	Exploration
	MEL-EXP-XXX-XXXX
	Drilling On-Ice

Electronic Approval	
Approver/Owner	Exploration
Approver	Geology & Environment
Reviewer	OHSC Representative

1 – PURPOSE

The purpose of this procedure is to provide direction for on-ice drilling to minimize the potential for environmental impacts related to these activities. Please refer to MEL-EXP-ENV-0001 for a comprehensive list of overarching drilling activities requirements related to environmental management.

On-Ice drilling or drilling near a body of water or a watercourse should not be carried out as part of "regular" drilling without having been the subject of reflection on the advantages/disadvantages related to such work, even if permitted by the water license. If an adjustment to the dip or location makes it possible to achieve a similar result with drilling on land, this will be considered.


2 – SCOPE

This procedure applies to all Agnico Eagle personnel and contractors involved in surface exploration activities at the Meliadine Gold Project.

3 – REGULATORY CONTEXT

Refer to MEL-EXP-ENV-0001.

This document is uncontrolled if printed.	Issue date: 22/12/2023 MEL-EXP-XXX-XXXX – Drilling on Ice	Page 1 of 8
---	--	-------------

	Exploration
	MEL-EXP-XXX-XXXX
	Drilling On-Ice

4 – PRELIMINARY INFORMATION

4.1	<p>Required Equipment</p> <p>Winter gear, PPE, work cards/inspection tablet, radio.</p>
4.2	<p>Required Training</p> <p>Working on ice procedure, Driver awareness, First aid course, Supervisor Level 2</p>
4.3	<p>Other Special Information</p> <p>AMQ-SAFE-0001 Working on Ice Procedure, MEL-HSH-PRO-0021 Adverse Weather-Work Restriction, MEL-ENI-PRO-0004 Convoy Procedure, MEL-GEO-PRO-3007 Surface DDH shut down procedure, MEL-GEO-PRO-3002 Working on Ice, MEL-GEO-PRO-3003 Auger Ice Profiling, MEL-GEO-PRO-3005 Open Hole on Ice, FOR-008 Inspection Site De Forage Surface 2021, FOR-010 Inspection Pre-Forage</p>


5 –PROCEDURES FOR ON-ICE DRILLING ACTIVITIES

5.1 Before On-Ice drilling Activities

The following items must be verified by the drilling supervisor, geology coordinator and environment coordinator before drilling equipment is mobilised onto a lake:

- An Internal Environmental Permit has been issued from the Environment Department.
- A survey of the ice thickness must take place, as specified on the procedure MEL-GEO-PRO-3002 Working on Ice procedure. A report must be prepared by the exploration technician and coordinator and approved by the Geology Superintendent.
- A snow road with a minimum of snow cover equal to the dozer track height is to be established to each drill site to protect the tundra from inadvertent damage.

This document is uncontrolled if printed.	<p>Issue date: 22/12/2023</p> <p>MEL-EXP-XXX-XXXX – Drilling on Ice</p>	Page 2 of 8
---	---	-------------

	Exploration
	MEL-EXP-XXX-XXXX
	Drilling On-Ice


- An inspection of the drill setup will be completed. The inspections to be entered into Intelix will include but will not be limited to the following points:
 - All drilling equipment will be free of leaks.
 - All skids will be free of dirt that might be transferred onto the ice.
 - CaCl₂ must be stored within secondary containment to prevent spillage.
 - All mobile fuel tanks are double-walled and equipped with secondary containment for the fuel nozzle.
 - The recirculation tanks will be equipped with water level sensors able to indicate either visually or audibly of a potential overflow before it occurs.
 - An accessible flow meter needs to be installed at each drill.
 - Waste disposal receptacles are in place and clearly labelled.

4.2 During On-Ice Drilling Activities

The following items must be verified by the drilling supervisor during drilling activities:

- All water use must be recorded daily.
- A spill kit is available at each drill set up.
- Drip pans are installed, and absorbent matting inspected and replaced as required.
- All fuel and hazardous materials are stored away from open holes in the ice.
- Drill cuttings and water recirculation system functioning optimally:
 - No cuttings or drill wastes are deposited onto the ice.
 - As recirculation water is considered a spill, measures are to be taken to prevent a release to the lake surface including an overflow protection system on the recirculation tank.
- All drill cuttings disposal areas will be inspected each shift to ensure they remain confined to the designated area. If drill cuttings are observed to be flowing outside of the designated area, this is to be documented in the daily inspection form and drill cuttings are to be disposed of in an alternate location approved by the Environment Department.
- Drilling additives or mud shall not be used in connection with holes drilled through lake ice unless they are first approved by the Environment Department. If approved, they

This document is uncontrolled if printed.	Issue date: 22/12/2023 MEL-EXP-XXX-XXXX – Drilling on Ice	Page 3 of 8
---	--	-------------

	Exploration
	MEL-EXP-XXX-XXXX
	Drilling On-Ice

must be recirculated or contained such that they do not enter the water or are demonstrated to be non-toxic.

