APPENDIX 10:

HOPE LAKE
REMEDIATION PROJECT

SITE SPECIFIC HEALTH AND SAFETY PLAN (INCLUDES SPILL CONTINGENCY PLAN)

E.GRUBEN'S TRANSPORT LTD.

Hope Lake, Willow Creek and Husky Creek Cleanup

Nunavut Settlement Area

SITE SPECIFIC HEALTH AND SAFETY PLAN

April 24rd, 2012

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EMERGENCY AND REGULATORY CONTACTS

Medical Evacuation via Kugluktuk Health Center	**TEL: 867-982-4531**
Alternate Medical Evacuation contact Air Tindi (Yellowknife)	**TEL: 867-669-8200**
Adlair Aviation	**TEL: 867-983-2569**
Kugluktuk RCMP	**TEL: 867-982-0123**
Workers' Safety & Compensation Commission	**TEL: 800-661-0792** **FAX: 866-277-3677**
Northwest Territories/Nunavut Spill Line	**TEL: 867-920-8130**
Environment Canada	**TEL: 867-979-3660**
Government of Nunavut – Environmental Protection	**TEL: 867-975-5907**
Department of Fisheries and Oceans	**TEL: 867-975-8000**
AANDC - Project Manager (Mark Yetman)	**TEL: 867- 975-4733**
AANDC - Manager of Waters (Jim Rogers)	**TEL: 867- 975-4550**
AANDC - Land Administration (Jeff Mercer)	**TEL: 867- 975-4280**
AANDC - Manager of Field Operations. (Peter Kusugak)	**TEL: 867- 975-4295**
PWGSC - Project Manager (Michael Bernardin)	**TEL: 780-497-3853**
PWGSC – DR ( )	**TEL:**
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EMERGENCY CONTACT LIST - EGT MANAGEMENT & STAFF

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Superintendent of Operations Doug Saunders	**TEL: 867-977-7017** **CEL: 867-678-0045**
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OTHER EMERGENCY RESPONSE CONTACT LIST – OUTSIDE AGENCIES

Kugluktuk RCMP	**TEL: 867-982-0123**
Nunavut Manager of Health and Social Services (Donna Rand)	**TEL: 867-983-4552**
Yellowknife Stanton Territorial Hospital	**TEL: 867-669-4111**
Canadian Coast Guard	**TEL: 867-874-5559**
Inuvik Renewable Resources	**TEL: 867-777-7308** **CEL: 867-777-1185**
Inuvik Hospital	**TEL: 867-777-8000**
Inuvik RCMP	**TEL: 867-777-1111**
Aklak Air Ltd.	**TEL: 867-777-3555**
Canadian Helicopters	**TEL: 867-777-2424**

1.0 INTRODUCTION

1.1 Site Specific Nature of Project

Hope Lake is located about 75 km southwest of Kugluktuk, Nunavut. The site is located approximately 34km west of the Coppermine River, and 20 km northeast of the Dismal Lakes in the Kitikmeot Region of Nunavut. The site is large in area, and part of it is situated on the southern shore of Hope Lake, a moderately sized water body. The Hope Lake site is a result of exploration activity. Exploration was carried out by Coppermine River Limited (CRL) and a second company called Hearne Coppermine Limited (Hearne), and culminated in production of a detailed plan for a mine and an associated community, which was written in 1968. However, no mining activity, other than exploratory drilling and geological surveys, ever occurred at Hope Lake. The associated sites of Husky Creek and Willow Creek are approximately 20 km and 10 km respectively from the Hope Lake sites. The objectives of the project are to cost effectively and safely clean up and restore the Hope Lake and the associated sites at Husky Creek and Willow Creek while minimizing disturbance to their sensitive ecosystems.

The nearest community and charter base is Kugluktuk, located approximately 75 km to the Northeast of the Hope Lake site. The Husky Creek and Willow Creek sites are between Hope Lake and Kugluktuk. Yellowknife is located approximately 594 km to the south of Kugluktuk. Inuvik is about 475 km to the northwest of Kugluktuk. This project, are subject to the terms of the Nunavut Comprehensive Land Claim Agreement (CLCA).

The Hope Lake site has one airstrip that has approximately 458 m (1500 ft.) of usable surface with a northeast-northwest orientation. This portion of the airstrip is generally in good condition, which will be suitable for the types of aircraft utilized by EGT. A gravel access trail/road links the airstrip to the main camp area. Willow Creek and Husky Creek do not have airstrips; however there are many suitable areas for helicopter operations.

Because of the remote location and of limited transportation options to and from the sites, special provisions are required for emergency situations, including medical emergencies, fire response procedures and oil/fuel spill response procedures.

The arctic eco-system is also particularly sensitive to disturbance. Special provisions must be made to protect the environment on and around the sites and to minimize the disturbance made by work related activities.

The Hope Lake area is also an area frequented by varieties of wildlife. It is an area of grizzly bear activity and home of caribou and occasionally wolverine and wolves. Both the safety of site personnel and the safety and preservation of local wildlife particular to the area must be considered.

Due to the particular features of geography, climate and wildlife sensitivity associated with the Hope Lake, Willow Creek and Husky Creek areas, we have created this Hope Lake, Willow Creek and Husky Creek Site Specific Health and Safety Plan as a

supplement to E. Gruben's Transport Ltd. Health, Safety and Environment (HSE) Manual, which applies to all EGT operations. The procedures and policies described within the general EGT Health, Safety and Environment (HSE) Manual will continue to apply if not particularly addressed or modified in this Hope Lake, Willow Creek and Husky Creek Site Specific Health and Safety Plan.

The types of work and the nature of the materials to be dealt with at Hope Lake, Willow Creek and Husky Creek are considered unusual to most EGT day-to-day operations. The particular hazards associated with them require special attention in this Hope Lake, Willow Creek and Husky Creek Site Specific Health and Safety Plan.

A portion of the principal infrastructure of the original Hope Lake mining facilities remains on site, but have deteriorated considerably and collapsed. The runway will require some repairs and maintenance, a variety of buildings foundations will need to be demolished and removed. Several areas of hydrocarbon contaminated soils as well as barrels and both hazardous and non-hazardous debris will be encountered throughout the sites.

Construction practices at the time of the initial construction of the site included the use of materials such as asbestos in insulation, leachable lead paints, batteries, ballasts which could contain PCB's, fiberboard containing asbestos, electrical insulators, gaskets and mastic containing asbestos and mercury in thermostats, which are materials and practices no longer considered acceptable. Asbestos at Hope Lake were used as well as lead-based paints and primers, which mean some high levels of lead and leachable lead, may be encountered. There may also be some PCB paints, which were common during the era the sites were occupied.

[A complete list of known and suspected hazardous materials on site can be found in Appendix A: Hazardous Material Audit.]

These materials and the precautions and procedures required for safe handling, processing, shipping and disposal which are specific to the work at this site will also be addressed in this Hope Lake, Willow Creek and Husky Creek Site Specific Health and Safety Plan.

Infrastructure remaining at the main Hope Lake site includes wood frame building foundations and core shacks, which are all collapsed. There is little infrastructure at either of the Willow Creek and Husky Creek sites.

The Hope Lake, Willow Creek and Husky Creek site conditions in general are typical of its Arctic surroundings consisting of permafrost barren glacial/gravel topography. The most significant physical aspects about the site that impact the performance and schedule for work to complete this project are:

- Cat Train access is required for mobilization and demobilization of the majority of equipment, materials and offsite disposals. The coastal access for barge operations to Kugluktuk to mobilize the required equipment from the PIN-D and

PIN-E sites and subsequent demobilization from Kugluktuk to Inuvik is only ice free and accessible by existing barge services from August to later September.

- The onsite work requires snow free, thawed and relatively dry conditions that only exist between late June and late September.
- There is only aircraft access to the site. The airstrip is 458 meters long can be utilized and in relatively good condition with occasional areas of settlement causing ponding and frost cracking along the length of the airstrip.
- Type of aircraft and access is dependent upon good weather conditions. The closest air charter support bases are located at Kugluktuk to the northeast.
- Mobilization to the site will take place via Cat Train in March - April of 2013. Contract work will be conducted through the summer of 2012 and 2013. Demobilization from the site will take place via Cat Train in March - April of 2014.

Given these project constraints the work window is limited to summer months with limited transportation options. The desired project completion schedule will be critically dependent upon timely cat train mobilization, efficient manpower usage and project execution logistics, timely cat train demobilization and normal/favorable weather. It will also be important to develop a committed flight schedule with the project resupply air charter company and to maintain ongoing good communication and a working relationship with them. There are alternate air charter companies to mitigate any potential air supply problems.

The remediation work for the Hope Lake, Willow Creek and Husky Creek sites requires the handling and disposal of both non-hazardous and hazardous materials. The work has been designed based upon the remedial guidelines and clean-up criteria of the AANDC Abandoned Military Site Remediation Protocol. Any hazardous materials encountered on site will be handled according to regulations stipulated by the Canadian Environmental Protection Act (CEPA), Transportation of Dangerous Goods Act (TDGA) and the Nunavut/NWT Guideline for the General Management of Hazardous Waste as applicable. The remediation materials will be collected, consolidated, managed and containerized for offsite disposal. Both non-hazardous materials will be transported to Kugluktuk for transport to Inuvik and subsequently to the respective Non-Hazardous and Hazardous Landfills. The hazardous materials will require professional and careful handling, packaging and offsite southern transportation and disposal at licensed hazardous waste facilities.

These materials and the precautions and procedures required for safe handling, processing, shipping and disposal which are specific to the work at these sites will also be addressed in this Hope Lake, Willow Creek and Husky Creek Site Specific Health and Safety Plan.

1.2 EGT Policy and Leadership Philosophy

E. Gruben's Transport Ltd. believes that safety, productivity and quality of services are inextricably linked. To be successful high standards must be achieved in all of these areas.

The key to providing a viable, high quality work environment is to encourage employees to embrace the concept of Accident and Incident Prevention.

We will achieve continued improvement in all aspects of our Safety Program by the following key principles:

- Provide strong commitment from management;
- Provide leadership and complimentary management;
- Provide training and skills upgrading for new and present personnel;
- Set and implement performance standards, which involves everyone;
- Measure our safety, productivity and performance;
- Reward superior performance through the presentation of Safety Awards;
- Emphasize sound recruiting procedures;

Education and awareness of safe work procedures and policies and the implementation and enforcement of these procedures and policies in the control of identified job hazards will enable achievement of the Accident and Incident Prevention goal.

1.3 EGT Policy and Leadership Guiding Principles

E. Gruben's Transport Ltd. will integrate the following principles into all aspects of operations:

- All occupational injuries and illnesses are preventable;
- All work shall be conducted in compliance with applicable laws and regulations;
- Safe work performance and protection of the environment in which we work are fundamental values integrated into our business;
- Operations in the Kitikmeot area shall be conducted with emphasis on actively protecting the health and safety of our people and the environment;
- Systems and resources are in place to ensure work is conducted safely;
- All personnel, throughout the company, have a personal responsibility to perform their work safely and to protect the environment;

- Everyone has the obligation to stop work when an unsafe act or condition is identified. Corrective action shall be taken to ensure conditions are safe before resuming plans;
- E. Gruben's Transport Ltd. will participate with industry to develop and implement effective emergency response plans;
- E. Gruben's Transport Ltd. will identify and implement improvement opportunities for the health, safety and environment (HSE) program.

The Guiding Principles will be reviewed as part of employer & contractor orientations, training programs and at regular safety meetings.

A safe and healthy work environment for all our personnel is the first priority on every job and task we undertake. E. Gruben's Transport Ltd. will endeavour to protect the health and safety of all individuals who work on or are affected by our activities while maintaining the highest standards of environmental performance.

E. Gruben's Transport Ltd. is committed to providing active leadership and participating in safety, occupational health, and environmental protection and loss control programs. This commitment will be demonstrated by operating in a manner that avoids or mitigates adverse health, safety and environmental impacts.

E. Gruben's Transport Ltd. will ensure that:

- Our operations will meet or exceed the requirements of relevant occupational health and safety legislation, environmental protection legislation, industry standards and corporate policy.
- All our personnel and others employed on our behalf are informed of the requirements to protect themselves and their fellow workers from injury and occupational illness, to protect the environment, and to protect the reputation and assets of the company and its clients; and that they receive the necessary information, training and equipment, and management support to do so.
- We will determine and evaluate risk factors and mitigate the hazardous conditions and environmental impacts of our operations during planning, implementation and operational phases of our projects.
- All levels of our organization will maintain a rigorous commitment to health, safety and the environment and our operations will be subject to ongoing occupational health and safety evaluations to ensure compliance with this policy.
- E. Gruben's Transport Ltd. will continue improvement practices with the goal of "Zero Accident" performance.

2.0 HAZARD IDENTIFICATION & RISK CONTROL

Hazard identification comes from four basic sources:

- Workers' identification of workplace hazards ("Hazard I.D.'s").
- Observation of worker behaviour at the worksite.
- Observation of work site physical conditions.
- Inspections

2.1 Hazard Identification Reports ("Hazard ID's")

Hazard Identification reports are used to alert site supervisors to any hazardous conditions or unsafe work procedures found by workers and others on the site. The value of observation and involvement of workers in the field cannot be over-emphasized in the identification of hazards. Placing some of the onus for hazard identification on the workers most closely involved helps give participants a sense of ownership and buy-in to the entire HSE program.

Hazard Identification reports fill in the gaps between regular company inspections and help enable supervisors and workers to provide a safer worksite. Hazard I.D's allow greater participation of the workers in their own safety as well as enabling them to easily bring to the attention of supervisors unsafe conditions or practices which have been overlooked through the inspection process.

