MEADOWBANK GOLD PROJECT

Groundwater Monitoring Plan

In Accordance with Water License 2AM-MEA0815

Prepared by:
Agnico-Eagle Mines Limited – Meadowbank Division

Version 3
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EXECUTIVE SUMMARY

This document presents the Meadowbank Mine Groundwater Monitoring Plan, a requirement of the Meadowbank Type A Water License No. 2AM-MEA0815. Conditions applying to groundwater monitoring; Schedule 1, Table 2: annual monitoring of groundwater quality at well locations that are to be determined.

The Meadowbank Mine has currently four operating groundwater monitoring wells. Two of these wells were drilled in 2008 and two were drilled in 2011. Additional, wells were previously drilled in 2003, 2006, and 2008, however these wells are inoperable. The design, installation, and initial production of each well were completed by Golder Associates.

Groundwater quality data has been used to predict the future quality of water that will accumulate in the pits during operation, and to determine baseline groundwater quality underneath the tailings basin before tailing deposition.

Groundwater wells will be sampled on a bi-annual basis. Analytical parameters will comply as per Schedule 1, Table 1, Group 3 of the Meadowbank Water License. Quality Assurance/Quality Control procedures and samples will be implemented for each monitoring well for each sampling occurrence.

An annual groundwater monitoring report will be submitted by Agnico-Eagle Mines Limited to the Nunavut Water Board (NWB) by March 31 annually. This report will conclude the data from the previous year's results, changes, dates in which sampling took place, methods, personnel involved with sampling, and an assessment of the data obtained.

IMPLEMENTATION SCHEDULE

As required by Water License 2AM-MEA0815, Part B, Item 16, the proposed implementation schedule for this Plan is outlined below.

This Plan will be immediately implemented (January 2012) subject to any modifications proposed by the NWB as a result of the review and approval process**.**

DISTRIBUTION LIST

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DOCUMENT CONTROL

Version	Date (YMD)	Section	Page	Revision
1	08/08/08			Comprehensive plan for Meadowbank Project
2	09/03/31	all		Comprehensive update of plan to include 2008 well installations
3	11/12/14			Update Executive Summary; insert Figure 1; update Table 1; addition of information on wells created in 2011; include well installation section;

Version 3
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SECTION 1 • INTRODUCTION

This document presents the Meadowbank mine Groundwater Monitoring Plan. The location of each of the groundwater wells, design characteristics of each and the groundwater sampling methodology used to recover water samples for chemical analysis are presented.

1.1 PURPOSE OF GROUNDWATER MONITORING

Groundwater quality data has been used to predict the future quality of water that will accumulate in the pits during operation, and to determine baseline groundwater quality underneath the tailings basin (the northwest arm of Second Portage Lake) before tailing deposition. To this end, groundwater monitoring wells have been installed to sample talik water (unfrozen ground beneath large lakes) in areas where through taliks exist. No groundwater monitoring wells will be installed at the Vault deposit, as the Vault pit will be developed in an area where the talik does not extend down through the permafrost.

