



Drilling Procedures Summary

**Submitted Drilling Procedures Summary as Requested by the NWB in Licence 2BE-RBP0608
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Prepared by Advanced Explorations Inc.

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A summary of the water conservation procedures at the Roche Bay drilling camp by Advanced Explorations Inc for the 2008 season.

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Overview

This document provides a progress summary of the procedures that have been implemented since the drilling operations were last inspected and provides the Nunavut Water Board a better idea of the Advanced Explorations Inc.'s water use procedures at their drilling camp near Roche Bay. It also addresses AEI's response to the specific concerns raised by the July 2007 inspector's report.

Camp Description

The camp is located directly on the banded magnetite iron formation which is the centre of this year's drilling program, as shown on the figure below:



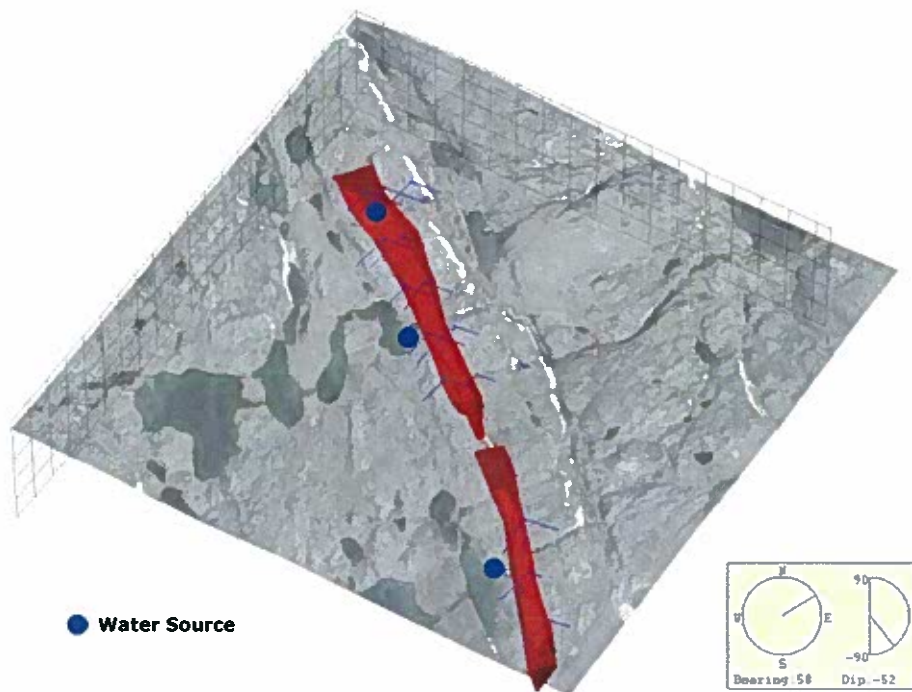
The overall size of the camp varies between 45 and 60 workers. This includes: 1-2 drill foreman, 1 drill mechanic, 8 drillers, 8 helpers (2x12 hr shifts for up to 4 drills), 1 helicopter engineer, 2 Helicopter Pilots, 4 core cutters, 4 geo technicians, 2 cooks, 1 paramedic, 6-8 local helpers/labourers, 1 camp manager, 1 site supervisor, 1 site supervisor assistant and space for 4 visitors which fluctuates depending on the time of year. Most crews work on a 6 weeks on, 2 weeks off rotation, with local labour working on a 4 weeks on, 10 days off rotation.

Camp Water Source and Usage

The exploration camp is located adjacent to a small lake and stream. During freezing conditions, the lake was used for all camp water needs. However, following spring runoff, this source proved inadequate for all needs, and thus was used only as a source of non-potable water. Drinking water was flown into camp in the form of commercial bottled water, or from a nearby large river source. In camp, we use on average 7.5 cubic meters, or 7,500L per day from the lake.

Drilling Activities

Over the summer 53 holes were drilled as part of the mineral exploration program, for a total of 16,500m. The following map shows the concentration of these activities:



Drill Water Usage

For drilling units, we estimate usage per drill if running 24/7 at about 82 cubic metres/day, or 82,000L. This would represent the maximum water demand on any given day – on average, we experience 12 hours of down-time for every three days of drilling. As a result, this summer with 4 drills running resulted in an average water use of approximately 274,000L per day. Note that this is significantly less than the 510 cubic metres in the licence amendment application, since the application was based on a much larger drilling program using 8 drills. Water for drilling was taken from nearby lakes – precise geographic coordinates of water sources are available upon request. We have made efforts to reuse water, including installing a poly drill system to re-circulate water at the drills. However, there were significant issues with this technology in relation to local conditions (e.g. poor removal of drill cuttings) and the approach needed to be abandoned. We responded to this problem by establishing monitoring of lake water levels to make sure no significant impact on water levels was occurring due to the drilling operations. A better water re-circulation system for the drills is planned for next year starting from the beginning of the drilling program.

Drill Cutting Disposal

The drill return is filtered through a baffle system where possible, or allowed to settle behind constructed berms to remove cuttings. Cuttings from the baffle system are then placed back into their source drill-holes. Cuttings that settle out behind the berm are left in-place and allowed to dewater naturally. Overflows from baffles and berms are captured using sand bags and left in place to filter over a number of days. Calcium chloride is the only drill additive used.

Remediation for drill sites begins immediately, with all cleaning activities fully completed within 4 days of completion of drilling. Drill cuttings are contained in bags or behind berms and used to return the site to its natural contour (if required) as well as for other restoration work that may be needed. These restored areas (including the cuttings behind berms) are then covered with peat moss to help with natural re-vegetation of the site. A complete list of holes so restored with images is available on request. Note that a control group of holes, representing 10% of those drilled, were not so remediated in order to get a better idea of the effect peat moss has in contributing to soil restoration. All holes will be inspected for evaluation when the camp re-opens next year.

Response to Inspector's Report

Last year (July 15, 2007) an inspection by NWB found discrepancies between the procedures proposed for that year between water conservation policies and practice taking place at the time. Specifically, the inspector found the following:

The practice of not controlling the returns from the drill and having the drill return flowing downstream into the potable source for the camp is not in fact supported or condoned by the Inspector and such was conveyed to the staff and drillers on site at the time of the inspection.

The drill will be set so that it will re-circulate water as our purpose is to keep our water usage to a minimum. Any water that does need to be disposed will first go through a tank whose purpose is to enable the suspended solids to settle to the bottom of the tank before being spilled. This in fact was not the process noted during the period of inspection and it is of concern that the licensee is not submitting an application for modification to the Nunavut Water Board to address these changes in operations.

Finally, it should be noted that all drill cuttings and wastes associated with the drilling process are not to be "spilled" but in fact secured in a low lying area or constructed sump such that they will not flow or be released back into the environment or a water source. This sump or location is to be located at least 31m above the ordinary high water mark of any adjacent water body.

It was noted that water meters were not installed on the intakes for either the potable water or the drill inspected during the Inspection. This is to be addressed by the period of the next inspection.

Since this report, drilling practices have been changed to improve water conservation:

- Drill return is controlled and processed through a baffle or berm depending on the surface
- Drill return is not allowed to flow into potable water
- Drill cuttings and waste are secured in their original drill holes
- Water meters were installed on the potable water intakes
- Water meters were also installed on drills; unfortunately, our assessment is that drill operators have shown inadequate compliance with use of water meters. As a consequence, we have committed to structuring drill operator contracts to require universal and consistent use of water meters when drilling for next year.