Pebble Project

NORTHERN DYNASTY MINES INC.

DRAFT ENVIRONMENTAL BASELINE STUDIES PROPOSED 2007 STUDY PLANS

CHAPTER 1. INTRODUCTION

DRAFT

SEPTEMBER 2007

TABLE OF CONTENTS

LIST OF TABLES (attached)

LIST OF FIGURES (attached)

1. INTRODUCTION

1.1 Purpose

This document provides a description of the 2007 study plan for Northern Dynasty Mines Inc.'s (NDM's) baseline environmental program for the Pebble Project. This study plan builds on the baseline work started in 2004 and is presented for agency and stakeholder review and comment, to ensure that the planned program provides a comprehensive and thorough basis for baseline environmental characterization of the Pebble Project.

This plan, in conjunction with the 2005 and 2006 study plans, provides a complete description of the work for the environmental and socioeconomic baseline studies for the Pebble Project. Five chapters—surface water hydrology, groundwater hydrology , water quality, fish and aquatic resources, and data management—are complete study plans and do not refer back to previous plans.

1.2 Background

The Pebble Project is a potential mine for a copper, gold, molybdenum, and silver deposit located in southwestern Alaska north of Iliamna Lake (Figure 1-1). Starting in 2001, Northern Dynasty began extensive study programs to collect geological information. In 2004, environmental, socioeconomic, and engineering studies were initiated. The baseline data being collected are used to support project design and applications for state and federal permits.

The design of this project requires planning and coordination of all aspects of the project from its initial stages through to the final design. In this context, responsibility for environmental stewardship over the life of the project is a fundamental ingredient to the engineering design and feasibility of the project.

Northern Dynasty recognizes that a feasible project is one that is both technically and economically viable, and environmentally and socially responsible. Therefore, Northern Dynasty considers that there are three cornerstones to pursuing the development of the Pebble Project:

- Geology and exploration—definition of a mineral deposit that supports an economic mine.
- Engineering—sound and practical engineering that incorporates appropriate environmental and economic standards to give a robust and feasible project design.
- Environmental and socioeconomic studies—diligent characterization of the existing environmental and social conditions of the project area and their incorporation into the project design and operation.

1.3 Goals and Objectives

The primary goal of this study plan is to provide a description of Northern Dynasty's baseline environmental programs for the purpose of agency and stakeholder review. Agency and stakeholder feedback is solicited on this study plan and in the production of a comprehensive and thorough basis for baseline characterization of the Pebble Project.

The specific objectives of this document are to:

- Describe the study plan for characterization of the baseline conditions.
- Provide a sound technical basis for project design and permitting, and for ongoing evaluation of environmental effects during mine operation and closure.
- Define the methods and approach for data gathering and analysis for review by others.
- Define the objectives of the environmental baseline studies.

1.4 Project Description

Pebble Project consists of two adjacent deposits—the near-surface Pebble West deposit and the deeper, richer Pebble East deposit. Pebble West is a 4.1-billion-ton open-pit style deposit. Pebble East is a 3.4-billion-ton deposit conducive to underground methods of bulk extraction.

To date, the geologic and metallurgical data indicate that a crush/grind/flotation processing method can be used to recover the primary ore minerals of copper, gold, molybdenum, and silver. The key mine design considerations include the following:

- The deposit is a copper/gold porphyry with the primary mineralization occurring as copper/iron sulfides with associated gold values.
- The primary process for recovering the ore would be to produce sulfide concentrate(s) from a crushing, grinding, and flotation process.
- The major components of the milling process that require storage would be flotation tailings and associated process water.
- Access for construction, operation, and concentrate shipping would be required. Transportation systems could include a ship docking facility for concentrate handling and shipping, and a road connecting the port to the mine site.
- Concentrate(s) produced from the mine must be conveyed to port/markets.
- The potential for oxidation and metal leaching must be considered for all mine-rock components.
- Tailings-pond water will be recycled to the process plant.
- The estimated stripping ratio is relatively low, but some permanent mine-rock storage must also be considered in the major facilities.
- Final details of the mine design and project description await completion of geological, engineering, and environmental studies.

