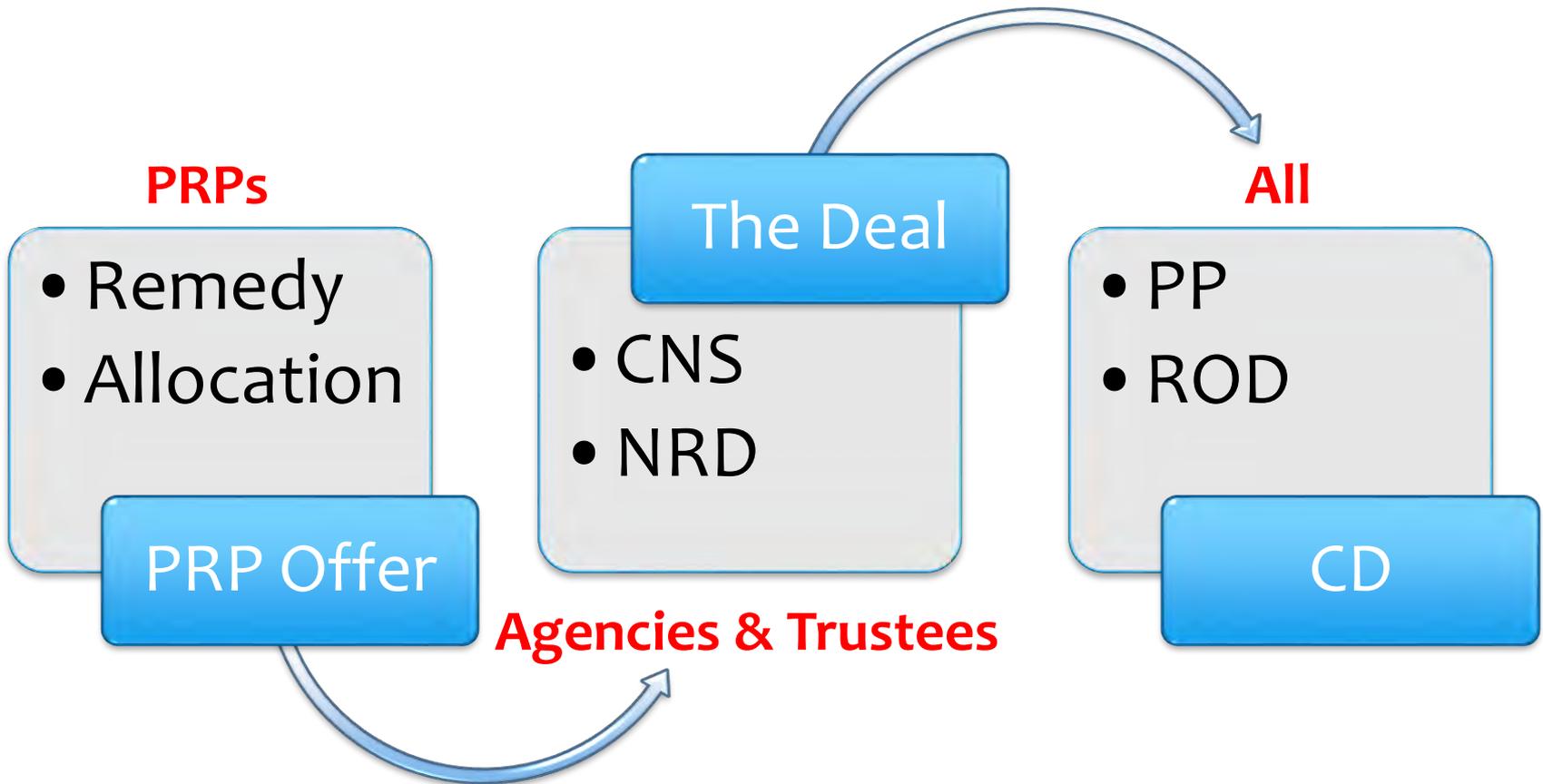


Project Risk Management For Site Remediation, ITRC (March 2011)