Employees, contractors & subcontractors are to notify the appropriate supervisor of any hazard observed on the company worksite. Hazard I.D. Reports can be given verbally or in writing. EGT has developed simple Hazard/Near Miss Reports for this purpose.

After assessing the hazards, every effort should be taken to eliminate the hazard. In the event the hazard cannot be eliminated, all potentially affected personnel must be informed of the hazard and the hazard must be immediately marked with any of the following hazard indicators, which is appropriate under the circumstances:

- Danger Sign
- Flags
- Lights
- Alarms
- Barricades
- Fences
- Labels
- Placards

Identified hazards are documented on an "Action Plan to Correct an Identified Hazard" form.

The form outlines the following:

- Date & location of identified hazard (s).
- Description of the hazard (s).
- Name of hazard reporter.
- Corrective action taken and by whom.
- Date to be completed and/or completion date.
- Signed off by: Supervisor, Safety Supervisor and/or Senior Administration.

When a hazard is identified:

- Specify who is responsible to correct the identified hazard.
- Set a deadline date for the hazard correction.
- Complete the E. Gruben's Transport Ltd. form, "Action Plan to Correct an Identified Hazard" and forward to appropriate supervisor.

2.2 Observation of Worker Behaviour

The observation of worker behaviour is a significant aspect of the responsibility of all supervisors (see section 2.4.2 below for a more detailed discussion of supervisor's observation of workers). Peer observation and mentoring are also useful and beneficial means of monitoring the behaviour of workers, especially of workers new to a job or a task.

2.3 Observation of Work Site Physical Conditions

Management, supervisors and all field personnel are expected to observe the work site for hazards which may exist or which may appear. The different perspectives which individual personnel will have of a work site are valuable in the identification of hazards. In particular, they are the clear responsibility of all work site supervisors.

2.4 Inspections

Management is responsible for taking regular tours and inspections of company worksites and reviewing all general health, safety and environmental company responsibilities. Regular inspections will be ongoing; however formal inspections will be conducted monthly or at least once per job, whichever is greater. Upon completion of regular tours and inspections, management will construct a list of specific health, safety and environmental improvements to enhance our goal of excellence in health, safety and environmental performance.

Planned health, safety and environmental inspections are a key management tool that significantly contributes to preventing loss producing incidents. They also provide an opportunity for employees to participate in inspecting their own work area. There are many examples of possible inspection formats, and each of them has a specific purpose.

The intent of any inspection is to identify and correct actual or potential hazards and ensure continued compliance with regulations and company health and safety standards.

Inspections can include:

- Determining if there are deficiencies in tools, equipment, and process controls (for example, dikes, spill containment, storage tank alarms etc.);
- Monitoring the progress of previously identified recommendations;
- Monitoring and correcting unsafe and environmentally damaging conditions;
- Monitoring and correcting unsafe actions of people;
- Determining actual or potential hazards arising from installing or modifying a facility and associated equipment;
- Demonstrating management's commitment to the community's safety and welfare, and to the protection of the environment;
- Identifying health hazards and industrial hygiene concerns; and
- Taking the opportunity to recognize and reinforce positive behaviours.

Inspections enable personnel to help ensure that company safety standards & regulatory requirements are being followed. Inspections enable personnel to identify hazards before they become a problem. The end result of regular inspections will be a list of hazards, potential hazards and corrective measures for these hazards.

Hazard corrections will be documented and will include:

- Corrective measures taken.
- Name of person assigned to correct hazard.
- Deadline date for correction.
- Date correction was completed.

Types of Company Inspections

- Management and Supervisor worksite/jobsite tours.
- Worker observation (At-risk behaviour inspection).
- Work site (Physical conditions inspection).
- Equipment and vehicle inspections.
- Engineering safety inspections involving Engineering Controls:
- Eliminating hazards/enclosing hazards.
- Isolating workers from hazards.
- Reducing transmission of hazards to workers.

2.4.1 General Worksite Inspections

These will include all field and office work sites, yards, mechanical shops, work camps and company recreation areas such as lounges and dining halls.

The frequency of inspections will be scheduled in relation to the category of hazards at the sites and the potential danger of the work and worksite environment.

Work site inspections should assess the following:

- Physical layout and conditions of the site (including location, terrain, season and weather).
- Hazards of materials handled.
- Conditions of equipment and tools used.
- Work practises and behaviour of people at the site. (Including employees, contractors, sub-contractors, visitors and clients).
- The level and quality of supervision given to workers.

Examples of physical hazards, including worksite equipment and materials, which are to be inspected include:

- Slipping and tripping hazards
- Presence of dangerous gases
- Faulty or missing emergency equipment
- Improper or missing signs
- Faulty machinery, cables, tie-downs etc.
- Poor housekeeping
- Confined spaces
- Inadequate or missing PPE
- Blocked exits
- Overhead hazards
- Electrical hazards
- Difficult terrain for vehicular or personal movement
- Flammable, corrosive or explosive materials
- Missing material safety data sheets (MSDS)

2.4.2 Work Practices - Worker Knowledge & Behaviour to Inspect

Employees will be observed and questioned where applicable to ensure that they:

- Know and follow safe work procedures;
- Properly use tools and equipment;
- Correctly use PPE and other safety equipment;
- Are adequately trained to perform their work properly;
- Know emergency response procedures;
- Are competent to supervise and direct workers under their care;

In the event that unsafe work practices and unsafe work sites are encountered, work should be stopped immediately until the problems can be rectified, whether through further instruction, better procedures, or improved engineering controls. Work will be stopped:

- For unsafe behaviour.
- For unsafe work practices.

- For unsafe worksite conditions.

Individual personnel and work groups should also be rewarded by management for safe worker and worksite practices.

2.4.3 Equipment & Vehicle "Walk-Around" – Pre-Trip Inspections

- Daily pre-trip equipment and vehicle walk-around inspections are to be done prior to commencing daily work duties to monitor any wear and tear.
- If there is more than one operator, one will be assigned who will be responsible for equipment and vehicle walk-around inspection.
- Critical checks would include fluid levels, belts, hoses and electrical connections.
- Required emergency survival gear will be checked

2.4.4 Company Inspection Checklist

- Standard checklist will ensure nothing is missed.
- Checklists provide a detailed record of the inspection findings.
- Checklists provide a detailed record of corrective measures needed.
- Include monthly inspections of shop and yard.
- On-going inspections of work practices and work site conditions.

2.4.5 Government Inspections

- Inspect to ensure company meets Regulatory Requirements.
- These inspections may assess records, plans, policies, equipment and/or work procedures.
- The inspectors may interview anyone on the work site.
- They have the right to remove any item from the work site they need to inspect further.
- Anyone on site at the time of the inspection must co-operate with the inspector.
- Stop work orders can be given in any situation which might pose an immediate danger to people or the environment.
- Lesser violations will attract orders to correct the violations or deficiencies.

2.4.6 Inspection and Maintenance of Mobile Equipment

The majority of work that E. Gruben's Transport Ltd. performs involves the use of heavy mobile equipment. It is therefore extremely important that specific attention is paid to the inspection and maintenance of this equipment. The quality and performance of mobile equipment is directly proportionate to the soundness and sustainability of the Shop Preventative Maintenance Program.

E. Gruben's Transport Ltd. management has made improved inspection and maintenance of heavy and mobile equipment a company priority. Modern maintenance facilities, experienced personnel and appropriate equipment for the job are available. In order for

the shop to provide quality, timely support to the equipment fleet, E. Gruben's Transport Ltd. and our subcontractor Kikiak Contracting Ltd. shops are open for business 12 hours/day, 7 day/week in the summer and 24 hour/day, 7 days/week during winter operations.

A senior Shop/Field Supervisor is responsible for selecting proper equipment for projects when ordering new equipment. The senior Shop/Field Supervisor works in concert with the Superintendent of Operations and the C.E.O. of E. Gruben's Transport Ltd. when purchasing new equipment. The right equipment for the job is of paramount importance in attaining continual improvement in performance at the worksite.

Driver Inspections: Drivers are required to do a "Walk-Around" inspection of their vehicles prior to commencing their daily operations. If repairs are required at any time the driver will complete a "Cry Sheet" which lists the problems and repair requirements. Drivers are requested to report deficiencies immediately to the Shop Foreman to prevent serious and time-consuming repairs, which could have safety implications. Well documented and timely "Cry Sheets" make projects more cost effective and inefficient.

2.5 First Time Purchasing Of Hazardous Products

The following steps will be taken:

- Supervisor will contact the safety supervisor and request a MSDS evaluation of new product;
- Safety Supervisor will obtain a MSDS Sheet for the new product;
- A Hazard Assessment will be performed for the new product using the MSDS Sheet and other applicable information;
- A decision will be made to purchase or not purchase the product.

3.0 RULES AND SAFE WORK PROCEDURES

3.1 Process for Developing Standard Work Procedures

1. List all jobs on all the work sites.
2. Create a list of critical jobs.
3. Assess the jobs and list in order of risk.
4. Break high-risk jobs into steps.
5. Determine hazard controls for each step.
6. Describe regulatory requirements.
7. Test procedures in the field.
8. Finalize the written procedures.
9. Train workers to follow the procedures.

1. List all jobs at the worksites.

2. Create a list of critical jobs in which any of the following might occur:

- Serious injuries
- Frequent injuries
- Severe property damage
- Significant interruptions to production
- Public liability
- Government intervention

3. List the jobs in order by the degree of hazards they present and the frequency with which they are performed.

4. Break high risk jobs into steps.

Analyze each job by observing and interviewing workers. Record the following information:

- Job name and location
- Each step of the job and its hazards
- Roles of each worker involved
- Special equipment required
- Applicable regulatory requirements

5. Determine measures needed to control job hazards, such as:

- Engineering controls to eliminate hazards
- Workers training
- Personal protective and safety equipment
- Hazard markings
- Safety meetings

If engineering controls or worker training can be used to permanently or reduce the impact of hazards, implement them.

Prepare the standard health, safety and environmental work procedure by listing the steps of the job, in the order in which they will occur, and the control measures required for each step (excluding one-time measures such as engineering controls and training).

Also describe:

- Regulatory requirements
- Special equipment required
- Specific training requirements for workers (e.g., BOP Level I or journeyman electrician)

6. Test the health, safety and environmental procedure in the field to ensure it:

Is accurate

- Meets regulatory requirements
- Is understandable to workers

7. Finalize the written health, safety and environmental procedures and place it at appropriate worksites.

8. Train workers to follow the health, safety and environmental procedures.

3.2 Enforcement

E. Gruben's Transport Ltd. will hold employees accountable for adherence to all rules, practices and procedures. Supervisors will promote and enforce rules and safe work practices.

Employees must be aware of penalties and the increasing consequences for their actions.

At E. Gruben's Transport Ltd. a progressive discipline system is in place for general disciplinary cases and may be used in the following format in regard to disciplinary action:

First Offence: A verbal warning that is accompanied by a dialogue between the employee and the supervisor shall be given. The supervisor will explain the reason for the warning and how the employee must act or perform in the future. The warning will be recorded so that a record of it exists in the employee's personnel file.

Second Offence: A written warning shall be given. The supervisor will review the facts with the employee as well as the previous warning. They will agree on a resolution to the problem before the employee returns back to work. The supervisor will follow up with a memo to the employee and a submission to his/her file.

Third Offence: A suspension of the employee (with or without pay) shall be given. The supervisor will be firm in asking the employee about their wishes for further employment in the company. The time off will give the employee a chance to consider their actions as well as their intentions for the future.

Fourth Offence: No further warnings – immediate dismissal.

E. Gruben's Transport Ltd. reserves the right to depart from all or a portion of this format in the event that E. Gruben's Transport Ltd. deems it necessary, due to unique circumstances involved in the disciplinary case. Particularly flagrant offences may be dealt with more severely, such as the consumption and/or possession of alcohol or non-prescription drugs, which are strictly forbidden in the camp or on E. Gruben's Transport Ltd. property. A zero tolerance policy is in effect regarding these items and failure to comply may result in immediate removal from the camp.

3.3 General Safety Rules

Safety rules are established to communicate clear expectations for proper workplace behaviours. Safety rules are written to protect all employees and visitors from known hazards and to ensure E. Gruben's Transport Ltd. meets regulatory requirements.

To comply with regulatory requirements E. Gruben's Transport Ltd. safety rules must meet or exceed Legislated Standards that apply to all work undertaken by E. Gruben's Transport Ltd.

3.3.1 Communicating Safety Rules

To ensure everyone on the work site knows and understands the safety rules, they must be communicated in a variety of methods and in an on-going fashion.

Ways to Communicate:

- Provide all new and returning employees with worker orientations.
- Make copies of EGT Health, Safety & Environmental Safety Manual available and easily accessible for employee reference.
- Post the safety rules in areas of where staff use frequently.
- Review safety rules at regular safety meetings, management meetings and orientations.
- Distribute copies of the safety rules.
- Discuss safety rules during on-the-job training programs.
- Refer to appropriate safety rules at pre-job meetings.

3.3.2 Reinforcing Safety Rules:

- Workers at-risk behaviour observation will be conducted by supervisors and peers through inspections at worksites. Immediate correction and documentation of the at-risk behaviour correction are vital.

3.4 Legislative Compliance

Safety legislation is designed to protect workers, the public and the environment. Compliance with legislation helps prevent personal injuries, fines and legal actions. E. Gruben's Transport Ltd. will comply with regulatory requirements as a minimum standard for our safety program. Regulatory requirements include all Acts, Regulations, Policies, Practices and Procedures administered by Government and their Agencies. Medical compliance for the wearing and use of respirators will be enforced as per (CSA Z94-04) when applicable.

