Enviromental Guidelines for Construction and Mineral Exploration Companies

PREFACE

The following guidelines were prepared to assist construction contractors and mineral exploration companies to carry out their activities so that the least damage to the environment results.

The first four sections are aimed primarily at construction contractors who may be building linear facilities such as access roads, but may also be of use to mineral exploration companies. Sections 5 to 8 are applicable to both mineral exploration companies and construction companies, while sections 9 to 11 deal specifically with mineral exploration issues such as drilling and trenching.

The guidelines presented here are not legally binding; they simply represent good practices that should be followed by construction and mineral exploration companies, although failure to follow these guidelines could result in situations for which legal action could be taken. They are based on current construction practices and should not be regarded as the last word in environmental protection. Under unusual conditions, impacts not covered in these guidelines may occur. Throughout the text, there are other sources and guidelines mentioned. If a procedure is not completely covered, these other publications should be consulted for further details.

There are several acts and statutes which may govern certain aspects of mineral exploration. Approval may be required from various agencies depending on the location and nature of the exploration program. Most of these agencies are mentioned in the guidelines; however, the responsibility for obtaining approval rests with the proponent.

CLEARING AND TIMBER SALVAGE

Planning should include mitigative measures to minimize the number of stream crossings and promote cut-and-fill operations to minimize borrowing operations outside of the right-of-way, buffer zones, etc. Once planning has been completed, all required permits and approvals obtained, and the route flagged, the first step in construction will normally be clearing. The importance of this phase will depend on the type of road being constructed and the nature of the existing vegetation. If an existing right-of-way is being used, clearing may be minimal or not required at all.

WHERE TO CLEAR

Clearing should be carried out only along the approved right-of-way. Trails need only to be cleared to the width of the vehicles travelling the road. Haul roads may require a single lane supplemented by turnouts or a right-of-way wide enough to handle traffic in two directions. In all cases individual farms, regional pastures, blueberry management units, silviculture plots and plant quarantine areas should be avoided.

Buffers from 15 to 150 metres must be left along bodies of water for both erosion protection and aesthetic reasons. The width of the buffer zone will depend on soil characteristics (clay rich soil is more susceptible to solifluction), the steepness of the slope leading to bodies of water and the type of road construction. A recommended formula for determining buffer zone width is:

12 metres + 1.5 metres x slope (%)

The following buffer zones must be maintained around protected water supply areas:

Body of Water	Width of Buffer Zone
Intake Pond/Lake	150 metres
River Intake	150 metres for a distance of 1 kilometre upstream and 100 metres downstream
Main River Channel	75 metres
Main Tributaries/lakes/ponds	50 metres
Other bodies of water	30 metres

In addition, no clearing activity is to occur within 800 metres of a bald eagle or osprey nest during the nesting season (May 15 to July 31) and 200 metres outside the nesting season. All hardwoods within 30 metres of a body of water occupied by a beaver are to be left standing. For known waterfowl staging areas, a minimum 30 metre buffer from the water's edge with at least 20 metres of forest will be established. These areas will be identified by the Canadian Wildlife Service.

HOW TO CLEAR

Clearing by axe, saw, bulldozer, etc. should be carried out in a manner that will minimize surface disturbance and prevent erosion. Ground vegetation loss should be kept to a minimum and low ground shrubs should be preserved along the right-of-way. This vegetation preserves soil stability and acts as a sediment filter near waterways.

Trees should be felled onto the right-of-way to minimize disturbance to the adjoining forest. Trees should always be felled away from watercourses. A watercourse is defined to include:

a. any pond, lake, river, stream, brook, creek or marsh that visibly feeds into a water system; or

b. any pond greater than 0.25 hectares in area

Debris and brush should not be disposed of within 30 metres of the high water mark of any watercourse or body of water. Care should be taken to ensure that leaners are not left along the right-of-way. Leaners are trees that have been partially knocked over during clearing, but which are left leaning over the right-of-way or hanging in the surrounding forest. Sensitive slopes, unstable soils and water crossings require special clearing procedures - hand clearing instead of machine clearing - to prevent surface disturbance and reduce erosion.

Merchantable timber should be cut, trimmed and piled along the right-of-way. A Timber Cutting Permit, obtained from the Department of Forest Resources and Agrifoods, is required. Specific conditions included with the permit are: (1) no cutting within 100 metres of the centerline of a public highway; (2) no cutting within 15 metres of any stream or body of water; (3) the holder of a permit shall not deposit any trees, logs, slash or other logging debris likely to cause pollution in or when frozen on any stream or body of water; and (4) the permit holder shall not operate in or disturb streams or waterways with skidders or other logging equipment unless written permission has been obtained from the Provincial Department of Environment and Labour and the Federal Department of Fisheries and Oceans.

Tops and limbs (brush) can be lopped and scattered, windrowed along the sides of the right-of-way or piled for burning. A Burning Permit can be obtained from a local Department of Forest Resources and

Agrifoods office. When crossing bogs and wet areas, brush may be spread on the right-of-way before fill is dumped.

STRIPPING AND STOCKPILING

Stripping involves the removal of topsoil and overburden before the construction of the road or facilities. The material that should be stripped is that portion of the soil with the majority of plant roots. This is usually the top 15 to 40 centimetres. Stripping should be done in 2 stages:

1. removal of the organic layer (top soil);

2. removal of the inorganic layer (overburden).

Topsoil and organics must be stockpiled separately from the rest of the overburden for later revegetation purposes and to prevent mixing. All stockpiles must be easily accessible, on well drained ground, away from bodies of water (minimum of 50 metres) and standing timber. A working space of at least 5 metres around stockpiles is recommended. Topsoil and organics should be stored in low (1-2 metre high) stable piles to decrease compaction effects, and if they are to be stored for extended periods, they should be vegetated to minimize nutrient loss, erosion of fines and structure change.

QUARRIES AND BORROW AREAS

PLANNING

Advanced planning by a qualified person, engineer/geoscientist, is essential for a pit operation to run smoothly. The operator must know the type and quantity of material required and where to get it. There should be an understanding of how to search for a new location of aggregate material and why some sources cannot be excavated because of such factors as local drainage patterns, important wildlife areas, present and planned parks and reserves etc.

An existing pit should be used if it can meet the requirements. Numerous pits in a small area are unsightly and harmful to the environment.

A Quarry Permit from the Department of Mines and Energy is required to develop a quarry or borrow pit and it contains several specific conditions which must be followed. These include: (1) no quarrying within 50 metres of any roadway, body of water or watercourse; (2) no quarrying within 300 metres of any residential development without the permission of the Minister in writing; (3) no quarrying within 90 metres of the centerline of Protected Road Zone Areas; (4) no quarrying within 15 metres of private property unless prior written consent of the owner is obtained and a copy of this consent forwarded to the Department of Mines and Energy; and (5) the permit holder shall leave tree screens where they exist between the workings and adjacent roads, highways or other land uses or earthen berms shall be constructed to screen the operation.

