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MAJOR MIDWEST DRILLING

Fax

To: Alex McPherson	**From:** Walt Thomson
Fax:	**Pages:**
Phone	**Date:** May 3, 2002
Re:	**CC:**

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

Hello Alex
- 10 Pages : your water license application
- 6 Pages : Major Midwest Environmental Procedures
- 3 Pages : Polydrill MDSS for 1300 ℓ OBX

⇒ As discussed, I can work up a drilling cost at a later date

Regards
Walt Thomson

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COPY

ENVIRONMENTAL POLICY

Major Drilling is committed to:

- the protection of the natural environment;
- to comply with environmental regulations; to respect archeological/cultural sites;
- to maintain equipment, premises and, drill sites in environmentally sound conditions; and
- to ensure that all employees comply with acceptable environmental practices.

Major Drilling expects all employees to:

- assess the environmental effects of all work and integrate protective measures into the planning process to prevent or minimize impacts upon the environment
- prevent environmental disruption by complying with applicable laws and regulations.
- apply technologically proven and practical environmental protection measures throughout drilling operations.
- restore drill site and camp location to acceptable environmental conditions at termination of projects.

The "Three R's" of Environmental Protection

RESPECT the environment in which you work
REFRAIN from unnecessarily disturbing the natural environment
RESTORE the natural setting of areas where you have worked

Initial Assessment

The initial assessment must include a base-line survey of the site. The purpose of this survey is to document the pre-drilling condition of the site. The base line survey will assist in assuring proper restoration of the site and may include photographs, drawings, field sketches and sampling.

The initial survey must also include identifying and establishing contact with the jurisdictional agencies that will have an interest in the site. All the necessary permits, bonds and control measures must be identified.

Specific issues to be identified include, but are not limited to:

- any special measures for protection of wildlife;
- criteria and procedures for reporting environmental incidents;
- the local standards for construction, limits of approach, etc.
- guidelines for structures, including core storage;
- fire fighting equipment; and
- reclamation treatments.

Planning

Prior to starting work, an environmental protection plan must be prepared/coordinated. This plan will be prepared in consultation with the appropriate client representatives, with jurisdictional authorities and with the land owners. The plan will address the measures to be taken during all stages of the work from mobilization through restoration and de-mobilization.

Training and Communication

Each worker on the site must be aware of, and adhere to the environmental protection requirements. In order to do this, training and information will include such topics as:

- environmental codes and regulations;
- carrying out environmental protection procedures;
- sensitivities associated with fish and fish habitat, wildlife, downstream water users, marshes and wetlands, native lands, archaeological sites and all other land users; and
- procedures and techniques to be used close to permafrost areas, marshes, bogs, lakes, streams and rivers

Road Building and Access

- Check with local agencies and land users to determine restrictions, requirements and other processes governing the development of roads and trails.
- Be sensitive to the needs of other land users such as tourist lodge and resort operators
- Plan and locate roads and trails to suit drilling operations but with minimum environmental disturbance.
- Take advantage of landform and vegetation to screen road locations whenever possible.
- Clear right of way timber and debris in an orderly manner and dispose of debris by:
  burning, if permitted;
  burying in off-road push piles, if practicable; or
  in a manner prescribed by local regulations.
- Provide for erosion and surface water control by installing culverts, bridges, waterbars, and ditches, whenever necessary.
- Keep insloping to a minimum, and provide for frequent water diversions off the road where necessary. Remove all unnecessary berms from road edges.
- Water bars shall be placed at intervals not exceeding 45 meters, be skewed at a 30 degree angle, complete with ditch blocks and armored outfalls.
- Construction should be done after the spring freshet when soil moisture conditions have dissipated. (Some jurisdictions do not allow winter construction or winter use of roads and may limit the type of equipment used). If possible, avoid construction during heavy rainfall.
- If stability problems are encountered, seek appropriate guidance (engineer, authority,
- etc.) before proceeding.