Cosmic Mess



The Path

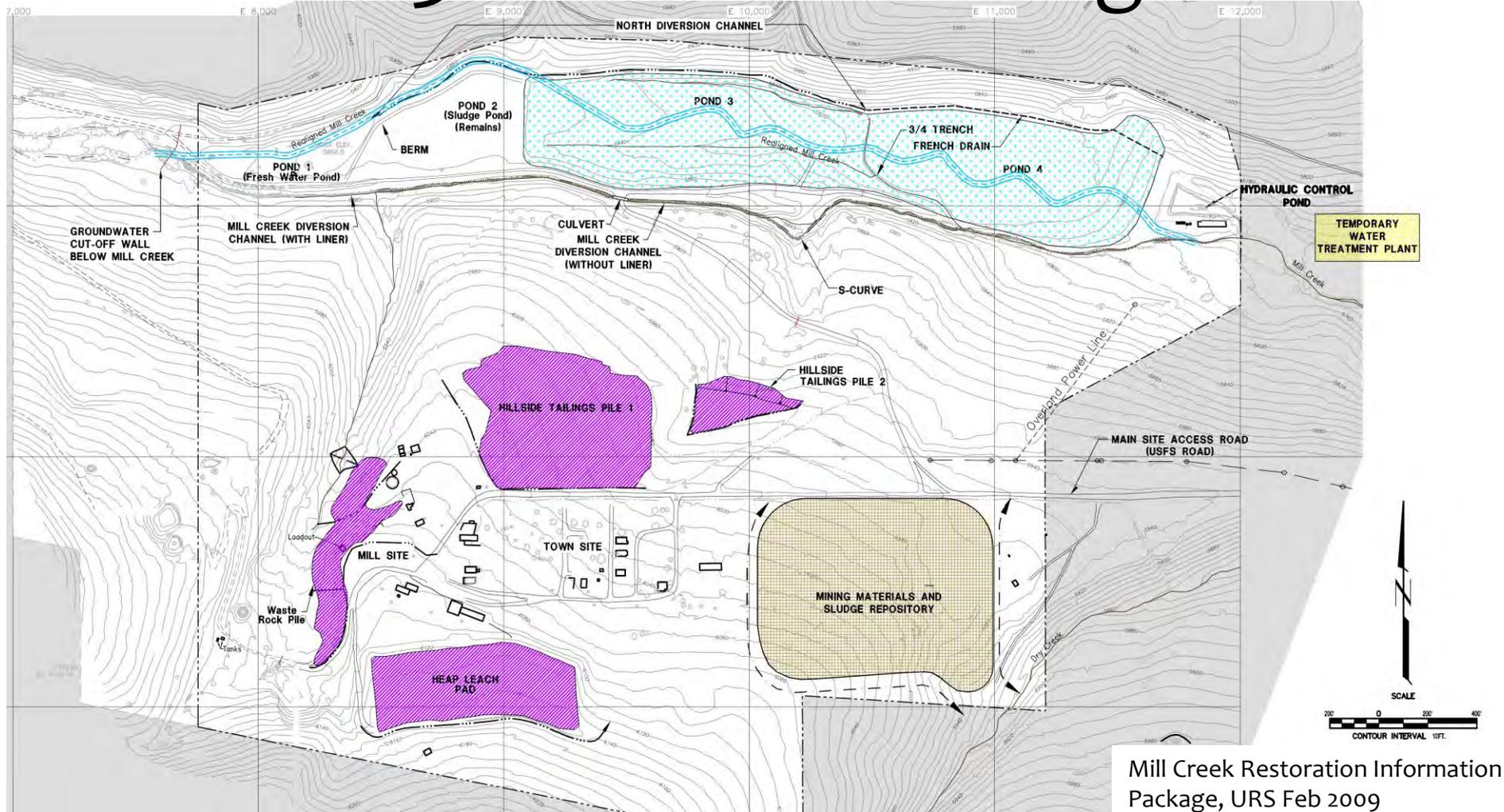


Step One

PRPs

- * “Sound science” supports water treatment
- * Each PRP believes the other is more at fault.

Alt 3A Remedial Design



Mill Creek Restoration Information Package, URS Feb 2009

Remedy Estimates

Adapted from Cost Estimate Summary for Alternatives 2012 ROD Appendix A

¹Note: ¹Rounded to nearest \$10,000 from original cost estimate.