DESIGN

To develop a pit in an orderly and efficient manner, it must first be well designed. Remember that boundary edges (which should be flagged) are the absolute limits of the excavation - all work including stockpiling and restoration must take place within these limits. Therefore, a well designed pit will allow for:

- controlled access in and out of the pit;

- working space in which to move equipment;

- storage areas for stockpiling topsoil and overburden separately;
- space to form a final grade;
- visual screening;
- dust control by washing, etc. when required; and
- space for an acceptable settling pond system(s) to remove suspended solids from any water used.

The best protection that can be given to the environment is to limit the amount of land disturbed. Staking and flagging the boundary is an important first step in containing work activities. Any slash generated from the clearing phase should be placed in a compact windrow at least 5 metres away from standing timber. All organics and topsoil must be stripped from the cleared area and saved for restoration purposes. It must be piled in its own separate location and must not be mixed with the overburden. Ample working space should be left behind the pile to allow equipment to re-spread the material at the restoration stage. Excavated material should be stockpiled on well drained ground and a minimum 50 metres away from waterbodies.

Open pits should be visually screened if possible. Ideally, the pit should be developed on the downhill side of the road where it is completely concealed from view. Visual screening can be done in a well vegetated area by leaving a buffer strip of a variety of natural vegetation including trees between the road and the pit by doglegging the access to the pit area. If a pit is near a watercourse or a body of water, a 50 metre wide buffer zone of natural vegetation including trees is required, as the natural vegetation serves to filter run-off and protect fish. The pit access road should also be screened from highways. During operations, it is essential that the pit site not be used as a disposal place for oil, oil cans, fuel containers, etc. When engine oil is changed, the spent oil must be completely contained and either removed to an approved waste disposal site or delivered to a reprocessing facility so it does not pollute the soil or water or destroy vegetation. If oil changes have to be carried out in pit, an oil absorbent should be used and removed to an approved waste disposal site. In no case shall oil changes, lubrication and repair of vehicles be carried out within 100 metres of any body of water - Federal Department of Fisheries and Oceans.

RESTORATION

Regardless of location or size, all pits must be restored before abandonment. Restoration steps to be taken before abandonment are:

- clean up;
- drainage and erosion control;
- recontouring;
- overburden replacement;
- revegetation.

Although the pit and surrounding areas should be kept as clean as possible throughout the operation, any garbage or debris must be completely disposed of at an approved waste disposal site prior to pit abandonment. When revegetation is required, adequate drainage control measures must be taken. These might include:

1. constructing a berm at the top of the slope to stop water from running into the pit;

2. laying brush and slash across the slope to slow run-off and hold back sediment; and

3. directing run-off away from the pit by cutting drainage ditches or pumping.

When the pit is totally abandoned, the slopes of the pit should be graded to a suitable angle of repose no steeper than two horizontal to one vertical (2:1). The final shape of the pit should blend into the natural contour of the land. If pit walls cannot be graded to the suitable angle of repose (2:1), the recontoured slope should be gently stepped to help reduce erosion.

All overburden removed and stockpiled when the pit was opened up must be spread evenly over the pit floor and the recontoured side walls. If the pit was designed properly, there should have been a space left between the overburden stockpile and the surrounding forest so that equipment can easily get behind the overburden to push it down into the pit. The topsoil stored/salvaged, if any, when the pit was opened, must now be spread over the overburden. The topsoil contains seeds and organic material that will help vegetation regrow. Without any topsoil, natural revegetation is a much slower process.

Once the pit has been recontoured and any overburden and topsoil have been replaced, one of the following decisions must be made in consultation with the Department of Environment and Labour keeping in mind the final land use and factors such as climate, type of surface and its moisture holding capabilities:

1. allow natural revegetation with no assistance;

2. allow natural revegetation with some assistance; or

3. completely assist revegetation.

Generally, the best guide is to undertake a revegetation method that encourages a return to conditions as close as possible to those that existed before operations commenced.

STREAM CROSSINGS

Any stream crossing has the potential to alter the existing natural flow regime for the entire range of low to high flow conditions and to impact on fish habitat. The alteration of natural stream flow, if carried out improperly, can result in many types of serious problems such as flooding, dewatering, reduced ability of the stream to ameliorate natural sedimentation and alteration of fish habitat, etc. Improperly installed watercourse crossings can result in extensive loss and damage to property, danger to human life, barriers to fish migration, as well as environmental damage. When crossing a stream, there are four environmental goals:

1. the prevention of bank erosion and sedimentation into the stream;

2. the protection of fisheries and wildlife habitat in and along the stream;

3. the preservation of water quality and its physical characteristics; and

4. the prevention of flooding and water diversion.

Proposed stream alterations require approval from the Water Resources Division, Provincial Department of Environment and Labour and the Federal Department of Fisheries and Oceans, i.e. Authorization for Works or Undertakings Affecting Fish Habitat.

In planning linear facilities such as roads, pipelines or transmission lines which require crossing of watercourses, consideration should be given to route selection and corridor location in order to mitigate the impact of the development on water resources. In selecting a crossing site, it is important to examine the physical characteristics of the watercourse and its drainage basin, and to identify the site with the best

features and conditions for a crossing. The following points should be kept in mind:

Select gentle approaches, whether naturally occurring or constructed. If construction of approaches is necessary, coarse-grained material should be used.

Avoid cutting stream banks as this results in stream sedimentation.

Avoid using any machinery in streams. Rubber-tired or broad-tracked vehicles working from streambanks are preferable.

Minimize or eliminate in-stream activities as these can stir up sediment, restrict stream flow, impact upon fish and fish habitat, injure or kill beaver and muskrat, disturb nesting waterfowl and divert the course of a stream. If in-stream activities are necessary and unavoidable, rubber tired vehicles should be used and the work should be scheduled between June 1 and September 30 to minimize the effect upon the incubation, hatching and survival of juvenile fish.

Prevent the deposition of debris, soil and organic material in the stream. Do not fill an intermittent stream channel or gully with soil to serve as a crossing.

Streams can be crossed by creating a ford, by installing a culvert or by constructing a bridge.

