



The Bodie Mine Project:

Incorporation into the novel Good Sam Process

MMSA Annual Good Sam Summit

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Bodie Mine

Location/Background

- Bodie Mine discovered in 1897 along Toroda Creek while Bodie Mining Company established in 1902 by Henry Dewitts.
- After 1902 a 10-Stamp 20tpd mill was operated for mercury amalgamation since Au had been discovered prior to mining
- 1st period of mining 1902 – 1916 while 2nd period of operation by Northern Gold ranged between 1934-1941 with an updated 125 tpd ball mill.
- Total estimated production is 50-70,000 tons of ore valued at \$410,000 to \$1.3M
- Former mining features (bunkhouse) are listed on register of Okanogan Historical Society while mill burned down in 1962 ending the mining period on site.
- Total development is approximately 10,000 feet of adits, drifts, stopes, glory hole, and open pit.
 - **Six adits lie on west facing slope driven east at right angles into the vein**
 - **Longest horizontal development on vein was 1,000 ft at 400 level**
 - **Lowest development is 90 ft winze sunk from 400 level giving vertical extent of 450 feet**

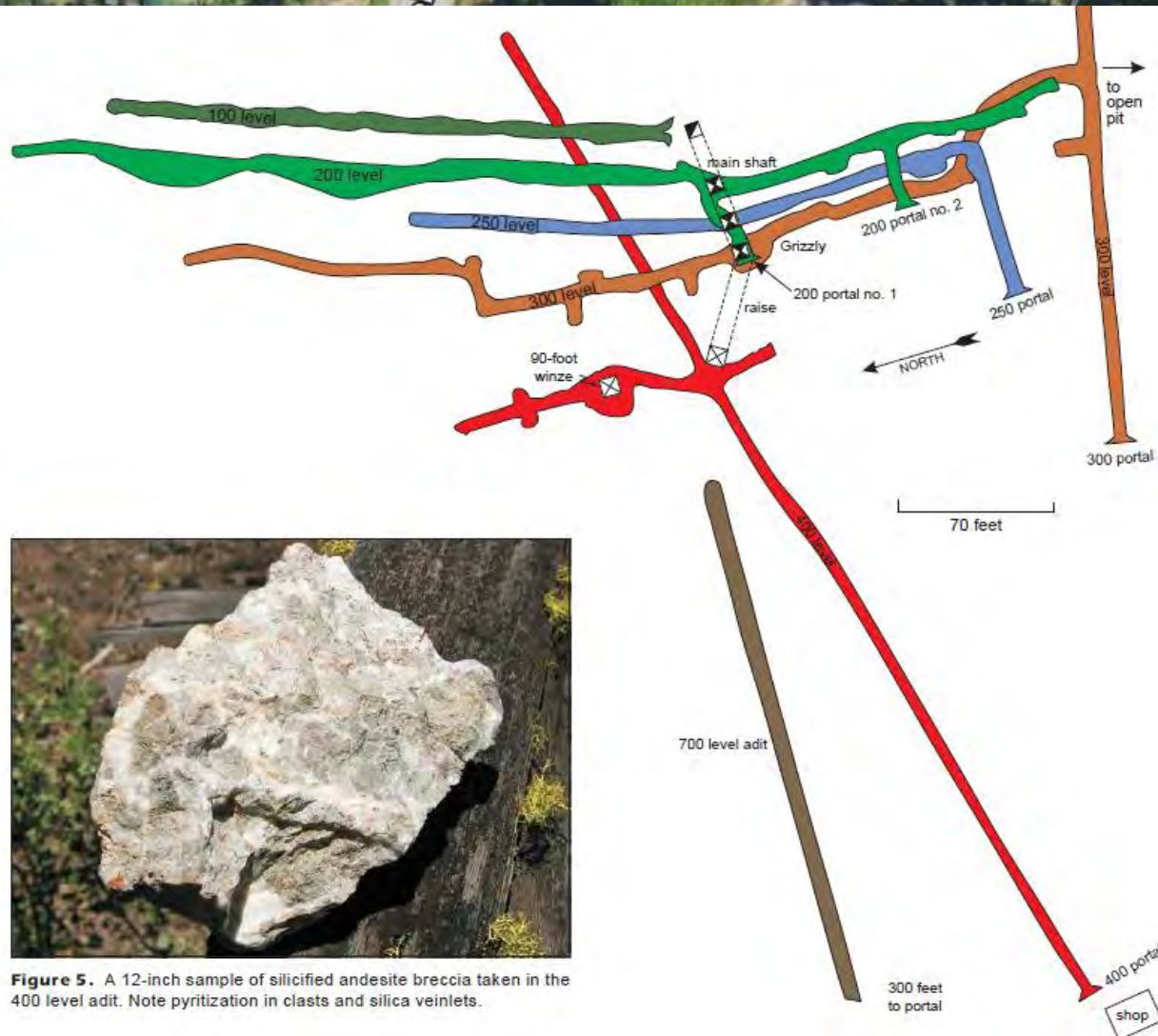


Figure 5. A 12-inch sample of silicified andesite breccia taken in the 400 level adit. Note pyritization in clasts and silica veinlets.

Source, Type, Extent of Contamination

- **Tailings exposed on cut bank along east bank of Toroda Creek.**
 - Covering an area of 6.5 acres with 4 feet thick on margins and 8 feet thick closer to former mill site.
 - Estimate of 30-40K CY
- **TU estimated erosion rates of up to 104 tons/year of contaminated sediment migrating from site**
- **Baseline samples from 2018 & 23**
 - ND to 83 mg/kg for As
 - ND to 3.6 mg/kg for Hg
 - Four sample locations exceed WA sediment management levels of 14 mg/kg for As and 0.66 mg/kg for Hg.
 - As also exceeds BLM Rec SL (30.6) & EPA Residential and Industrial SLs (0.68 and 3)



Project Approach



- Dewater per plan.
- Excavate and stockpile 1,100 CY of material from streambed and east-bank along 400 LF section of Toroda Creek. Create two stockpiles for streambed and up to 790 tons of tailings for confirmation sampling and off-site disposal as needed.