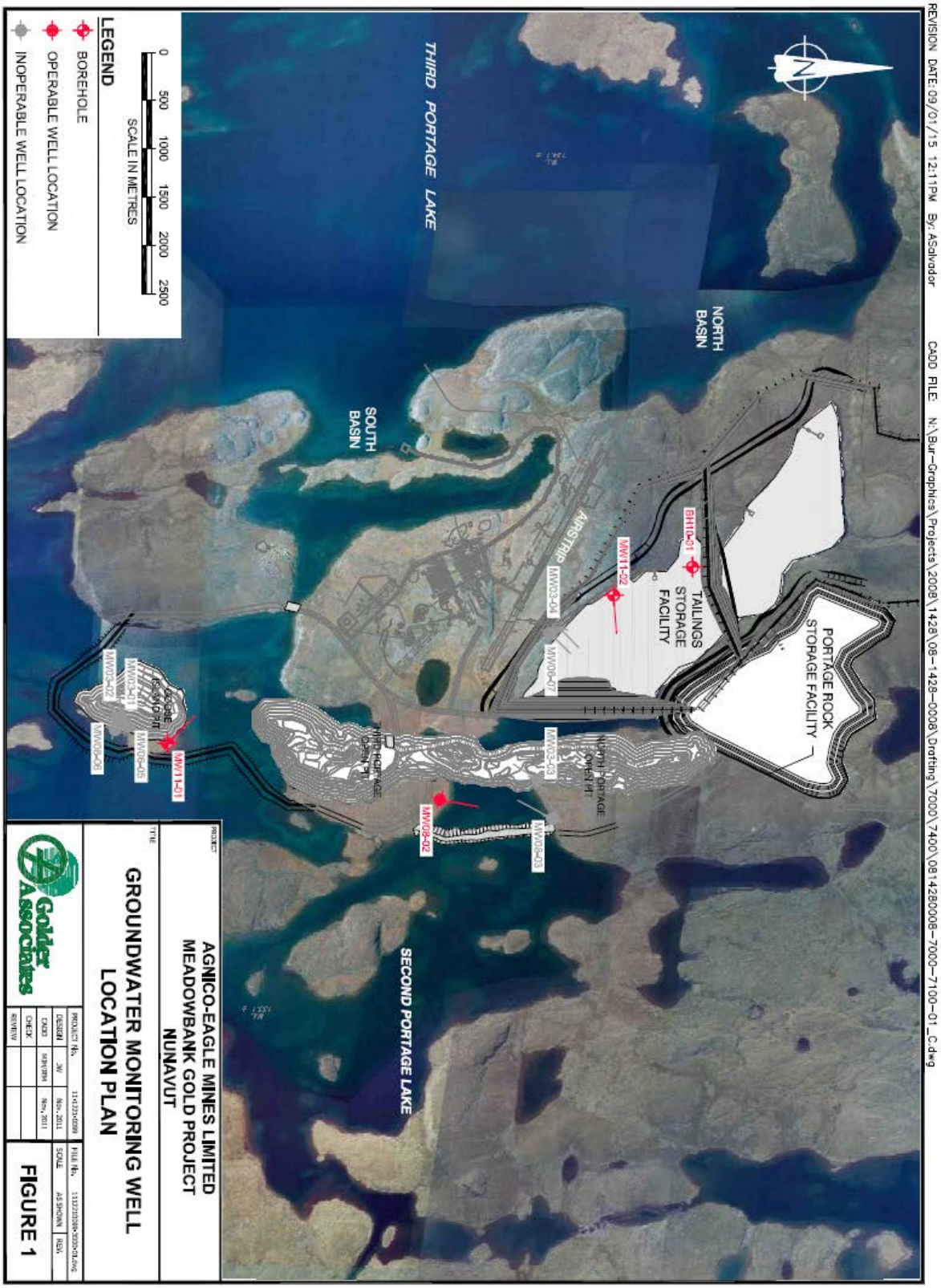
1.2 EXISTING MONITORING WELLS

Four monitoring wells were installed at the Meadowbank Gold Project site in 2003. Three of these wells (MW-03-02, MW03-03 and MW03-04) were damaged by frost action between 2004 and 2006. The fourth (MW03-01) was operable until 2010 when it was also damaged by frost action. The three defective wells were replaced in 2006 (MW06-05, MW06-06 and MW-06-07). The three wells were again damaged by frost action. MW06-05 and MW06-06 were replaced in 2008 with a more robust design (MW08-02 and MW08-03). The replacement of the third defective wells (MW06-07), at the tailings storage facility, was deferred until verification of the effectiveness of the new well designs in 2009-2010. In 2011 two monitoring wells were installed. Well MW11-01 was installed on Goose Island adjacent to the Goose open pit outline, to replace one of the 2003 wells (MW03-01), and well MW11-02 was installed at the tailings storage facility to replace MW06-07 and to monitor shallow groundwater quality below the basin where tailings will be deposited. The well MW08-03 shows a blockage in 2010 and 2011. Action will be take in 2012 to try to recuperate this well. The coordinates for each of the groundwater wells and specific design characteristics are provided in Table 1.

