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June 22, 2022

Brook Beeler
Washington State Department of Ecology
4601 North Monroe
Spokane, WA 99205-1259

Certified Mail 6875 8957

RE: POM Present State Analysis – Historic Debris Field

Dear Ms. Beeler,

The Pend Oreille Mine (POM) has completed a Present State Analysis (PSA) for the Historic Debris Field west of the Mill Loadout Building. This document is the current state and what we know about this area.

We met with Bill Fees and Ted Uecker on June 21, 2022 to discuss the possibility of this area entering into the Voluntary Cleanup Program (VCP). The PSA is in support of the Ecology assessment. Please pass this report on to the correct reviewers and let us know if this project will fit into the VCP?

If you have any questions, please feel free to call Bruce A. Howard at (509) 446-5348 or myself at (509) 446-2461.

Regards,

Victor Christensen
General Manager
Teck Washington Incorporated
Pend Oreille Operations

Bruce A. Howard
Environmental Superintendent
Teck Washington Incorporated
Pend Oreille Operations

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Memorandum

Historic Debris Field Present State

POM-01-TMP

Revision: 1

Date: 21-Jun-2022

Revision History					
Revision	**Date (dd-MMM-yyyy)**	**Details of Change**	**Author/Editor**	**Reviewer**	**Approver**
1	21-Jun-2022	For Decisions	POm team	E. Buck/ B. Howard	F. Wimberley
0	29-Apr-2022	For Decisions	R.V. Scartozzi	E. Buck/ B. Howard	F. Wimberley
A	13-Dec-2021	For Review	R.V. Scartozzi	E. Buck/ B. Howard	V. Christensen

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Project Description			
PROJECT NAME		PEND OREILLE MINE (POM): WBS 530 HISTORIC DEBRIS FIELD – PRESENT STATE	
DECISION No.	NA	**REVISION No.**	ORIGINAL
ORIGINATOR	POM TEAM	**DISCIPLINE/GROUP**	ENVIRONMENTAL

Present State Description

Overview

The Pend Oreille Mine (POM), located in NE Washington State north of Metaline Falls, is an underground lead and zinc operation that has exhausted economical resources and has phased into closure. The mine is located approximately 2 miles north of Metaline Falls, Washington and 95 miles north of Spokane, Washington. The mine announced a transition from care and maintenance status to closure status in April of 2021.

This memo focuses on the Historic Debris Field (HDF) and provides a Present State Analysis, covering the following topics:

- HDF history
- Known extent of potential contamination
- Contamination type
- 2009 Reclamation Plan
- Communities of Interest (COI's)

Historic Debris Field History

Very little is known about the origin of the HDF. The timing of the material placement occurred when other entities began operating the facility in the early 1950's up to 1967. Figure 1 shows the location and extent of the HDF. Some of the wood debris may be part of the launder chute system used to discharge tails from the mill to the river. The discharge point and the debris field location coincide. The launder chute system was abandoned in 1967.

The site was identified on April 6, 2005 during a scheduled site visit/inspection by the U.S. Environmental Protection Agency. (Mark Brown correspondence to Washington State Department of Ecology (Ecology), July 28, 2006). In conjunction with Seattle City Light, POM conducted an assessment of the site to determine the extent of the HDF, identify possible contamination sources and assess slope stability issues if the debris is removed.

The ensuing report, Solid Waste Deposit Assessment, was completed by GeoEngineers on July 26, 2006 and submitted to Ecology, and forms the basis of information for this report.

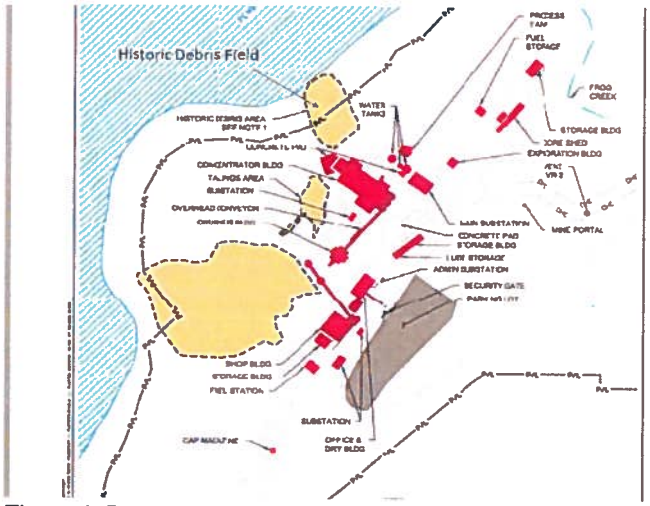

Figure 1: Base map

Extent of HDF

The three primary objectives for the project report were to (1) assess the extent of the HDF; (2) assess for potential releases to the environment that might be associated with the HDF; and (3) assess slope stability issues if the debris is removed. The extents were determined from a combination of site reconnaissance, soil and waste sampling, a geophysical magnetic survey and ground penetrating radar.

The HDF is on a steep northwest facing slope, beginning at the top of the slope approximately 80 feet from the mill building and extending downslope to within 20-30 feet of the Pend Oreille River edge. Elevations range from 2,145 feet to 2,030 feet (see Figure 2). Roughly half of the HDF is on Teck property while the remainder is on Seattle City Light property. There is small slope failure halfway up the slope that occurred in a debris accumulated area. Vegetation within the HDF is a mixture of deciduous and coniferous trees. Understory vegetation consists of smaller trees, brush, and grasses. It appears that the area was cleared of larger trees in the past. There is a small seep at the base of the slope. No other seeps were present, and groundwater was not encountered in any of the test pits. The total area defining the debris field is about 1.5 acres.