Relevant Legislation:

A large range of regulatory agencies cover work undertaken by E. Gruben's Transport Ltd. The following list of regulatory agencies represents some of the more prominent legislation whose regulations govern our work:

NWT/NU Environmental Protection Act
Explosives Act
NWT/NU Mines Safety Act
NWT/NU Occupational Health & Safety Act
NWT/NU Workers Compensation Act
Transportation of Dangerous Goods Act
WHMIS Legislation
National Energy Board
Canada Labor Code
Building Code of Canada
Canadian Electrical Code
National Fire Code of Canada

E. Gruben's Transport Ltd., by reason of its geographical location, falls under the statutes of the Northwest Territories/Nunavut Workers Compensation Board, Canada Labor Code Part 2, and Oil & Gas Occupational Safety & Health Regulations. The Canada Labor Code, Oil and Gas Occupational Safety & Health Regulations utilize the National Energy Board as its enforcement arm.

The Northwest Territories/Nunavut Workers' Compensation Board Safety Act exercises jurisdiction on Safety Regulations which do not fall under the Canada Labor Code.

3.4.1 Canada Labour Code Regulations

Regulations Respecting Occupational Safety & Health Made Under Part II of the Canada Labour Code

A summary of some specific duties of employers as they relate to E. Gruben's Transport Ltd.

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125 (d) post the Canada Labour Code – Part II – June 1998, at a place accessible to every employee and at every place directed by a Safety Officer.
(i) a copy of this Part,
(ii) a statement of the employer's general policy concerning the safety and health at work of employee's
(e) Keep and maintain in prescribed form and manner, prescribed safety and health records;
(i) ensure that the vehicle and mobile equipment used by the employees in the course of their employment meet prescribed safety standards
(j) provide every person granted access to the work place by the employer with such safety materials, equipment, devices and clothing as are prescribed;
(o) comply with such standards as are prescribed relating to the fire safety and emergency measures;
(p) ensure, in the manner prescribed that employees have safe entry to, exit from and occupancy of the work place;
(q) provide, in the prescribed manner, each employee with the information, instruction, training and supervision necessary to ensure the safety and health at work of that employee;
(s) ensure that each employee is made aware of every known or foreseeable safety or health hazard in the area where that employee works;
(t) ensure that the machinery, equipment and tools used by the employees in the course of their employment meet prescribed safety standards and are safe under all conditions of their intended use;
(u) adopt and implement prescribed safety codes and safety standards
(v) ensure that every person granted access to the work place by the employer is familiar with and uses in the prescribed circumstances and manner, all prescribed safety materials, equipment, devices and clothing; and
(w) comply with every oral or written direction given to the employer by a Safety Officer concerning the safety and health of employees.

125.1 (e) subject to the Hazardous Material Information Review Act, make available, in the manner prescribed, to each of the employees, a material safety data sheet with respect to each controlled product in the work place

126.1 While at Work, every employee shall:
(a) use each safety material, equipment, devices and clothing as are intended for the employee's protection and furnished to the employee by the employer or as prescribed;
(b) follow prescribed procedures with respect to the safety and health of employees;
(c) take all reasonable and necessary precautions to ensure the safety and health of the employee, the other employees and any person likely to be affected by the employee's act or omissions;
(d) comply with all instructions from the employer concerning the safety and health of employees;

(e) cooperate with any person exercising a duty imposed by the Part or any regulations made there under;
(f) cooperate with safety and health committee established for the work place the employee is employed or, if there is not such committee, with the health and safety representative, if any, appointed for that work place;
(g) report to the employer an thing or circumstance in work place that is likely to be hazardous to the safety or health of the employee, the other employees or other person granted access to the work place by the employer;
(h) report in the manner prescribed every accident or other occurrence arising in the course of or in connection with the employee's work that has caused injury to the employee or to any other person; and
(i) comply with every oral or written direction of a Safety Officer concerning the safety and health of employees.

127.1 Subject to Subsection (2), where an employee is killed or seriously injured in a work place, no person shall, unless authorized to do so by a Safety Officer, remove or in any way interfere with or disturb any wreckage, article or thing related to the incident except to the extent necessary to;
(a) save a life, prevent injury or relieve human suffering in the vicinity;
(b) maintain an essential public service; or
(c) prevent unnecessary damage to or loss of property.

REFUSAL TO WORK IF DANGER

128.1 Subject to this section, where an employee while at work has reasonable cause to believe that:

(a) the use or operation of a machine or thing constitutes a danger to the employee or to another employee; or
(b) a condition exists in any place that constitutes a danger to the employee; the employee may refuse to use or operate the machine or thing or to work in that place

For other questions not covered specifically in the above Employer's Duties, please refer to the document Canada Labour Code – Part II – June 1998. A copy of the Canada Labour Code, Part II will be posted and accessible to all staff on EGT sites.

3.4.2 The Three Workplace Rights

The Right to Refuse
All employees have the legal right to know about the hazards of their workplace. As an employer, EGT has a legal obligation to fully train their employees in all of the hazards of the job those same employees are expected to perform and how to avoid those same risks from having an adverse effect on them.
In all Canadian provinces, territories and in the federal jurisdiction, workers are protected by the Workplace Hazardous Materials Information System.
This WHMIS law requires your employer to:
• Label containers of hazardous materials;
• Provide Material Safety Data Sheets (MSDSs) with additional information;
• Provide education and training so that you will understand

The Right to Know
As an employee of EGT you have the right to be part of the safety process and where applicable, be represented and have full participation on the joint (worker/management) health and safety committee. Any representative on a Health and Safety Committee will participate and assist in formulating the direction of the safety process at EGT.

The Right to Participate
All employees of EGT have the right, and in some provinces the obligation to refuse what is deemed to be hazardous work. When an employee refuses work which they believe is likely to endanger them, they must immediately report the problem to their supervisor, who in turn must report it immediately to their respective regional safety office. Under no circumstances will that specific work continue until a solution to the problem has been put into place. The worker who originally refused to perform the work can be placed in another work situation until the original situation has been rectified. The worker who originally refused to perform the work cannot be replaced by another worker.

3.5 General Safety Rules

The safety rules listed below are applicable to all personnel. Compliance with these basic rules is mandatory and in the best interest of all personnel:

- Adhere to maximum allowable work hours and rest period as per legislated requirements. Exemptions to requirements must have prior regulatory approval, through obtaining extended hour work permits.
- Use or being under the influence of alcohol or illegal drugs, while on the job, is strictly prohibited.
- Workers taking prescribed medication, which may impair their ability to work, shall not engage in any work activity that may endanger the health and/or safety of themselves or other co-workers and employee's.
- Workers shall advise their immediate supervisor when using prescription medication.

- Smoking is prohibited in all workplaces, except in designated smoking areas. Matches, lighters, cell phones and pagers are prohibited in some work areas.
- Beards or excess facial hair are not permitted on any workers who may be required to wear respiratory equipment, which requires a seal to the face.
- Workers shall not work around moving machinery if they are wearing loose clothing or jewellery, or have long hair, which is not contained.
- Workers shall not engage in practical jokes, horseplay, boisterous conduct, and/or un-necessary running in a work area.
- Firearms are prohibited on company premises except for authorized wildlife monitors. All existing gun laws must be followed.
- Flammable and combustible materials must be stored appropriately and at safe distances from sources of ignition.
- All inside door handles for the entrance of cooler and freezer doors shall be free of defects and open freely.
- Gas lines from propane tanks shall be protected to prevent damage from vehicles or equipment driving over the lines.
- Electrical cords from light plants or cords used for plugging in vehicles and equipment must be protected to prevent damage to the lines.
- Personnel shall be provided with appropriate means of communication as determined by risk assessment.
- Stairs with more than three steps must be provided with handrails.
- Catering service providers shall have printed procedures for safe food handling. Kitchen staff shall familiarize themselves with all employee health and safety procedures that immediately effective them on a day-to-day basis.
- Smoking in the workplace is prohibited by law. Certain exemptions exist for remote work camps. See section 3.11, Smoking in the Workplace, for further details.

3.6 Personal Protective Equipment (PPE)

All employees will have access to PPE and E. Gruben's Transport Ltd. will comply with the Northwest Territories Safety Act S.N.W.T. 1996, c.9 4 (b); wherein, "Every employer shall take all reasonable techniques and procedures to ensure the Health and Safety of every person in his or her establishment".

In addition E. Gruben's Transport Ltd. will, as a condition of employment, require every worker employed with or in connection with E. Gruben's Transport Ltd. to abide by the Northwest Territories Safety Act S.N.W.T. 1996, c.9 5 (b) which states, "every worker employed on or in connection with an establishment shall, in the course of his or her employment, as the circumstances require, use devices and articles of clothing or equipment that are intended for his or her protection and provided to the worker by his or her employer, or required pursuant to the Regulations to be used or worn by the worker."

Workers have the shared responsibility of protecting themselves, and wearing the necessary PPE for the work they are doing.

3.6.1 General PPE Rules

Elimination, substitution, engineering, work practice and administration controls are the preferred means of reducing or controlling hazards which may endanger the health and safety of workers. Residual risks require the use of PPE following the rules listed below:

- Workers shall be responsible for the proper care, maintenance, cleaning and use of PPE that is assigned or loaned to them;
- Supervisors are responsible for ensuring that workers are adequately trained in the proper use and care of, and responsibilities for the PPE;
- Workers shall not use PPE that is defective or unsafe;
- Such articles shall be taken out of service and reported to the supervisor and replaced immediately.
- Visitors to operating areas of work sites will be required to wear all applicable PPE that is required for the work site.

3.6.2 Head Protection

CSA approved hard hats shall be worn by all personnel while engaged in activities where a risk of injury to the head may exist. In addition:

- A hard hat shall never be worn without a properly adjusted suspension;
- Metal hard hats are not permitted due to electrical conductivity and inferior impact resistance to sharp objects; and,
- Off-road helmets must be worn when operating quads and snowmobiles.

Workers have the shared responsibility of protecting themselves, and wearing the necessary PPE for the work they are doing.

3.6.3 Foot Protection

CSA approved safety-toed boots shall be worn by all workers while engaged in activities where a risk of injury to the feet exists. Also note:

- There may be additional requirements for wet, slippery and winter conditions; and,
- Running shoe style safety footwear is not acceptable.

3.6.4 Eye & Face Protection

All employees while engaged in activities where a risk of injury to the eyes or face may exist shall wear CSA approved eye and face protection. Eye and face protection also means:

- Face shields shall be worn in addition to eye protection while using grinding, buffing or striking tools.
- Face shields shall be made available whenever they may be required;
- Goggles shall be worn when handling liquid or powder chemicals where there is a risk of splash hazard;

- In some situations, a face shield shall be used in conjunction with the goggles for additional eye and face protection; and,
- Face shields and goggles shall be provided as required.

3.6.5 Hearing Protection

All work areas where noise levels exceed 85dBA shall be identified by the display of appropriate signs indicating the high noise area and ***"Hearing Protection required".*** Additional hearing protection includes:

- All workers entering or working in areas that are marked as high noise areas shall wear CSA approved hearing protection devices;
- Supplied hearing protection devices may be either of the plug or muff design and shall be supplied.

3.6.6 Limb & Body Protection

All workers shall wear suitable clothing for the existing conditions and the work being performed. This means:

- Where a potential fire and explosion hazard exists, Fire Retardant Clothing (FRC) shall be worn;
- Approved cold weather clothing shall be worn by all personnel working in the Coronation Gulf or while being transported via air transport;
- A luminous vest or reflective tape on front or back of outer garments shall be worn; and,
- Workers shall wear appropriate gloves or mitts to protect their hands from workplace hazards.

3.6.7 Respiratory Protection

All workers working in hazardous environments will be provided with adequate and appropriate respiratory protection for the types of hazards they may encounter at Hope Lake, Willow Creek and Husky Creek. These workers will ensure they have a medical assessment by a qualified medical practitioner to ensure they are capable to work under conditions requiring the use of respiratory protection and will be fit-tested prior to commencing work. They will be trained in the use and maintenance of their respiratory equipment. These workers will be trained in the use and maintenance of and will be fit-tested. This will include the following.

- Supplied air respirators for internal tank cleaning crews
- Half-mask, full-face mask and powered full-face respirators with HEPA, HEPA/OV and HEPA/general industrial filters for asbestos abatement work as is appropriate for the level of abatement.
- Half-mask respirators with OV filters for boxing of hydrocarbon soils, as deemed required by conditions
- Half-mask respirators for PAP packaging

Further details training and use of respirators can be found in task specific sections below.

3.7 Harassment Policy

Harassment

E. Gruben's Transport Ltd. commitment to providing a safe workplace also includes a commitment to provide a safe and respectful atmosphere where harassment or threats of violence are not tolerated. Disciplinary action may result for anyone who harasses another person, or for any personnel who fail to act properly to end harassment.

No person, whether a manager, supervisor, employee, contractor, or a member of the public, shall tolerate harassment for any reason, at any time. Likewise, no person has the right to harass anyone else at work or in any situation related to employment.

"Harassment" may be defined as any repetitive or occasional conduct, comment, gesture or contact that is directed toward an individual or group that is insulting, intimidating, humiliating, malicious, degrading or offensive, or is of a nature that, on reasonable grounds, could be perceived as placing a condition of a sexual or other nature on employment or on any opportunity for training or promotion.

Harassment is against the law. The *Canadian Human Rights Ac*t and the *Canadian Labor Code* protect workers from harassment. The *Criminal Code* protects workers from physical and sexual assault. All workers have the right to live and work without being harassed.

