

Callahan Mine Superfund Site – Community Update

December 2020

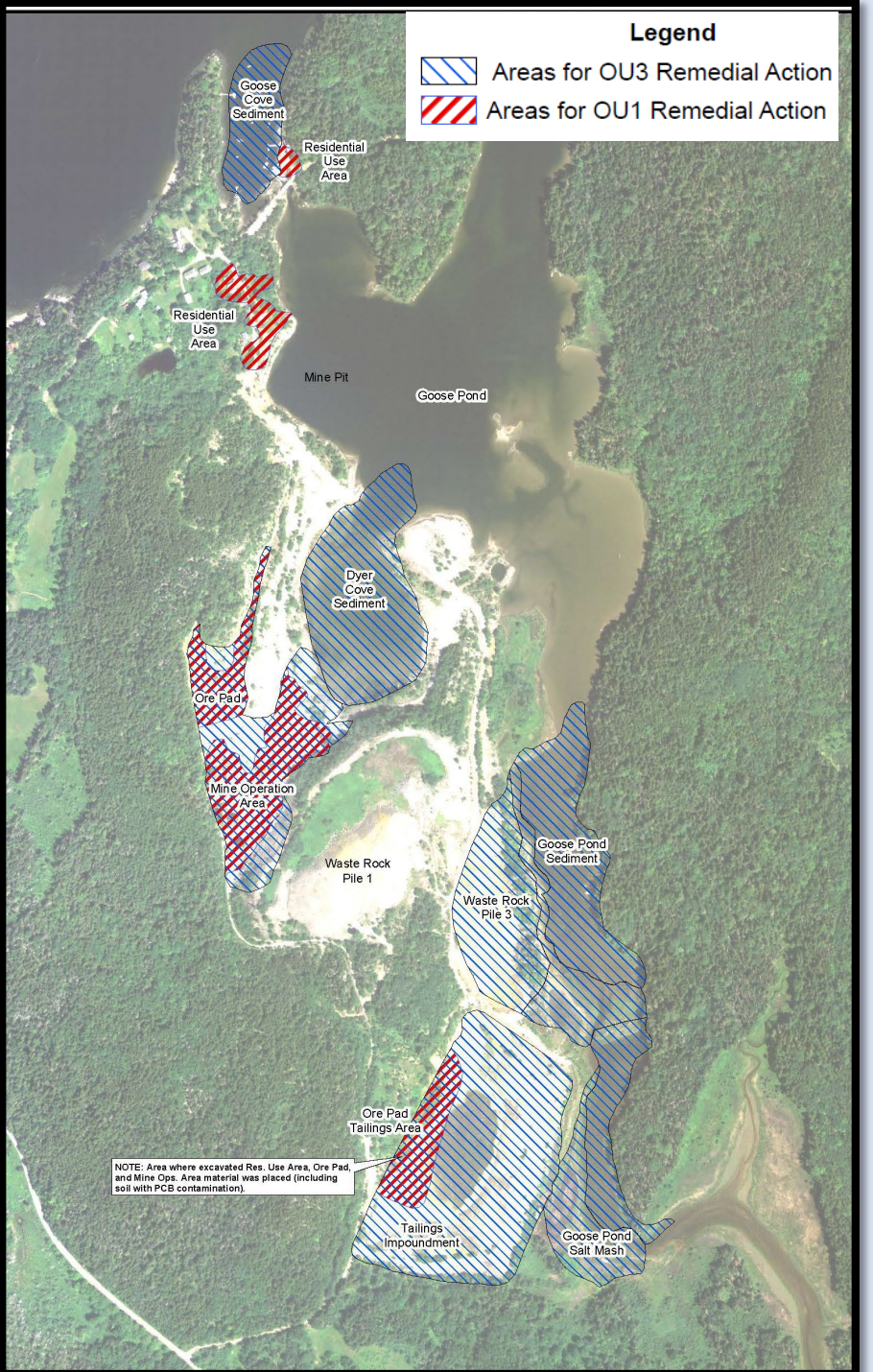


This is an update of the activities implemented at the Callahan Mine during 2020.

- Outline
 - Background
 - Activities completed through December 2020
 - Activities planned for 2021.
 - Five-Year Review of Callahan Mine cleanup actions.

Callahan Mine Cleanup Approach: EPA is managing the Callahan Mine cleanup as three separate projects (called “Operable Units”).