Table 2 - Monitoring Well Locations

Well ID	Location UTM coordinates		Azimuth	Dip	Total Drilled	Screen Interval Depth
	Easting	Northing				
MW08-02	639185	7213901	010	60	200 m	170-200m
MW08-03	639282	7214483	200	60	200 m	170-200m
MW11-01	638893	7212488	315	50	220 m	195-220m
MW11-02	638125	7214802	80	80	81 m	65-81m

Figure 1 - Map of Monitoring Wells On the Meadowbank Site



SECTION 2 • WELL INSTALLATION

2.1 2008 WELL INSTALLATION

2.1.1 MW08-02 & MW08-03

The two boreholes drilled for the replacement monitoring wells MW08-02, and MW08-03 were drilled using standard PQ and HQ size coring method. Heated water from the Second Portage Lake was used as drilling fluid during drilling. The boreholes were drilled to 200m depth along a 60 degree angle. Each borehole was cased to 20 m past the anticipated base of the permafrost using HWT flush-joint casing. The geological information used to was based on the core recovered from each borehole. The first 170 meters of the MW08-02 borehole were drilled without core recovery; the screened interval core was collected to confirm the target lithology. The full length of MW08-03 borehole was logged. Agnico-Eagle geologists logged the core from both boreholes. The well locations in UTM coordinates are presented in Table 1.

2.1.2 Instrumentation

The MW08-02 & MW08-03 wells were constructed with 1.5-inch diameter, schedule 40 stainless steel pipe and 18 m long 2 inch diameter stainless steel screen. The annulus between the casing and the monitoring well pipe was sealed at the base of the casing (169 m depth) with a pneumatic packer inflated with propylene glycol (a non-toxic and biodegradable liquid with low freezing point). This isolated the annular space between the borehole casing and the monitoring well pipe from the borehole interval below the permafrost. A small diameter double valve pump (DPV) driven by inert nitrogen gas was fixed to the outside of the riser pipe to allow removal of water from the well annulus above the packer to keep this area dry and minimize the potential for frost damage to the outside of the monitoring well pipe. A smaller diameter stainless steel pneumatic packer was installed inside of the monitoring well pipe immediately above the screen interval to prevent freezing of the inside of the monitoring well pipe throughout the permafrost. After sample collection, the inside packer is inflated and a portable DPV pump is used to evacuate water above this packer and keep the well pipe dry between the sampling events. A heating cable was attached to the outside of the monitoring well pipe through the entire anticipated interval of permafrost. The heating cables prevent water from freezing during sampling, and constitute a back-up system to melt the ice inside the monitoring well in case of a packer failure.

2.2 2011 WELL INSTALLATION

2.2.1 MW11-01 & MW11-02

Two boreholes were drilled using standard HQ size coring method for the installation of monitoring wells MW11-01 and MW11-02. Heated lake water was used as drilling fluid during drilling. The

borehole for MW11-01 was drilled to 220 m depth at an angle of 50 degrees below ground surface and the borehole for MW11-02 was drilled to 81 m depth at an angle of 80 degrees below ground surface. Each borehole was cased through the overburden and into the first few metres of bedrock. All core was recovered from both boreholes and logged by Agnico-Eagle geologists. The well locations in UTM coordinates are presented in Table 1. Borehole logs and monitoring well designs for previously-existing installations are presented in previous reports (Golder 2008).