Filing a Complaint

Every employee of E. Gruben's Transport Ltd. is entitled to employment free of harassment, and we will make every reasonable effort to ensure that no employee is subjected to it. An employee who feels that he/she is a victim of harassment should take the following actions:

- Report the complaint to his/her immediate supervisor. If circumstances do not permit this, the complaint may be brought to the next level of administration;
- Maintain a written record of all relevant details including
    - The name of the harasser;
    - Date(s), time(s) and location(s) of harassment incidents(s);
    - Description of harassing behavior; and
    - The physical, social and/or emotional effects caused by the harassing behavior.

Under the *Fair Practices Act* (NWT and Nunavut), an employer cannot fire or otherwise penalize an employee for filing a complaint about harassment or discrimination at work. Employees are also entitled to make a complaint under the *Human Rights Act*.

Addressing a Complaint

Upon receipt of a harassment complaint, E. Gruben's Transport Ltd. will:

- Conduct an investigation by questioning the:
  - complainant,
  - named aggressor(s), and
  - witnesses;
- Maintain confidentiality with respect to the complainant and the circumstances related to the complaint except where disclosure is necessary for the purposes of investigating the complaint or taking disciplinary action;
- Treat all complaints of harassment seriously, whether they are made formally or informally, and act on all complaints quickly, confidentially and fairly;
- Take disciplinary action against any person under the organization's direction who subjects any employee to harassment, up to and including dismissal; and
- Discipline any personnel who knowingly allow harassment of a co-worker to persist.

Workplace Violence

All workers have the right to work in an environment that is protected from violence or the threat of violence, from workers or non-workers. Violent behavior, fighting and/or disregard for other persons and their property will result in permanent removal of involved workers.

"Violence" is the attempted, threatened or actual exercise by a person of any physical force so as to cause injury to a worker, and includes any threatening statement or behavior which gives a worker reasonable cause to believe that the worker is at risk of personal injury.

Threats of violence will be handled in the same manner as any other workplace harassment. Criminal proceedings may be used if it is felt that the risk to any worker warrants it.

3.8 Camp Rules

The consumption and/or possession of alcohol or non-prescription drugs are strictly forbidden in the camp or on E. Gruben's Transport Ltd. property. A zero tolerance policy is in effect regarding these items and failure to comply may result in immediate removal from the camp.

All personnel should familiarize themselves with the camp layout and the facilities available, and familiarize themselves with the emergency exits. Camp Fire Procedures and Exit Routes are posted in each room. A Muster Area will be designated for emergency situations.

Do not tamper with the fire/smoke alarms and do not use the fire exits except in the case of an emergency. Exits and fire extinguishers at exits should not be cluttered or covered.

Smoking is permitted only in the "smoking shack" adjacent to the main camp building or other place designated by the Site Supervisor and DR. The smoking area will be well ventilated and not located in an area that will not expose non-smokers to cigarette smoke. Otherwise, smoking is strictly prohibited in the rest of the camp. Candles or any other devices that generate open flame are prohibited within the camp.

Tap water in this camp is NOT considered potable until confirmed by lab testing. Bottled potable water is found in the kitchen and recreation rooms. Try to minimize unnecessary water use.

E. Gruben's Transport Ltd. is not responsible for personal belongings. Please take time to ensure that your personal items are secure. Insuring personal belongings is the responsibility of each individual.

Coveralls, hard hats, work boots and other work clothing are to be left in the mudroom. Hats may not be worn in the dining room. Bare feet are not permitted outside of the bedrooms and bathrooms.

Please use courtesy and common sense in regards to levels of activity and noise in the camp at all times. Some personnel may work different shift hours than others.

Please do laundry after shift or after confirming camp personnel do not need use of the machines.

Keep rooms and camp tidy. Return plates and cutlery to the kitchen. The camp staff is onsite to clean the facilities not to tidy other peoples' messes.

Prepared snacks and drinks are available in the kitchen in the evenings. Except for catering staff, cooking is prohibited.

No hunting or fishing is allowed at these sites. No-one except wildlife monitors may possess firearms. Wildlife monitors will be trained in firearms and wildlife deterrent use. Wildlife Monitors will be required to have a valid Firearm Certificate, transport, handle and store their firearms as per the regulations of the AHJ.

There is no recreational use of ATVs.

3.9 Small Vehicle Policy

E. Gruben's Transport will provide safe, fully-functioning small vehicles of the best quality that can reasonably be purchased. These vehicles will be used to carry out the company's business and to enhance the public and customer image of the company.

Vehicles will be equipped with the following:

- Two-way radio with, at minimum, company local repeater channels.
- First Aid Kit
- Fire-extinguisher
- Reflective triangles/flare kit
- Rotating beacon
- Buggy whips
- Spare tire, jack and wheel wrench

E. Gruben's Transport Ltd. small vehicles will be operated in the following fashion:

- All personnel will have the appropriate license required to operate the vehicles.
- Vehicles will be operated in accordance with the Territorial or Provincial Highway Traffic Act.
- All occupants of EGT small vehicles must wear seatbelts at all times.
- EGT vehicles will not be driven in excess of posted speed limits. Road and traffic conditions may dictate lower maximum allowable speeds.
- EGT vehicles must be maintained in clean condition.
- All personnel are responsible for conducting maintenance checks of fuel, all fluids and tire pressure, and for ensuring that required safety/emergency equipment is present prior to departure.
- All operators are to conduct a thorough walk-around of vehicles prior to departure. Windows and mirrors are to be kept clean and free of obstruction.

3.10 ATV Policy

ATV use will be limited to contract specific work at Hope Lake, Willow Creek and Husky Creek. There will be no after-hours or recreational use of ATV's.

CSA approved helmets must be used at all times when operating ATV's.

No passengers will be allowed to ride on ATV's unless the ATV is designed for passengers. No passengers will be allowed to ride in ATV trailers.

ATV's must be operated safely at all times and driven at appropriate speeds especially in the camp and congested areas.

3.11 Smoking in the Workplace

Legislation prohibits the smoking of tobacco in the workplace. The *Environmental Tobacco Smoke Worksite Regulation* now deals with controlling the smoking of tobacco products in the workplace.

Smoking is prohibited in the workplace. This includes our offices, shops and warehouses, and most of our camp residences.

Smoking is prohibited within 30 meters of any fuel storage or fuel transfer facilities. Smoking can only take place outside of contained work areas, and must take place more than 3 meters (10 feet) from any entrance.

Companies can be fined $5,000 dollars for violating this law and individuals can be fined $500.

We will be providing one “smoking shack” in a separate well ventilated building adjacent to the main camp complex or other place designated by the Site Supervisor and DR for our workers at Hope Lake.

When in doubt, don’t smoke!

3.12 Emergency Response - General Practices

Maintain a Disciplined Approach To An Emergency Situation.
The way in which an emergency is handled can have a great effect on the outcome. When an emergency is encountered, confusion can be the worst enemy. All emergencies must be dealt with in a disciplined manner. At Hope Lake, the site superintendent will be advised immediately by radio or other means of communication and will assume command of all emergency situations, supported by the foreman, crew leaders and the onsite EMT medic. All incidents will be reported to the Safety Manager and or the Operations Manager, who will give direction related to investigations and provide support and advice as required. A first aid station will be established in the main camp area; all workers will be made aware of its location during the Site Orientation Seminar and suitably equipped for a medic working at the EMT level.

A disciplined approach to an emergency situation includes the following steps:

Protect yourself by retreating to a safe area.
The most important point to remember when responding to an emergency situation is ensuring your own personal safety first. If you are hurt or incapacitated while responding to an emergency, you are not only escalating the problem but you will no longer be able to take corrective action to address the emergency.

Depending on the nature of the emergency, you may need to evacuate the area, put on personal protective equipment or seek any other appropriate means of self-preservation.

Sound the alarm and call for help.
Ensure that other personnel have a clear picture of the emergency:
What happened?
Where;
When;
Known injuries; and,
Present status.

Always be sure that the information that you have provided has been understood. Ask for the information to be repeated to ensure it is accurate.

Isolate the emergency area.

Establish who is in command.
If you are not alone, someone must take command of the emergency. The most senior person on site or the most experienced worker is usually the best person to assume command. Be clear and communicate who is in charge. Decisions must be calculated and concise. Orders must be clear and understood.

Assess the situation for hazards.
In an emergency, there can be many variables that pose a threat to safety. An assessment of the situation must be undertaken to identify further potential hazards to personnel and to the public.

Establish a plan of attack, including a determination of people and requirements.
The plan should include consideration for the following:

- Capabilities of responders;
- Safety of responders/rescuers;
- Safety of the public;
- Access of the public;
- Hazards involved and how to eliminate or deal with them;
- Timelines (i.e. consequences of waiting vs. not);
- Availability of resources;
- Personal protective equipment;
- First aid and other medical emergency equipment;
- Firefighting equipment;
- Vehicles for transportation or response to the incident;
- Roadblock kits, barricades and appropriate signage; and,
- Communication equipment including ground-to-air frequencies.

Contain or control of the threat.
Implement the plan of attack plan to contain or control the threat. Worker response actions will default to their training.

Decontaminate, clean up and dispose of waste properly.
Before subjecting personnel to hazardous materials consider decontamination and clean up requirements, including:

- Personal protective equipment for decontamination crew;
- Availability of showers;
- Eye wash stations;
- First aid and medical requirements; and
- Absorbents.

All personnel have the responsibility to dispose of materials and chemicals that can adversely impact the environment or human health in the proper manner in compliance with regulations, policies, procedures and Material Safety Data Sheets.

Consider waste impacts in all decisions.

Document the incident.
Records are to include:

- Plans, actions taken;
- Diagrams;
- Incidents date, time, location;
- Responder's names;
- Observations;
- Materials involved; and
- Diagrams, photos, and/or videos.

Emergency Scenarios for Possible Consideration
E. Gruben's Transport Ltd. operations could potentially involve a variety of possible emergency scenarios, which should be taken into consideration. These could include, but are not limited to:

- Injury or fatality;
- Worker or equipment through ice.
- Vehicle accident;
- Fire or explosion;
- Spill to environment of raw products (oil, salt water) or refined products (diesel, gasoline,);
- Aircraft incident;
- Release of toxic gases;
- Natural disasters;
- Transportation of Dangerous Goods incident;
- Elevated or confined space rescue;

3.12.1 Personal Injury Emergency Responses

Due to the remoteness of the Hope Lake and associated sites at Husky Creek and Willow Creek, EGT will maintain sufficient levels of medical care to address basic wellness in addition to emergency care. An EMT medic will be deployed with the crew to Hope Lake to ensure that medical coverage is accessible and maintained at the site, with a sufficient number of Emergency or Standard First Aid trained workers to provide assistance when necessary.

The Hope Lake site will have an infirmary deployed with the main camp, which will be supplied with sufficient supplies to provide care for serious injuries. A system will be put in place to:

- Provide primary care for the injured worker;
- Consult a physician via radio or phone; and
- Prepare and care for the injured during transport and transferring of the injured to the care of medical professionals.
- Helicopter support will be available to transport injured workers if necessary between the satellite locations at Husky Creek and Willow Creek to the Hope Lake Infirmary or to Kugluktuk in serious cases.
- Fixed wing aircraft will also be available to transport patients from Hope Lake to Kugluktuk

FOR COMPLETE DETAILS OF THE SITE SPECIFIC MEDICAL RESPONSE PLAN PLEASE REFER TO ATTACHED APPENDIX C.

3.12.2 Fire Emergency Response:

A fire safety program will be implemented at Hope Lake that will include fire prevention, fire protection and firefighting capabilities. The focus of which will be to prevent fires and taking precautions to ensure fire extinguishers are readily available at strategic locations in the camp and job site locations to contain and localize fires before they have an opportunity to spread. A fire response team led by the Site Supervisor will be assembled and given suitable training, which will allow them to appropriately respond to fires, which may be encountered for the duration of the job. The fire safety program will meet or exceed the requirements set out in the Nunavut Safety Act, the National Fire Safety Code of Canada and the Canada Labour Code.

Each work area shall have a fire emergency procedure and all workers shall be made familiar with this procedure.

Regular exercises of fire drills shall be conducted to ensure optimum firefighting and evacuation preparedness at the Hope Lake camp.

A smoke detections system will be installed and maintained within the construction camp including auxiliary structures, which complies with the National Building and Fire Codes and as required in the Nunavut Safety Act.

Smoking will not be permitted in hazardous areas and caution will be exercised when using smoking material or open ignition sources in non-restricted areas. Appropriate signage indicating both Non Smoking and Smoking Permitted areas will be installed. Individuals, who violate the smoking policy, will be subject to disciplinary action. A smoking shelter will be provided and set up in an appropriate location at least 3 meters away from the camp area.

Rubbish and waste, which could be potential fire hazards will be kept to a minimum through good housekeeping practices. Extreme care will be exercised with reference to the handling and storage of waste oil and other petroleum products. All greasy and oily rags, which are subject to spontaneous combustion, will be disposed of as hazardous material.

FOR COMPLETE DETAILS OF THE SITE SPECIFIC FIRE SAFETY PLAN REFER TO APPENDIX B

3.12.3 Spill Response Plan

All Diesel Fuel required for summer 2013 operations will be delivered in sleigh mounted 13,200 liter fuel sloops via the proposed Cat Train in the winter of 2013. During the winter 2013 Cat Train EGT intends to mobilize a 30,000 liter Enviro-tank to the Hope Lake site. It will be mobilized to site empty from Kugluktuk.

The first 27,000 liters of diesel fuel delivered to Hope Lake will then be transferred by properly trained and certified personnel into the storage tank. The remaining 11,000 liters of required diesel fuel will be stored in one of the 13,200 liter sleigh mounted fuel sloop which will remain at the Hope Lake site.

All gasoline required for summer 2013 work will be will be delivered in 205 liter drums via the proposed winter 2013 Cat Train phase of the project mobilization.

