

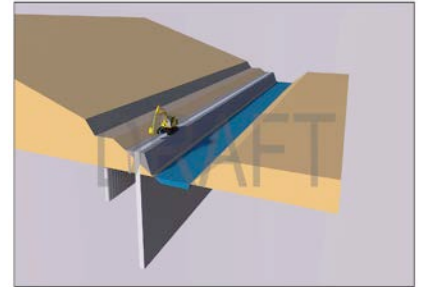
# HOLDEN MINE REMEDIATION PROJECT UPDATE

April 29, 2015

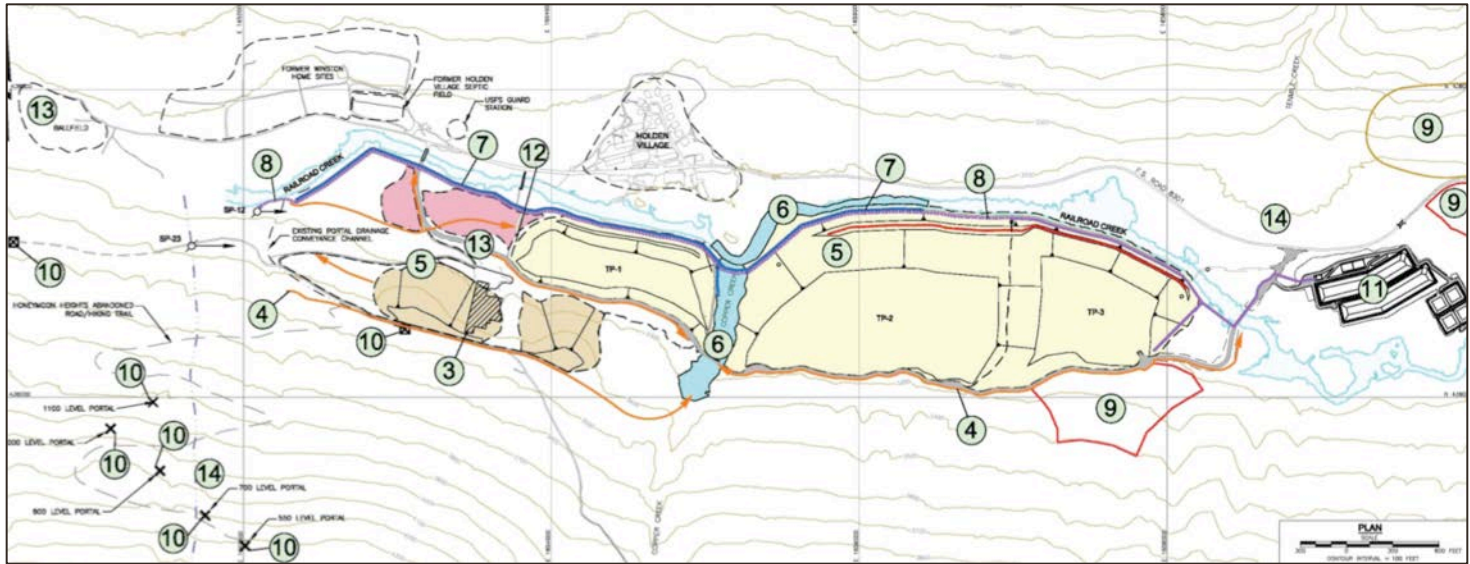


## 2014: a big and busy year

- Cleanup work began in 2012
- 2013 first year of heavy construction
- 2014 bigger and busier:
  - Installing the below ground barrier wall to collect contaminated water
  - Re-grading and stabilizing tailings