- Use confirmation testing to determine whether stockpiled materials can be reused or must be hauled to a Subtitle C or D landfill.
- Reconstruct the creek channel and bank grades with approved clean streambed material or imported rock/riprap mixture.
- Reshape and stabilize the east streambank using combo of excavated streambed material & imported clean fill to construct coir-fabric encapsulated soil lifts.
- Revegetate disturbed areas using an Ecology-approved biochar/compost amendment, native seed mix, and 300–400 native plants.
- Achieve goals by removing the contaminant source, reducing erosion and sediment loading to Toroda Creek, and improving riparian habitat/veg.

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Project Approach

Dewatering and Stormwater Protection controls

Work in the dry using bypass pipe, cofferdams, seepage pumping, and fish exclusion netting. Turbid and non-turbid water piped to upland areas while BMPs used around stockpiling, hauling, and revegetation areas.

Soil verification sampling

Pothole and confirmation sampling during construction to determine reuse vs. off-site disposal location. Analyze materials for total metals and TCLP. Elevated TCLP conc defined as results greater than 20X dangerous waste criteria per WAC 173-303

Post-project & effectiveness monitoring

Annual photo points, vegetation monitoring, bank pins, and bank migration measurements. Three-year monitoring period aligned with OCD and Ecology grant requirements aligning with Good Sam permit period.

Table 4. Samples to be Collected During Construction at Toroda Creek.

Sampling Location Project Stage	Sample Method	Number of Samples to be Collected	Analytical Parameters
Right Bank - Materials to be Excavated	Composite soil/tailings (grab)	3	Total metals ^a and TCLP ^b as needed
Right Bank - Materials to Remain in Place	Discrete soil/tailings (grab)	3	
Streambed – Materials to be Excavated	Composite sediment (grab)	4	
Backfilled Streambed	Composite sediment (grab)	2	

^a Total metals include arsenic, cadmium, copper, lead, mercury, selenium, and zinc.

NOTES:

1. SAMPLE LOCATIONS ARE APPROXIMATE.
2. PRE-DESIGN RIGHT BANK SAMPLES WERE COLLECTED DIRECTLY FROM THE EXPOSED CUTBANK, WITH TWO COMPOSITE SAMPLES COLLECTED FROM EACH LOCATION (ONE FROM THE UPPER STRATA, AND ONE FROM THE LOWER STRATA).

