



# STIBNITE CLEANUP REPORT

2021 - 2023

APRIL 2024

**PERPETUA RESOURCES**





# THIS REPORT

The following report summarizes Perpetua Resources' activities between 2021 and 2023 to fulfill the obligations of the voluntary agreement between Perpetua Resources, the Environmental Protection Agency, and the U.S. Forest Service to address the most pressing and time critical impacts of legacy mine waste left behind after nearly a century of mining activity.

For decades, ground and surface water at Stibnite have suffered from elevated levels of arsenic and antimony. While we did not cause the problems impacting water quality today, we have always been clear on our intentions to be a part of the solution.”

– Laurel Sayer, President & CEO (2016-2024)



# SUMMARY

**\$17M**

INVESTED

## LEGAY CLEANUP

**Perpetua Resources (Perpetua) invested ~\$17 million** in early-action water quality and restoration improvements at the historic Stibnite Mining District as a result of the voluntary 2021 Administrative Settlement Agreement and Order on Consent (ASAOC or Agreement) between Perpetua Resources, the Environmental Protection Agency (EPA) and the U.S. Forest Service.

With the approval of the EPA and U.S. Forest Service, Perpetua and its crews removed over 325,000 tons of legacy waste rock and tailings, installed stream diversions, and restored river habitat and connectivity to address the most time-critical environmental and human health needs at the abandoned mine site between 2022 and 2023.



# LEGACY SITE

## BACKGROUND

Two major Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) agreements, issued between 2002 and 2012, left the Stibnite Mining District without a responsible party for the legacy impacts incurred from private and government-contracted mining work that stretched across the 20th century.

These impacts included millions of tons of unconstrained legacy tailings and waste that leach arsenic and other metals into ground and surface water.

When the Stibnite Gold Project (Project) was first considered, Perpetua Resources (then Midas Gold) recognized the unique opportunity to use modern mining to address the environmental challenges facing water quality, habitat, and fish passage. Thus, the Project married responsible gold and antimony redevelopment, which serves as the economic engine for our Project, with our vision to restore the site.

However, questions remained. In particular, how could a private entity take on cleanup actions addressing a century-old mess and avoid inheriting the liability of the past actors? And how could the Company, who never operated on the Stibnite site, gain authority to conduct voluntary cleanup on CERCLA sites?





# CLEANUP AGREEMENT

## ADMINISTRATIVE ORDER

Between 2018 and 2021, Perpetua engaged with EPA and the U.S. Forest Service to shape a path forward on legacy cleanup. By 2020, both the Nez Perce Tribe and the Shoshone-Bannock Tribes were included in the discussions with EPA, and the framework of the ASAOC began to take shape.

The final ASAOC was signed in January 2021 and consists of three primary phases.

### **Phase 1 - Time Critical Removal Actions to Improve Water Quality**

- **Water diversions** to move water so it may avoid contaminated areas of the site
- **Removal** of at least 325,000 tons of historical mine waste rock and tailings from problematic locations affecting water quality
- **Biological Assessment** of conditions at Stibnite
- **Clean Water Act evaluation**
- **Cultural Resource Survey**
- **Financial Assurance**



