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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI

EXPLORATION/ REMOTE CAMP SUPPLEMENTARY QUESTIONNAIRE

Applicant: Bay Resources Limited

Licence No: _____

(For NWB Use Only)

ADMINISTRATIVE INFORMATION

1. Environment Manager: see below Tel: _____ Fax: _____
E-mail: _____

2. Project Manager: Craig Alford Tel: 807-345-2904 Fax: 807-345-2904
E-mail: calford@spots.ca

3. Does the applicant hold the necessary property rights?

Claims (29) are held and an application for a Land Use Permit has been submitted to INAC for work on the INAC land.

4. Is the applicant an 'operator' for another company (i.e., the holder of the property rights)?
If so, please provide letter of authorization.

No

5. Duration of the Project

Annual

Multi Year:

If Multi-Year indicate proposed schedule of on site activities

Start: June 1, 2004

Completion: September 30, 2004

Start: June 1, 2005

Completion: September 30, 2005

CAMP CLASSIFICATION

6. Type of Camp

Mobile (self-propelled)

Temporary

Seasonally Occupied: June 1 to September 30 of 2004 and 2005

Permanent

Other: _____

7. What are the design population of the camp and the maximum population expected on site at one time? What will be the fluctuations in personnel?

Between 14 and 20 people will be on camp for approximately 12 weeks between early June and late September of 2004 and 2005. This includes management and exploration staff, a helicopter contractor and a drill contractor.

8. Provide history of the site if it has been used in the past.

This site was used by Natural Resources Canada (Nunavut) in 2001 for a camp.

CAMP LOCATION

9. Please describe proposed camp location in relation to biogeographical and geomorphological features and water bodies.

The camp will be located at 66°47'59" N and 90°42'46" W, an island on Walker Lake. An esker is located on the island, that will be used as a landing strip. The camp will be a tent camp with approximately 11 tents (7 for sleeping, 1 for core logging, a dry, a kitchen and an office).

10. How was the location of the camp selected? Was the site previously used? Was assistance from the Regional Inuit Association Land Manager sought? Include maps and/or aerial photographs.

Selection was based on previous use of the site and appropriateness for a camp (esker for landing, water supply, minimal potential for wildlife interaction).

11. Is the camp or any aspect of the project located on:

- Crown Lands Permit Number (s)/Expiry Date: application submitted
 Commissioners Lands Permit Number (s)/Expiry Date: _____
 Inuit Owned Lands Permit Number (s)/Expiry Date: _____

12. Closest Communities (distance in km):

The camp is located 360 kilometres northeast of the town of Baker Lake (Qamani'tuaq), Nunavut, and 180 kilometres west to southwest of the town of Repulse Bay (Naujat). The community of Kugaaruk (formerly Pelly Bay) is 230 kilometres northeast, while Sila Lodge, located on Wager Bay is approximately 150 kilometres southeast.

13. Has the proponent notified and consulted the nearby communities and potentially interested parties about the proposed work?

Notification letters to the Mayor and Hamlet offices of the above noted communities are being prepared as of late March / 04.

14. Will the project have impacts on traditional water use areas used by the nearby communities?
Will the project have impacts on local fish and wildlife habitats?

An impact assessment is attached

Core splitting will be conducted manually and with a core saw

SPILL CONTINGENCY PLANNING

23. Does the proponent have a spill contingency plan in place? Please include for review.

The spill contingency plan is attached.

24. How many spill kits will be on site and where will they be located?

Spill kits will be located at the camp / landing strip where fuel will be stored (1) at another fuel storage area on claim near drill areas, if required) (1) and with the drill (1).