- Culverts shall be removed in the Autumn or precautionary water bars constructed adjacent to the culvert to effectively drain of water if the culvert becomes plugged or frozen.
- An appropriate grass seed mixture and fertilizer should be applied to the road cut and
- fills immediately on completion of construction, to stabilize disturbed soil.

Operating In an Environment-Friendly Manner

In order to ensure the environment is protected, procedures will include, but are not limited to the following:

- identify community watersheds and avoid any disturbance;
- do not operate vehicles or heavy equipment in streams or on stream or pond banks;
- minimize any clearing, grubbing, excavating or other surface disturbances near streams and ponds;
- minimize disturbance to livestock and crops by respecting fences and gates;
- observe all signs posted by land owners;
- avoid unnecessary disturbance of wildlife and vegetation;
- use established roads and tracks and obtain permission and/or guidance from land owners when off-road travel is necessary;
- all materials carried into a site must be carried out of disposed of in accordance with regulations.
- all refuse must be kept in suitable receptacles pending proper disposal;
- establish used oil facilities and ensure they are protected and regularly monitored;
- any fires must be in accordance with local jurisdiction and seasonal restrictions;
- ensure there is adequate fire fighting equipment available which meets or exceeds any local requirements;
- collect and remove hazardous substances used in machinery (such as batteries) to designated disposal facilities;
- scrap, containers, packaging or other debris shall be removed or appropriately disposed of;
- contaminated absorbent matting, or absorbent wipes must be collected and disposed of;
- use on-site field vehicles and equipment for exploration activities only;
- avoid unnecessary disturbance to nearby residents and wildlife;
- reuse containers as much as possible and whenever appropriate;
- avoid wasting water by installing and using shut-off valves when water lines are not in use;
- use bio-degradable materials whenever possible and use products that pose the least threat to the environment;
- if a fuel and lubricant storage site is required, it must be located where a spill would not drain into any water course and can be effectively contained (check local requirements and standards);
- equipment shall be refueled and lubricated by having the product delivered daily or only as needed. (Note that some jurisdictions may place restrictions on the amount of fuel kept at a drill or pumps);

- restrict re-fueling operations to daylight hours or ensure lighting is adequate to do the job properly and detect leaks or spills;
- impermeable absorbent matting shall be used when refueling and servicing equipment.
- an emergency spill containment kit shall be maintained at each drill, pump, sump site and piece of heavy equipment. The spill kit should contain, at a minimum, the following items:
  - three absorbent socks, 4 feet long;
  - one kilogram of biodegradable absorbent;
  - four absorbent wipes;
  - one pair of rubber gloves;
  - two sizes of plastic disposable bags.
- any spill of petroleum product (no matter how small) shall immediately be cleaned up and removed for appropriate disposal;
- fuel or oil leaks on equipment shall be repaired as soon as they or discovered or the equipment shall be removed from the site and not operated until repairs have been made.
- appropriate sanitary facilities are to be available to the workers al all limes. The
- facilities must be of a type that prevents contamination of the water- course and shall
- be serviced al regular and appropriate intervals.

Drill Sites

- The drill shall be set up on an impermeable oil absorbing matting.
- Drilling fluids must be handled in a manner prescribed by local authorities. This may involve recycle systems and sumps. There may also be specific requirements for the disposal of fluids and sludge upon completion of the drilling program.
- A berm constructed of soil and oil absorbent matting shall be constructed at strategic locations to intercept and contain any inadvertent spills from the drill and the sump.
- Any drilling fluid additives should be of a non-toxic type (nor harmful to humans, fish or wildlife). The product MSDS sheets must be available and submitted for approval if called for.
- Confirm any hole-cementing requirements with local authorities or clients.