# CLEANUP AGREEMENT

## ADMINISTRATIVE ORDER

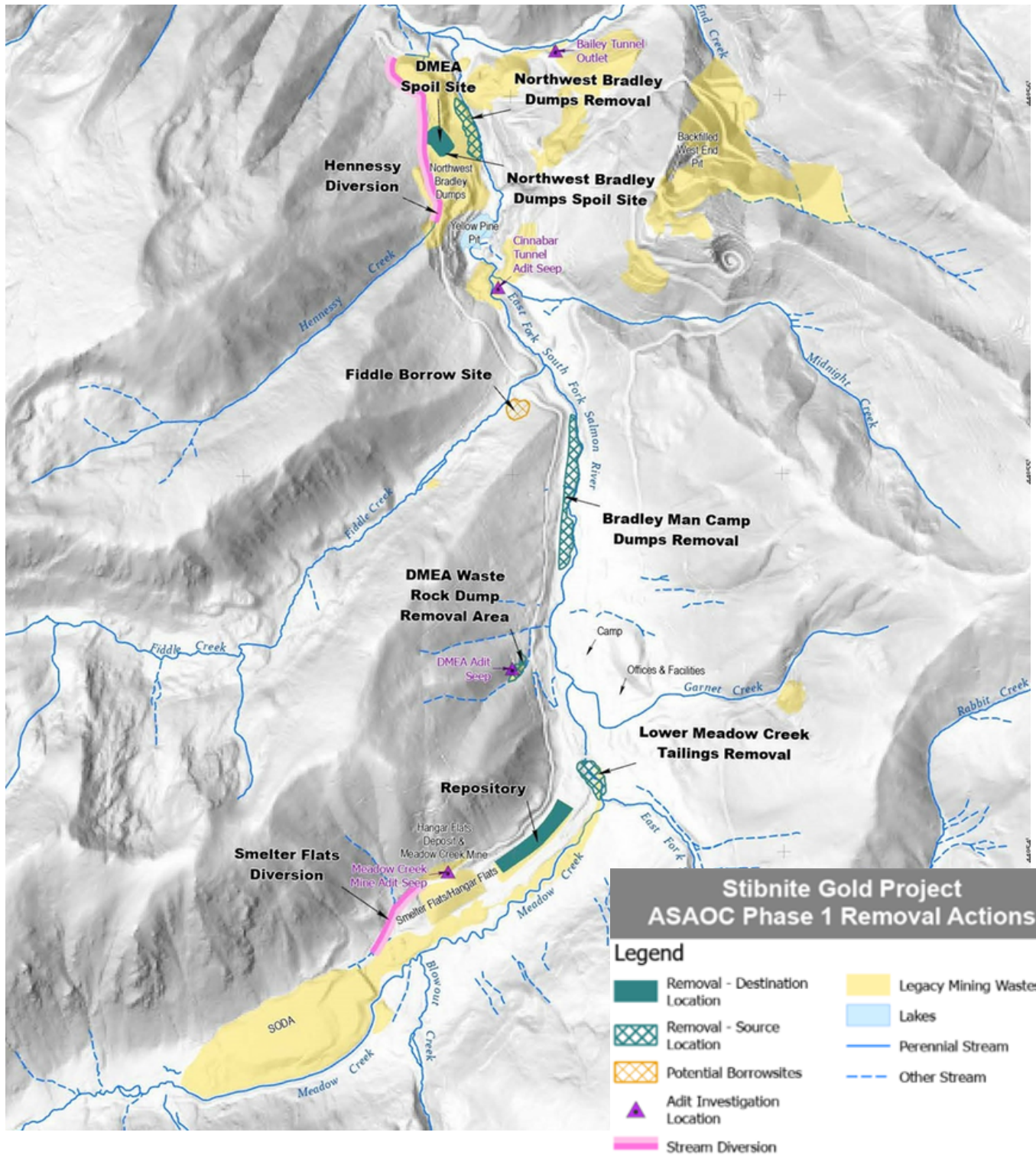
### Phases 2 & 3 - Industrial Scale Action

If the Stibnite Gold Project moves forward with approved mining under federal and state law, Phases 2 and 3 of the ASAOC provide the opportunity for comprehensive and site-wide cleanup of legacy features and waste.

Under the supervision of the EPA and U.S. Forest Service, the agreement provides the Company the opportunity to address legacy areas that are not included in the restoration activities proposed by the Stibnite Gold Project.



# PHASE 1 - IMPLEMENTATION





# LOWER MEADOW CREEK REMOVAL & RESTORATION

**25,000**  
TONS REMOVED

## LOCATION

The Lower Meadow Creek Tailings are located just upstream of the box culvert where the East Fork South Fork of the Salmon River and Meadow Creek converge. This area was first disturbed in the late 1920s to early 1930s to capture water for power generation before serving as the location for at least three tailings dams during World War II and the Korean War era.

## LEGACY

Soil samples in this region indicate levels of arsenic and antimony exceed EPA regional removal management levels (RMLs). In addition to leaving legacy tailings behind, historical activity disturbed the course and severely impacted the quality of habitat in Meadow Creek.

## WORK PERFORMED

In 2023, Perpetua and its teams removed 25,000 tons of tailings material and relocated it to the On-Site Repository. Perpetua also performed river restoration work to repair and enhance the quality of habitat through reconstructing the natural stream channel, increasing floodplain connectivity and creating a robust riparian corridor by planting and seeding native species. The return flow contains minimal levels of turbidity and the ponded area is expected to promote the development of wetland features.





# BRADLEY MAN CAMP DUMPS

**200k**  
TONS REMOVED

## LOCATION

The Bradley Man Camp Dumps are located on the west bank of the East Fork South Fork Salmon River, and entirely on the Payette National Forest. This site was used for various mining activities from the 1930s to late 1990s.

## LEGACY

Modern day investigations found this region has 7-18 feet of non-native material, including a layer of tailings beneath mine waste material ranging in thickness from a few inches to 8 feet.

## WORK PERFORMED

In 2023, Perpetua and its crews removed 200,000 tons of waste rock and tailings material and relocated it to the On-Site Repository, while also performing restoration work to stabilize the riparian region around the river, including increasing floodplain connectivity and enhancing the riparian and upland corridor through planting and seeding native species.





# NORTHWEST BRADLEY DUMPS REMOVAL

**100k**

TONS REMOVED

## LOCATION

The Northwest Bradley Dumps are located alongside the East Fork South Fork Salmon River as it exits the Yellow Pine Pit lake and before the confluence with Sugar Creek.

## WORK PERFORMED

In 2023, Perpetua removed over 100,000 tons of waste material from the dump and placed it in a Spoil Site located at higher elevation.

## LEGACY

Material in the Northwest Bradley Dumps consists of approximately 2.1 million cubic yards of mine waste and ore material containing gold, antimony, and tungsten. Investigations indicate elevated arsenic and antimony concentrations associated with prior mining activity.