25. Please describe the types, quantities, and method of storage of fuel and chemicals on site, and provide MSDS sheets.

Fuel to be stored on site includes:

- diesel (P50) - 200 45 gallon containers
- aviation fuel - 221 45 gallon containers
- propane – 20 100 lb canisters

Materials used for drilling (MSDS sheets attached) include:

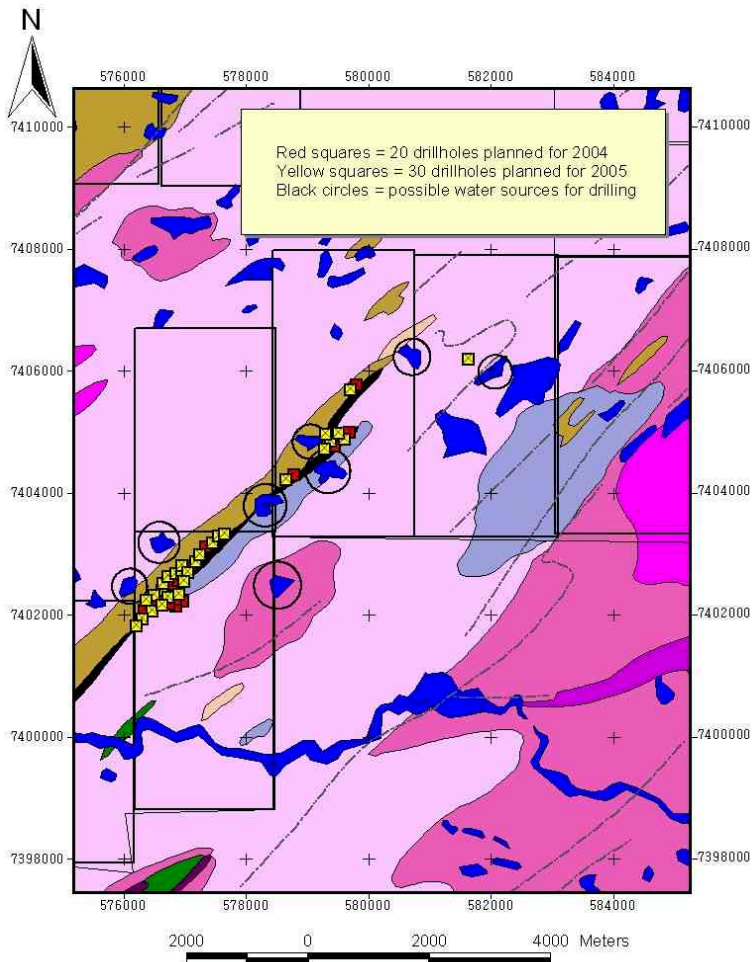
- tube grease - Beacon 2, Beacon 3, threokote 706, Z-50 pipe dope
- calcium chloride flake
- circulation polymer – G-stop
- fire extinguisher – Triplex
- antifreeze – Esso HD antifreeze
- rod grease – Big Bear diamond drill rod grease
- drill fluid additive – 550X polymer
- motor oil – super plus SAE 10W30 and 15W-40
- hydraulic oil – Harmony AW 22, 32, 46, 68

Storage will be at the landing strip and/or on claim land near drill areas with Environment Canada approved containment.

WATER SUPPLY AND TREATMENT

26. Describe the location of water sources.

Water for the camp will be provided from Walker Lake. Water or drilling will be provided from lakes in the drill area (circled in map below).



27. Estimated demand (in L/day * person):

- ✓ Domestic Use: 1,000 to 1,500 L/day for 15 – 20 people Water Source: Walker Lake
- ✓ Drilling Units: up to 45,800 L/day Water Source: Lakes noted above
- Other: _____ Water Source: _____

28. Describe water intake for camp operations? Is the water intake equipped with a mesh screen to prevent entrapment of fish? Describe:

Intake will a land based pump and the intake will include a mesh screen to prevent entrainment of fish. Screening will meet the DFO end-of-pipe fish screen guidelines.

29. Will drinking water quality be monitored? What parameters will be analyzed and at what frequency?

Analysis for bacteriological parameters (total and fecal coliform) in treated potable water will be conducted once each month. Analysis for turbidity, colour, odour, total dissolved solids, nitrate, sulfate, chloride, flouride, cyanide and total metals will be conducted at the beginning of the camp inhabitation.

30. Will drinking water be treated? How?

Potable water will be chlorinated as required under the *Public Health Act Water Sully Regulations*.

31. Will water be stored on site?

A holding tank will store treated potable water.