	Alternative 2 Water Treatment	Alternative 3 Fluvial Tailings Removal	Alternative 3A Partial Removal
	Cost ¹	Cost ¹	Cost ¹
Construction Cost	\$13,400,000	\$29,000,000	\$17,980,000
O&M Costs	\$11,400,000	\$11,400,000	\$3,600,000
Total	\$24,800,000	\$40,400,000	\$21,580,000
Time to Complete Construction	2 years	3 years	4 years

Step Two

Agencies & Trustees

- * Nevada wants to retain lead agency role
- * EPA wants review authority
- * Trustees (Tribes) want tailings removed & NRD settled
- * PRPs want covenant not to sue protection

Proposed Plan

Adapted from Rio Tinto Proposed Plan, 2010

	Alternative 1: No Further Action	Alternative 2: Water Treatment	Alternative 3: Full Tailings Removal	Alternative 3A: Preferred Alternative
<i>Primary Criteria</i>				
1) Water Quality Objectives and Requirements	Fails	Meets	Meets	Meets
2) Overall Protection of Human Health and the Environment	Fails	Meets	Meets	Meets
<i>Secondary Criteria</i>				
3) Short-term Impacts	-	1 st	3 rd	2 nd
4) Long-term Effectiveness and Performance	-	3 rd	2 nd	1 st
5) Reduction of Toxicity, Mobility and Volume	-	3 rd	1 st	2 nd
6) Implementability	-	1 st	3 rd	2 nd
7) Economics (Cost)	-	1 st	3 rd	2 nd

The ROD

- * Move Tailings Ponds 3 and 4 to an on-site repository.
- * Realign Mill Creek to support fish passage.
- * Apply Institutional controls.
- * Implement a Water Quality Compliance Protocol
- * Monitor for Mine Pool influence to surface water (Ambient Monitoring Protocol).

Adapted from: NDEP Record of Decision (2012)

One More Headache The Property Owner

- * Mine property owner wants compensation.
 - Refuses fair market value offer from PRPs
 - Engages legal counsel and asserts that PRPs & consultants are trespassing.
- * EPA counsel offers to name property owner as responsible party.
- * **Access Granted. No more threats from the owner!**

Step Three

All Aboard?

- * Less than “model” consent decree language proposed
- * Use of Trust and Insurance for Financial Assurance
- * Covenant not to sue under Clean Water Act
- * State lead for Federal (CERCLA) CD
- * No mine pool remedy

Consent Decree

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEVADA

UNITED STATES OF AMERICA,
STATE OF NEVADA THROUGH ITS DEPARTMENT OF NATURAL RESOURCES,
DIVISION OF ENVIRONMENTAL PROTECTION and
THE SHOSHONE-PAIUTE TRIBES
OF THE DUCK VALLEY RESERVATION
Plaintiffs,

v.

ATLANTIC RICHFIELD COMPANY,
CLIFFS NATURAL RESOURCES,
E.I. DU PONT DE NEMOURS AND COMPANY,
TECK AMERICAN INCORPORATED., and
MOUNTAIN CITY REMEDIATION, LLC
Defendants.

CONSENT DECREE

Trustees

- * NRD claims settled
- * Funding for continued involvement
- * Hazardous tailings removed from valley floor
- * Mill Creek restored to its historic location
- * Vegetation restored within valley floor
- * Redband Trout migratory path restored

Agencies

Nevada

- * Retained oversight lead and averted Fed battle

EPA

- * Secured co-oversight role
- * Past costs settled and future costs guaranteed
- * Strengthened relationship with Tribes

PRP Wins

- * Resolved NRD
- * Resolved 3rd Party Liability (property owner)
- * Avoided costly CERCLA site process
- * Retained State lead
- * Limited removal of valley tailings
- * Phased surface water compliance
- * No Mine Pool remedial action
- * CERCLA Remedy with covenant not to sue
- * Use of environmental trust and insurance (FA)

2014 Construction



Lessons Learned

- * Deferral strategies rarely achieve the lowest life-cycle cost.
- * Never discount stakeholders' interests and influence on site work or remedy selection.
- * If you find yourself in “environmental hell” then enlist the right expertise to develop a path to a holistic solution.

Additional Reference

Adam S. Cohen and Elizabeth H. Temkin (March 3, 2014). **The Rio Tinto Mine Site, Elko County, Nevada: A CERCLA Case Study.** *Superfund and Natural Resource Damages Litigation Committee Newsletter*

Retrieved from:

<http://www.dgslaw.com/publications?id=1161>

If you would like more information regarding this presentation, or interested in re-evaluating your environmental strategy, feel free to contact me at
roy.thun@bridgeenviro.com
Office: 1-661-287-3855

Thank You

Web: www.bridgeenviro.com