



Homestake Mining Company of California

Thomas Wohlford
Closure Manager

30 January 2019

Document Control Desk
U.S. Nuclear Regulatory Commission,
Washington, DC 20555-0001

40-8903

Mr. Ron Linton, Project Manager
Project Manager, Materials Decommissioning Branch (Mail Stop: T-8F5)
Decommissioning, Uranium Recovery & Waste Programs
Office of Nuclear Materials Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

**RE: Homestake Mining Company of California – Grants Reclamation Project –
Groundwater Corrective Action Plan Table of Contents**

Dear Mr. Linton:

As per the October 11, 2018 request for a due date extension for the Groundwater Corrective Action Plan (CAP) (ADAMS Accession No. ML18289A400), a milestone was set for submission of the CAP Table of Contents by January 31, 2019. You will find the preliminary Table of Contents attached to this cover letter.

Thank you for your time and attention on this matter. If you have any questions, please contact me via e-mail at twohlford@homestakeminingcoca.com or via phone at 505.290.2187.

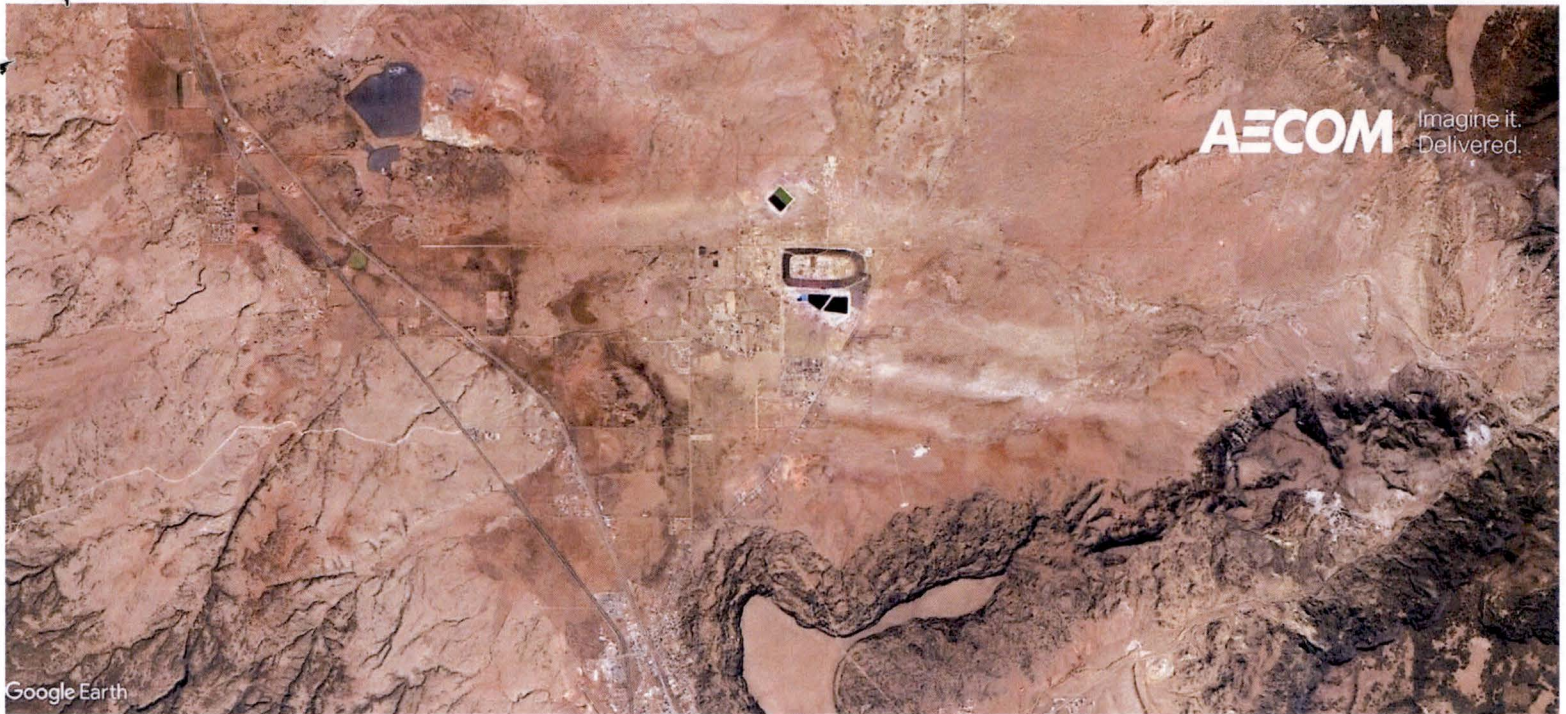
Respectfully,

Thomas P. Wohlford, CPG
Closure Manager
Homestake Mining Company of California
Office: 505.287.4456 x34 | Cell: 505.290.2187