- Operable Unit 1 (OU1): Cleanup of arsenic and lead contamination in residential properties and PCB contamination in the former Mine Operations Area was completed in September 2013.
- Operable Unit 2 (OU2): Will address Site-wide Groundwater, Waste Rock Pile #1 and Waste Rock Pile #2) - No cleanup decision yet.
- Operable Unit 3 (OU3): Tailings Impoundment, Waste Rock Pile #3, and sediments.
 - Installation of a horizontal drain was completed in 2015.
 - **Stabilization of the Tailings Dam and installation of a Cover system for Tailings Impoundment – current site activity.**
 - Excavation/dredging of waste rock and contaminated sediments and placement into the former mine pit (CAD cell) to address ecological threats.
 - Waste Rock Pile #3 approach still being evaluated.
 - Restoration of disturbed areas.



The OU3 cleanup is being implemented in three phases.

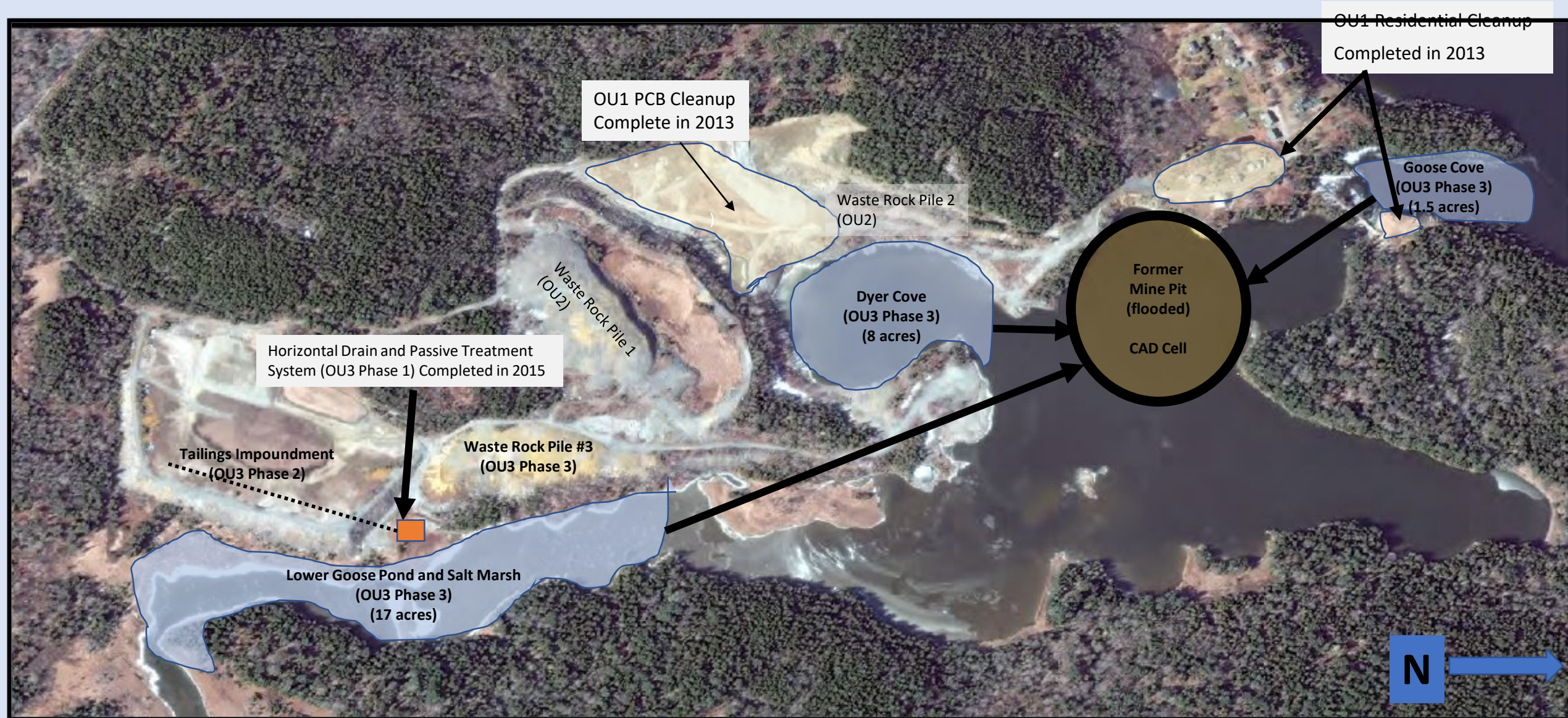
Phase 1: Installation of a Horizontal Drain and passive treatment system to facilitate dewatering of the Tailings Impoundment (completed in 2015).