WASTE TREATMENT AND DISPOSAL

32. Describe the characteristics, quantities, treatment and disposal methods for:

✓ Camp Sewage (blackwater)

packed toilets and incinerated

✓ Camp Greywater

discharged to sump in pervious material a minimum of 30 m from edge of Walker Lake

✓ Solid Waste

incinerated

✓ Bulky Items/Scrap Metal

removed from site and disposed of at an approved site (possibly Baker Lake or Yellowknife)

✓ Waste Oil/Hazardous Waste

waste oil can be incinerated and used as incineration fuel.

any hazardous waste will be removed from site and disposed of at an approved site (possibly Baker Lake or Yellowknife)

✓ Empty Barrels/Fuel Drums

removed from site for re-use

Other: _

33. Please describe incineration system if used on site. What types of wastes will be incinerated?

Burnable waste including camp waste (kitchen, paper, packaging, small wood and sewage) will be incinerated. This will be in a 205 L burn barrel or a CSA environmentally-rated incinerator, if economical.

34. Where and how will non-combustible waste be disposed of? If in a municipality in Nunavut, has authorization been granted?

Appropriate site such as Yellowknife if required

35. Describe location (relative to water bodies and camp facilities) dimensions and volume, and freeboard for sumps (if applicable).

The grey water sump will be located a minimum of 30 m from Walker Lake within pervious material (esker on the island). The sump freeboard will be a minimum of 30 cm and dimensions 1 m by 1 m by 1.5 m deep.

36. Will leachate monitoring be done? What parameters will be sampled and analyzed, and at what frequency?

No

OPERATION AND MAINTENANCE

37. Have the water supply and waste treatment and disposal methods been used and proven in cold climate? What known O&M problems may occur? What contingency plans are in place?

Proposed methods (or similar) have been used at other exploration sites in area including by Committee Bay resources and DeBeers. The camp operator will be trained to operate and repair camp building, power, water supply, waste management and communications systems. Water lines used for water supply and grey water will be insulated to prevent freezing and back-up plans in place. The grey water sump will be monitored for capacity and expanded or a new one excavated if there is a problem.

Back – up materials including water supply pump and camp generator will be on site. A minimum of 100 L of acceptable drinking water should be stored at the site in case of a problem with the water supply. Emergency supply of materials can be provided by the expediter and Oopik Aviation.

ABANDONMENT AND RESTORATION

38. Provide a detailed description of progressive and final abandonment and restoration activities at the site.

At the end of the season, the camp site will be secured and all waste incinerated / removed. When the camp is dismantled at the end of exploration, all materials will be removed from site (for re-use or appropriate disposal) and disturbed areas (including grey water sump) covered and graded.

BASELINE DATA

39. Has or will any baseline information be collected as part of this project? Provide bibliography.

- Physical Environment (Landscape and Terrain, Air, Water, etc.)
- Biological Environment (Vegetation, Wildlife, Birds, Fish and Other Aquatic Organisms, etc.)
- Socio-Economic Environment (Archaeology, Land and Resources Use, Demographics, Social and Culture Patterns, etc.)
- Other:

REGULATORY INFORMATION

40. Do you have a copy of:
- ✓ Article 13 - Nunavut Land Claims Agreement
 - ✓ NWB - Water Licensing in Nunavut - Interim Procedures and Information Guide for Applicants
 - NWB - Interim Rules of Practice and Procedure for Public Hearings
 - NWTWB - Guidelines for the Discharge of Treated Municipal Wastewater in the NWT
 - ✓ NWTWB - Guidelines for Contingency Planning
 - ✓ DFO - Freshwater Intake End of Pipe Fish Screen Guideline
 - ✓ Fisheries Act - s.35
 - ✓ RWED - Environment Protection- Spill Contingency Regulations
 - ✓ Canadian Drinking Water Quality Guidelines
 - ✓ Public Health Act Camp Sanitation Regulations
 - ✓ Public Health Act Water Supply Regulations
 - ✓ Territorial Land Use Act and Regulations

You should consult the above document, guidelines, and legislation for compliance with existing regulatory requirements.

Environmental Impact Assessment

Existing Environmental Conditions

Biophysical - The Committee Bay Belt lies within the zone of permanent permafrost. The mean annual temperature of -20°C reflects its Arctic location (the Arctic Circle transects the property area). The climate is typical of the Eastern Arctic with average temperatures in the winter months of -30°C to -35°C , and $+10^{\circ}\text{C}$ to $+12^{\circ}\text{C}$ in the summer. Wind speeds have been recorded in excess of 100 kilometres per hour. The ground remains snow covered for more than 250 days a year (generally September to June). Rivers break up in June and lakes are ice bound until mid July. In the summer and fall, the temperature differential between the warm land and cooler ocean can create fog blankets in low lying areas.