FORDS

Carefully selected stream fording sites will serve to minimize the impact to fish and fish habitat provided traffic volume is low. When choosing a fording location, a site with stable bed material such as natural bedrock is preferable. Otherwise, the ford area should be stabilized with coarse material. All vehicles using the site should be mechanically sound and free of mud, and should approach the watercourse at right angles. If any right-of-way clearing is needed in the stream buffer zone, it should be done by hand and all slash and debris kept from entering the watercourse. Further guidelines can be found in the document "Environmental Guidelines for Fording", by Water Resources Division, Water Investigations Branch, Provincial Department of Environment and Labour. This document is also available from the Federal Department of Fisheries and Oceans.

CULVERTS

On many access roads, culverts are the most common method of crossing smaller streams. They must be installed in such a manner that disruption to the stream bed and stream flow is minimized and fish passage is not obstructed. The culvert should be designed to adequately contain peak flows and should always maintain the original velocity and direction of streamflow. They should also be of sufficient length to extend a short distance beyond the toe of the fill material and should be protected by rip-rap to prevent blockage of the culvert ends by erosion.

Specific guidelines on culvert design and placement can be found in the publication "Resource Road Construction; Fish Habitat Protection Guidelines" by McCubbin, Case, Rowe and Scruton 1990.

BRIDGES

Larger, faster-flowing streams may require the construction of a bridge in order to cross them. It is environmentally desirable, even on small streams, to construct bridges instead of other alternatives such as culverts because only bridges can avoid the alteration of flow regimes. Such problems as flooding, erosion and siltation are avoided through the use of properly designed and constructed bridges. Bridges are recommended for all watercourses supporting fish because there is no need to disturb the streambed and sufficient capacity will ensure that flow velocities are kept to a level where fish passage is maintained.

Bridges are also recommended where the natural channel is too steep to accommodate maximum culvert slopes, or where steep banks would necessitate a great deal of infilling if culverts were used. The completed bridge should safely accommodate reasonably predictable levels of flow and ice buildup, as well as the forces of moving water and ice on the structure, without causing any adverse environmental impact at the crossing or in upstream or downstream areas. Further guidelines can be found in the document "Environment Guidelines for Bridges", by Water Resources Division, Water Investigations Section, Department of Environment and Labour, 1989.

MARSHALLING YARDS / LAYDOWN AREAS

Site selection is an important aspect of locating marshalling yards, laydown areas and equipment storage areas. The site should be of low value with respect to its potential for other uses when compared to other lands in the area. Abandoned gravel pits, abandoned commercial enterprises, or other previously disturbed areas are preferred locations. The site should be located to minimize potential traffic hazards. Incoming and outgoing vehicles should be able to merge safely with other traffic. If no previously disturbed site can be utilized, then an area could be cleared and stripped, providing all organic material and topsoil is stockpiled in a separate, accessible location for future rehabilitation purposes. An adequate buffer zone of at least 30 metres should be maintained between the yard or laydown area and the nearest body of water.

Marshalling yards/laydown areas are not permitted within protected water supply areas.

TEMPORARY CAMPS

From an environmental standpoint, selection of an acceptable location for a camp site is of paramount importance and proper planning will reduce the need for future mitigation. The location of the first camp is often the site of all later camps. A Licence of Occupation is required for the purpose of road construction and temporary work camps (Department of Government Services and Lands).

Some variables to consider when selecting a campsite are slope, wind exposure, available area, water supply, drainage conditions and access. Available area is a major consideration. Leave enough room so the original camp can form the nucleus from which larger camps grow. When more facilities are needed, all operational and environmental protection measures are simplified if the camp can be expanded, rather than opening a new camp. A flat site facilitates camp construction. When a sloping site must be used, choose slopes facing south or west. These are the warmest and driest locations. Slopes that face north or east are cooler and wetter. Camps should be located on previously cleared sites or areas where other land use possibilities are low. Keeping excavation to a minimum will pay dividends later by reducing restoration costs and problems when work ends.

Campsites should be sheltered from strong winds; crew comfort and aircraft safety being the chief reasons. Gusty winds can cause serious problems for aircraft.

When camps cannot be located on dry ground, the area should be drained by shallow (30 + centimeter) trenches/drains to create a dry site. On slopes with substantial near-surface water flows (common on north-facing slopes), it will be difficult to keep the camp dry; these areas should be avoided. Flat but wet areas may be dried by clearing and leveling the area and then letting natural drainage remove excess water. This is the process of surface discharge of water from an area by streamflow and sheet flow and the removal of excess water from soil by downward flow. Clearing the area and building a dry elevated gravel pad is more likely to be successful. In either case, organic matter and topsoil removed from the site should be used later for site restoration. Boardwalks between buildings may be desirable in areas that drain slowly. Besides making camp life more pleasant boardwalks reduce trampling of in-camp vegetation.

Access is a major factor in camp location. Where access is overland, camps must be located adjacent to the road. When camps rely on helicopters there must be room to build a helipad nearby. Access to the

helipad should be along gentle gradients to facilitate movement of supplies. If float planes provides access, camps must be located near a sheltered lake shore where planes can land and take off without taxiing long distances. A 30 metre buffer zone must be obtained between the camp area and the nearest body of water. A fire break and the appropriate fire-fighting equipment as stipulated by the Department of Forest Resources and Agrifoods should be established around and located on site.

Before any actual construction of the camp begins, a Permit-to-Occupy must be obtained from the Department of Government Services and Lands, Lands Branch. (Exception - Fly Camps)

OPERATION

The camp at all times should be operated in a safe, clean and orderly condition. A suitable potable water supply must be chosen and a permit for water withdrawal obtained from the Department of Environment and Labour. A permit is required from the Department of Government Services and Lands, for the installation of on-site sewage disposal systems.

Most camps generate a variety of solid wastes most of which is wet or dry garbage. All solid matter must be disposed of in an environmentally acceptable manner approved by the Department of Environment and Labour. The major environmental problem with dry garbage such as paper, wood and packaging materials is one of aesthetics: blowing paper and litter can visually degrade wide areas.

Burning in an incinerator or pit is one way of disposing of this material; however, it should be discouraged wherever possible. Because open burning is usually forbidden during forest fire season, incineration in a screened unit or container is the preferred method.

A Burning Permit is required from the Forestry Branch of Forest Resources and Agrifoods during the fire season as declared by the Minister. This is usually between early May and late September.

Wet garbage, which consist mainly of waste food and food packaging may attract wildlife, provide a breeding ground for flies and represent a source of disease. To limit these problems, food wastes must be properly disposed of, preferably by incineration. Burning in an open pit is not recommended and because of fire hazards, it is often not permitted. Also, wet garbage is unlikely to burn completely, and "cooking" it in a fire attracts animals. If garbage cannot be incinerated, it may be backhauled on the return leg of supply flights, if the camp is fly-in. It will need to be carefully packaged and stored so it does not break open in the aircraft. Ordinary garbage bags are not adequate, especially in winter. Heavy duty bags and metal or plastic garbage bins should function well.