1.5 Approach

There are a wide variety of environmental aspects (including the physical, chemical, biological, and human environment) in the project area that require the contributions of experts from a variety of disciplines. In addition, there has been a coordinated integration of the project's environmental and engineering teams to incorporate environmental information into the project design.

The baseline study program is designed to characterize the disciplines listed in Table 1-1. The study area is depicted on Figure 1-1.

1.6 Project Status

During drilling in late 2005, Northern Dynasty Mines Inc. discovered the Pebble East deposit. As a result of this major discovery, the project definition is under review. Geologic and engineering work is underway to delineate Pebble East and to prepare an integrated development plan that could involve underground block cave mining and other changes/additions to the design concept. Completion of the feasibility study has been deferred until the deposit is better defined and additional engineering studies can be completed. In this 2007 study plan, more effort is being focused on understanding the Upper Talarik Creek drainage. This is in direct response to potential development of Pebble East.

In addition to continuing the environmental baseline studies, Northern Dynasty continues with the pre-feasibility process of evaluating a range of options for development of the various components of mine facilities and infrastructure.

TABLE

TABLE 1-1
Pebble Project Environmental Baseline Studies Program

Discipline	Consulting Firm
Meteorology	Hoefler Consulting Group
Noise	Michael Minor & Associates
Surface Water Hydrology	Mine — HDR Alaska, Inc. Transportation Corridor — Bristol Environmental and Engineering Services Corp.
Groundwater Hydrogeology	Mine — Water Management Consultants / SLR Alaska Transportation Corridor — Bristol Environmental and Engineering Services Corp.
Water Quality	Mine — HDR Alaska, Inc. Transportation Corridor — Bristol Environmental and Engineering Services Corp.
Trace Elements	Mine — SLR Alaska. Transportation Corridor — Bristol Environmental and Engineering Services Corp. / SLR Alaska
Geochemical Characterization and Metal Leaching/Acid Rock Drainage	SRK (Canada) Inc.
Terrestrial Wildlife and Habitats	ABR, Inc.
Wetlands	Mine — Three Parameters Plus Inc. Transportation Corridor — HDR Alaska, Inc.
Fish and Aquatic Habitat	Buell & Associates HDR Alaska, Inc. Northern Ecological Services
Marine Habitat	ABR, Inc. Bristol Environmental and Engineering Services Corp. PENTEC Environmental RWJ Consulting
Subsistence	Stephen R. Braund & Associates
Cultural Resources	Stephen R. Braund & Associates
Recreation	Kevin Waring & Associates
Land Use	Kevin Waring & Associates
Socioeconomics	Kevin Waring & Associates McDowell Group
Visual	Land Design North
Data Management and Geographic Information System (GIS)	Resource Data Inc.

FIGURES

156°0'0"W 155°0'0"W 154°0'0"W 153°0'0"W

59°30'0"N

Port Alsworth
Lake Clark National Park
Lake Clark National Preserve
Mt. Iliamna
Chulitna R.
Lake Clark
Kokhanok River
Nondalton
N. Fork Kokhanok R.
S. Fork Kokhanok R.
Upper Talarik Cr.
Lower Talarik Cr.
Newhalen River
Iliamna
Newhalen
Pedro Bay
Pile Bay
Williamsport
Port Site
Iliamna Lake
Kokhanok
Igiugig
Kvichak River
Cook Inlet
Augustine Island
Kukaklek Lake
Katmai National Preserve
Katmai National Park
Kamishak Bay
Katmai National Park

59°0'0"N

156°0'0"W 155°0'0"W 154°0'0"W 153°0'0"W

Pebble Project

NORTHERN DYNASTY MINES INC.

Figure 1-1

Pebble Project Study Areas

Legend

- General Pit Outline
- Study Area
- Mine Studies
- Transportation Corridor Studies
- National Park and Preserve
- Borough Boundary
- Port Site
- Possible Road (10/2005)
- Existing Roads

0 5 10 15 20 25 Miles

0 5 10 15 20 25 Kilometers

N

Scale 1:600,000

Alaska State Plane Zone 5 (units feet)
1983 North American Datum

File: ND_ProjectArea_11X17L_1of1_D08.mxd	Date: August 01, 2006
Version: 8	Author: RDI-LS