CUMULATIVE EFFECT VOL 1
BASELINE DATA AND METHODS

TWIN METALS MINNESOTA PROJECT
Environmental Review Support Document

Prepared for Twin Metals Minnesota, LLC
Prepared by

Document No. TMM-ES-025-0153-01
Revision 0A
November 20, 2020

REVISION RECORD

Revision	Date	Description	EDMS Download Date	Project Configuration Version
0A	11-20-2020	Submitted for Agency Review – TOC		

REVISION NARRATIVE

DISCLAIMER

This document is a working document. This document may change over time because of new information, or further analysis or deliberation.

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

LIST OF ABBREVIATIONS, ACRONYMS, AND SYMBOLS

TMM	Twin Metals Minnesota, LLC

1.0 INTRODUCTION

The Twin Metals Minnesota, LLC (TMM) Project (Project) is focused on designing, permitting, constructing, and operating an underground copper, nickel, cobalt, platinum, palladium, gold, and silver mining project. Located approximately nine miles (14 kilometers [km]) southeast of Ely, Minnesota, and 11 miles (18 km) northeast of Babbitt, Minnesota, the Project targets valuable state, federal, and private minerals within the Maturi deposit, which is a part of the Duluth Complex geologic formation.

All potential Project infrastructure locations presented herein are considered preliminary and are undergoing further design and engineering evaluations which will dictate final design and locations. Further information about TMM and the Project is located at http://www.twin-metals.com/.

The purpose of this document is to provide necessary information for the environmental review and permitting process. TMM retained [insert Consultant name] (insert abbreviated Consultant name) to complete [insert text].

2.0 SUMMARY

- Provide a high level summary of what is presented within this report.
- Describe how this report volume relates to the other volumes. The specific resource volumes provide the base data for this report.
- Describes how the analysis is intended to address the combined effects of a proposed Project with other reasonably foreseeable projects that could contribute similar environmental effects.
- Describes rationale and approach for the selection of baseline data.
- Describes establishment of environmentally relevant areas (by resource) used to complete the analysis.
- Reference relevant sections of the FSDD, SEAW, and / or federal documents to remind the reader there is a defined scope that is being followed.

3.0 PROPOSED ACTION AND ALTERNATIVES

3.1 Proposed Action

- Reference the TMM Project Description and Alternatives document and indicate the proposed action is defined within this document.

3.2 Alternatives to the Proposed Action

- Reference the TMM Project Description and Alternatives document and indicate the alternatives to the proposed action are defined within this document.

3.3 No Action Alternative

- Reference the TMM Project Description and Alternatives document and indicate the no action alternative is defined within this document.

4.0 REGULATORY FRAMEWORK

- Establish Regulatory Framework by discussing the following:
  - 40 CFR 1508.7 – Cumulative effects definition
  - MN Rules Chapter 4410
  - BLM NEPA Handbook H-1790-1
  - Guide to Minnesota Environmental Review Rules, May 2010, MN EQB
  - EQB Guidance 2013 – EAW Guidelines

5.0 AFFECTED ENVIRONMENT

The affected environment describes the existing condition of the human environment that may be affected by implementing the proposed action or an alternative. Cumulative potential effects is intended to address the combined effects of a proposed Project with other projects that could contribute similar environmental effects within the affected environment. Cumulative potential effects are analyzed in terms of potentially affected resources, environmentally relevant areas, and impact timescale.

5.1 Area of Analysis

This section will describe how the area of analysis for cumulative effects is derived using the BLM and EQB guidance. Describing the present condition of the affected resources within the identified geographic scope provides a baseline for the cumulative effect analysis.

The geographic scope is generally based on the natural boundaries of the resource affected, rather than jurisdictional boundaries. The geographic scope will often be different for each cumulative effects issue as noted in the NEPA handbook H-1790-1.

EQB guidance suggests that potential cumulative effects would occur where the “environmental footprints” of Project’s overlap. These overlapping footprints are referred to as environmentally relevant areas. Environmentally relevant areas are

determined on a case-by-case basis, based on each resource and each potential impact.

Also, as noted in the NEPA handbook H-1790-1 the time scales of potential effects need to be considered on a case-by-case basis, based on each resource and each potential impact. This is done in the context of past, present, and reasonably foreseeable projects that would affect the resource of concern within the geographic scope and the timeframe of the analysis. For future projects, you must include reasonably foreseeable future actions within the geographic scope and the timeframe of the analysis (40 CFR 1508.7). When considering if the future project is "reasonably likely to occur:"

- Is there an existing proposal or permit application.
- Is there a commitment of resources, such as funding.
- Has the NEPA process begun.
- "Sufficiently detailed information is available about the Project to contribute to the understanding of cumulative potential effects" (EQB, 2013).

Using this approach to define the environmentally relevant areas by resource and then applying a timescale provides a framework for analyzing whether affected resources have the capacity to accommodate additional effect and to determine the potential for significance of identified cumulative effects.

5.2 Methods

Methods for defining the affected environment will be defined in this section including the following:

- Project-Specific Potential Effects
  - Inventory of potential effects of the Project by resource (from earlier baseline report TOC's)
- Potentially Affected Resources
  - Definition of environmentally relevant areas by resource
- Reasonably Foreseeable Future Actions
  - Past impacts accounted for in baseline conditions
  - Present activity accounted for in baseline conditions
  - Define other reasonably foreseeable future actions

5.3 Existing Conditions

Using the area of analysis defined in Section 5.1 and the methods defined in Section 5.2, existing conditions will be described within this section including the following:

- Environmentally relevant areas by resource.

- Inventory of resources within the environmentally relevant area potentially affected.
- Inventory of other reasonably foreseeable future actions.

6.0 REFERENCES

TABLES

FIGURES

APPENDICES

APPENDIX [#A, B, C, D]

[APPENDIX TITLE]

APPENDIX [#A, B, C, D]

[APPENDIX TITLE]

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