In summer, ashes and noncombustible material can be placed in a landfill area. Pits should be excavated in deep, stable dry soils. Filling should begin at one end and progress steadily along the pit. Each day garbage should be covered by a thin layer of soil, about 10 centimetres thick. When a pit is full, it must be covered by 1 metre of compacted soil. This will usually be sufficient to prevent animals from burrowing into the pit.

When landfill disposal is used, some animals will visit the dump. Every effort must be made to handle and store food and garbage so that animals do not seek food in the camp itself. Animals that visit a camp should not be fed. All predators are a potential threat, and limiting contact with them is the only safe course. Bears are the greatest hazard. At present, there is no truly effective and safe way to scare bears away. Killing them is prohibited except in cases of immediate threat to human safety or property. Camp operators should contact the local office of the Wildlife Division of the Department of Forest Resources and Agrifoods which should be able to provide current information on bear hazards in the area and advise on the best deterrent methods available. A permit for Waste Disposal is required and can be obtained from the Department of Government Services and Lands.

The major source of sewage in most exploration camps and small construction camps is washwater and human waste. Except in the largest camps, pit privies are used for human waste. The privy should be downslope of the camp and must be downslope of the water intake. Only human waste and chemicals used to promote decay and/or reduce fly populations should be put in privies. When pits are full, they should be covered with at least 30 centimetres of thoroughly compacted soil. Pit privies require approval by the Department of Government Services and Lands.

Washwater from the kitchen and washing facilities must also be disposed of in an approved manner. For small camps, the best method is to discharge the wastewater to a kitchen sump located at least 15 metres from any body of water. Sump capacity should be at least 1.3 times the maximum volume of wastewater to be discharged. The bottom of the pit should be filled with coarse gravel and the sides shored up with board, etc. to prevent erosion and collapse of the pit. Wastewater must not be discharged directly onto the shore or into a body of water. In large camps (greater than 6 men) washwater can be handled by sewage treatment facilities.

Minimize the danger of fire by taking such precautions as mounting spark arresters on stovepipes, incinerator stacks and motorized equipment. Adequate quantities of fire-fighting equipment must be available to deal with accidental fires. Details of the type and amount of equipment required at a camp can be obtained from the local District Office of the Forestry Branch of the Department of Forest Resources and Agrifoods.

ABANDONMENT

Removal of material is the most basic task. It means taking away everything from tent frames to fuel containers and this applies to all work sites and camps.

Many mineral exploration camps are used for only part of the year, and material or equipment may be left on-site for the next field season. If material is properly stored, environmental or property damage is unlikely to occur while the camp is empty.

Equipment can be protected from damage by storing it in secure, inaccessible locations. Tents and other structures should be taken down, but tent frames can stay up. Food should be removed and non-perishable items stored in a weather-tight building.

Fuel drums must be secured by removing nozzles and hoses, re-sealing them, and returning them to the main fuel storage area. When a camp is closed for the season, all garbage must be properly disposed of. Materials that cannot be burned should be removed to an approved waste disposal site.

Diamond drill core left in the field must be properly and securely stored. Owners of drill core must preserve the technical integrity of drill core in their possession. Persons intending to dispose of drill core must contact the Department of Mines and Energy - Core Storage Program and the core will be considered for collection.

FUEL STORAGE

Fuel storage in Newfoundland and Labrador is regulated by The Storage and Handling of Gasoline & Associated Products Regulations, 1982, and a Certificate of Approval for a fuel storage system must be obtained from the Department of Government Services and Lands. Fuel caches in remote areas of Newfoundland and Labrador should abide by the Environmental Guidelines for Fuel Cache Operations as stipulated by the Department of Environment and Labour.

A Certificate of Approval may not be required for a diamond drill or trenching program where only one or two barrels are necessary to complete the job - helicopter supported reconnaissance drill job.

Regardless of the size of any fuel caches, all containers should be marked, indicating their content, and must be handled carefully.

Fuel caches should be located on flat stable terrain at least 30 metres from the highwater mark of the nearest body of water whenever possible. Exceptions will be considered for approval (if justified).

Dyking of fuel caches is required at temporary or permanent sites when:

1. fuel is to be located in sensitive areas (domestic water supply areas, sensitive wildlife areas, ecological reserves, archaeological sites, etc.)

2. where filling/refilling of drums is proposed or carried out.

Dyking is recommended at a fuel cache when:

1. the size of storage is 100 drums or more, and

2. the duration of storage is permanent

Dykes should be built of clay or other impermeable material. A liner may be used if it is protected from punctures during installation. The preferred method for the elimination of water accumulation inside dykes is the use of a portable pump. If a valved system is used, the valve must be padlocked in the closed position when not supervised.

Any spill in excess of 70 litres must be reported through the 24 hour Spill Report Number 709-772-2083. In addition, a fuel/oil spill clean up kit must be kept on site within the protected area to facilitate any clean up in the event of a spill.

This kit must include absorbent pads, loose absorbent materials such as dried peat, speedi-dry or sawdust and a container such as an empty drum for recovering the fuel/oil.

If there is a bulk fuel storage facility within the protected area, the clean-up kit must include the following list of fuel/oil spill clean-up equipment:

1. Wajax fire pump and 100 metres of hose;

2. Two hand operated fuel pumps;

3. Six recovery containers such as empty drums;

4. Four long handled shovels;

5. Two pick axes;

6. Fifteen cubic metres of impervious soil (a silt or clay bearing gravel);

7. Fifty metres of low density rope;

8. Ten metres of containment boom;

9. Twenty-five absorbent pads; and

10. Two 60-kilogram packages of loose absorbent material such as dried peat, speedi-dry or sawdust.

When any fuel spill occurs, stop the flow immediately if possible. This may entail repairing a leak, pumping out a tank or shutting off a valve. If oil is spilled onto soil, dyking may be necessary. If fuel enters water, absorbent booms or barriers such as fencing or netting with loose absorbent or straw must be used to contain the spill. If necessary, culverts may be blocked off by earth or wooden barriers to contain fuel, provided the threat of flooding is addressed.

All empty fuel containers must be removed from work areas and campsites. When an operation is shut down for the season, all unused fuel must be retrieved and either stored at the main fuel storage area or removed from the site. Contaminated soil or snow must be disposed of at an approved waste disposal site.

MINERAL EXPLORATION AND BLASTING

Blasting is sometimes required in mineral exploration to (1) aid in access route developments and (2) expose fresh rock for sampling.