Gasoline and Jet Fuel required at site, these products will be shipped and stored in 205 liter steel drums.

E. Gruben's Transport Ltd. will clean up spills immediately and report spills to the appropriate authorities. However EGT believes that taking a proactive approach to spill prevention will reduce or eliminate these types of incidents.

Many small spills are from leaks in parked vehicles, equipment and from broken hydraulic lines in cold weather. Other common sources of spills are from the process of re-fuelling equipment and from loosened fuel-filters. Workers are to report any drips or spills to your supervisor and the mechanic immediately. By addressing small leaks before they become major leaks, we can lessen our environmental impact and the effort required to clean up spills. Our supervisors and equipment operators should all carry oil-absorbent rags, bags and shovels in their vehicles. All fuel sloops, fuel trucks and supervisors vehicles also carry fuel spill kits.

Parked vehicles at work sites should be parked over drip-trays. Vehicle walk-around inspections should be conducted daily and after breaks.

Safe fuelling procedures must be followed at all times. No fuel nozzle or open sloop or tank can be left unattended when fuel is being transferred. Designated and competent individuals will refill equipment at all sites. Fuel caps, sloop valves, truck valves and nozzles must be checked to make sure they are closed/off after refuelling. Spill clean-up materials must be available during any refuelling situation.

<u>Responding to a Spill</u>

1. **Assess Situation –** Make sure area is safe for yourself and others.

2. **Minimize –** Use any emergency shutdown device.

3. **Contain –** Use available resources such as shovels, absorbents or heavy equipment.

4. **Secure –** Place appropriate barriers and warning devices.

5. **Report –** Notify your supervisor who will direct the clean-up and report to the NWT/NU Spill Line as required.

Spills greater than 100 liters on land and 20 liters on water will be reported to the **NWT/NU Spill Line at 867-920-8130** (NWT/NU Spill Line Fax 867-873-6924). NWT/NU Spill Report Forms will be kept in the Site Superintendent's office.

The Site Superintendent will be responsible for all reporting and incident investigation requirements on site and will have full authority to ensure the safety of site personnel, to respond to spills immediately and to take any actions he deems necessary to prevent an escalation of any unplanned event or spill. The CEO/Project Manager, the Superintendent of Operations and the Safety/Loss Control Manager will provide advice, logistical and technical support and financial authorities to respond to any unplanned event or spill as required.

Chief Executive Officer/Project Manager	**TEL: 867-977-7008**
Russell Newmark	**CEL: 867-678-0040**
Superintendent of Operations	**TEL: 867-977-7017**
Doug Saunders	**CEL: 867-678-0045**
Safety/Loss Control Manager	**TEL: 867-977-7014**
Randy G. Hein	**CEL: 403-638-9636**

REFER TO THE DETAILED SITE SPECIFIC SPILL CONTINGENCY PLAN ATTACHED AS APPENDIX F.

3.13 Environmental

Environmental guidelines related to the use of the land, waste discharge, fuel handling and storage, surface disturbance and other conditions of site use are primarily addressed in the LAND USE PERMIT and WATER LICENCE. These form part of the Site Specific Health and Safety Plan when available. Environmental protection processes are integrated in the specific sections on the Plan.

Hunting and Fishing

There will be no hunting and fishing by personnel employed at these sites.

3.14 ACTIVITIES SPECIFIC TO HOPE LAKE, WILLOW CREEK AND HUSKY CREEK

3.14.1 Infrastructure Improvements

The current infrastructure at Hope Lake consists of an airstrip and a minor road/trail which was constructed during the mineral exploration period and will require varying degree of improvements in order to facilitate the completion of the project work as described below.

During the 2012 summer proposed operations program there will be no heavy equipment available onsite to perform any infrastructure upgrading work.

Airstrip

The Hope Lake airstrip was originally constructed to a length of 1000 meters (3280 feet), but currently has about 458 meters (1,500 feet) in good, usable condition for aircraft. EGT does not have any concerns regarding the current serviceability of the current 458 meters (1,500 feet) of airstrip for the 2012 summer air support operations. The airstrip is on an elevated stretch of land and there are no major drainage concerns.

EGT will request the pilots to provide them with a current assessment for the airstrip after the pre-mobilization site visit which will assist to identify any immediate or serious problem areas that could potentially be addressed by the 2012 summer manual operations crew.

A windsock supplied by the air charter company will be erected at a location as per their directions.

If a problem develops on the airstrip such as a major slump or washout there may be a need to change aircraft to a STOL type, such as twin otter and/or with larger tundra tires.

During the summer 2013 operations there will be heavy equipment located at Hope Lake from the spring 2013 cat train mobilization. Once the project remobilization by air is complete the EGT site superintendent will again inspect the airstrip with the pilots to assess and establish a maintenance program if required.

Any required dragging will be completed with the loader pulling a steel or wooden drag. This will serve to level out and compress any mounds or vegetation and also help compact the airstrip. Any holes or ruts identified in the airstrip may have to be filled with granular material from the designated borrow located next to the airstrip with the loader and compacted.

EGT will provide a small stockpile of granular material quarried at the designated Borrow Area to be set aside to fill in any holes or ruts in the airstrip if they develop

during airstrip usage throughout the Project. It is anticipated that only small quantities of granular material will be required for airstrip maintenance.

Site Road/Trail Repairs and Maintenance

There will be no heavy equipment available onsite during the 2012 summer proposed operations program to perform any infrastructure upgrading work. During 2012 operations trail/road use and its impact will be minimal as only ATVs will be onsite and in use. The EGT site superintendent will closely inspect the road and culverts and will be able to inform EGT management of what materials will be required to upgrade the road appropriately to sustain the 2013 site operations planned. They will be mobilization from Tuktoyaktuk to Kugluktuk during the summer of 2013 and will be available for the 2013 site work and upgrades.

During the summer 2013 operations there will be heavy equipment located at Hope Lake from the spring 2013 cat train mobilization. Once the project remobilization by air is complete the EGT site superintendent will initiate road improvements as soon as the camp construction progresses to permit the mobilization of the additional personnel.

The roads/trails previously built at the Hope Lake are very narrow; however in many areas the road/trails are situated on dry good gravel bearing terrain which acts like a road bed. Road/trail improvements may be needed however where personnel cross creeks or through low depressions. There are six creek crossings with barrel culverts installed.

EGT utilizes low ground pressure (LGP) equipment as much as possible on their remote arctic projects to mitigate soft ground problems. Using this equipment together with "Swamp Mats" greatly reduces the need for intensive road upgrades and construction. The strategy of using low ground pressure equipment proved extremely effective during the recent BAR-D (Atkinson Point), Johnson Point, and BAR-B (Stokes Point) Remediation Projects where soft, wet and narrow road conditions were encountered. On these projects EGT was able to consistently access low lying, wet, swampy areas of the sites with this type of equipment with minimal or no environmental impact. The reduced requirement for substantial road upgrading and access construction also reduces the granular foot prints that these types of Remediation Projects would otherwise produce.

It appears that that about half of the culverts are in fair condition. In these instances, instead of excavating and replacing the culverts, EGT will place a lift of gravel over the low lying culvert area to the maximum width of the culvert. Depending on the stability achieved two swamp mats could be added to provide additional strength and stability to the roadbed.

For culverts that are in obvious need of replacement to sustain the projected work they will be excavated and replaced following the accepted procedures and as described in the EGT site Erosion, Sediment and Drainage Control Plan.

It is EGT's intention to establish two to three consolidating work and Temporary Storage Areas close to the most concentrated debris areas to minimize heavy traffic over the road/trail network.

It is anticipated that Hope Lake will be used as the water source. An access route and a turnaround area pad will be constructed using Type 1 granular material near to the dock at APEC 3A to provide water supply for the camp. The water suction hose will lead from the loading pad to a float anchored in sufficient water depth to allow the suction inlet to be positioned half way to the Lake bottom. The intake hose will be fitted with a micro screen to prevent the suction of aquatic fish/creatures.

Type 1 granular material for road upgrades, subsequent repairs and maintenance and the water lake access will be quarried at the designed Borrow area source, loaded with the excavator and hauled with the articulated dump truck as required. The gravel will be spread and compacted with the D6 or D31 dozers.

EGT expects that approximately 250 cubic meters of Type 1 material could be required for all road repairs and maintenance and the water lake access during the Project.

It is EGT's intention to use low ground pressure (LGP) equipment together with Swamp Mats for this project. Therefore EGT will not require fully upgraded roads for their equipment and as a result EGT will only need to undertake minimal road construction repairs. This strategy of using low ground pressure equipment proved extremely beneficial at the recent BAR-D (Atkinson Point) and Johnson Point remediation projects. On these projects EGT was able to consistently access low lying, wet, swampy areas of the sites with this type of equipment with minimal to no environmental impact.

A gravel quarrying and hauling operation and the undertaking of road repairs would cause added surface impact and damage which in turn would require more road repairs. Therefore, using LGP equipment and minimizing gravel quarrying will in combination greatly reduce the impact of the project on the environment and its overall footprint. It will also allow the preexisting roadways to re-vegetate in a quicker and more natural manner.

In the event that conditions at Hope Lake become excessively wet and rutting of roads/trails occur, EGT will initially place Type 1 as required. If further stability is required Swamp Mats will then be placed on top. EGT believes that the vegetation that is currently growing on the road will grow back and the road/site will look more natural sooner without the placement of large quantities of gravel.

<u>Potential Problems and Mitigation Measures (Mitigation)</u>

In addition to the infrastructure improvement problems and mitigations addressed specifically above, the most significant potential problem that could affect the road, airstrip and off road access work throughout the Project would be wet weather conditions.

Should this be experienced then the maintenance and upgrading work and efforts described above will be escalated with the addition of more gravel and/or Swamp Mats.

Mechanical breakdowns are a potential problem that would slow or halt aspects of the work. In addition to spare parts sent with the equipment to site, EGT/Kikiak maintains full service and parts facility in Kugluktuk or suppliers in Yellowknife from which any required parts, tools and/or additional mechanics can be mobilized to site if and when required.

The EGT site superintendent will speak routinely with the resupply charter pilots to ensure any issues they may have with the airstrip are addressed immediately.

EGT will take whatever steps necessary to mitigate potential problems. These include conservatively estimating the duration of work tasks and activities and having extra beds available in the camp if required for the intensification of site activities. The schedule also provides for an extra 4 to 6 week "cushion" at the end of both 2012 and 2013 summer operations seasons if extra work is required. If required extensive consultations with the proposed subcontractors to ensure that they fully understand the importance of meeting the project schedule will further ensure the schedule focus.

EGT is confident it can respond to any potential Infrastructure improvement requirements or maintenance problems encountered during the Project.

3.14.2 Mobilization, Demobilization and Scheduling

Project Execution Summary

EGT has intensively analyzed the logistical and operational issues concerning the Hope Lake Remediation Project and has developed the following general schedule to undertake the work. EGT's overall logistical and transportation plan will use helicopter, fixed wing and cat train transportation methods with two summer seasons of work onsite to optimize work efficiency and minimize environmental impacts. This plan is summarized as follows:

2012 Summer

- Mobilize light equipment, materials and helicopter fuel to Hope Lake from Yellowknife by fixed wing aircraft
- Daily mobilization of approximately 10 person crew from Kugluktuk by helicopter to undertake summer 2012 cleanup remediation operations.
- Complete drum consolidation, liquid sampling, debris pickup, wood incineration and excavation and containerization of contaminated soils at Husky and Willow Creek sites.
- Sling (by helicopter) consolidated materials and drums from Husky and Willow Creek sites to Hope Lake storage area with heavier containers to remain stored at Husky and Willow Creek.
- Establish Materials Processing Area at Hope Lake

- Consolidation and liquids sampling of drums and tanks at Hope Lake.
- Mobilize heavy equipment, well site trailers, steel containers, intermediate containers, fuel tanks, fuel sloops and other materials to Kugluktuk.

2013 Winter/Spring
- Mobilize heavy equipment, well site trailers, steel containers, intermediate containers, fuel tanks, fuel sloops, fuel and lumber by cat train from Kugluktuk to Hope Lake.
- Demobilize containers stored at Husky and Willow sites.
- Demobilize large, intact 75,000 fuel tanks from PINs & Tuktoyaktuk to Kugluktuk.

2013 Summer
- Complete all Hope Lake remedial work based from camp at Hope Lake including final site grading and landscaping.
- Store all containerized materials at Hope Lake in preparation for cat train demobilization.
- Demolish and containerize large fuel tanks in Kugluktuk, barge/truck to disposal facility.

2014 Spring/Summer/Fall
- Demobilize all equipment, well sites, fuel tanks, fuel sloops and containerized wastes by cat train from Hope Lake to Kugluktuk
- Barge and truck all wastes from Kugluktuk to southern disposal facilities
- Project complete October 31, 2014

Completing the preliminary consolidation and sampling work described above during the summer of 2012 will allow EGT to accurately assess, characterize and determine volumes of all wastes and liquids at the Hope Lake sites. This information will be extremely valuable in allowing EGT to ensure that the correct number and types of containers, materials and environmental supplies are procured and mobilized. This summer 2012 work will thus mitigate against potential shortages or excesses of containers and an unforeseen discovery of additional or unknown hazardous materials. It will also permit EGT to more accurately analyze work required during 2013 and confirm the correct complement of equipment and resources to be mobilized.

It will allow for the preparation and packaging of some wastes to be demobilized on the returning 2013 spring cat train mobilization thus reducing the volume and number of trips required for the final cat train demobilization in the spring of 2014. This will help mitigate against potential mechanical and environmental issues by reducing the duration and traffic required in spring 2014.

