NEW DISCOVERY MINES LTD.
MON GOLD MINE
MILL WASTE MANAGEMENT PLAN

MV2014L2-0002
MV2013C0021

Revisions:

Orignial Plan: September 20, 2016

Contents

Introduction

This plan was prepared as part of the review of the proponents Waste Management Plan in 2016. Previously, this plan was submitted as part of that plan

All details omitted from this plan can be found in the general Waste Management Plan.

The Mill Waste Plan is designed to minimize impacts with the receiving environment and to conform to regulatory regimes and legislation.

The Mon Gold Mine was approved by the MVLWB in 2013 (MV2013C0021) and 2014 (MV2014L2-0002) subject to approvals of the Waste Management Plan and Spill Contingency Plans submitted at those times. The WMP was originally filed in October 2013, and revised as per reviewer comments in December 2013, April 2014, May 2015, July 2015, October 2015, August 2016, and September 2016.

Purpose and Scope of the Mill Waste Management Plan

The purpose and scope of New Discovery Mines Ltd.'s Mill Waste Management Plan is to identify and manage waste resulting from the processing of ores from the property that will introduce waste products into the environment.

The goal of the Mill Waste Management Plan is to mitigate environmental effects of New Discovery Mines Ltd.'s milling activities and locations on land, vegetation, water, air, wildlife and fish, which have both intrinsic value to the ecosystem and sociocultural and aesthetic values to a variety of land-users.

The objectives of this Mill Waste Management Plan are to operate in such a way as to reduce/reuse and recycle where possible, and to handle and dispose of waste so as to obviate or minimize impact to environment, offer local employment and use local services as best complements the exploration program, to operate in compliance with governing authorizations and legislation, and to strive for continuous improvement in environmental management, which is a core objective of all environmental programs.

Project Description

New Discovery Mines Ltd. wishes to operate under MV2013C0021 and MV2014L2-0002 from the MVLWB. A range of exploration activities, including prospecting, surficial rock sampling, underground bulk sampling, drilling and operation of seasonal tent camps are to be authorized under the permits under application. Additionally, processing of ores in an approved facility and the discharge of waste will occur as contemplated in MV2014L2-0002 as waste waters and waste solids. Dore gold (impure gold bars) and gold-bearing flotation concentrate will be produced.

Processing of the ores recovered from the permitted operations will:

- recycle the maximum amount of water possible,
- ship all concentrates off property to facilities approved for further processing
- produce non-acid generating solids waste products that meet or exceed all guidelines for tailings disposal,
- store these solids in a constrained and monitored environment.
- Discharge no liquids except as already permitted.

Proposed Location of Mill Waste-Management Activities

Mill Waste-management activities will occur within New Discovery Mines Ltd.'s Mon Gold Mine project, which are depicted in *Map 1* (Figure 1) below. Specific waste-management locations at the Mon Gold Mill will be as filtered flotation tailings solids. Approximately 10 to 15% of the mass of solids tails will be as entrained water.

Waste products;

a. Water tank.
b. Dry stack storage facility

Are stored at locations shown on the map in Figure 1. As tailings in a Dry Stack and water in a water tank. No other discharges will occur.