Water Supply Pumps

- Contaminants shall not be permitted to enter the water course either during set up or operation of pumps.
- A barrier of oil absorbent matting or similar material shall be placed between the pump and the watercourse so that any inadvertent spills are intercepted and prevented from entering the watercourse.
- Position the pumping unit as far as reasonably possible from the supply source. Use a long, suction hose with foot valve if required. In the event of a spill, the greater the distance the pump is from the supply source, the greater the opportunity to properly contain and clean up the spill
- Whenever possible, position the pumping unit on terrain that drains away from the source of supply. If this is unattainable, and/or if the local terrain slopes steeply

towards the water source, a bermed impoundment shall be constructed for the pumping unit to be placed in. (This will be in addition to the metal lipped tray used to house the pumping unit.) Line the bottom of the impoundment with absorbent material.

- The pumping unit shall be housed in a metal lipped tray capable of holding 110% of the volume of lubricants and coolants used at the pump unit. The bottom of the tray shall be lined with a suitable amount of absorbent material.
- If precipitation causes an appreciable accumulation of water in the containment tray, the pumping unit must be provided with a means of shedding snow or rain. As well, leaking water from the pump shall not be allowed to accumulate in appreciable volumes within the containment tray.
- The fuel supply shall be housed in a metal lipped tray capable of holding 110% of the volume of fuel used on site. The containment shall be lined with an adequate amount of absorbent material.
- Fuel stocks shall be stored on secure footings within the tray to reduce the likelihood of tipping the fuel containment.

Camps

- Ensure that camps are located., constructed and operated in such a way that they will have the minimum impact on the environment.
- Always keep camps neat, orderly, safe and clean and in accordance with the local regulations .
- Be familiar with and comply with all statutes, regulations, amendments and permit requirements governing the operation of campsites.
- Locate camps away from water courses and maintain it in a neat and orderly fashion.
- Ensure that pit privies, conventional septic tank/tile bed systems, and packaged sewage treatment plants are designed, installed, and, where necessary, disposed of in accordance with local regulations
- Compost organic kitchen waste.
- Remove inorganic domestic waste to approved municipal sites, to an approved landfill for the camp, or to a recycling facility.
- In regions populated by bears, establish a special containment system for kitchen wastes.
- Make every effort to avoid attracting wildlife to the camp.
- Leave campsites that are to be used for future operations in a clean and tidy condition.

De-Mobilizing and Reclamation

- Outslope and remove all berms from reacts that are no longer needed, and install appropriate water barriers and other erosion control structures.
- Remove culverts, low bridges and other structures that may cause blockage or unwanted direction of water courses.
- Where possible, rip up a site that is to be abandoned to break surface compaction.
- Backfill all pits in accordance with local regulations.
- Bury organic waste and remove all other refuse from the site, taking advantage of recycling facilities as much as possible.

- At the end of operations, dismantle campsites that are to be abandoned.
- Grade to contour or smooth out drill sites, building sites, roads, or other major disturbances resulting from construction during the exploration program.
- Make sure that procedures on site abandonment contained in local mining regulations have been correctly followed.
- Remove all trash and other foreign material from exploration area. If government regulations allow it, bury inert, non-polluting waste at least 0.6 metres deep in an area where it will not affect or be affected by surface or ground waters.
- Where possible and at the proper time of the year, re-vegetate all disturbed surfaces areas by planting trees which are suitable for the area. In addition or as an alternative, prepare the disturbed surfaces in a way that will encourage maximum natural re-vegetation.
- Inspect gates and fences to confirm fences have not been damaged and gates are closed.
- Remove all fagging and stakes (except those required by regulations to remain).
- Advise Local residents, landowners, native groups and government officials that you are abandoning the site.
- On completion of the work program and project, the work sites and access shall be re-contoured and reclaimed.
- Reclamation shall include re-vegetating with appropriate grasses, legumes and tree species. The drill sites and roads shall be re-contoured. Any natural drainage that has been disturbed shall be restored.

Any contaminated soils shall he removed or disposed of according to local requirements.