Phase 2: Tailings Impoundment closure (current work).

- Tailing Dam and Tailings Impoundment has been stabilized by reducing the height of the rock wall and installation of stabilization measures along to the toe of the Tailings Dam (completed in 2020).
- Tailings excavated as part of the Tailing Dam height reduction were placed on the back portion of the Tailings Impoundment (completed in 2020).
- A cover system will be installed over the Tailings Impoundment (to be performed in 2021).

Phase 3: Dredging/excavation of contaminated sediments and placement in the former mine pit (Confined Aquatic Disposal – CAD cell). The Design for Phase 3 was completed in 2019. This phase of the cleanup has not yet received funding.

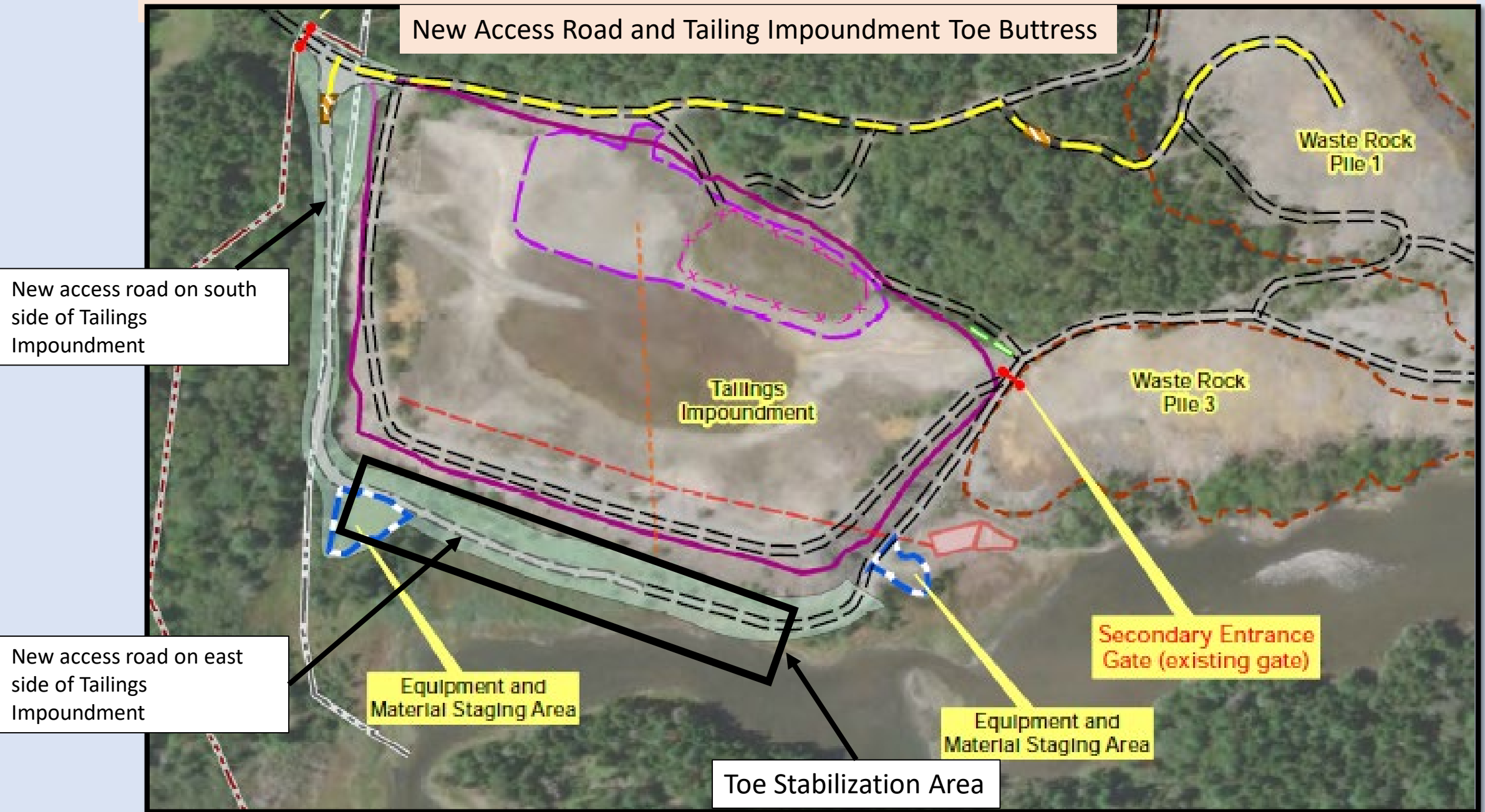
Callahan Mine – Operable Units and Phases