No person shall be allowed to conduct or direct a blasting operation unless they are the holder of a valid blasters safety certificate issued by the Department of Environment and Labour. Every certificate is normally granted for a period of 5 years. In all cases, explosives shall be stored a distance of at least 22.86 metres from a road and 30.48 metres from an occupied building. Explosives in excess of 68.04 kilograms shall be kept only on premises which have been licensed under the Explosives Act. All transportation of explosives must conform with The Fire Commissioners Act and The Explosives Act (Canada).

In general all trenches and other pits excavated by blasting methods should be backfilled. The material should be replaced in reverse order than it was excavated, the surface area compacted, stabilized and revegetated if natural revegetation appears unlikely. If the trenches have to be left open for a period of time, the piles of excavated material should be contoured and stabilized. Abandoned access roads should have permanent erosion control. All culverts are to be removed and suitable drainage structures installed. Erosion bars shall be placed at frequent intervals to ensure stability. Permanent access roads shall be maintained annually with cutbacks and fill slopes revegetated.

MINERAL EXPLORATION - DRILL SITES

Drill sites and water lines should be located as much as possible in areas where access to them and their operation will create the least amount of disturbance. Use the smallest drill pad area consistent with safe working practices. If clearing and levelling is required, the areas levelled should be no larger than necessary. Trees should be felled, bucked and piled neatly. A permit obtained from the Water Resources Division of the Department of Environment and Labour is required before drilling can take place on any watercourse or body of water. Diamond drilling cannot be carried out within buffer zones in protected water supply areas as follows:

Body of Water	Width of Buffer Zone
Intake Pond/Lake	150 metres
River Intake	150 metres for a distance of 1 kilometre upstream and 100 metres downstream
Main River Channel	75 metres
Main Tributaries/lakes/ponds	50 metres
Other bodies of water	30 metres

These buffer zones may be broadened at the discretion of Environment and Labour. Buffer zones may also be imposed around sensitive areas such as steep slopes, bogs and marshes and any other area deemed necessary by Environment and Labour.

Careful planning is needed to minimize the length and number of access trails. Fewer trails reduce operational costs and erosion problems and simplify site restoration if an area is abandoned.

An adequate closed circuit facility must be provided for drilling mud and flocculating agents. This facility can consist of a series of settling tanks and/or a small well constructed settling pond or sump a short distance down slope from the drill. All fuel and hazardous materials present on the site must be handled with care so as to minimize the possibility of spills. The area cleared for a storage site should be the minimum size required, be at least 100 metres from the nearest waterbody and dyked. In general, drilling waste shall not be allowed to enter streams or lakes or to run uncontrolled. If drilling is performed on a frozen waterbody, only sufficient fuel for one refueling shall be brought on the ice at one time.

All pump units shall be located on land or shall be contained in a shelter with absorbent pads to absorb any oil, etc. that may leak. In the case of winter drilling, pumps will be allowed on the ice provided there is a provision to collect drippings. These provisions will be stipulated under the Certificate of Approval. All maintenance of a drill rig or any other equipment involving any work other than emergency repairs shall be carried out on land and at least 100 metres from the nearest body of water.

At the termination of exploration all fuel or hazardous materials are to be removed from the area, the site resloped and revegetated only if natural revegetation appears unlikely. All waste (garbage, sanitary waste, broken tools, drill pipe, scrap, used drill mud, grout, etc.) shall be collected, transported and disposed of at a site approved by Environment and Labour and in no case shall this site be within 100 metres of any body of water.

In the event of a spill of fuel and/or hazardous materials, in excess of 70 litres, it must be reported through the 24 hour Spill Report Number 709-772-2083. Immediate steps should be taken to ensure that the spill is contained in dykes and/or booms and cleaned up by oil absorbent materials.

Drill holes are often inadequately plugged by leaving a piece of drill stem in the hole or by stuffing a branch of convenient size into it. Proper final abandonment of exploration holes should require the use of commercially available high swelling clays such as bentonite. In particular, holes through which water flows and deep drill holes should be plugged. Occasionally a drill hole is deepened after core interpretation or the hole is logged at a future date. Capping the borehole until all work has been completed, and then final abandonment should be the procedure followed.

Racks of drill core should be stored at one central location and must be protected to the extent necessary to preserve the core's original technical value. The necessary protection is going to depend on the nature and physical characteristics of the drill core.

MINERAL EXPLORATION - TRENCHING

Surface disturbance occurs when excavating test trenches or pits. Serious problems that may arise can be minimized if simple precautions are employed.

Hand excavation is preferable to mechanical excavation because disturbance is limited to the trench and its vicinity, however, if mechanical means are necessary backhoes are the most suitable machines as they are more efficient and cause less damage to the local environment than bulldozers. Consideration should be given to selecting the most appropriate type of off-road vehicle for the job and the terrain. Vehicles with the optimum traction and load distribution characteristics can greatly reduce disturbance in travelling from site to site and thereby reduce rehabilitation costs upon completion of the work. Equipment should be brought in on carefully prepared trails (See Section 4). Mechanical excavations and stripping with Wajax water pump cannot be carried out within buffer zones of protected water supply areas.

The first step is to selectively remove and stockpile the topsoil and organic material. If the trenches have to be left open for a period of time, the piles of excavated material should be contoured and stabilized. When a trench is backfilled, the material should be replaced in the reverse order than it was excavated. After backfilling and compaction is completed, the surface should be stabilized. If natural regeneration appears unlikely, then the entire site should be revegetated.

Important geological features - mineral occurrences, fossil sites, etc. - may be left open for future viewing if industry in consultation with officials of the Departments of Mines and Energy and Environment and Labour, deem them to be unique.

In the event of the discovery of a possible historic resources or archaeological object, all work should cease in the immediate area of the discovery until Historic Resources Division of the Department of Tourism and Culture advises the contractor, etc. as to the disposition of the discovery and/or authorizes the renewal of the work. A Historic resource is defined as a work of nature or of humans that is primarily of value for its archaeological, prehistoric, historic, cultural, natural, scientific or aesthetic interest and includes an archaeological, prehistoric, historic or natural site, structure or object. An archaeological object means an object showing evidence of manufacture, alteration or use by humans that is found in or on land and is of value for the information that it may give on prehistoric or historic human activity in the province and includes human remains. Archaeological Investigation Permits from the Historic Resources Division of the Department of Tourism and Culture are required for archaeological surveying, archaeological excavation and historic resource impact assessments.

ALL-TERRAIN VEHICLE USE

Persons wishing to establish ATV trails will be required to obtain a licence of occupation. Areas where ATV use is permitted includes (1) areas underlain by forested mineral soils (2) trails constructed under licence pursuant to the Lands Act (3) abandoned railway corridors, beaches, abandoned highways, forest access roads, roads constructed under licence pursuant to the Lands Act and any other road constructed for the purpose of providing vehicle access to resources where ATV use may be prohibited by virtue of other requirements (in reserved area, etc.) (4) privately owned land less than ten hectares (5) working farms (6) land in Labrador north of latitude 54 and (7) any lands when snow-covered and frozen below ground surface.