<u>Cat Train Mobilization and Demobilization</u>

The cat train mobilization from Kugluktuk is anticipated to commence on March 19 and continue until April 9, 2013. Winter conditions generally prevail in the area around Kugluktuk until at least the end of April. The Cat Train will consist of the following personnel and equipment. There will be a Supervisor, equipment operators, an ice profiler

and a wildlife management person. They will use a loader, two dozers, 6 deck sleighs, 2 fuel sloops, 2 Snow Cats and 2 snowmobiles to mobilize and demobilize the project equipment, containers, materials, supplies and well site trailer by cat train in the winters of 3013 and 2014.

The individuals involved will have a strong compliment of local residents that are familiar with the area and the environment. The route will be carefully scouted and defined prior to the initial mobilization and will follow a known route to Hope Lake.

The equipment will be in excellent operating condition and well maintained. The crew will carry with them ample supplies and shelter from the elements. The crew will follow strict journey management plans, will utilize a remote work and wildlife management plan and be trained in cold weather survival. They will be supported by helicopter if necessary and will have satellite phones to remain in contact with the EGT/Kikiak base in Kugluktuk.

The cat train equipment will be Low Ground Pressure (LGP) to minimize environmental impacts on the access routes. Personnel will be fully familiar with cat train operations procedures, cold work procedures, sleigh loading/offloading procedures, fuel transfer procedures and the fuel spill response equipment that will be sent with the EGT/Kikiak cat train equipment

Fuel Management

For the Hope Lake project EGT estimates that on-site fuel requirements will be 38,000 liters of diesel fuel, 1,500 liters of gasoline and 9,000 liters of jet (helicopter) fuel. These quantities of diesel fuel, gasoline and jet fuel should prove sufficient to satisfy the needs of all diesel mobile equipment, heating appliances, camp generators, ATV's, gas powered tools, small equipment and helicopter flying.

The plan for the storage and delivery of fuel for the Hope Lake Project is as follows. Gasoline and jet fuel required for summer 2012 work will be delivered to the Hope Lake site via fixed wing aircraft in 205 liter sealed, steel drums. No diesel fuel will be required during the summer of 2012. EGT will identify and stake the fuel storage location at Hope Lake during summer 2012 site visit to ensure the fuel drums delivered by fixed wing in the summer of 2012 and the fuel scheduled to be mobilized during winter 2013 Cat Train are positioned in the proper location.

All Diesel Fuel required for summer 2013 operations will be delivered in sleigh mounted 13,200 liter fuel sloops via the proposed Cat Train in the winter of 2013. During the winter 2013 Cat Train EGT intends to mobilize a 30,000 liter Enviro-Tank to the Hope Lake site. This tank was constructed new in 2011 and is currently located at the PIND site. The tank will be mobilized to Kugluktuk in the summer of 2012. It will be mobilized to site empty from Kugluktuk.

Upon the arrival of the Cat Train at the Hope Lake site the 30,000 liter storage tank will be unloaded and set into place at the previously identified staked location. The first 27,000 liters of diesel fuel will then be transferred by properly trained and certified personnel into the storage tank. The remaining 11,000 liters of required diesel fuel will be stored in one of the 13,200 liter sleigh mounted fuel sloop which will remain at the Hope Lake site.

Each tank will be set up in accordance with the "Environmental Code of Practice for Above Ground Storage Tank Systems Containing Petroleum and Allied Petroleum Products Guidelines". The tanks will be fully certified tanks that meet the CEPA (1999), and the "Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations SOR/2008-197". All storage tanks will be registered with Environment Canada on the "Federal Identification Registry for Storage Tank Systems" (FIRSTS) database.

All gasoline required for summer 2013 work will be will be delivered in 205 liter drums via the proposed winter 2013 Cat Train phase of the project mobilization.

Due to the small amount of Gasoline and Jet Fuel required at site, these products will be shipped and stored in 205 liter steel drums. The Gasoline and Jet Fuel drums will be individually identifiable, labeled to industry standards and all information necessary for health, safety and environmental purposes will be made available. Appropriate MSDS will be maintained at site. All barrels will be stored in accordance with the land use permit and labeled with AANDC's and EGT's name, stored on pallets in an upright position and banded to the pallets. All fuel storage will be in an area that complies with all applicable regulations and approved by the Departmental Representative. EGT has very specific written fuel transfer procedures which will be strictly followed during loading and offloading work. These procedures were developed not only to prevent any environmental incidents, but to protect the health and safety of all personnel involved in fuel transfer operations. They included procedures for handling hoses, getting on and off equipment, preventing spillage, using proper equipment and using proper PPE.

All fueling activities will be conducted by properly trained staff, and only those personnel authorized will be permitted to dispense fuel. Fuel usage records will be maintained on-site and will be kept to track individual unit usage as well as task usage.

A copy of the Site Specific Spill Contingency Plan, fire extinguishers, emergency spill equipment, including appropriate personal protective equipment, a minimum of two fuel pumps, empty drums, and absorbent materials sufficient to cleanup a 1000 liter spill will be positioned at all fuel transfer and storage sites. Smoking will be strictly prohibited within 100 meters of this area and No-Smoking signs will be posted. Spill mats or spill trays will be utilized under all mobile fueling containers. All mobile equipment will be equipped with spill kits.

In the event that any leaks or spills occur they will be responded to quickly with onsite fuel spill response equipment and materials. The Site Specific Spill Contingency Plan

which will form an integral part of the on-site orientation for all personnel along with the Oil Pollution Emergency Plan (OPEP) contained in the EGT HSE program will be reviewed with all personnel during safety training and meetings.

3.14.3 Supply, Operation and Maintenance of Camp Facilities

Camp Facilities for Hope Lake, NU

EGT proposes to supply camp and support facilities consisting of a combination of hard-sided "well-site" trailers and a main camp complex of hard-sided and soft-sided tent camp units. The main camp complex, further described below, is a complete package camp, including sleeping, kitchen/dining, ablution/latrine, laundry and recreation facilities. In addition to this complete camp package, EGT will deploy three well-site type trailers to the site. These three trailers will be used for EGT office, communications and Infirmary/Medic, for DR's accommodation and office, and for the site lab. All hard-sided well-site trailer units are skid mounted wood-frame construction with metal cladding. They are electrically heated and are in new to very good condition.

The separate hard-sided well-site trailer unit designated for the DR includes separate bedroom, washroom and office space. The DR's Specialist Inspector and other authorized personnel will be accommodated in segregated soft-sided wall tent units with a maximum double occupancy. Space will be allocated to accommodate both male and female representatives as required. One private hard-sided wash tent will be provided for the sole use of the DR Specialist Inspector and other DR authorized reps. In the event that there are female DR Reps they will be assigned the hard sided wash tent and the DR will share the washroom in the well-site trailer with any male DR Reps.

A separate field laboratory will be mobilized to site. This lab unit has previously been deployed as the Geotech Lab on PWGSC's PIN-E Cleanup. The lab is larger than required in the Tender Specifications (as amended by Solicitation Amendment 003) and will be fully equipped with office furniture, appliances, shelving, communications equipment, and all lab supplies as per the tender specifications. This unit also includes office space for the DR Specialist Inspector in addition to the lab. A floor plan will be provided to the DR for approval prior to mobilization/construction.

The tent camp configuration consists of 16 tents, 6 of which are hard sided, 10 of which are soft-sided. Total available beds provided by the above described camp facilities are 32, 30 in the tent-camp complex and one each in the DR's and Site Superintendent's well-site units, with a maximum of 4 beds per room. The facility meets all minimum requirements as per the RFP specification and applicable regulations.

All hard sided tent units will have an elevated wooden floor foundation with wooden walls. All soft sided tents will have an elevated wooden floor foundation with aluminum framing.

The generator power package for the camp consists of a matched set of fuel efficient 60 KW Cummins engines. EGT has found these engines to be very quiet and fuel efficient compared to similar engines in this size range. The additional load from buildings outside of the core camp complex, such as the EGT Superintendent and DR well-site trailers and the lab unit, will allow the generator to operate closer to its rated load application, which in turn will allow them to operate more efficiently.

EGT's forecasted maximum project accommodation requirement consisting of their own operations personnel and subcontractor support personnel together with the PWGSC personnel would be 26 persons. Therefore, the maximum peak number of persons to be accommodated at any point in time would be 26 persons. EGT will have 32 available beds, which provides a minimum of 6 additional beds at all times as a contingency.

It is proposed to setup the camp facility between the northwest end of the airstrip and Apec 5, where the terrain appears to be relatively high and flat and appropriately distanced (minimum 100 meters) away from water bodies and natural drainage. This location was also suggested in the Remedial Action Plan as a suitable location for the camp. The final decision on camp location will not be made until a more detailed inspection of the area takes place during the Pre-Mobilization Site Visit by the Site Superintendent and the DR. The site is central to all areas of work and the airstrip, and is relatively high, providing good visibility around the camp area and best radio communications.

The hard side trailer units, generators and any required lumber, timbers, mats, landings, and railings required for floors and foundations will arrive by Cat train during the winter of 2013. The hard sided camp trailer units will be set on timbers and or rig mats to facilitate plumbing and electrical installations as well as to ensure a stable and level foundation. The canvas tent portions of the tent camp will be mobilized to site via fixed wing aircraft in the summer of 2013. Both the soft and hard sided tent units will be placed on wooden floor foundations constructed with materials that will be mobilized with the cat train.

EGT will ensure that prior to camp start-up all required permits, including an electrical permit, will be obtained and prominently posted in the camp. EGT has operated numerous camps in remote locations in Nunavut in compliance with applicable camp legislation. Recent examples include camp operation and management at the PIN-B, PIN-2, PIN-D and PIN-E abandoned DEW Line sites in the Kitikmeot Region of Nunavut between 2008 and 2012. All applicable permits were obtained for these camps and the camps were operated successfully and satisfactorily for the duration of these projects.

Hours of Work and Rotations for Contractor's Workforce

It is expected that EGT's workforce will have a work day based on 12 hours with 1 hour for lunch, 15 minutes of rest for every 2.5 hours of work included within the 12 hour period. It is expected that the work day will either be 7 AM to 7 PM or 8 AM to 8 PM to

be determined on site by the EGT Site Superintendent. Workers will be rotated as required, and within the limits of the EGT/Kikiak/Kitikmeot Catering extended work permits approximately every 3 to 4 weeks with a maximum duration being 30 days onsite. This work schedule has been utilized by EGT on numerous DEW Line and other remediation Projects in Nunavut and the Northwest Territories and has been approved by the Nunavut WSCC. All work will be undertaken in accordance with applicable WSCC and labor standards. EGT has successfully operated in compliance with this legislation on numerous previous projects in Nunavut and the Northwest Territories over the past 20 years.

Catering

Three meals a day will be provided with a minimum of two choices per-meal from top quality groceries including at least once per week the choice beef steak. EGT and Kitikmeot Caterers Ltd. will strive to provide meals for any persons with special dietary needs such as vegetarians, heart smart, diabetics etc. Snacks, pastries and fresh fruit will be available throughout the day and night along with fresh milk and a selection of juices, coffee, tea and hot chocolate. At least two weeks stores of non-perishable food and water supplies will be kept onsite in the event that resupply planes are delayed.

Staff will ensure that the camp facilities are kept in a clean and tidy manner and that all beds will be changed weekly or when a change of occupants occurs. Environmentally friendly, non-chlorine based cooking and cleaning products only will only be used. Catering staff will be rotated approximately every 2-3 weeks. Kitikmeot Caterers Ltd. has an extensive local pool of experienced catering and maintenance personnel that will ensure project coverage at all times.

Recyclable containers (water bottles, UHT juice containers, pop cans) generated in camp garbage which can be recycled through community recycling programs will be collected and shipped from Hope Lake and donated to a youth or community group in either Kugluktuk or Yellowknife. In 2009 and 2010 we shipped all recyclables from 2 projects (PIN-B and PIN-2) to the community of Kugluktuk and donated to the local youth committee. In 2007 we shipped all recyclables generated in camp waste at the BAR-D cleanup to the Tuktoyaktuk Youth Center, in 2008 and 2009 the same program was followed at our Johnson Point Remediation project, generating the Youth Centers in the various communities several hundred dollars of income and lessening the unnecessary incineration of plastics and other recyclable materials at PIN-B, PIN-2, BAR-D and Johnson Point work sites.

Resupply Flights

The shortened version of the original 1450 meter airstrip at Hope Lake is capable of accommodating EGT's planned re-supply aircraft which are Twin Otter and Caravan aircraft. EGT does not intend to conduct any major repairs to the runway to support its planned operation. EGT intends to utilize the services of Aqsaqniq Air (Aqsaqniq) in Yellowknife to provide charter services to move passengers and freight directly to site

from Yellowknife and Kugluktuk with a regular scheduled flight on Thursday of each week with additional flights arranged as required by the EGT Hope Lake Site Superintendent. Expediting services in Yellowknife will be provided through Nunavut Mining Services, an Inuit listed company.

Kikiak has in place an expediting network based from Kugluktuk for EGT's and Kikiak's own internal operational requirements in addition to providing this service to the community of Kugluktuk. A Kikiak expeditor will be assigned to the Hope Lake project and will work directly with EGT's subcontractors Aqsaqniq Air and Nunavut Mining Services personnel throughout the project to coordinate and document all project personnel and cargo movements.

Weather and long flight times will be a definite ongoing concern for the resupply flights operated from Yellowknife. The resupply plane will be on short notice commitment to the project to ensure that weather windows are capitalized on during times of inclement weather. EGT experienced similar circumstances during its recent PIN-B and PIN-2 Projects and was very satisfied with the performance of Aqsaqniq in overcoming changing and variable weather patterns to ensure regular flight service into the sites.