Debris was visible on the surface, partially buried, or encountered in shallow shovel pits. The thickness of the debris is unknown but determined to be in the range of 5.5' thick to 20' thick. The debris is defined by:

- Vegetation consisting of smaller diameter trees and dense underbrush
- Surface debris consisting of metal drums, vehicle body and frame parts, various machine parts, cables, hoses, sheet metal, and wood debris
- Features indicative of past dumping of fill soil and debris.

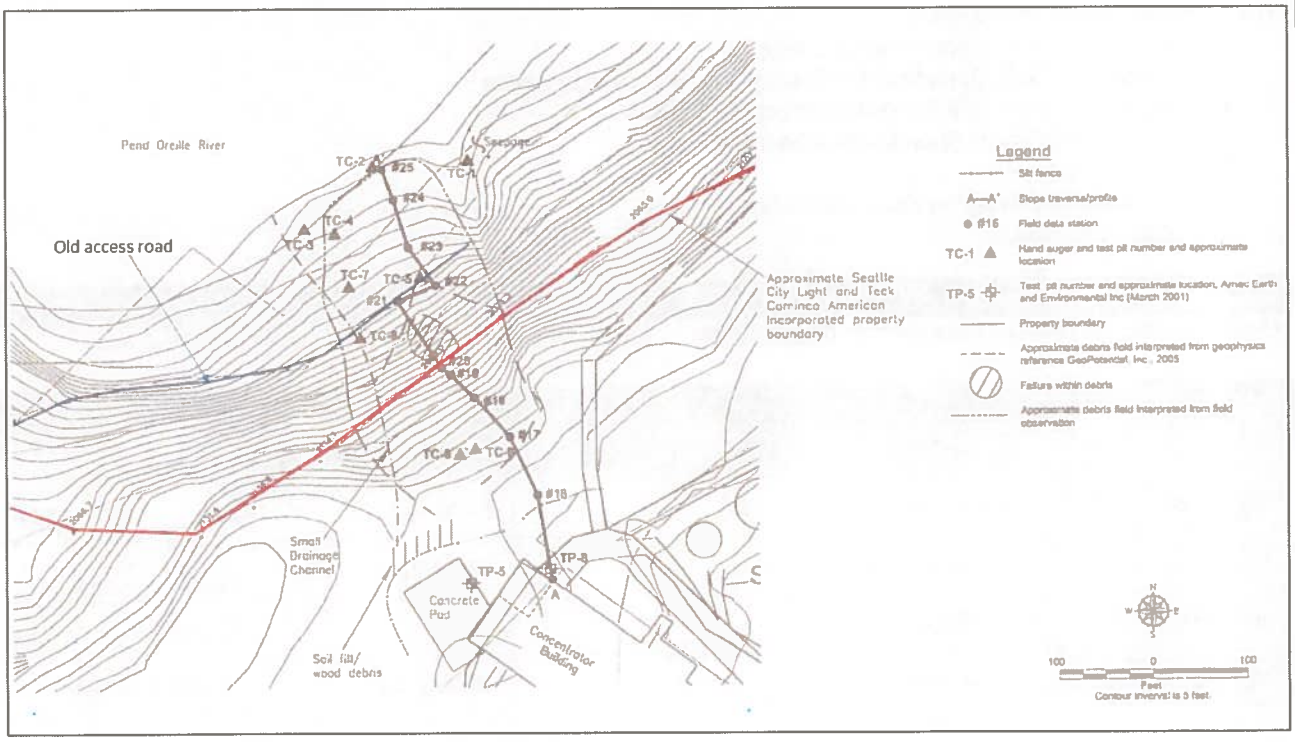

Figure 2: Surveyed extents and relevant features

Contamination Type

The environmental assessment of the HDF identified trichloroethene present at concentrations exceeding MTCA Method A cleanup levels in soil collected from test pits. Trichloroethene has historically been used as an industrial solvent. Other contaminants, including oil-range petroleum hydrocarbons, organochlorine pesticides, and PCBs were detected at concentrations lower than MTCA levels. Partially buried drums were encountered.

Water analysis of the seep at the base of the slope did not identify contaminants at concentrations exceeding MTCA groundwater cleanup levels.

Slope Stability

The planned HDF closure activities have been previously presented to Ecology in the URS's 2009 "Reclamation Plan Report" (Reclamation Plan). The details below are extracted from this document.

Removal of the debris will require removal of vegetation from the steep slope. The GeoEngineers report states that the removal of the debris is possible without slope failure, but instability issues should be expected by removing the debris and vegetation from the slope, due to:

- Exposure of the slope soil to erosion from precipitation or surface water.
- Potential shallow surface failures in loose soil disturbed by debris removal.
- Potential failure zones in areas where subsurface sand, gravel or seepage is encountered.

COIs

The following entities are identified:

- Washington State Department of Ecology
- Washington State Department of Ecology Shoreline Management
- Department of Natural Resources Shoreline Division
- Pend Oreille County Shoreline Management
- Seattle City Light
- Recreationists using the Pend Oreille River
- Local community

Impact On The Project

Understanding the present state will help prepare POM for future reclamation and closure decisions for this area.

Approvals

		Signature	Date	Role
PREPARED BY	POm team	N/A	21-Jun-2022	N/A
REVIEWED BY	Bruce Howard		6/22/22	Environmental Superintendent
REVIEWED BY	Erin Buck		6/22/22	Engineering Manager
APPROVED BY	Frank Wimberley		6/22/2022	Project Manager