- Activities completed through December 2020:
 - Installation of a stone buttress along the toe of the Tailings Impoundment Dam and a new access road was completed in July 2020.
 - 21,000 cubic yards of stone from on-site rock piles was used to construct the buttress and access road. This minimized the need for off-site material.
 - A small quantity of drainage stone was imported to the Site.
 - The height of the Tailings Dam was reduced by about 20 feet and the Tailings Impoundment was re-shaped to fit the new dam height.
 - About 53,000 cubic yards of rock was removed from the Tailing Dam and placed at Waste Rock Pile #1.
 - About 46,000 cubic yards of tailings were excavated and relocated to the western (back) area of the Tailings Impoundment.

- Other Activities completed through December 2020 (continued):
 - Environmental Sampling of the following:
 - Surface water in Goose Pond and Goose Cove.
 - Groundwater monitoring wells at the Site.
 - Surface water seepage along the toe of the Tailings Impoundment and Waste Rock Pile #3.
 - Pumping tests were performed for the bedrock groundwater and overburden groundwater at the Tailings Impoundment to better assess the inflow of groundwater into the Tailings Impoundment.
 - Installation of geotechnical monitoring instrumentation to assess any changes in the stability of the Tailings Impoundment during the construction activities.
 - Dewatering of the pond on the Tailings Impoundment prior to placing the excavated tailings in that area.
 - Stabilizing the Tailings Impoundment for the winter.
 - Decommissioning wells and geotechnical instrumentation no longer necessary.