The project area is on the northern section of the Wager Plateau, a shield area that has been significantly modified by glacial processes. Elevations range from 122 m a.s.l. in the southwest to 560 m a.s.l. in the northeast. Expansive till plains with eskers, kames, and moraines are the predominant geomorphologic features though glacially sculpted bedrock (including roches moutonnées), felsenmeer, and glacial boulder fields are also present. Bedrock is estimated at 10% of the total surface area, though locally it can be much higher.

The Hayes River and its tributaries flow northwest into Chantrey Inlet. The Brown River (southwest) flows into northwestern Hudson Bay. The Arrowsmith River, to the north, flows into the Gulf of Boothia. Elongate eskers and rock striae indicate the glacial ice movement was to the north northwest in 56K and north northeast in 56J.

Based on the commercial harvest data (Vera Williams of DFO, Winnipeg, Mar 31/04 e-mail response), a number of fish species are present in these systems, with commercial harvests for both landlocked and searun Arctic charr in the Arrowsmith River (late September to mid-April) and Lake trout, Lake whitefish and searun Arctic charr (summer). Specific fish presence in Walker Lake and waterbodies in the drill area was not indicated but there is possible presence of several game and non-game species.

The regional area is used by wolves, caribou and muskoxen and may be used by grizzly bears and Polar bears (both COSEWIC listed as special concern). Important Polar bear denning and summer retreat habitat is present in the Wager Bay area. The North-East Mainland caribou (barren-ground) may migrate through or close to the planned exploration area between late February and early May and again from late July to early December. A known calving area is located south of the exploration area. Pelly caribou (COSEWIC listed as threatened) may be present in the winter as far south as the Hayes River. Based on a July 2000 survey, muskoxen are present in the area in very low density. The Wager Bay area is known as an important raptors' nesting area. Species include Peregrine falcon, Gyrfalcon and Rough-legged hawk (letter from Mathieu Dumond of Nunavut Sustainable Development, March 18/04).

Socio-economic - The western limit of the proposed Wager Bay National Park is located north and east of Laughland Lake. The outlines for this proposed park have not been finalized but given that Bay Resources' ANOR claims were recorded, the park boundaries will be set south of these claims.

The region west of Committee Bay is used for hunting muskox, caribou and wolves between November and May of each year (Ema Qaggutag of Hunters and Trappers Association). As noted above, commercial fishing takes place in the Brown and Arrowsmith rivers.

There is no known existing manmade infrastructure (roads, power-lines, buildings, campsites) at the proposed sites. Both proposed sites are located beside sources of water and near known landing sites suitable for tundra tire equipped aircraft. It is believed that these landing sites are located along flat topped eskers.

Existing prospecting permits and mineral claims in the region are noted in Figures 4 and 5.

Figure 4. Existing Prospecting Permit (purple) and Mineral Claims in (black and green)