2.2.2 INSTRUMENTATION

2.2.2.1 Well MW11-01

MW11-01 was constructed with 1.25 inch diameter, schedule 40 stainless steel pipe and 15 m of 2 inch diameter slotted stainless steel screen. The well was installed into an open borehole. A pneumatic packer was installed in between the slotted screen and the solid pipe at a depth of 193.28 m below ground surface (bgs). The pneumatic packer was inflated with propylene glycol (a non-toxic and biodegradable liquid with a low freezing point) and served as the seal between the talik water and the overlying permafrost and surface water. A heating cable was attached to the outside of the stainless steel pipes, above the packer through the entire anticipated interval of permafrost. The heating cables allow for thawing of the well for subsequent sampling events and prevent water from freezing during sampling. The annulus between the solid pipe and the borehole above the packer was filled with grout through a tremie line that was installed over the length of the solid pipe. The grout provides support and minimizes the potential for frost damage to the outside of the monitoring well.

2.2.2.2 Well MW11-02

MW11-02 was constructed with 1.5 inch diameter, schedule 40 stainless steel pipe and 15.25 m of 2 inch diameter slotted stainless steel screen. The well was installed into an open borehole. The annulus between the stainless steel well and the borehole was filled with approximately 16 m of sand. A bentonite seal approximately 4 m thick was placed on top of the sand. The remainder of the annulus was loosely filled with gravel and a grout seal was placed at the top of the well. Although the ground is not frozen at this location in the talik, it is predicted to freeze in time. For this reason, a heating cable was attached to the outside of the stainless steel pipes above the bentonite seal. The heating cable will allow for thawing of the well in the event of permafrost in the area.

SECTION 3 • SAMPLING METHOD

3.1 GROUNDWATER WELL MW08-03

3.1.1 Well Preparation for Sampling

At the time of purging and sampling the heat trace cables will be activated to warm the well pipe. Once the new well has been warmed up the pneumatic valve inside the well pipe will be deflated to allow groundwater to flow into the well pipe.

3.1.2 Well Purging

The well is then purged to remove standing water inside the well and to induce the flow of fresh groundwater from the rock formation. Purging is done by lowering a portable double valve sampling pump (DVP) into the well pipe to approximately 10 to 20 meters above the top of the screened interval and activating the DVP. The pump is activated by pumping compressed air into a ¼" Low Density Polyethylene (LDPE) tubing attached to the DVP. The quality of the purged water is to be monitored for pH, electrical conductivity, temperature, water clarity and colour (visual observation) during this activity. A minimum of 3 well volumes (volume of water between the in-well packer and bottom of screened interval) are to be removed prior to sampling or until the monitored parameters stabilize (values remaining within 10% for three consecutive readings).

3.1.3 Groundwater Sampling

Groundwater is to be sampled immediately after purging, by lowering the intake of the DVP tubing to 3 to 5 meters above the screened interval. The same DVP pump and tubing used for purging is to be used for sampling but utilizing compressed nitrogen gas to evacuate water that entered the sampler unit. Nitrogen gas is stable (inert) and avoids alteration of groundwater chemistry during sampling. Chemical parameters are to continue to be measured during sampling.

A groundwater sample is to be collected in clean, laboratory-supplied containers. Where required, preservatives will be added to the sample bottles prior to sample collection, to minimize chemical alteration during transport to the laboratory. Samples analyzed for dissolved metals are to be filtered through a 45 μm inline filter.

Samples are to be collected in duplicate and submitted as blind duplicates (using different reference numbers) to the analytical laboratory. Duplicate samples are to be analyzed for chloride and dissolved metals only.

3.1.4 Well Close-Down Procedure

Once the water sample is obtained, the pneumatic valve will be re-inflated and the well water above the valve will be removed using the portable DVP pump. The DVP pump fixed to the outside of the

well will also be activated to remove water accumulated in the annulus of the well during purging and sampling (if any). The heating cable will be de-activated and the cap will be replaced on the casing.

3.2 GROUNDWATER WELLS MW08-02, MW11-01 & MW11-02

3.2.1 Well Preparation for Sampling

Because water is allowed to rise and freeze in place within the well pipe, the heat trace cable activation period will be considerably longer, in the order of 4-7 days, to thaw standing water (ice) present in the well pipe. The effective heating cables in the groundwater wells should allow the water present in the well pipe to thaw in a timelier manner.