ATV use in wetland and barren areas is restricted to approved, properly constructed trails. A licence of occupation for trail construction must be obtained from the Department of Government Services and Lands.

ABANDONMENT AND REHABILITATION

The most basic task in abandoning any site is removal of material. All waste and other discarded material should be removed from pits, quarries, laydown areas, camps and any other disturbed sites to an approved waste disposal area. Camp sites in particular must be carefully cleaned up. Tent frames and out-buildings should be dismantled and removed, along with any fuel or fuel containers. Any oil saturated soil, snow or ice should be excavated and disposed of at a site approved by the Department of Government Services and Lands.

If access roads are to be abandoned, they must have a system of permanent erosion control, with erosion bars placed at frequent intervals to ensure stability. All bridges and culverts should be removed and stream banks restored after obtaining approval from the federal Department of Fisheries and Oceans and the provincial Department of Environment and Labour. The road surface itself should be scarified or ripped to promote natural regeneration, or to provide a suitable site for revegetation. Abandoned roads must be blocked to vehicular access to prevent watercourse fordings which could lead to serious soil erosion problems.

When local topography has been disturbed, the original contours should be restored, preferably to grades 2:1 or less. Erosion-prone areas may require revegetation to limit future problems. This begins with providing a fertile surface dressing of topsoil and organic material, which should have been stockpiled when the area was originally cleared. Until new growth is established, erosion can be controlled by using a mulch to stabilize the bare ground. One popular method is hydroseeding, whereby a slurry composed of seed, fertilizer, mulch and water is pumped through a nozzle and sprayed over the ground. When planning any revegetation program, the Departments of Environment and Labour and Mines and Energy should be consulted.

APPENDIX

Permits and approvals that may be required for Mineral Exploration Projects.

(This permit/licence list is based on information obtained from the agencies named and is not necessarily complete).

GOVERNMENT OF NEWFOUNDLAND AND LABRADOR

Department of Environment and Labour

The Occupational Health and Safety Act 1978 - places specific obligations on government, employers, workers and self employed persons to protect the health and safety of workers and all other persons at or near the workplace.

Occupational Health and Safety Act 1990 - requires employers to register prior to construction, any new construction project or industrial enterprise.

Contact: Director of Occupational Health and Safety Services - 729-5548.

Occupational Health and Safety Committees - are required to be established in each workplace where ten or more workers are employed, to monitor the health, safety and welfare of the workers employed at the workplace.

Contact: Director of Education and Committees - 729-2703.

First Aid Regulations, 1986 - requires employers to provide and maintain first aid supplies and services in each workplace.

Contact: Director of Occupational Health and Safety Services - 729-5548.

Right of worker to refuse to work - a worker may refuse to do any work that he has reasonable grounds to believe is dangerous to health or safety, or the health and safety of any other person in the workplace.

Contact: Director of Occupational Health and Safety Services - 729-5548.

The Regulation of Mines Act, Chapter 330 - prescribes standards for the design, use and safe operation of equipment used at mines, in accordance with adopted codes and negotiated national and international agreements.

Contact: Director of Occupational Health and Safety Inspections - 729-5548.

The Mines (Safety of Workers) Regulations 1957 - provides for the occupational health and safety of workers at mines.

Approvals - are required for the use and storage of explosives at mines and the use of internal combustion equipment underground.

Permits - are required for the storage of explosives used at mines and internal combustion equipment used underground.

Contact: Director of Occupational Health and Safety Inspections - 729-5548.

The Radiation Health and Safety Act Chapter R-1 - the purpose of this Act is the protection of persons exposed to radiation and the regulation of the use and installation of radiation equipment.

Approval - is required for permanent installation of radiation equipment.

Registration - is required for all radiation equipment, whether operated or not, and annually thereafter.

Contact: Manager, Medical and Hygiene Services - 729-2644

Surveys - are required for a new installation or modification and every two years thereafter.

Registration - is required by persons selling, supplying or servicing radiation equipment.

Certification - as a medical or dental practitioner is required for those who prescribe the use of radiation equipment for the irradiation of human subjects.

Registration - is required before any person is permitted to operate radiation equipment for the irradiation of human subjects.

Certification - by the Canadian Government Specifications Board or registration as a veterinarian is required for any person prescribing the use of radiation equipment for irradiation of other than human subjects.

Asbestos Abatement Code of Practice - the purpose of this code is to regulate the use or removal of asbestos or products containing asbestos and the protection of the individuals exposed to asbestos fibers.

Contact: Manager, Medical and Hygiene Services - 729-2644

Registration - is required by any person, firm, corporation or other entity before they may engage or work at the business of asbestos removal.

Contact: Manager, Medical and Hygiene Services - 729-2644.

The Environment Act, 1995 - written approval is required before proceeding with any alterations to any body of water or flow therein. Eg. Bridges, Culverts, etc.

Contact: Manager, Water Investigations Section - 729-5713.

The Environment Act, 1995 - written approval is required for all development activities within protected as well as unprotected public water supply areas.

Contact: Manager, Surface Water Section - 729-2535.

A water use authorization - will be required for any beneficial use or diversion of SURFACE, GROUND and SHORE WATERS.

Contact: Water Resources Management Engineer, Water Rights Section - 729-4795.

The Well Drilling Act, 1981 - provides for licencing of well drillers, requirements for the location of wells from sources of pollution, well records, construction, testing and abandonment.

Contact: Groundwater Manager - 729-2539.

A Certificate of Approval - is required for any sewage works, with the exception of on site systems.

A Certificate of Approval - is also required for any water distribution system.

Contact: Director of Environmental Management Division - 729-2556.

A Certificate of Approval - may be required for any industrial or processing works.

Contact: Director, Industrial Environmental Engineering Division - 729-2555.

The Pesticides Control Act, RSN 1990, c. P.8 and Regulations, 1984 - a licence is required by individuals or companies involved in the sale, use, and handling of commercial and restricted categories of pesticide products.

Contact: Manager of Pesticides Control Section - 729-3395.

Department of Fisheries and Aquaculture

The Aquaculture Act - a permit is required for any water based activity related to aquaculture.

Contact: Provincial Aquaculturalist - 729-3726.

Department of Finance

Retail Sales Tax (RST) Act - outlines the tax status and responsibilities of a non-resident business entering Newfoundland to perform contracts or engage in other business activities of a temporary nature.