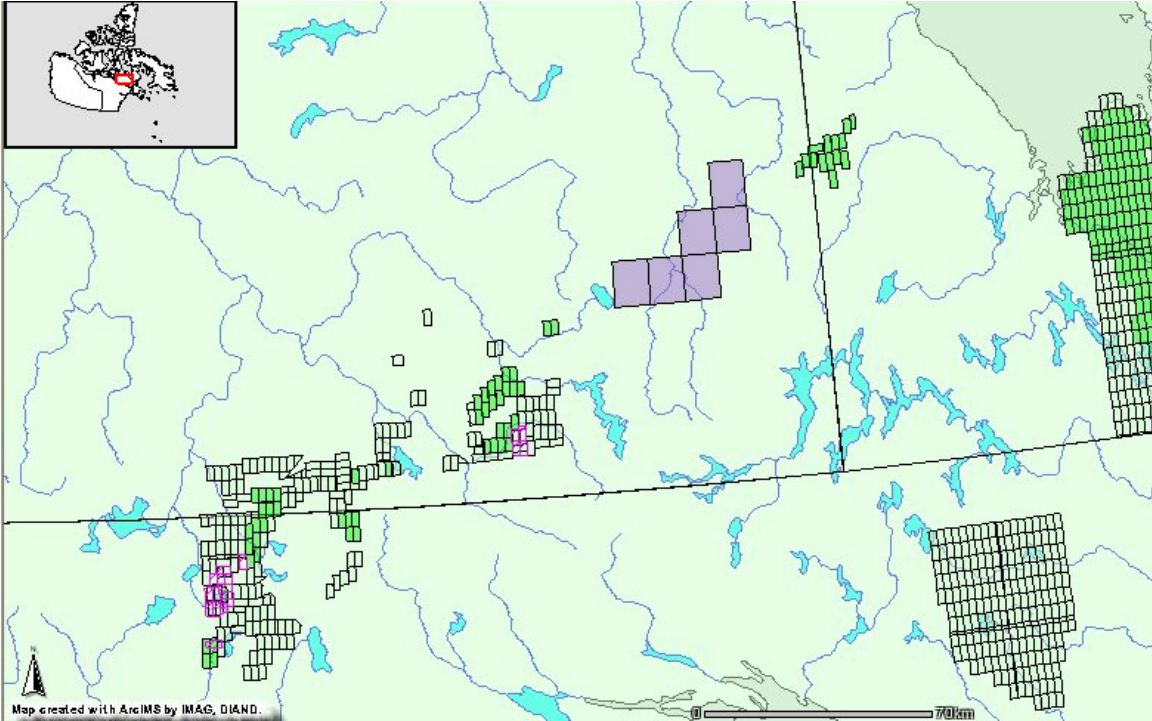
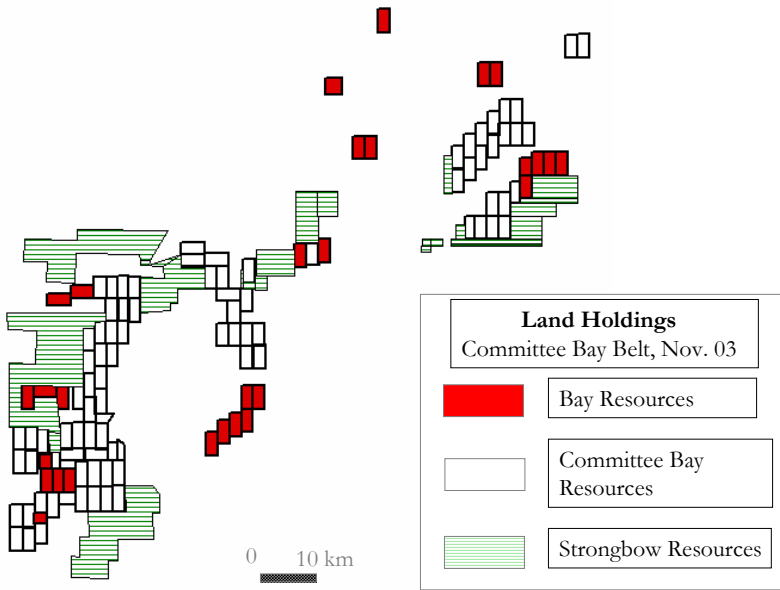


