HORNBY BAY
MINERAL EXPLORATION

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Addendum
to the
Mouse Lake Project - Uranium Exploration Plan

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Drilling Fluid Products To Be Used

For drilling operations related to the Mouse Lake Project, Hornby Bay Mineral Exploration Ltd. contracts the services and equipment of Cyr Drilling International Ltd.

The following drilling fluid products are to be used in the drilling program:

- W-OB Polymer – natural-based polymer; biodegradable
  Function: viscosifier
  Standard Blend concentration: 4.3- 5.7 liters per 1000 liter mix (for fresh water); 8.6-10 liters per 1000 liter mix (for 15% $CaCl_2$ brine)
  Maximum Sump Concentration: 3 liters per 1000 liters of supernatant fluid

- DR-133 Polymer – synthetic polymer
  Function: viscosifier; flocculant
  Standard Blend concentration: 2.1- 2.9 liters per 1000 liter mix (for fresh water); <0.25 liters per 1000 liter mix (for 15% $CaCl_2$ brine) added as a flocculant at outlet to facilitate settling in the tank system
  Maximum Sump Concentration: 0.5 liters per 1000 liters of supernatant fluid; DR-133 serves a secondary function of encapsulating solids, hence it leaves the system as it attaches to solids and settles out of the fluid, resulting in diminished concentrations in the supernatant fluid.

- Calcium Chloride ($CaCl_2$)
  Function: salt used for freeze point suppression; inhibitor of swelling clays
  Concentration up to 15% w/w; $CaCl_2$ will only be used as necessary to maintain a safe working environment down the hole to prevent freeze in.
  Maximum Sump Concentration: always less than 15% because of natural dilution from potential down-hole fresh water and the dilution of any fresh-water mud already existing in the sump when the brine-water mud is added to it.

Further details on the drilling fluid products are presented in the following documents attached to this Addendum (total 2 sheets):

- Product Data Sheet – W-OB Polymer (1 sheet)
- Product Data Sheet – DR-133 Polymer (1 sheet)

W-OB Polymer

DESCRIPTION

W-OB POLYMER is a liquid suspension comprised of a long chain biodegradable natural polymer and a blend of nonvolatile carriers. It is designed to maximize viscosity yield and minimize hydration times by finely dispersing the dehydrated polymer in the carrier fluid. Does not have a negative flocculating effect on bentonite systems and is less susceptible to salt or brackish water contamination. Allows for easy, quick and even mixing.

PRIMARY FUNCTIONS

- Viscosifier for FRESH and SALT or BRACKISH water sources
- High "low shear rate" viscosity for hole cleaning

SECONDARY FUNCTIONS

- Functions as a 2 part system with DR-133 to offer exceptional rheology profile and inhibition on sensitive formations.
- Lubricates the drilling assembly

MIXING

If being mixed as a standalone product or in combination with DR-133 in an open system it is easiest to place the container over the tank at a place of agitation and poke a small hole near the bottom and open the top to allow for gravity drainage. The hole size can be fine tuned to achieve consistent desirable visc. Ensure that each jug is shaken before using as the product may settle over time.

Recommended concentration when mixed with DR-133 – 2 Liters/1000L water
Recommended concentration when mixed alone with no other viscosifiers – 3-4L/1000L water
Recommended concentration to enhance bentonite system properties – 1.5L/1000L Mud

ENVIRONMENT

Non-dangerous goods

PACKAGING

20 liter Jugs.

DR - 133 Polymer

DESCRIPTION

DR-133 POLYMER is a high yield, readily dispersible, anionic, liquid synthetic polymer formulation that can act alone or as part of a complete fluid solution for varied demanding drilling situations.

PRIMARY FUNCTION

- Increase viscosity to provide hole cleaning and cuttings transport
- Shear thinning polymer to reduce pumping pressure demands

SECONDARY FUNCTION

- Maintains hole conditions in friable zones such as overburden, silts, sands and clay
- Superior lubricating qualities eliminate vibration while increasing core recovery
- Encapsulating structure reduces swelling of clays and caving shales

MIXING

DR-133 POLYMER can be added either by either batch measuring the prescribed amount and adding at a point of agitation or continuous additions by poking a small hole in the bottom and top of the jug and placing near a point of agitation above the tank.

If being mixed as part of a complete polymer system add approximately 2L for every m^3 of fluid under normal drilling situations

If being mixed as a standalone product increase the mixture to 3.5-4L/m^3 and vary concentration depending on hole conditions.

If being added as an over burden binder or to a bentonite system as an extender add 3L/m^3 after the bentonite has been added to the mix and allowed to hydrate.

ENVIRONMENT

DR-133 is environmentally acceptable, is non-toxic and does not ferment. When mixed with water it is tasteless, odourless and colourless.

PACKAGING

20 liter pails or 2 x 10 liter plastic jugs in a carton.