## Phase 1 Remediation Plan



*Preliminary, under review by regulatory agencies*



## Remediation Plan



*Cap regraded tailings with crushed stone and growing medium, then plant*



*Demolish mill building*

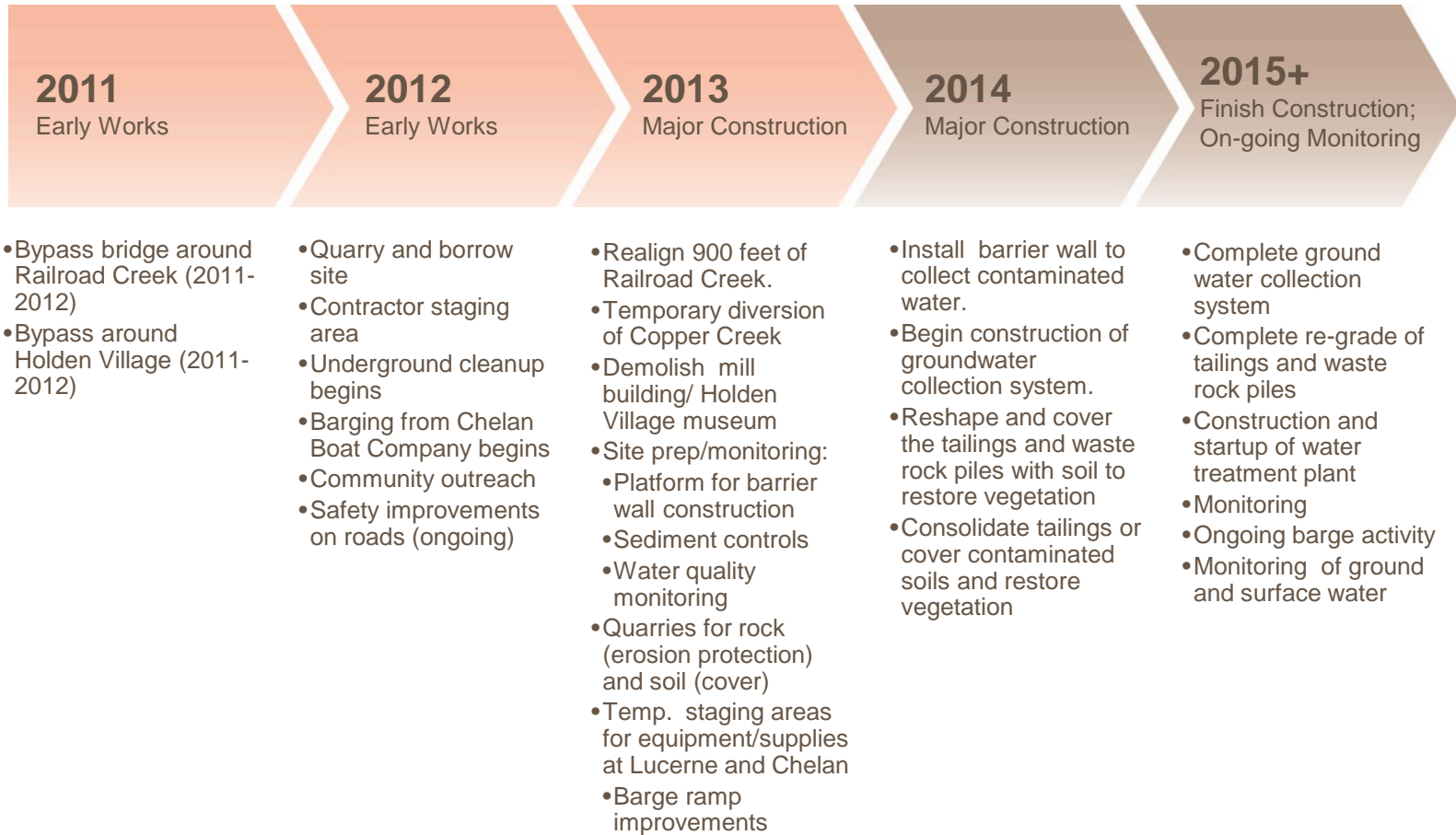


*Regrade tailings to prevent leaching into Railroad Creek*



*Iron staining in creek will eventually dissipate after cleanup*

## Timeline





## Railroad Creek Alignment



## Copper Creek Diversion





# Mill Building Demolition





## Initial Tailings Re-grading



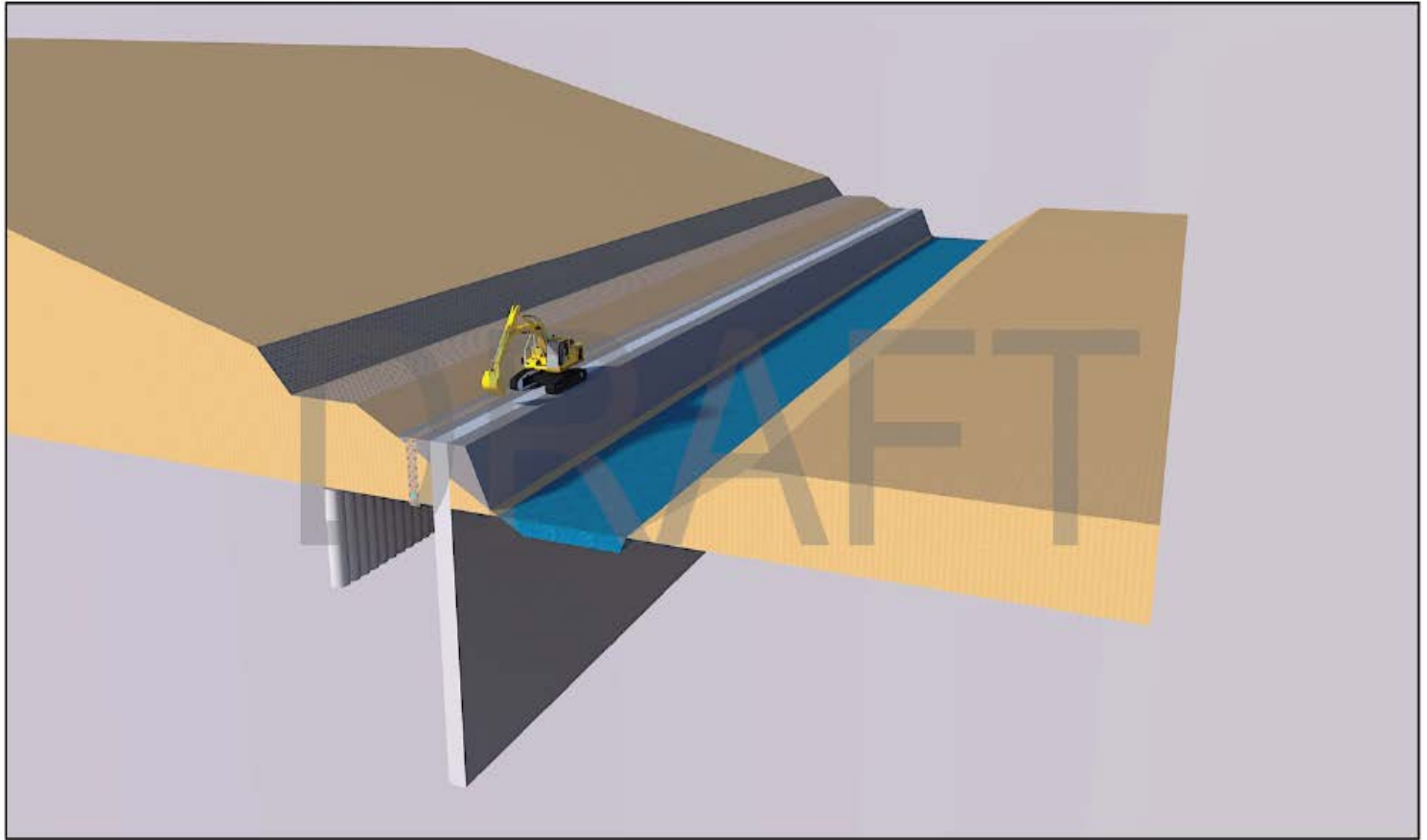


# Barrier Wall Platform





# Barrier Walls to Improve Water Quality

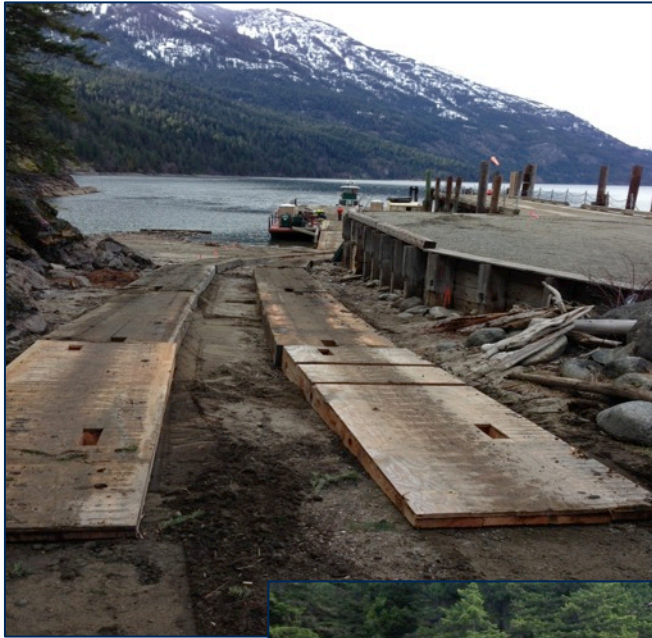


# Chelan Boat Company Parking Lot





# Lucerne Barge Ramp



## Barge Safety, Schedule & Cargo

### **Safety**

- Barges have been operated safely on Lake Chelan for decades
- Operators trained extensively; protocol is in place to deal with emergency situations
- Barges scheduled to avoid highest-use times on lake

### **Schedule**

- Average of three barge trips a week between the Boat Company and Lucerne in 2014.
- Barges leave early morning and return in the afternoon or evening – barges run seven days a week
- After the cleanup is complete in 2016, a monthly shipment of lime for the water treatment system will be required for many years to come.

### **Cargo**

- Barges transport all equipment and supplies needed for cleanup project, including backhoes, dump trucks, pickup trucks, cement, etc.
- Special precautions are taken for the storage and transportation of fuel for vehicles and explosives for blasting of rock



# Underground Portal





## Temporary Maintenance Bldg for Holden Village





## Dining Hall and Catering Services



## Economy and the Community

- 370 jobs over the life of the project; 60% from Central Washington.
- 30+ million in local expenditures
  - Camp support and leasing
  - Ferry services, storage area rental, marine transport
  - Equipment rental
  - Fuel
  - Subcontracted and professional services
  - Local lodging
  - Construction related goods and services
- Additional 50% in value will be generated in the community through the multiplier effect





## Community Partners



## What's Ahead: 2014-2015+

- Complete barrier Wall, if necessary
- Complete ground water collection system, if necessary
- Re-grade tailings and waste rock piles
- Complete all of Railroad Creek Relocation
- Startup of water treatment plant
- Permitting/environmental studies/licensing for hydropower plant
- Monitoring
- On-going barge activity



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