Flights routed through Kugluktuk will help mitigate any difficulties associated with weather by being able to have shorter trips and capitalize on "weather windows" as they occur during periods of inclement weather. Some potential problems could include problems arranging as and when flights with the aircraft subcontractor due to aircraft availability as well as weather conditions making flights into the site impossible for several days at a time.

EGT will mitigate the effects of any continuing poor weather by ensuring that the inventory of necessary food and other supplies is kept high enough to ensure that flight delays will not affect ongoing operations. EGT will ensure that it plans operations in cooperation with the flight services company to so that its subcontractor is aware of the importance of the resupply flights and plans accordingly. As a further contingency EGT will be in contact with other aircraft charter companies and have arrangements with these companies so that they will be responsive to EGT's needs in the event that the primary subcontract has mechanical or other difficulties.

Potable Water System

It is expected that Hope Lake will be capable of providing water for washroom facilities, and cleaning. In consideration of the projected short duration of camp operations it is not probable due to lengthy turnaround times on samples that drinking water from a local source will be utilized for cooking and consumption. Drinking and cooking water will be provided by bottled drinking water that meets Health Canada Guidelines. A bulk supply consisting of 200 cases of 24 x 500 ml bottled water and 50 ea. large 20 liter jugged water will be mobilized with the camp to Hope Lake. That quantity should prove to be an adequate supply of drinking water for the 2013 camp season.

EGT estimates the water usage at Hope Lake to be 3,000 to 3,500 liters daily. Camp water requirements (Non-potable) will be obtained from the 'Fresh Water Supply Lake' (Lake). Water will be transported to site from the Lake with a portable tank capable of being mounted or carried by on-site equipment. The lake water intake will be set up from a float anchored at a distance from the shore so that it can be positioned at a good depth half way to the Lake bottom. The intake hose will be fitted with a micro-screen to prevent the suction of fish or other marine life.

One of the potential problems given the lack of availability of on-site drinking water would be the camp running low on bottled water. The Site Superintendent and the catering personnel will closely monitor inventory levels of drinking water and, if required, additional supplies will be flown to site from either Yellowknife or Kugluktuk. Another potential problem that could be encountered is that a dedicated vehicle used to transport the water tanks to fill the camp holding tanks could have a mechanical failure. EGT will use portable, skid mounted tanks for the transport of the water so as if one unit has mechanical trouble the tank could be mounted into a different vehicle in a timely fashion so as not to interrupt the normal camp daily re-supply.

Wastewater Management Plan

All camp facility grey water/sewage will drain to lift-stations adjacent to the camp facilities and be pumped from the lift stations to the lagoon. The lift-stations will be fitted with an industrial grade submersible macerator lift-pumps controlled by level switches to start and stop automatically as required. These submersible pumps will pump the sewage to a sewage lagoon that will be situated at a location 100 meters downwind from the camp, 100 meters from any natural drainage courses and 450 meters from any fish bearing waters as agreed with the Departmental Representative (DR).

The sewage system will consist of two separate lagoons adjacent to each other and constructed to dimensions that will allow for 20 days of capacity in each lagoon. The lagoon base will be excavated approximately 0.5 meters into the existing ground. Perimeter berms will be constructed to a finished height of 2.0 meters allowing for a maximum depth of 1.0 meters and a freeboard of 1.0 meters. The lagoon base excavated material will be used to construct the lagoon berms.

The lagoon sewage pipe from the camp lift stations will feed into the first/closest lagoon. A tee overflow pipe connecting the two lagoons will be placed so that the liquid from beneath the solids/scum layer can pass to the second lagoon.

EGT has proposed and used this type of lagoon system on numerous other projects in Nunavut and has had its proposals approved by the Nunavut Water Board. Most recently EGT has developed and implemented a similar system on the PIND and PINE Remediation Project. A lagoon system similar to the PIND lagoon system will be constructed and implement at Hope Lake.

The camp will be fitted with two separate grease traps that will remove visible mineral oil and grease from the camp generated effluent. EGT and our Inuit catering contractor Kitikmeot Catering Ltd. are very experienced in the operation of remote camps, the wastewater discharge criteria, cooking and housekeeping practices and "green" biodegradable products that must be used (as well as those products that must not be used) to ensure that sewage can meet discharge criteria. To improve water conservation all bathroom faucets are self-closing and toilets and shower heads are water saver models.

Some of the potential problems associated with the camp wastewater system could include an unforeseen increase in camp water consumption and/or difficulties meeting discharge parameters. In the event that the sewage lagoons become full prior to receiving confirmatory samples to allow for discharge EGT will construct an additional lagoon as required. EGT will ensure that the primary lagoons are constructed in an area that will allow for the construction of any additionally required lagoons.

The operation, discharge and closure of the lagoons will be in compliance with the water use permit for Hope Lake. The effluent will be sampled and tested at an approved third party testing facility (Maxxam Analytics, Edmonton Laboratory) to determine if the required discharge criterion has been met. EGT will take all required steps to ensure samples arrive at the testing location within the allowable time limits. Once testing confirms discharge criterion has been met and discharge is approved by the Water Inspector the effluent will be pumped and released onto the ground at a location as agreed and approved by the DR, a minimum of 30 meters from natural drainage courses and 100 meters from fish bearing waters.

Solid Waste Management Plan

Camp waste will be incinerated in a new two-chamber Westland Environmental CY-2050-FA "D" diesel-fired incinerator. This incinerator will be supplied with a larger than normal 770,000 BTU primary incinerator to achieve temperatures of 1000 degrees C. The secondary chamber should also achieve temperatures in the 850 to 1000 degree C range to satisfy the requirements of Canada Wide Emissions Standards.

Camp waste will be incinerated throughout the day as required. A metal covered garbage container will be used to store garbage by the incinerator while it awaits incineration. All waste will be incinerated daily at minimum. Camp waste consists primarily of cardboard, food waste and paper.

We will separate from general camp waste containers which can be recycled under the GNWT/NU Recycling Program. Recyclables used in camp operations generally include plastic water bottles, aluminum pop cans and UHT containers. These items will be collected and donated to the Kugluktuk community or other worthy cause. Battery drop-off locations will be designated in the camp and the EGT Site office to keep "disposable" batteries out of the general waste stream. These will be containerized according to TDG regulations and shipped off site to a licensed disposal facility.

The minimal residual ash from the incinerator will be collected in a lined sea-can container and will be sampled and tested prior to final disposal. All ash will be removed from the site and will be handled according to test results. If testing determines that the ash is a hazardous waste it will be disposed of at a licensed hazardous waste disposal facility and will be shipped subject to Transportation of Dangerous Goods regulations. In the event mechanical problems arise with the incinerator spare parts will be maintained at the site to allow quick servicing and repairs.
The camp maintenance person will be specifically trained in the operation of the incinerator and will be the only person to operate it.

Communication System

A digital communications system capable of full duplex and secure voice, real time fax, and high speed internet will be provided. This system will consist of a satellite system and all required in camp/office connections and hardware. The system will include:

- Satellite system for Voice, Protected Wireless B/G Internet, data & fax transmissions (Internet usage on this system will be for the sole use of the EGT site super and DR and his authorized reps and will provide unlimited access).
- A minimum of 6 separate phone/fax lines with voicemail will be set-up (3 for DR`s use)
- Secondary Internet access through 1 or more Netkaster HSE satellite systems featuring; 2mb per second download and 512kb per second upload speeds, includes unlimited uploads and downloads, standalone system will also provide back-up communications with VOIP and e-mail in the unlikely event that the main system fails. Wireless B/G routers will be set-up to cover entire camp facilities.
- 2 MFC office machines (fax++) capable of networking and remote printing.
- Sufficient numbers of ICOM (5watt) hand held portable VHF radios w/chargers, spare batteries and cases including two for the exclusive use of the DR and his personnel.
- 2 Iridium handheld satellite phones will be provided for stand-by communications should the satellite systems go down.

The system, connections and hardware, will be installed and tested by a qualified technician onsite with services and accounts accessible for project startup.

In the event that problems arise with the system, arrangements will be in place with our service provider to have a technician available on short notice to service and support the systems if a problem cannot be solved remotely. There will be two Iridium hand held satellite phones kept onsite throughout the project as backup communication.

Wildlife Management Plan

As part of EGT's overall objective to provide a safe working environment for all personnel working at any of our sites EGT has developed a wildlife management plan for

the remediation of the Hope Lake site. This plan will defines the frequency of patrols, rules for onsite storage of firearms, terms of use for firearms, record keeping, reporting procedures, training requirements related to firearms, wildlife deterrent methodology, safe ATV operations, and radio operations.

EGT will maintain, at minimum, one full-time Wildlife Monitor during all times that camp and site operations occur. EGT will provide additional Wildlife Monitors on-site as required. The wildlife monitors will be on-site at all times from the initial mobilization phase and throughout the duration of the construction season. Wildlife Monitors will be sourced through our Inuit prime subcontractor, Kikiak Contracting Ltd. and will be hired from the community of Kugluktuk. Wildlife Monitors will be experienced hunters and marksman with personal knowledge of the Hope Lake and surrounding areas.

Each Wildlife Monitor will possess a valid FAC, a properly functioning rifle of no less than .30 caliber, an ample supply of ammunition, a mobile handheld radio, and a properly functioning ATV. Bear deterrent "screamers" and "bangers" will also be available onsite for use if necessary. In instances when contractor's or DR's personnel need to travel a distance from the camp beyond the functional range of handheld radio communication one of the two handheld satellite phones being kept onsite for back-up phone communications will be assigned to these personnel. Wildlife Monitors will keep a log of all wildlife sightings and report to the DR as required. Wildlife Monitors will be rotated every 2-3 weeks. Wildlife Monitor certifications will be provided to the DR.

The camp EGT will provide consists of both hard-sided and soft-sided structures, and because the Hope Lake site is known to be frequented by bears, a wildlife/bear deterrent electric fence will be crucial component of the camp setup structure.

Further details refer to the Wildlife Response Plan in Appendix E.

Medical Care and Transport

Due to the remoteness of the Hope Lake and associated sites at Husky Creek and Willow Creek, EGT will maintain sufficient levels of medical care to address basic wellness in addition to emergency care. An EMT medic will be deployed with the crew to Hope Lake to ensure that medical coverage is accessible and maintained at the site, with a sufficient number of Emergency or Standard First Aid trained workers to provide assistance when necessary.

The Hope Lake site will have an infirmary deployed with the main camp, which will be supplied with sufficient supplies to provide care for serious injuries. A system will be put in place to:

- Provide primary care for the injured worker;
- Consult a physician via radio or phone; and
- Prepare and care for the injured during transport and transferring of the injured to the care of medical professionals.

- Helicopter support will be available to transport injured workers if necessary between the satellite locations at Husky Creek and Willow Creek to the Hope Lake Infirmary or to Kugluktuk in serious cases.
- Fixed wing aircraft will also be available to transport patients from Hope Lake to Kugluktuk

3.14.4 Excavation and Off Site Disposal of Contaminated Soils

Contaminated soils at the Hope Lake sites have been categorized into three separate designations based on contaminant as described in Section 02 61 00.01 Soil Remediation of the tender Specifications. The types of contaminated soil excavation are identified below:

- Hydrocarbon impacted soil (110 m3)
- Metal impacted soil (50 m3)
- Salt impacted soil (50 m3)

The description of how each of these types of contaminated soils will be handled and disposed of is provided in the following individual subsections.
Throughout all aspects of the work, EGT will adhere to regulations relevant to the excavation, containerization and transport of contaminated soils including Nunavut HSE, CCME, AANDC and TDG regulations.

Contaminated Soils Excavation Methodology

Management of all handling, excavation and on-site transportation of contaminated soils will be supervised by EGT's Hazardous Waste Specialist qualified in hazardous waste and contaminated soils management. EGT's Hazardous Waste Specialist will be trained and certified for TDGA, possess many years of waste management experience on numerous remediation and DEW Line Cleanup Projects and have successfully completed the 40 hour training course in compliance with OSHA 1910.120.

Training and Personal Protective Equipment (PPE)

The Hazardous Waste Specialist, Site Superintendent and Crew Foremen shall instruct and direct all workers with respect to Contaminated Soil management and safety practices. Health, safety and waste management procedures will be covered in the employee orientation and project startup session. Daily safety meetings will be held onsite. Hazard Assessments and Job Safety Assessments (JSA) will be completed before the execution of critical tasks.
Safety instructions and PPE as they pertain to the NIOSH guidelines will be emphasized for the following work elements:

- personal protective equipment
- personal decontamination
- work procedures
- equipment decontamination
- emergency response procedures

All personnel involved with this work will be trained in First Aid, WHMIS and TDG as it relates to the work. Personal Protective Equipment (PPE) for the handling of contaminated soil include Tyvek coveralls over street clothes, steel toed rubber boots, hard hats, nitrile gloves, safety glasses and half mask respirators with appropriate filters will be provided to all workers and DR representatives as required when dust is visibly present.

Excavation

The equipment, camp and project resources will have been mobilized to site in the spring of 2013. Once the site facilities and camp services has been set-up and commissioned at the commencement of the summer 2013 work season, project work personnel will be mobilized to site to commence work activities. These will include the surveying crew. One of first surveyor activities will be to layout all contaminated soils excavations as per the drawings and specifications which will then be verified by the DR.
Excavation activities will be dependent on local site access and conditions such as standing water or excess rain. Any surface debris removal will have been completed prior to excavation. Standing water will be removed prior to excavation.

Standing water will be removed using a 2" gas powered trash pump with a suction hose. Standing water to be pumped will be sampled in-place to determine if treatment is required prior to discharge. If the water does not pass discharge criteria it will be treated through liquid phase granular activated carbon (GAC) filters that will remove dissolved petroleum contaminants from the water as it passes through the filter. Any water requiring treatment will be stored in a storage tank or lined pond where samples will be collected to make sure treatment objectives have been met. The water will be held until analytical results determine if the water is below the Wastewater Discharge Criteria and can be discharged at a location acceptable to the DR.