Copy To:

A. Winton, NMED (electronic copy)
M. Purcell, EPA (electronic copy)
M. McCarthy, Barrick, Salt Lake City, Utah (electronic copy)
C. Burton, Barrick, Henderson, Nevada (electronic copy)
G. Hoffman, Hydro-Engineering, Casper, Wyoming (electronic copy)
R. Whicker, Environmental Restoration Group, Albuquerque, New Mexico (electronic copy)

NM5501



Draft Groundwater Corrective Action Plan (CAP) Table of Contents

Homestake Mining Company of California
Grants Reclamation Project
Grants, New Mexico

January 30, 2019

TABLE OF CONTENTS

1 Introduction

- 1.1 Purpose and Scope**
- 1.2 Regulatory Framework**
- 1.3 CERCLA Equivalency**
- 1.4 Corrective Action Plan Organization**

2 Site Background and History

- 2.1 Site Background**
- 2.2 Operational History**
 - 2.2.1 Mill Operations**
 - 2.2.2 Mill Decommissioning**
- 2.3 Land Use**

3 Regional Setting

- 3.1 Physiographic Setting**
- 3.2 Climate**
- 3.3 Geology**
- 3.4 Surface Water**
- 3.5 Hydrogeology**

4 Site Hydrogeologic Conceptual Model

- 4.1 Site Geology**
- 4.2 Site Hydrogeology**
- 4.3 Site Geochemistry**
 - 4.3.1 Source Geochemistry**
 - 4.3.2 Aquifer Geochemistry**
 - 4.3.3 Geochemical Conceptual Model**
- 4.4 Groundwater Standards**
- 4.5 Constituents of Concern**

5 Extent of Groundwater Contamination

- 5.1 Historical Extent of Groundwater Contamination in 1999**
- 5.2 Current Extent of Groundwater Contamination in 2018**

6 Groundwater Remediation

- 6.1 Remediation History**
- 6.2 Existing Remediation System**

- 6.3 Treatment Water Balance**
- 6.4 Past Remediation Technology Evaluations**
 - 6.4.1 Electrocoagulation**
 - 6.4.2 Tripolyphosphate**
 - 6.4.3 Bioremediation**
 - 6.4.4 Land Application**

7 Groundwater Flow and Contaminant Transport Model

- 7.1 Purpose and Scope**
- 7.2 Model Software Selection**
- 7.3 Model Design and Construction**
- 7.4 Model Input**
- 7.5 Model Calibration**
- 7.6 Sensitivity Analysis**
- 7.7 Predictive Simulations**
- 7.8 Model Uncertainty**

8 Selection and Evaluation of Alternatives

- 8.1 Site Groundwater Exposure Pathways**
 - 8.1.1 Exposure Pathways**
 - 8.1.2 Hazard Assessment Summary**
 - 8.1.3 Dose Assessment Summary**
- 8.2 Remedial Action Objectives**
- 8.3 Applicable or Relevant and Appropriate Requirements (ARARs)**
- 8.4 Identification and Screening of Remedial Technologies and Process Options**
- 8.5 Development of CAP Alternatives**
- 8.6 Detailed Analysis of CAP Alternatives**

9 Recommended Corrective Action Program

- 9.1 Corrective Action Requirements**
- 9.2 Summary of Corrective Action Program**
- 9.3 Description of CAP Components**
 - 9.3.1 Source Control**
 - 9.3.2 Plume Control**
 - 9.3.3 Groundwater Extraction**
 - 9.3.4 Reverse Osmosis Treatment**
 - 9.3.5 Zeolite Treatment**
 - 9.3.6 Evaporation**
 - 9.3.7 Natural Attenuation**
 - 9.3.8 In-Situ Treatment**

9.3.9 Institutional Controls

10 CAP Performance Evaluation

10.1 Performance Criteria

10.2 Source Control

10.3 Groundwater Monitoring

10.4 Hydraulic Control

10.5 Treatment System Effectiveness

10.5.1 Reverse Osmosis System

10.5.2 Zeolite Treatment

10.6 Point of Compliance Assessment

11 Restoration Schedule

12 References

Figures

Tables

Appendices