- All domestic and hazardous is segregated, stored securely and disposed of appropriately as per site standards.
 - All food waste and wildlife attractants must be removed from the drill location and disposed of at the mine site at the end of each shift.
- When using a portable water pump on a frozen water body, a drip pan must be installed at the base of the pump when refueling.
- Buoys are attached to water lines should they become frozen into the ice and require removal in the spring. A waypoint is to be collected for the buoy/waterline location.
- All drill equipment will be inspected and repaired as per the preventative maintenance schedule.


4.3 After On-Ice Drilling Activities

Once the drill setup is moved and the drill site has been decommissioned the following items must be verified by the drilling supervisor:

- There are no signs of spills, drill cuttings or other foreign materials left at the drill site.
- All domestic and hazardous waste has been removed from the drill site.
- If a water line is to be left in the ice a buoy needs to be attached, with an ID associated and a GPS point is to be documented so that the line can be recovered after spring melt.
- All on-ice drill collars must be removed, and holes must be plugged with cement.
- A snow road must remain in place during the end of winter to protect the tundra inside the 31 meters buffer. Geology is to picket the buffer in a way the Dozer will recognize where not to use his blade to scrape the tundra. A silt fence is to be installed by environment as soon as the access is closed. When the silt fence will be installed, an inspection form needs to be completed and entered in Intalex.

4.4 Inspections, Reporting and Documentation

This document is uncontrolled if printed.	Issue date: 22/12/2023 MEL-EXP-XXX-XXXX – Drilling on Ice	Page 4 of 8
---	--	-------------

	Exploration
	MEL-EXP-XXX-XXXX
	Drilling On-Ice

All field inspections will be documented in Intelex using a field tablet. This will allow for consistent tracking of and access to information and data related to the drilling activities and timely response to any deficiencies noted during the inspections.


Templates for each inspection type are available to all users (drilling personnel, geology, environment). Completed inspection reports and appended data (flow meters readings, photos, GPS points) will be uploaded to Intelex by an automatic synchronization when the tablet establishes a connection to the site Wi-Fi network.

Inspection Type	Frequency	Responsible Department/Personnel
Supervisor work card visit	Twice a shift	Drilling company supervisor
Pre-Drilling inspection	Before to start a new hole	Drilling company supervisor
Pre-operation inspection	At the start of the shift	Drill Runner
Spill containments inspection	Twice a shift	Drill Helper
Geology Technician inspection	Once a week per drills	Geology Technician
Environmental inspection	Once a week per drills	Environmental Technician

4.5 Spring Inspection procedure:

It is possible that debris or material will become visible as snowmelt proceeds during the end of the winter. As such, every drilling site drilled during the winter will need to be revisited when the snow coverage is melting for inspection. This procedure will apply for holes drilled on ice and on land. Therefore, the geology technician report after the drilling will always ask for a 2nd visit for

This document is uncontrolled if printed.	Issue date: 22/12/2023 MEL-EXP-XXX-XXXX – Drilling on Ice	Page 5 of 8
---	--	-------------

	Exploration
	MEL-EXP-XXX-XXXX
	Drilling On-Ice


these holes. Any debris or material observed will be cleaned up as per the procedures described above and within procedure MEL-EXP-ENV-0001.

As some winter programs can be spread into a large territory with numerous drill holes, an organized and structured way need to be implemented to ensure the visits are prioritized and no sites are forgotten.

- Small ponds and lake shores are the ones that are melting the faster, visiting drill sites over there will be a priority when the snow will start melting.
- Drill sites on the tundra close to the lake shores will need to be prioritized in second. The accesses used to get on lakes and the depressions used for the cutting deposition are in the same level of priority.
- Drill sites on the lakes are to be inspected and cleaned right after.

Documentation of each site inspection in a structured way is an important component of due diligence. Some material may be cleaned up immediately and some may require future visits (if stuck on ice, or frozen in soil for instance). Documentation and record keeping is crucial to ensure nothing is left behind.

This document is uncontrolled if printed.	Issue date: 22/12/2023	Page 6 of 8
	MEL-EXP-XXX-XXXX – Drilling on Ice	

	Exploration
	MEL-EXP-XXX-XXXX
	Drilling On-Ice

6 – SPECIFIC RESPONSIBILITIES

Role	Responsibility
Drilling Supervisor	Ensure high standards are kept at the drills
Drilling Personnel	Produce safe meters in an environment friendly way
Geology General Supervisor	Ensure industry standards are followed, provide the contractors with clear directions in line with the client expectations
Geology Coordinator	Make sure the contractor understands its role, have proper support
Geology Technician	Verify on the field that standards are followed by the drilling personnel
Environment General Supervisor	Provide guidance and support to the environmental team for their drilling sites inspections
Environment Coordinator	Ensure that numbers of inspections at the drills are met. Communicate all non-conformity to drilling supervisor.
Environment Technician	Verify on the field that standards are followed by the drilling personnel

7 – REFERENCES / RELATED DOCUMENTS

References
MEL-EXP-ENV-0001

8 – CHANGE LOG

Version	Revision date	Modification	Initiator
001	22/12/2023	Procedure was created.	Geology and Environment Departments

This document is uncontrolled if printed.	Issue date: 22/12/2023 MEL-EXP-XXX-XXXX – Drilling on Ice	Page 7 of 8
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