Contact: St. John's - 729-3831; Grand Falls-Windsor - 292-4357; Clarenville - 466-2611; Corner Brook - 637-2470.

Department of Forest Resources and Agrifoods

Meat Inspection Act - A licence is required to establish and operate a slaughtering facility for animals to be consumed as food, unless the facility is operated solely for the provision of food for the operator and the operator's family.

Contact: Director, Animal Health Division - 729-6879.

The Forestry Act, 1990 - a permit is required to light fires out-of-doors during the forest fire season as outlined in the regulations.

The Forestry Act, 1990 - an operating permit is required to carry on logging or sawmill operations on forest land during the forest fire season.

The Forestry Act, 1990 - a permit is required to cut timber on Crown land.

Contact: Regional Director (Eastern) - 729-2641; (Central) - 256-7131; (Western) - 637-2409; and (Labrador) - 896-9377.

The Sawmill Act - a permit is required for the operation of a sawmill.

Contact: Refer to contacts for the Forestry Act.

The Wildlife Act, 1970 and Amendments - a permit is required for the control of nuisance animals.

A permit - is required to collect, import and export any wild animals.

Contact: Director of Wildlife Division - 729-2817.

Department of Government Services and Lands

Urban and Rural Planning Act 1970 - A development permit is required for development alongside all Protected Roads and within Development Control Areas in the Province.

The Crown Lands Act, 1970 - a permit is required to occupy Crown land, including the sea bed and column of water above it, within three miles offshore of the high water mark.

Contact: Customer Support of the Department of Government Services and Lands Offices - St. John's - 729-5392, Clarenville - 466-4060, Gander - 256-1436, Corner Brook - 637-2207, Goose Bay - 896-2661.

The Environment Act, 1995 - a Certificate of Approval is required for any commercial sewage works in an unserviced area and not covered under a municipality.

Boilers, Pressure Vessels and Compressed Gas Act - the purpose of this Act is to regulate the design and installation of boilers, pressure vessels, pressure plants and compressed gas systems.

Approval - is required for the design of boilers, pressure vessels, pressure plants and compressed gas systems.

Contact: Engineering Services, Government Services and Lands - 729-2747

Permits - are required for the installation, alteration or repairs to boilers, pressure vessels and pressure systems.

Licences - are required by persons engaged in the installations, repair, or alteration to boilers, pressure vessels, or compressed gas systems.

Certification - is required for power engineers, gas installers and welders.

Contact: Engineering Services, Department of Government Services and Lands - 729-2747

The Buildings Accessibility Act 1981 - requires that entrance and facilities available to and accessible by members of the public for lawful purposes to be available to and accessible by physically disabled persons.

The Buildings Accessibility Regulations, 1982 - drawings and specifications of design must be submitted for registration and approval to ensure compliance with the applicable Codes and Standards.

The Elevators Act - regulates the installation of an apparatus, appliance or device used for lifting, lowering, or transporting persons or goods from one permanent level floor, landing or point to another.

Approval - must be granted for drawings and specifications of an elevator before the installation or major alterations commences. If the design meets the requirements of the Act and the applicable Safety Code, a Registration Number is issued.

Contact: Engineering Services, Department of Government Services and Lands - 729-2747.

Boiler, Pressure Vessel and Compressed Gas Act - A Certificate of Inspection is required for the operation of boilers, pressure vessels and pressure systems when the installation or repair work has been completed. The Inspection Certificate is renewed annually.

The Electrical (Inspection Fees) Regulations 1986 - establishes the fees to be paid for the inspecting, testing and approval of electrical wiring and equipment.

The Electrical Regulations, 1982 - adopts the Canadian Electrical Code C22.1, as the safety standard for electrical wiring and equipment. In addition, it ensures that only individuals who are qualified to do electrical work are permitted to do so, and restricts the purchase of electrical permits to qualified electrical contractors.

Permit - is required for the installation, alteration or repair and inspection of electrical wiring system or equipment. This permit is only issued to a Registered Electrical Contractor.

Electrical Registration Certificate - required by an individual who performs electrical work and who qualifies in accordance with section 4 and 5 of the Regulations.

Contact: Mechanical and Building Inspections, Department of Government Services and Lands - St. John's - 729 2746, Clarenville - 466-4060, Gander - 256-1428, Corner Brook - 637 2446, Goose Bay - 896-2661

Electrical Contractors Registration Certificate - required by an individual who wishes to purchase an electrical permit and is only issued to individuals who meet the requirements of Section 6 of the Electrical Regulations, 1994.

Contact: Mechanical and Building Inspections, Department of Government Services and Lands - St. John's - 729 2746, Clarenville - 466-4060, Gander - 256-1428, Corner Brook - 637 2446, Goose Bay - 896-2661

The Elevators Act - A Certificate of Inspection is required to be issued and prominently displayed before an elevator is put in use by the owner.

Contact: Mechanical and Building Inspections, Department of Government Services and Lands - St. John's - 729 2746, Clarenville - 466-4060, Gander - 256-1428, Corner Brook - 637 2446, Goose Bay - 896-2661

The Waste Material (Disposal) Act, 1973 - a permit is required to establish or alter the boundaries of a waste management and disposal system.

The Storage and Handling of Gasoline and Associated Products Regulations, 1982 and Amendments - a Certificate of Approval is required for the storage and handling of gasoline and associated products.

The Storage of PCB Wastes Regulations, 1988 - a permit is required for the transportation or storage of PCB waste materials.

The Environment Act - A Certificate of Approval may be required for any industrial or processing works.

A Certificate of Approval - is required for Asphalt Plant Set-Up and for Asphalt Plant Operation.

Contact: Regional Operations, Department of Government Services and Lands - St. John's - 729-3084, Clarenville - 466-4060, Gander - 256-1420, Corner Brook - 637-2204, Goose Bay - 896-2661.

Department of Health Act, 1990

Public Health Sanitation Regulations (1991) - approval is required for the installation of a well to supply drinking water.

Sewage Disposal System Regulations (1985) - a permit is required for the installation of on site sewage disposal systems.

Contact: Operations Division, Department of Government Services and Lands - St. John's - 729-0485, Carbonear - 786-5032, Clarenville - 466-4060, Gander - 256-1428, Corner Brook - 637-2446, Goose Bay - 896-2661.

Swimming Pool Regulations (1978/93) - a license is required for the construction and operation of a swimming pool, waterslide, etc. for any facility that is involved with providing swimming or recreational bathing subject to compliance with pertinent legislation. License is renewed annually.

Food and Drug Act, Food and Drug Eating Establishment Regulations, 1966 - a Food Establishment License may be issued to any premise that is involved in the sale, production, manufacturing, preparation, storage and/or distribution of food subject to compliance with all pertinent legislation.