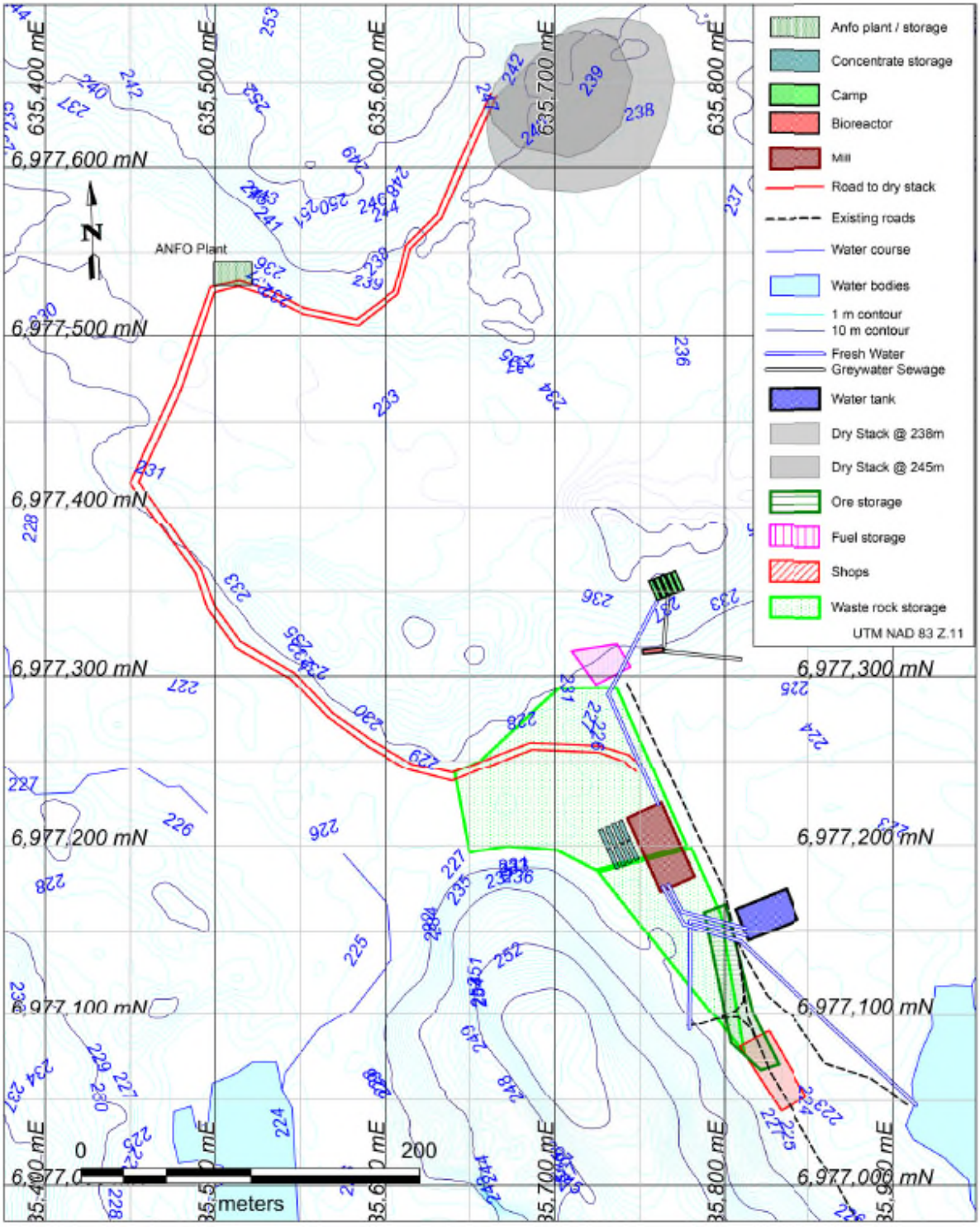

Figure 1 Map 1, Location of waste management sites.

Historical Land-Use and Waste Management

The Mon Gold Mine area has been explored by successions of exploration companies since the discovery of gold here in 1937. The Mon Gold Mine operated between 1988 and 1997, accessed by three portals and one shaft. A 100 tpd gravity mill and associated tailings containment site that operated in 1992 to 1997 are evidence of the potential here

Site and Setting Characteristics

The Mon Gold Mine lies within the Slave Structural Province of the Northwest Territories (the Slave Province), which is an Archaean segment of the North American Craton that covers 213,000 km2 . It is composed of granites, gneisses and supracrustal rocks. The Slave Province is a classical setting for diamondiferous kimberlites, rare earth element, light element and base and precious metal deposits.

For most of the year, the area is covered with ice and snow. Summer typically begins in June, when melting commences; winter usually arrives in October. Temperatures range from highs of around 25 during the brief summer months, to winter lows of -45 which are often magnified by strong, constant winds. Daylight varies from nearly 24 hours in the summer to only a few hours per day during the winter.