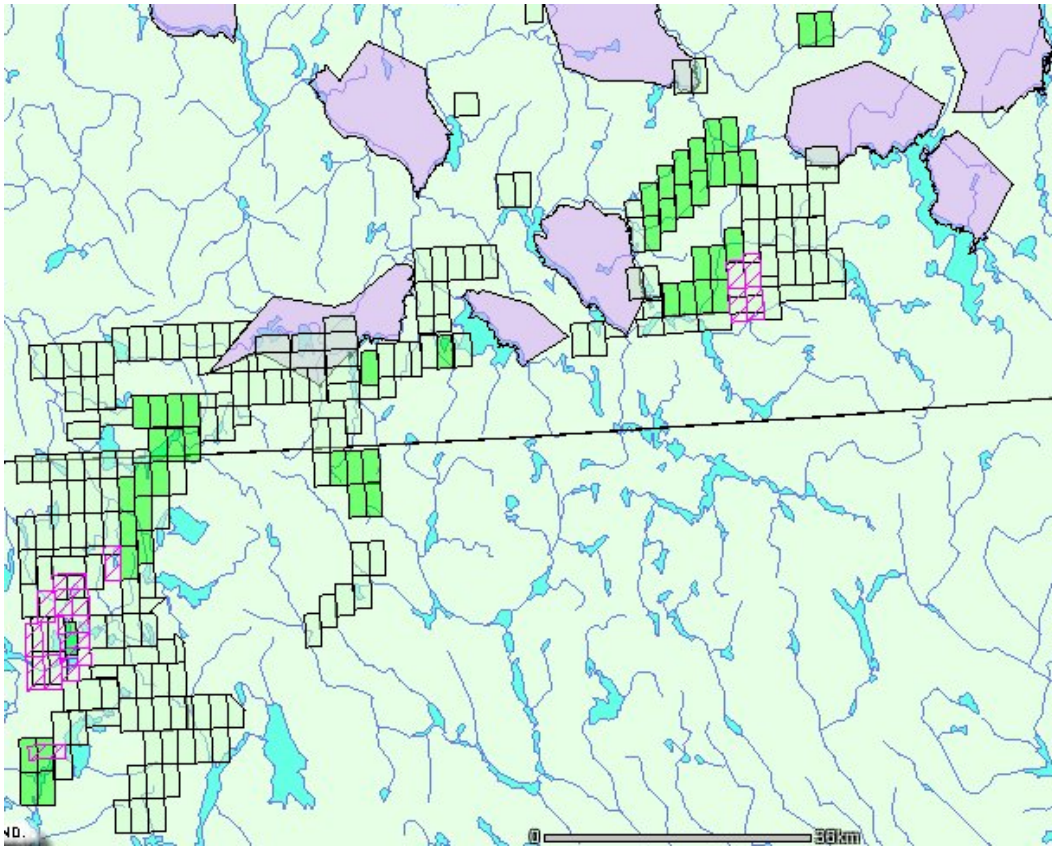
Figure 5. Claim Holdings as of November, 2003

Claim Holdings Committee Bay Belt, Nov. 03



Inuit owned surface rights to land in the Nunavut Settlement Area are noted in purple in Figure 6 in proximity to these mineral claims.

Figure 6. Inuit Owned Surface Rights to Land in the Nunavut Settlement Area



Potential Impacts and Mitigation

The attached potential project / environment interactions matrix (Table 1) outlines activities associated with the project and where they may interact with existing biophysical and social conditions.

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Biophysical - Impacts on **air quality** can result from discharge of exhaust from airplanes, helicopters, drilling operations and diesel generator power supply at camp as well as emissions from incineration. Given the remote location and lack of air quality issues in the project location, these short duration and small scope activities are not expected to result in measurable air quality impacts at the local or regional scale. An Environment Canada approved incinerator will be selected. **Noise** can result from the use of planes, helicopters and drills and to a lesser degree from activities within the camp and at the airstrip that can disturb wildlife. Mitigation is noted in the wildlife section, below.

Soil and permafrost quality can be impacted from spills of fuel and other materials, waste discharge and drilling. Preventative measures including storage in appropriate containers in areas where spill

clean-up is easy (ie on flat areas at runway or drill area, at least 30m away from watercourses) and fueling in these areas with diligence will be taken. Drip pans, or other such preventative measures, should be used when refuelling equipment on site.

Materials storage will meet the requirements of the federal *Environmental Protection Act*. Environment Canada recommends secondary containment, such as self-supporting insta-berms, also be used when storing barrelled fuel on location. A spill response plan (including preparation, clean-up, removal and reporting) is attached. The discharge of grey water to a sump meets acceptable standards and would be covered with 40 cm of native material following abandonment.

The following additional mitigation should be followed during drilling:

- Drilling will occur a minimum of 30 m from any water body.
- Absorbent pads will be placed under areas where fuel, lubricants and other toxic materials may leak from to assist in clean up following drill operations.
- Drill cuttings will be pumped to a sump (natural depression or temporary dyke) a minimum of 30 m from any surface water body where water will infiltrate to ground, direct flow into a water body is not possible and no additional impacts are created.
- Any fuel or hazardous material will be located) a minimum of 30 m from any surface water body.
- All sumps shall be backfilled with native surficial material upon completion of drilling and contoured to match the existing landscape.
- If artesian flow is encountered, drill holes shall be plugged and permanently sealed upon project termination.