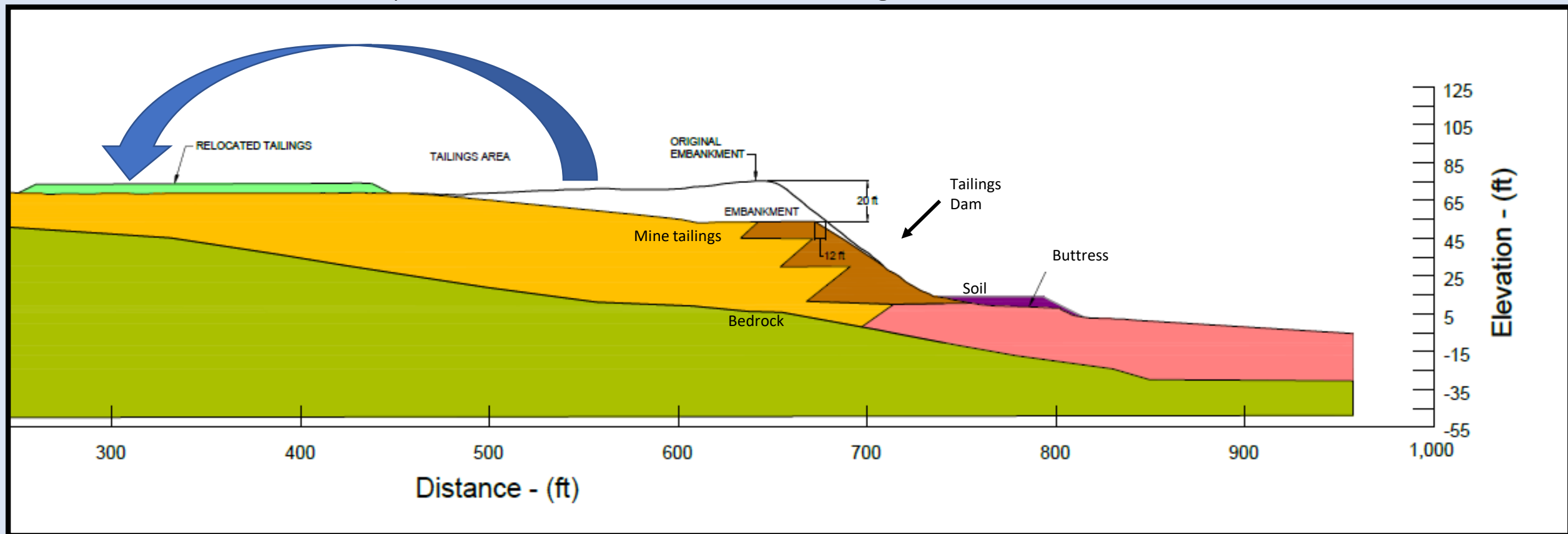
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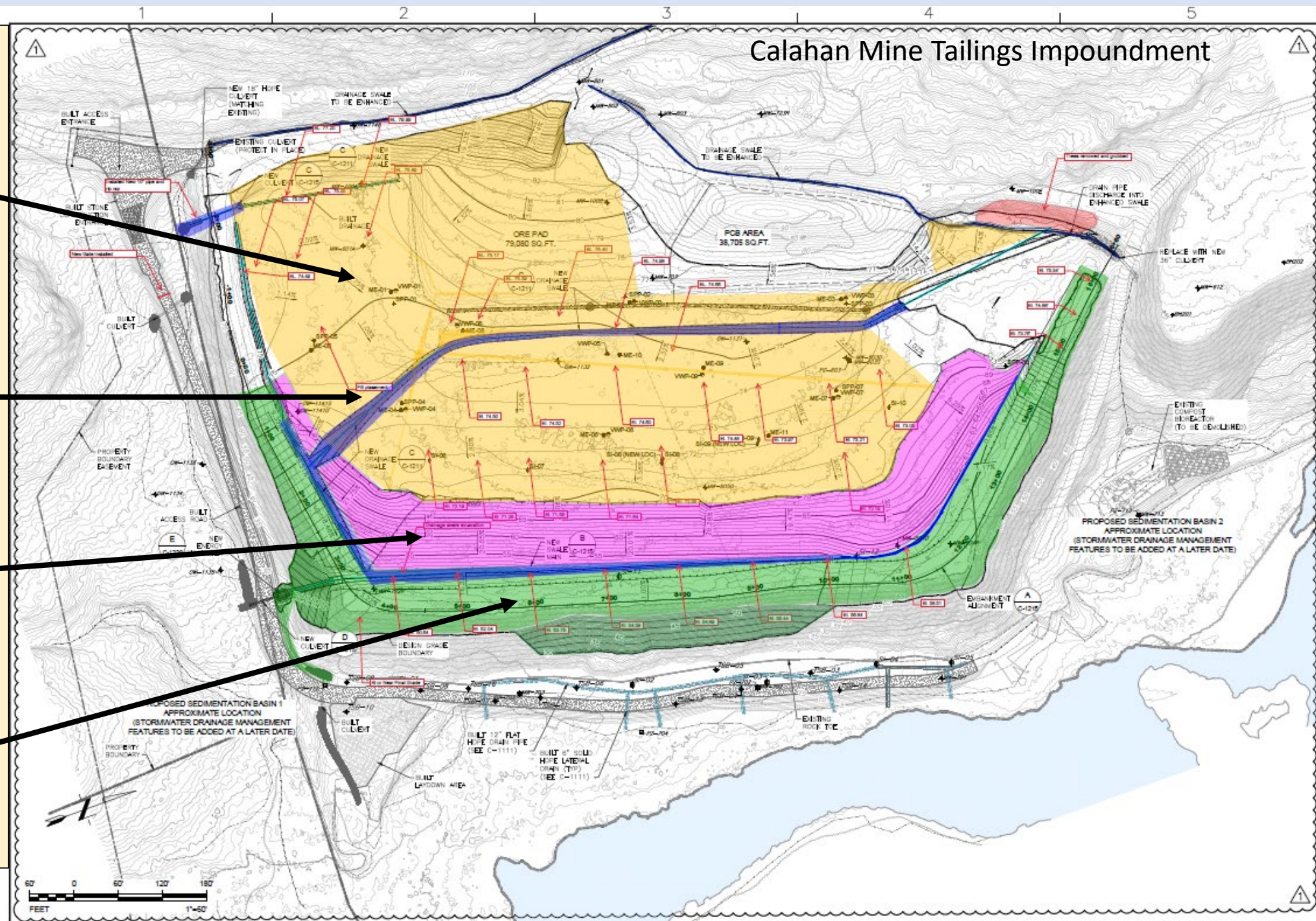
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The Figure below shows the general concept in cross-section for the Tailings Dam stabilization and tailings excavation and relocation.

1. A stone buttress was installed along the toe of the tailings dam.
2. Tailings were excavated from the area behind the tailings dam and relocated to the western side of the Tailings Impoundment.
3. About 20 feet of the Tailings Dam was removed to improve the long-term stability.
4. A final cover system will be installed over the tailings in 2021.