Landforms, relief and drainage have been strongly influenced by the effects of several periods of glaciation which, along with a weak fluvial incision, has produced a generally low-lying, undulose or wave-like terrain. Hills of granitic rocks and eskers rise about 15m above datum. The percentage of outcrop averages from about 1%-15%, although locally there are small areas with much higher percentages of outcrop. Frost-heave and/or shattered subcrop also occurs. Flat to undulose muskeg, with or without scattered boulder fields, is separated by treed areas and low hills. In areas of no outcrop, till cover averages from a few centimetres to tens of metres. Glaciation has also produced scattered glaciofluvial landforms such as eskers, braided esker complexes and deltas, outwash plains, boulder fields and alluvial fans.

Approximately 20% of the property is covered by lakes. River systems are juvenile and not deeply incised, however the Yellowknife River occurs to the east of the property. Water levels vary greatly with the season; they are highest during spring runoff and almost dry at the end of summer. Typical muskeg/ northern boreal forest vegetation comprised of black spruce, tamarack, pine, birch, aspen willow, labrador tea, bearberry, lichen and moss is present.

Caribou, wolves, foxes, rabbit, moose, ptarmigan, wolverines, ground squirrels and black bears are native to the area. Most of the larger lakes contain fish and support bird life.

The terrain in the Discovery Lake area where the Mon Gold Mine Project and camp are located is rugged tundra with little topsoil, low-lying shrubs and a large percentage of exposed supracrustal rocks. The area contains hundreds of small, shallow, glacially-formed lakes. The Yellowknife River flows into Great Slave Lake.

Northern Pike and Lake Trout are the most common fish species found in proximal lakes. Other species included grayling and lake whitefish. Most lakes exhibited a well-defined littoral shelf, comprised of large boulder and/or cobble substrates; beyond this shelf, there is a dramatic drop into the pelagic zone.

Conclusion from Existing Site Data

Based upon findings to date, collected during a period of more intensive activity in the 1980's and 1990's, and milling as permitted on the site in the early to mid 1990's, it can be predicted that proposed advanced exploration activities at the Mon Gold Mine projects have low potential of adverse environmental effects attributable to camp and drill waste, particularly given the existing Spill Contingency Plan, and Closure and Reclamation Plan, and corporate commitment to staff and contractor training.

Mill Flotation Tailings

Test work from material collected recently as well as nearly a quarter century of sampling of existing tailings on site are presented.

Test work on flotation tails by Inspectorate Exploration and Mining Services (2014) has shown that the flotation tailings are shown below:

ICP-MS Analysis on Flotation Tails

Element		Unit	Assays Comp 1	Element		Unit	Assays Comp 1
Aluminum	Al	%	1.05	Manganese	Mn	ppm	197
Antimony	Sb	ppm	6.0	Molybdenum	Mo	ppm	7.0
Arsenic	As	ppm	13.0	Nickel	Ni	ppm	189.0
Barium	Ba	ppm	75.0	Phosphorus	P	ppm	68.0
Bismuth	Bi	ppm	<2	Potassium	K	%	0.30
Cadmium	Cd	ppm	<0.5	Scandium	Sc	ppm	3.0
Calcium	Ca	ppm	0.76	Sodium	Na	%	0.34
Chromium	Cr	ppm	357.0	Strontium	Sr	ppm	28.0
Cobalt	Co	ppm	7.0	Titanium	Ti	%	0.1
Copper	Cu	ppm	90.0	Thallium	Tl	ppm	<10
Iron	Fe	ppm	1.37	Tungsten	W	ppm	12.0
Lanthanum	La	ppm	<10	Vanadium	V	ppm	46.0
Lead	Pb	ppm	216	Zinc	Zn	ppm	98
Magnesium	Mg	%	0.70	Zirconium	Zr	ppm	7.0

Whole Rock Analysis on Flotation Tails

Compound	Unit	Assays Comp 1	Compound	Unit	Assays Comp 1
Al_2O_3	%	2.08	MnO	%	0.03
BaO	%	0.01	Na_2O	%	0.71
CaO	%	1.04	P_2O_5	%	0.01
Cr_2O_3	%	0.05	SiO_2	%	88.25
Fe_2O_3	%	2.05	TiO_2	%	0.15
K_2O	%	0.38	LOI	%	0.80
MgO	%	1.07	Total	%	96.58