Department of Health Act, 1990 - Approval is required for the development of all Cemetery Sites.

Public Health (Sanitation) Regulations, 1991 - Bacteriological analysis of private water samples will be performed on a demand basis.

Contact: Operations Division, Department of Government Services and Lands - St. John's - 729-0485, Carbonear - 786-5032, Clarenville - 466-4060, Gander - 256-1428, Corner Brook - 637-2446, Goose Bay - 896-2661.

Salvage Dealers Act - a licence is required by individuals or companies to operate a salvage yard.

Contact: Supervisor of Licencing and Enforcement - 729-2595.

Department of Industry, Trade and Technology

Development Areas (Lands) Act - permission is required for any development activity, whether domestic, industrial or commercial within the Bull Arm Development Area.

Contact: Director, Business Analysis Division - 729-5066.

Department of Justice

The Corporations Act, Section 433 (1) - a domestic or extra-provincial company shall not begin or carry on an undertaking in this province until it is registered under this Act. Note - extra-provincial companies are "registered" and local (Newfoundland and Labrador) companies are "incorporated".

Contact: Registrar of Deeds and Companies - 729-3316

Municipal/Community Councils

The Municipalities Act, 1979 - a building permit is required for any building proposal which falls within a municipal jurisdiction.

Urban and Rural Planning Act - a development permit is required for all development within a Regional, Municipal or local planning area or in a protected area.

Contact: Town Clerk of Council concerned.

Department of Mines and Energy

Petroleum and Natural Gas Act, 1970, and Draft Regulations - a permit is required for petroleum exploration, development and production activities on land.

Contact: Director of Petroleum Resource Development - 729-2323.

The Quarry Materials Act, 1976 and Regulations - a permit is required for the removal of any quarry materials.

Contact: Manager of Quarry Materials Administration - 729-6410.

The Mineral Act, 1976 and Regulations - a mining lease is required for all mining activities.

Contact: Manager of Mineral Rights - 729-6418.

The Mineral Regulations 1983, (Amendment) under the Mineral Act (O.C. 95-730) - a person who intends to conduct a detailed systematic search for minerals on areas either licenced or leased under the Mineral Act, or granted or issued by another Act, must submit a description of the planned exploration before commencing the work.

When mineral exploration work involves heavy machinery, airborne surveys, extensive use of off-road vehicles or establishment of camps or other activities capable of impacting the environment, an exploration approval is required.

Contact: Director of Mineral Lands Division - 729-6425

Department of Social Services

Day Care and Homemaker Services Act, R.S.N., 1990 - a licence is required to operate a day care centre where four or more children are being cared for. A licence is also required to operate Homemaker - Home Support Services.

Contacts:

re: Day Care: Director, Family and Rehabilitative Services Division - 729-2436.

re: Homemaker Service Agency: Nursing Consultant - 729-3113.

Department of Tourism, Culture and Recreation Tourism Establishment Act - Tourist Establishment Regulations. A permit is required to build any accommodations. A licence is required to operate an accommodations facility. Accommodations include hotels, motels, hospitality homes, hunting/fishing camps, trailer parks and cabins. Recent policy requires only that vessels possess Safety Compliance from Coast Guard. Contact: Director of Tourism Development - 729-2822.

The Wilderness and Ecological Reserves Act, 1980 and Amendments - a permit is required for any travel or proposed activity within an ecological or wilderness area. A Scientific Research Permit is required for any research conducted within an Ecological or Wilderness Reserve.

Provincial Parks Act - A Permit is required for most activities within a Provincial Park.

Contact: Director of Parks Division - 729-2424.

The Historic Resources Act - an archaeological investigation may be required for any undertaking. A permit is required for any archaeological investigation on land or under water.

Archaeological Investigations Permit Regulations (1991) - These specify the professional qualifications that an archaeologist must have in order to qualify for a permit to survey for and/or excavate archaeological sites in the province. The regulations also delineate the methods and procedures to be followed by the archaeologist in the field.

Contact: Resource Archaeologist - 729-2460.

Department of Works, Services and Transportation

Transportation of Dangerous Goods Act - those handling, offering for transport or transporting any dangerous goods must comply with the Act. No actual permit issued.

Contact: Manager of Transportation Regulation Enforcement - 729-3454

Department of Transportation and Communications Act, 1983 - a permit may be required for any development within a highway reservation established by the Department of Works, Services and Transportation. Access off any highway under the Department of Works, Services and Transportation's jurisdiction may require a permit.

Contact: District Manager, St. John's - 729-2381, Clarenville - 466-7953, Grand Falls - 292-4300 and Deer Lake - 635-2162.

GOVERNMENT OF CANADA

Agriculture Canada

Plant Protection Act - Plant Protection Regulations: permission is required for any activity which might transport plant debris and soil into an area designated as a disease free area under the Plant Quarantine Regulations.

Contact: Program Officer, Plant Protection - 772-5030.

Environment Canada

The Canadian Environmental Protection Act - Part VI, a permit is required for any ocean disposal.

A Letter of Authorization - by the Minister is required for PCB destruction technology and treatment technology.

The Dangerous Goods Transportation Act, 1982 - Environmental Protection is required to inspect any cargo of waste material being shipped out of Canada from Newfoundland and Labrador.

Contact: Manager, Compliance and Enforcement - 772-4047.

The Fisheries Act (Section 36 - 42) - deleterious substances cannot be discharged into fish-bearing waters. Plans and specifications may be required.

Contact: Manager, Pollution Prevention - 772-4005.

Fisheries And Oceans Canada

Newfoundland Fisheries Regulations under Section 35 of The Fisheries Act - development plans may have to be reviewed by Fisheries and Oceans Canada.

Contact: Section Head, Habitat Evaluation Section - 772-4912.

Fisheries Act - an approval may be required for any activity which may impact on fish and/or fish habitat.

Contact: Area Habitat Coordinator; Area 1 (Eastern) 772-5597; Area 2 (Southern) 832-0010; Area 3 (Central) 292-5197; Area 4 (Labrador) 896-2642; Area 5 (Western) 637-4349; or Section Head, Habitat Evaluation, Marine Environment and Habitat Management 772-4912.

Transport Canada

The Transportation of Dangerous Goods Act - those handling, offering for transport or transport of any dangerous goods must comply with the Act. No actual permit issued.

Contact: Department of Transportation - 729-3454 or Transport Canada anutech - 613-992-4642 (Emergencies) - 613-996-6666.

The Navigable Waters Protection Act - a permit is required for any works or construction activity located below the high water mark, either over, under, through or across any navigable coastal waters.

Contact: Regional Superintendent of the Navigable Waters Protection Act - 772-2284.