- Light yellow shaded area is where the excavated tailings were placed.
- Blue shaded area shows the location of drainage features on the Tailings Impoundment.
- Purple shaded areas shows the extent of the tailings excavation.
- Green shading shows the areas where dam rock was removed or graded.



Construction Photos

Stone Buttress along Toe of Tailings Dam



Stone buttress



Tailings Dam Removal



Excavating tailing

Excavating Dam Rock



Tailings Excavation



Tailing Dam Excavation



Spreading tailings over geogrid in fill area



Tailings dam and tailings removal



Grading the excavated tailings



- **Activities Planned for 2021**

- The major activity in 2021 will be the installation of the cover system over the Tailings Impoundment. The cover system will include the following components:
 - Geosynthetic clay liner (GCL), which is a bentonite clay liner, will be placed over the tailings in select areas.
 - Geomembrane, which is a plastic barrier layer, will be placed over the entire Tailings Impoundment, but not on the dam crest.
 - Geocomposite drainage layer, which is a layer of plastic between two fabrics that transmits water off the cover system, will be placed over the geomembrane.
 - A 12-inch layer of stone will be placed over the geocomposite drainage layer to protect the geosynthetic material.
 - The stone will be obtained from on-site rock. A screening and crushing operation will be performed to obtain the size and distribution of rock needed.
 - Access roads will be installed on the Tailing Dam crest and Tailings Impoundment cover system to support long-term inspection and maintenance activities.
- EPA is also performing a Five-Year Review of the Callahan Mine project.

- Schedule for 2021

- January-February 2021

- Mobilize equipment for rock screening and crushing operations

- March-April 2021

- Process rock to create stone cover material
 - Begin decommissioning of remaining wells and geotechnical instrumentation

- May 2021

- Final grading of Tailings Impoundment and Tailings Dam crest

- June –August 2021

- Installation of cover system

What To Expect During The Construction Activities

- Most of the activities will occur at the Tailings Impoundment and Waste Rock Pile #1.
- Only passenger vehicles (including pick up trucks) will be using the North Entrance off Goose Falls Road.
- All truck traffic will enter via the south entrance off Cape Rosier Road.
- Truck deliveries will be mostly equipment and some materials. Substantial quantities of off-site material **will not** be required for this phase of the work.

Community Notice

- The construction activities will continue through 2021.
- Please do not visit the Callahan Mine property during the ongoing construction activities for your safety and the safety of the site workers.
 - It can be difficult for the large construction equipment see individuals or vehicles.
 - Due to the potential for rock falls, please do not access the areas below the Tailings Impoundment, including the areas of Goose Pond below the Tailings Impoundment.
- The contractor continues to update the Site Health and Safety Plan to include protocols to address the ongoing COVID19 situation.
 - As part of the health and safety plan, no visitors will be allowed at the Callahan Mine property.

Callahan Mine-Five Year Review

- EPA is performing a second Five-Year Review at the Callahan Mine Superfund Site.
- The first Five-Year Review was completed in April 2016.
- The focus of the Five-Year Review is to make sure the completed OU1 cleanup, which included the residential properties and the PCB cleanup within the former Mine Operations Area of the Site, remains protective of human health and the environment.
 - These cleanup actions were based on the 2009 Record of Decision and were implemented between 2010 and 2013.
 - The Five-Year Report is expected to be available during the summer of 2021.
- EPA welcomes public feedback relating to the Callahan Mine cleanup.

- The findings of the 2016 Five –Year Review are below:
- ISSUES
 - There were no issues that affect the short-term or long-term protectiveness of human health and the environment for the Operable Unit 1 Remedial Action because the Operable Unit 1 Remedial Action has been completed and meets the Remedial Action Objectives.
- PROTECTIVENESS STATEMENT
 - The remedy protects human health and the environment because direct contact with and incidental ingestion of arsenic, lead, and thallium contaminated soil in the Residential Use Area has been prevented by excavation of the soil above cleanup levels such allowing the Residential Use Areas to achieve unrestricted use. The remedy also protects human health and the environment because direct contact and incidental ingestion of PCB contaminated soil in the former Mine Operations Area above cleanup levels has been prevented by excavation and off-site disposal for the PCB contamination above 10 mg/kg or on-site consolidation and capping at the Tailings Impoundment of the PCB contamination below 10 mg/kg.
 - The remedy for Operable Unit 3 at the Callahan Mine site is expected to be protective of human health and the environment upon completion. All current human risks were addressed by the implementation of the Operable Unit 1 remedy.
- The 2016 Five-Year Review Report can be found at: <https://semspub.epa.gov/src/document/01/587817>

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