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Bodie Mine Good Samaritan Project Timeline

Part 1: Scoping, eligibility review, EID development, EA, and initial application concepts over first 6 months

- **Bodie mine planning efforts date back to 2015**
- **Substantial progress took place over 2023-2025 through engineering, design, and permitting**



Major workstream progression

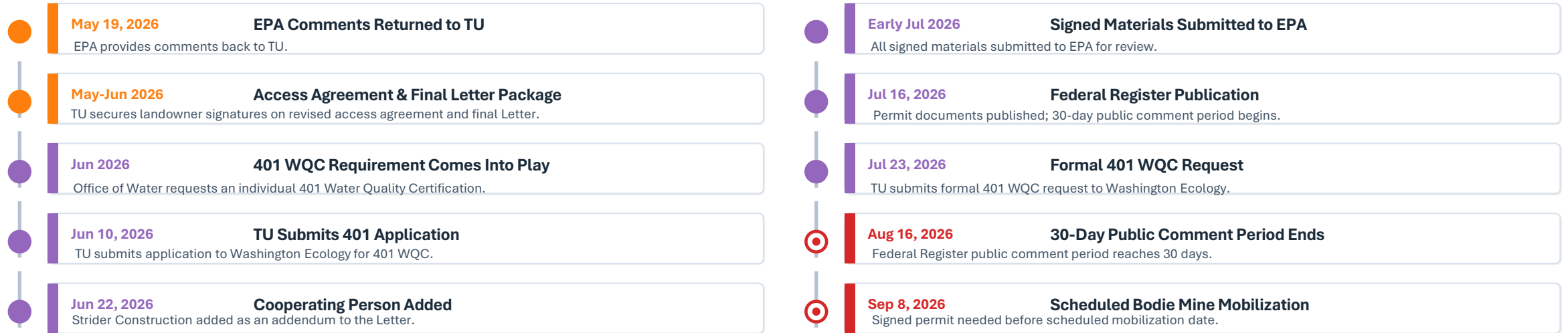
Scoping / Eligibility / EID

EA / Application Concepts

Letter Concept

Bodie Mine Good Samaritan Project Timeline

Part 2: EPA comments, final package, 401 WQC, public notice, comment closeout, and final push. Final 5-6 months



- **Final permit details TBD**
- **Alternatives for permitting to allow construction to still take place. 107(d) Letter.**

FULL TIMELINE: Approximately 11 months from initial Good Sam discussions to the scheduled September 8, 2026 mobilization date.

Major workstream progression

EPA Comments / Access & Final Letter

401 WQC / Final Package / Public Notice

Closeout / Mobilization Readiness

Permits

- **Section 4 (f) content of permits and (n) effect of permits**
 - To permit or not to permit?

Agency	Permit / approval	Purpose / status
USACE	NWP 13	Bank stabilization
USACE	NWP 33	Temporary construction access and dewatering
USACE	ESA/MSA/NHPA	Concurrence / associated consultations completed during NWP review
WA Ecology	401 WQC	Deferred as covered under general NWP requirements; separate 401 not necessary
Washington State	JARPA	Joint Aquatic Resources Permit package
WDFW	HPA 2025-2-8+01	Hydraulic Project Approval
WA Ecology	CSWGP WAR314513	Construction Stormwater General Permit and SWPPP
WA DNR	Land Use Permit	Access, staging, and temporary stockpiling on adjacent lands

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Lessons Learned and Takeaways

- **Adapting the prior Bodie project track from WA MTCA to Good Sam had its nuances**
 - **Numerous permits written under the guise of one regulator process that was different than Good Sam**
 - 4(n) specifies that a Good Sam undertaking a project is in compliance with all requirements of the FWPCA *and* no "authorizations, licences and permits" are needed that would not be needed if the project were conducted pursuant to CERCLA.
 - However, other 4 (n) and (f) sections say Good Sam not required to comply with 301, 302, 306, 307, 402, 404 of FWPCA (401 is not one of the enumerated CWA sections)
 - If 401 certifications are not required for CERCLA projects, are they required for Good Sam projects?
 - **Adapting previously written permits and summaries to focus on Good Sam specific section 4(c) language was required**
- **Turnover at TU from prior PM and lack of consistent file structure was challenging**
 - Several documents unsigned, expired, or not finalized that needed signatures to formalize the process
- **Maintaining close relationship with property owner(s) is important as scrutiny will take place during eligibility period**
- **Craft your project with terminology, process, and Good Sam in mind from the beginning.**