In addition, SWEP and Modified SWEP tests on both gravity tailings (GC1 residue) as well as flotation tailings (F1 flotation tailings) are shown below:

15. SWEP Test Leachate Analysis

Items	Unit	Sample ID				Method
		SWEP-01 Leachate (GC 1 Residue)	SWEP-02 Leachate (F1 Flotation Tails)	Modified SWEP-01 Leachate (GC 1 Residue)	Modified SWEP-02 Leachate (F1 Flotation Tails)	
pH		5.11	5.16	8.04	8.24	Env
Dissolved						
Ag	mg/L	<0.00006	<0.00006	<0.00006	<0.00006	ICPMS
Al	mg/L	0.07	0.08	0.04	<0.04	ICPMS
As	mg/L	<0.05	<0.05	<0.05	<0.05	ICPMS
B	mg/L	<0.01	<0.01	<0.01	<0.01	ICPMS
Ba	mg/L	0.198	0.079	0.018	0.008	ICPMS
Be	mg/L	<0.005	<0.005	<0.005	<0.005	ICPMS
Bi	mg/L	<0.001	<0.001	<0.001	<0.001	ICPMS
Ca	mg/L	98.54	78.84	18.81	11.12	ICPMS
Cd	mg/L	0.00518	0.00457	<0.00009	<0.00009	ICPMS
Co	mg/L	0.020	0.006	<0.001	<0.001	ICPMS
Cr	mg/L	<0.01	<0.01	0.01	<0.01	ICPMS
Cu	mg/L	<0.01	0.75	<0.01	0.01	ICPMS
Fe	mg/L	0.54	0.91	<0.03	<0.03	ICPMS
Hg	mg/L	<0.0001	0.0003	0.0002	0.0001	ICPMS
K	mg/L	<2	2	<2	<2	ICPMS
Li	mg/L	<0.007	<0.007	<0.007	<0.007	ICPMS
Mg	mg/L	9.2	7.7	0.6	0.7	ICPMS
Mn	mg/L	1.562	1.428	0.049	0.016	ICPMS
Mo	mg/L	<0.02	<0.02	<0.02	<0.02	ICPMS
Na	mg/L	2	<2	2.00	<2	ICPMS
Ni	mg/L	0.05	0.05	<0.03	<0.03	ICPMS
Pb	mg/L	3.71	0.42	<0.07	<0.07	ICPMS
Sb	mg/L	0.0003	0.0013	0.0005	0.0004	ICPMS
Se	mg/L	<0.002	<0.002	0.020	0.005	ICPMS
Sc	mg/L	0.001	0.001	0.001	0.001	ICPMS
Si	mg/L	1.07	1.01	0.26	0.46	ICPMS
Sn	mg/L	<0.002	<0.002	<0.002	<0.002	ICPMS
Sr	mg/L	0.097	0.059	0.042	0.018	ICPMS
Ti	mg/L	<0.01	<0.01	<0.01	<0.01	ICPMS
Tl	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	ICPMS
V	mg/L	0.019	0.019	<0.007	<0.007	ICPMS
Zn	mg/L	0.78	0.39	<0.02	<0.02	ICPMS

The very low concentration of metals in the F1 flotation tailings suggests an efficient flotation process. Their conclusions are:

The environmental tests suggest that the gravity-flotation process route will produce tailings that are unlikely to generate acid due to the removal of the majority of the sulphides, and produce lower levels of dissolved species in tails leachate.

Conclusions

It is recommended that:

1. A P90 -150 mesh grind be used to balance gold recoveries while minimizing fines produced. This will aid in filtering, and produce a more stable (courser-grained) tailings product
2. Samples be collected regularly for SWEP and Modified SWEP tests to assure efficient removal of metals to the tailings.
3. Grade control during mining note sulphide content, to alert the mill to potentially anomalous or unusual feed.