Surface water hydrology can be disrupted from removal of water for camp use and drilling while **surface water quality** may be effected by fuel and toxic material spills (including drill slurry) and grey water disposal. Physical **fish habitat** (stream bed) could be impacted from nearby drill activity or access (crossings). Water extraction at the camp and drill site, water quality impacts from fuel or other toxic materials such as drill slurry can ultimately effect **fish**.

The measures noted under the soil and permafrost discussion will mitigate for surface water quality impacts from spills. Sediment and drill fluids are also issues for surface water. Activities that may result in sedimentation should be avoided or sediment control measures put in place to mitigate downstream impacts. Any grey water discharge will be a minimum of 30 m from Walker Lake.

Water use at the camp will be taken from Walker Lake. Extraction volumes to sustain 15 to 20 people will be approximately 1 to 1.5 m³ per day, which will not impact aquatic habitat in the large lake. Drilling will use up to 45.8 m³ per day from one of the lakes in area A (noted in Figure 2B). The intakes will be screened as per DFO requirements to prevent fish kills from pumps. Disturbance to lake (or any stream) bed or banks should be minimized by placing temporary platforms for access and by excavating a sump quickly and cleanly, if required, for pump placement. These measures will ultimately mitigate for impacts on fish.

Vegetation communities and wildlife habitat can be disturbed by clearing/grading at the camp and drill sites. During drilling, any soil removed should be side-cast and the disturbed area recovered

following drilling. Soil should also be stored and covered at the camp site for reclamation at abandonment.

Wildlife can be displaced through loss of habitat, disturbed by noise (helicopter, plane, generators, drilling) or human interaction. Habitat loss can result in displacement of animals. Disturbance can cause health problems (stress-induced) and mortality. The camp location on an island will minimize human-wildlife interactions. Mitigation includes:

- avoiding disturbance of any raptor nests (particularly late May to mid-Aug when active) so that birds are not stressed to abandon the nest, bear dens and wolf dens;
- limiting helicopter overflights are to a minimum altitude of 300 metres whenever possible;
- avoiding helicopter flights over areas of known raptor nests during active reproductive periods, near waterfowl and shorebird staging areas during critical seasons and near large mammals;
- stopping drill activities and associated work if caribou cows appear nearby;
- recording wildlife sightings and passing this on to the rest of the crews;
- Ensure proper storage of hazardous materials to avoid exposure to wildlife;
- All personnel be aware of and follow wildlife deterrence techniques (including proper storage and disposal of food) to reduce the possibility of attracting wildlife to the camp and drill areas;
- All personnel should have bear safety training and be aware of the penalties for shooting Polar bears, even in self defense.

Socio-economics – The use of local services for transportation and camp will provide economic benefits. Access to the site will be via Baker Lake. Notable risks to **human health and safety** exist from accidents during helicopter travel, interactions with wildlife and working with power, machinery such as the drill rig and hazardous materials. The site safety program including emergency response will minimize accidents and injuries. Water supply will meet the requirements of the Public Health Act Water Supply Regulations.

With proper mitigation, the project should not affect land and water use, traditional use or cultural resources. All measures should be taken to avoid defense kills of bears. The camp location on an island will minimize human-wildlife interactions.