3.2.2 Well Purging

Once ice is fully thawed purging is initiated in the same way as for the 2008 wells, by inserting the DVP and tubing at 10 to 20 meters above the screened interval and removing well water by pumping compressed air. Groundwater will be continually pumped from the well until electrical conductivity and pH readings stabilized. This process may require more than 3 well volumes. In consideration of the low hydraulic conductivity of the rock causing a very slow recovery of groundwater level (only a few litres of groundwater can be removed at a time), this process can take up to 4 days to complete.

3.2.3 Groundwater Sampling

Groundwater sampling will be carried out immediately after well purging, in the same manner as for the 2008 design wells (same equipment, elevation of tube intake for water sample, use of nitrogen gas, monitoring of water quality parameters during this process). Groundwater samples are to be collected in clean, laboratory-supplied containers. Where required, preservatives will be added to the sample bottles prior to sample collection, to minimize chemical alteration during transport to the laboratory. Samples analyzed for dissolved metals are to be filtered through a 45 μm inline filter.

Samples are to be collected in duplicate and submitted as blind duplicates (using different reference numbers) to the analytical laboratory. Duplicate samples are to be analyzed for chloride and the suite of dissolved metals specified in Table 1 of Schedule 1 of the Meadowbank Water License.

3.2.4 Well Close-Down Procedure

Once the water sample is obtained, the heating cable will be de-activated and the cap will be replaced on the well.

SECTION 4 • SAMPLING

Sampling of each well will be performed on an bi-annual basis. Each well will be thawed prior to commencement of purging. A minimum of 3 well volumes (volume of water between the in-well packer and bottom of screened interval) are to be removed prior to sampling or until the monitored parameters stabilize (values remaining within 10% for three consecutive readings).

4.1 ANALYSIS

These samples will have field parameters taken (pH and Conductivity) and will also be sent to a certified laboratory for analysis. Analytical parameters will include the following, per Schedule 1, Table 1, Group 3 of the Meadowbank Water License: pH, alkalinity, turbidity, hardness, ammonia nitrogen, nitrate, nitrite, chloride, fluoride, sulphate, total dissolved solids (TDS), total and free cyanide (for well located in the flow path of the tailings containment area) and the following dissolved metals: aluminum, arsenic, barium, cadmium, copper, iron lead, manganese, mercury, molybdenum, nickel, selenium, silver, thallium and zinc.

4.1.1 Analytical Laboratory

Meadowbank Gold Mine will use Multi-lab Direct as the analytical laboratory for analyzing samples for groundwater monitoring. Multi-lab Direct is ISO / IEC 17025 certified and is a reputable laboratory in the Abitibi Region of Quebec.

4.2 QUALITY ASSURANCE / QUALITY CONTROL

4.2.1 Handling

The following procedures will be followed to provide data quality control:

- Measurement of field parameters at selected intervals until stable readings (within 10% of each other);
- Minimization of the exposure of the sampled water to the atmosphere;
- Use of compressed, inert gas (nitrogen) to evacuate water for sample collection;
- In-situ measurement of sensitive chemical parameters (pH, conductivity, dissolved oxygen, alkalinity, where applicable); and

Abiding by sample preservation methods (refrigeration and use of preservatives where needed); and specified holding times.

4.2.2 Sampling

Do to the effort that is needed to thaw and sample these wells, field blanks and duplicates will be taken at each station for all sampling occurrences. This will assess variance of the total method including sampling and analysis as well as document the precision of the sampling and analytical process.

SECTION 5 • REPORTING

An annual groundwater monitoring report will be submitted by Agnico-Eagle Mines Limited to the Nunavut Water Board (NWB) by March 31 of the following year. This report will include the following information:

- Description of the instrumentation and location in UTM coordinates of monitoring wells;
- Description of the working condition of the existing wells;
- Date of groundwater sampling;
- Name and title of personnel who completed groundwater quality monitoring;
- Analytical results including: field data, laboratory analytical data and QAQC information; and
- Comparative assessment of data obtained to date to input values used in the Water Quality Model for the site.