# DEFENSE MINERALS EXPLORATION ADMINISTRATION ADIT

~20k

TONS REMOVED

## LOCATION

An exploration adit was built under contract with the U.S. Government under the Defense Minerals Exploration Administration (DMEA) to explore for antimony and tungsten needed for national defense.

## LEGACY

Remnants from the adit include mine waste dumped at the exit of the adit, partially blocking a small tributary to the East Fork South Fork Salmon River. Stream water flowing through this waste rock becomes loaded with metals leached from the dump.

## WORK PERFORMED

Alternative analysis early in the design process identified that rather than stream diversion, the best solution for improving water quality was to remove the dump material and conduct stream restoration activities.

Perpetua and our team of contractors removed approximately 20,000 tons of mine waste from the DMEA dump to the Spoil Site and conducted stream restoration activities which eliminated the interaction of the stream with metal-leaching mine waste.



# HENNESSY CREEK & SMELTER FLATS DIVERSIONS



## LOCATION

Hennessy Creek and other streams flow through the abandoned mine site, interacting with legacy tailings and waste before eventually flowing into the East Fork South Fork of the Salmon River.

## LEGACY

Hennessy Creek flows from above the Yellow Pine Pit through abandoned waste dumps before joining with the East Fork South Fork Salmon River. Other streams flow through the old smelter site and other abandoned features of site. This interaction between these surface streams and legacy features degrades water quality with elevated levels of arsenic and antimony.

## WORK PERFORMED

Keeping clean water clean was a priority action to improve water quality conditions in the district. In 2022, Perpetua and its teams diverted Hennessy Creek around legacy dumps through a lined stream diversion to prevent seepage of water through the dumps, limiting the transport of dissolved metals into the East Fork South Fork Salmon River. The team did the same for streams in the Smelter Flats region of the district, helping to improve water quality conditions in the Meadow Creek valley.



# ONSITE REPOSITORY

**225k**

TONS SAFELY  
STORED

## LOCATION

The modern waste material repository was placed on the existing On/Off Heap Leach Pads.

## LEGACY

The On/Off Heap Leach Pads were utilized for cyanide leach recovery starting in the late 1970s through the mid-1990s.

## WORK PERFORMED

The Repository was designed to safely accommodate over 225,000 tons of material on a sustainable basis. Perpetua applied 60-mil linear low-density polyethylene (LLDPE) Agru MicroDrain geomembrane liner over the waste material to prevent infiltration of meteoric waters. Perpetua also placed soil cover to a minimum depth of 18 inches in a single lift to help stabilize the liner and allow revegetation.

A photograph of two workers in safety gear (hard hats, high-visibility shirts, and gloves) kneeling by a stream, sampling water. The worker on the left is wearing an orange safety vest and a white hard hat with a logo. The worker on the right is wearing a bright green long-sleeved shirt and a white hard hat with the Perpetua Resources logo. They are both wearing blue gloves. The worker on the right is holding a white plastic bottle and pouring water from it. The stream is surrounded by rocks and vegetation.

# HEALTH, SAFETY AND COMPLIANCE

- **No reportable spills occurred** during construction activities. Except for a historical concrete septic tank found at the Bradley Man Camp Dumps, no unexpected waste materials were encountered during construction. The concrete septic tank was taken offsite and disposed of in a manner consistent with EPA's off-site rule.
- **No recordable injuries occurred among Perpetua staff**, but one recordable injury occurred among the contractors working on the project.
- **Dust was monitored visually throughout construction** and mitigated with the use of several water trucks. Perpetua and our partners installed a water tank and filling station near the Northwest Bradley Dumps Spoil Site to supply the water trucks. Water was obtained legally through Perpetua's existing water right on Hennessy Creek located across Stibnite Road from the filling station. Perpetua also applied magnesium chloride to sections of Stibnite Road to further dust mitigation.



A woman in an orange safety vest with reflective stripes is smiling and talking to two men. One man is wearing a blue plaid shirt and glasses, and the other is wearing a dark jacket with reflective stripes. They are outdoors in a wooded area with a green building in the background.

# HEALTH, SAFETY AND COMPLIANCE

- **No cultural and/or historic resources or artifacts** were encountered at any of the removal actions.
- **Construction activities at all removal actions** were completed without visible impact to surrounding wildlife.
- **Turbidity monitoring was performed** by Perpetua throughout construction of all three removal actions and no turbidity exceedances occurred during construction activities at the compliance locations 1,000 feet downstream of Bradley Man Camp Dumps and Northwest Bradley Dumps.



# SUPPLIERS

## PROCUREMENT

All seed was procured from **Legacy Seed** in Nampa, Idaho.

Trees, forbs, and grasses were procured from **Twin Peaks Nursery** in McCall, Idaho.

Sedges and reedgrass were procured from **North Fork Native Plants** in Driggs, Idaho.



# PERPETUA RESOURCES