**Bay Resources Committee Bay Properties Work for 2004-2005
Potential Project / Environment Interactions Matrix**

Environmental / Social Components	Atmospheric Environment		Terrain and Soils		Aquatic Resources				Terrestrial Resources		Social, Economic and Health Conditions				
	Air Quality	Noise	Permafrost	Soil / Groundwater Quality	Surface Water Hydrology	Surface Water Quality	Physical Fish Habitat	Fish Species / Communities	Vegetation Communities / Wildlife Habitat	Wildlife Species / Communities	Economics	Land and Water Use	Traditional Use	Human Health and Safety	Cultural / Heritage Resources
Physical Works and Activities															
Camp and Airstrip															
Site preparation - groundwork		✓							✓	✓					
Set up buildings										✓	✓				
Food handling										✓					
Water use					✓		✓							✓	
Movement of people within camp		✓								✓				✓	
Power supply	✓	✓								✓				✓	
Fuel use and storage				✓		✓		✓		✓				✓	
Waste disposal (food, materials, fuel, sewage)	✓		✓	✓											
Site abandonment									✓	✓					
Helicopter and plane access	✓	✓								✓	✓			✓	
Exploration Activities															
Helicopter access	✓	✓								✓	✓			✓	
Foot access - prospecting / staking / geophysics														✓	
Drilling (incl. site prep and water use)	✓	✓	✓	✓	✓	✓	✓		✓	✓				✓	
Site abandonment									✓						

✓ denotes potential for an interaction (could be neutral, positive or negative)

Spill Contingency Plan

Bay Resources Nunavut Exploration - June 2004 to May 2006

Preventative Measures and Spill Preparation

Preventative measures include:

- Materials will meet the requirements of the federal *Environmental Protection Act*. Environment Canada recommends secondary containment, such as self-supporting insta-berms, also be used when storing barreled fuel on location.
- Secure valves before and after fuel transfer and do not leave fuel transfer unattended.
- Drums and hoses will be inspected regularly for leaks and pans or absorbent pads placed below fuel transfer areas and stationary machinery.
- Toxic materials will be stored away from sensitive areas (30 m from any surface water body).

The following measures will allow for preparation in the event of a fuel or other toxic material spill:

- Material safety data sheets (MSDS) will be on site for all products.
- Spill kits will be located at camp/landing strip (1), drill fuel storage area (1) and active drill site (1).
- This plan will be posted at camp, fuel storage area and drill site.
- All persons on site trained about MSDS sheets, use of spill kits and spill response and reporting.

Spill kits will contain:

- 20 lb ABC fire extinguisher
- polaski
- oil absorbent pads (package of polypropylene pads) that will also contain spills on water
- hydrocarbon-sorbent socks (polypropylene – one approximately 4' by 3" and one 10' by 3")
- 1 bag treated oil only cellulose particulate
- 1 roll poly plastic sheet 110'x 6'x 6 mil thickness
- 6 poly disposal bags and ties (45 gal drum size, 6 mil)
- shovel
- 2 pair nitrite gloves (large)
- utility knife
- labels / marker

Additional response equipment in the project area should include plastic pails, extra disposal bags and plastic sheets, absorbent pads and socks

Spill Response

The steps to follow if you are first on the scene of a spill include:

1. Protect human health and safety. Assess any risk of fire or explosion, eliminate ignition sources and keep away if there is a risk.
2. Identify the product and potential dangers. Look at the MSDS sheet and wear appropriate safety gear.
3. Stop the flow from the source, if possible.

4. Contain the spill. Spill containment may be by materials in the spill kit (absorbent pads) and berming soil/snow or trenching with hand tools or available machinery.
5. Report to the head site geologist.
6. Clean up what is immediately possible using materials from the spill kit.

Clean-up of spilled fuels and other toxic materials on land (including snow) will involve:

- Absorbing liquids with absorbent pads or cellulose particulate.
- Shoveling contaminated soil/permafrost for disposal or remediation.
- Storage of materials should be in drums or impermeable containers and labeled.
- Fuel or oil contaminated soil can be incinerated at the camp or aerated on tarps for natural remediation. Some materials must be shipped off-site to an appropriate disposal site
- Where a large area of soil/permafrost is contaminated, further remediation methods will need to be considered.

Spills onto ice will involve berming with snow, absorbing spilled material and clean up with shovels. Spills of fuel into surface water should be dealt with by redirection away from the water, where possible, containment with absorbent socks and clean up with hydrophobic absorbent pads.

Spill Reporting

Once reported to the Vice President of Exploration, Craig Alford, he will:

- Report major spills immediately to the 24-Hour Spill Line at (867) 920-8130 and to the DIAND Water Resources Inspector at (867) 975-4298. Major spills are those that would cause harmful effects to air, land, water, fish, wildlife or human health. A fuel spill greater than 200 L is considered major.
- Fill out a spill report form (attached) for submission to the DIAND Water Resources Inspector no later than 30 days following any spill.