If groundwater accumulates in a section of the excavation, the water will be tested. The groundwater will remain in the excavation until the analytical results of the groundwater sample and confirmatory soil samples are available. There are two advantages to storage of the groundwater in the excavation for the longest time possible (versus immediate dewatering). Firstly, the groundwater will act as an insulator to reduce the rate of permafrost degradation in the excavation and secondly this will decrease requirements for above-ground water storage. If analytical results indicate that the groundwater concentrations are below the wastewater discharge criteria in a particular section of the excavation, that section will be dewatered using a trash pump immediately prior to backfilling. The water will be discharged to a location approved by the DR. If the analytical results do not meet discharge criteria it will be pumped to holding tanks or subsequent treatment through either a barrel treatment system containing sorbent material or through a granular activated carbon (GAC) filters system.

Soils will be carefully excavated to avoid damage to any surrounding tundra using an excavator, and shovels where necessary. Gross excavation will be achieved with the excavator and fine excavation with shovels to dimensions and depths established in the drawings and as marked by the surveyor. If the ground access to the excavation site is

soft and rutting might occur then Swamp Mats will be placed to prevent ground disturbance.

For the very small and limited quantity of contaminated soils identified at the Husky and Willow sites that are not accessible from Hope Lake by road these areas will be accessed by helicopter support as described in previous sections of this proposal. EGT will sling in three (3) wooden seacans approved by the helicopter support contractor and governing regulations in the summer of 2012. The delineated soils will be excavated by hand into the seacans and then slung out to Hope Lake for storage until the winter/spring of 2013. The seacans will be blocked up to prevent freezing into the ground and will be subsequently loaded and transported by Cat Train to Kugluktuk for off-site disposal with the other contaminated soils from Hope Lake .

Immediately following excavation, the DR will be advised so that soil excavations can be tested at the side walls and floor of the excavation by the DR's representative. These samples will be submitted to the DR's analytical laboratory for analysis. The excavation will remain open until the samples confirm that no soils over criteria remain. Appropriate signage and barriers will be in placed to prevent onsite workers and/or equipment from accidentally entering the excavated area. Following confirmation, the excavated area will be backfilled, graded and compacted in lifts of 250mm with Type 1 granular fill to match the surrounding terrain. Containerization of the soils is described in the following sections.

Decontamination

It is not anticipated that any of the contaminated soil operations will require special personal decontamination. But in the event they are required, the following procedures will be followed:

- rubber boots and gloves will be wiped off with rags and solvent, or moist disposal wipes after each location is completed and washed off with soapy water or solvents at the end of each work day;
- outer wear, including coveralls, rain suits, hard hat, gloves and so on will be stored outside the lunch/coffee room so as to prevent the movement of contaminant dust into clean areas;
- wipes, respirators and disposable coveralls will be disposed of into an overpack drum appropriately labeled;

All excavating equipment will be cleaned of soil and lumps prior to exiting the excavation area using track shovels, scrapers and brushes to decontaminate digging implements and tracks. Wherever possible, contaminated soil excavation will take place with the equipment placed on clean ground adjacent to the contaminated soils. Any soils removed from equipment will be containerized with the excavated soils. Final decontamination will utilize rags and solvent, or soapy water rinse if required. Any wash water and solvent will be collected in a metal tray and tested and handled as per the specifications. All test results will be provided to the DR.

Details of Contaminated Soil Containerization, Transport and Disposal

All contaminated soils will be loaded at the excavation locations into TDGA approved, intermediate, 1.2 m x 1.2 m x 1.83 m wooden seacans mobilized to site. Depending upon the type of contamination in the soil each seacan will be lined with either a hydrocarbon resistant liner or poly liner. Once filled the seacan tops will be steel banded in place by four band wraps.
All seacans will then be labeled and numbered as to type of contaminated soil, location and manifested. An inventory of all boxed contaminated soils will be maintained and provided to the DR on a regular basis.
All soil seacans will then be transported to the designated gravel pad temporary storage area located near the Hope Lake air strip. Wood blocking will be placed under the seacans so that they do not freeze to the ground over the next winter. Prior to summer 2013 camp shut down EGT will complete an inventory and mapping of the filled contaminated soil seacans at the storage area. They will remain at the Hope storage location until they will be shipped to Kugluktuk by cat train in the winter/spring of 2014. They will then be stored at a designated temporary storage area located in Kugluktuk.

The filled contaminated soil seacans will be manifested showing the final disposal destination as being the CCS Landfill located at Ft. Nelson, BC. They will be loaded onto the barges during the latter part of summer 2014 for transport to Inuvik, NT. Once the barge reaches Inuvik the seacans will be off loaded and either loaded directly onto flat deck trucks to be transported to the CCS Landfill at Ft. Nelson, BC, or placed a temporary storage yard located in the EGT yard until trucks are available to transport the seacans to CCS landfill at Ft. Nelson, BC. All highway trucks and trailers will be inspected as per routine service inspections to ensure that they meet all regulatory requirements, have the required emergency and safety gear and are in good operating condition prior to being loaded. All personnel involved in the trucking and loading operations will be experienced, trained and licensed for this work as required.

Disposal of the PHC, metal and salt soils will be completed at CCS Midstream Services, Northern Rockies Landfill, Ft. Nelson, BC subject to testing analysis confirmation that they are within the CCS acceptance criteria. If they exceed the CCS criteria they will be disposed of at Earth Tech Canada Inc.'s Swan Hills Treatment Centre at Swan Hills, Alberta. EGT has obtained letters from CCS Midstream Services and Earth Tech Canada Inc. confirming their ability to accept and dispose of the Contaminated Soils, Hazardous and Non-Hazardous materials generated by the Hope Lake project.

It is expected that final soils disposal at CCS Ft. Nelson, BC landfill and/or Swan Hills Treatment Facility, Alberta will occur in late October 2014 as shown on the EGT Project Schedule.

As is normal protocol with CCS disposal soil characterization sampling will be completed with CCS to confirm they meet their disposal criteria. Copies of the Waste

Manifests will be forwarded to the Nunavut's waste authority. Copies of disposal receipts from the above disposal facility will be provided as required in the specifications.

Potential Excavation Risks and Risk Mitigation

Table 1 indicates potential risks that may arise during the excavation of all contaminated soil areas and the mitigation strategies for each identified risk.

Table 1 Potential Soil Excavation Risks and Risk Mitigation Strategies

Risk	Risk Mitigation
Contaminated soils are in permafrost.	Excavate with frost bucket to get the excavation to depth.
Excavation fills with groundwater prior to confirmatory sampling.	Sample the water within the excavation, dewater the excavation, and treat and store for confirmatory testing if required.
Groundwater becomes excessive	Construct treatment sump/storage with contingency liner on site (ref. 'Hazgard' liner info at end of this section)
Excavation walls collapse/sloughing	Cut back excavation wall to stable angle.
Surface runoff enters excavation.	Divert surface water runoff where possible and install silt fencing, containment dyke, or drainage channels.
Access to excavation becomes too soft.	Place 'Swamp Mats' to access excavation to drive on.

During all aspects of the contaminated soil excavation work, as with all work onsite, all efforts will be made to minimize environmental disturbance adjacent to the work. Should access conditions to an excavation area be soft, wet or unstable then "Swamp Mats" mobilized to site on the spring 2013 cat train will be laid out from the closest stable access point for access.

It is planned to start the excavation of contaminated soils as soon as possible in order to collect samples in a timely fashion. Given the succinct timeline for onsite work any additional delays due to sample analysis turnarounds would have a significant impact. EGT may backfill after the second round of excavation depending on site circumstances to avoid extensive permafrost degradation or if the site is approaching 2013 shutdown so as not to leave an excavation open.

3.14.5 Hazardous Waste

All material designated as hazardous will be managed, handled, processed, containerized, transported, disposed of and documented according to standard industry practices for the handling of hazardous materials, the Transportation of Dangerous Goods (TDG) Regulations and other applicable laws and regulations. The work procedures and descriptions apply to the remediation work at all three of the Hope Lake project sites.

Work Planning

Following is a general description for how the execution and sequencing of the hazardous waste work will be completed in 2012 and 2013. Specific methodologies for collection, consolidation, packaging, storage and transport of the various hazardous waste streams are then detailed as per the subsequent headings.

2012 Program

All three work sites will be accessed by helicopter during the summer of 2012, with fixed-wing support at Hope Lake, to collect process and consolidate hazardous materials, non-hazardous debris, miscellaneous drums and barrel caches. Hazardous material handling, debris collection and consolidation work at the Husky and Willow sites will be undertaken using crews and a Bell 206L3 or AStar 350 B2 helicopter from Kitikmeot Helicopters Ltd. This work will be based out of Kugluktuk and local crews from Kugluktuk will be flown to and from the work sites each day.

Prior to the commencement of operations various items will be transported by fixed wing aircraft to Hope Lake. Equipment and materials to be mobilized by air to Hope Lake will include working fuel, ATV's and trailers, emergency survival tents and supplies including food and water, emergency medical supplies, small tools, wooden-seacans and pallets, hazardous materials containers, overpack drums, packaging materials, spill containment kits, burn-bins, fire-extinguishers, helicopter sling-nets, personal protective equipment, communications equipment and any other tools and materials required. Fixed wing aircraft used will be provided by Summit Air and/or Twin Otter provided by Aqsaqniq Air Ltd.

The crew initially deployed to Hope Lake will include the EGT Supervisor/Hazmat Specialist, Departmental Representative, Wildlife Monitor and labor crew. The initial task upon arrival will be the establishment of the survival tent area with food and water cache. This will be adjacent to the airstrip on a high relatively flat area with good visibility due to the possibility of wildlife encounters.

Perimeter Trip Wire Alarm Fence

A wildlife perimeter trip wire alarm system will be provided with the survival tent areas and will be set up as a precautionary measure if it is felt that it is required. All site personnel will be trained in the use and risks of this system should it be activated.
At Hope Lake a Material Processing Area (MPA) will be established for the sampling and packaging of drums and hazardous materials brought in from Husky Creek and Willow Creek. It is expected that this MPA will be constructed between the northwest end of the airstrip and the old camp site at APEC 5 as this appears to be relatively flat and high ground. A general stockpiling and packaging area for Non-Hazardous materials will also be established in this area adjacent to the MPA. This location will be confirmed at a Pre-Mobilization Site Visit in consultation with the DR and Kitikmeot Helicopters. The location must meet the requirements for safe arrival of sling loads from Husky Creek and

Willow Creek and will satisfy the terms for the establishment of a Temporary Storage Area (TSA) as per the specifications, Section 01 52 00, 3.1. This area will ultimately be developed into the main Hope Lake TSA.

The surveyor will be deployed to the site once the initial setup of survival tent area has been completed and the location and establishment of MPA and general stockpiling area have been designated. He will establish his required temporary control points based on the survey control points indicated in the drawings, locate and survey the MPA and general stockpiling area and will locate, survey and stake out the contaminated soils excavations on and adjacent to the airstrip so that operations do not impact these areas.

The MPA will be located such that it is at least 30 m from a water body or drainage course, on stable ground not subject to flooding or seasonal saturation, in a previously disturbed area if possible, and not located so that it could interfere with other work. The DR can complete baseline sampling, as required, of these areas prior to development. These areas will be surveyed once the surveyor is on site in the first few days of the summer 2012 component of the project.

Once the working base has been established at Hope Lake, crews will deploy to the remote locations, Husky Creek and Willow Creek, to sort and package loads to be repositioned to Hope Lake by sling-load beneath rotary wing aircraft, to handle and package hazardous materials, to excavate contaminated soils and to incinerate untreated wood debris. Drums and debris will be packaged to be repositioned to Hope Lake by sling-loads beneath rotary-wing aircraft.

The crew initially deployed to Husky Creek and Willow Creek will include the EGT Supervisor/Hazmat Specialist, Departmental Representative, surveyor, Wildlife Monitor and laborers. A survival tent and gear including food, water, cook-stove, first-aid kit and satellite phone will be located at the remote work sites at all times crews are working. The surveyor will establish the survey control points as indicated on the drawings and will locate survey and stake out the contaminated soil excavation locations.

Collection and packaging of hazardous materials as well as non-hazardous debris and barrels during the summer of 2012 will commence first at Husky Creek with drums and some hazardous materials and non-hazardous debris being moved and consolidated at Hope Lake. Some of the larger and heavier debris will be consolidated at a Temporary Storage Area at Husky Creek (North), close to the Bombardier and Hydrocarbon Impacted Soil excavation. This TSA will follow the same guidelines and requirements as the Hope Lake TSA. Following completion of work at Husky Creek collection and packaging of hazardous materials, non-hazardous debris and drums at Willow Lake will be undertaken with the debris then being consolidated at Hope Lake or packaged and contained at a Willow Creek (Main) TSA to be established on level stable ground sufficiently far from waterways. These areas will also be confirmed with the DR on the Pre-Mobilization Site Visit or during initial site inspection during the 2012 work.

All processed hazardous materials will be stored at designated Temporary Storage Areas (TSA) on site at the end of the 2012 summer operations.

Hazardous wastes will be handled, processed and containerized as per the details described in the below subsections.

2013 Program

Hazardous materials not flown to Hope Lake in 2012 will have been packaged and stored at designated Temporary Storage Areas at the Husky and Willow sites for pickup and removal by the mobilization cat train during the spring of 2013. These processed and containerized hazardous materials stored at the Temporary Storage Areas in the summer of 2012 will then be transported to Kugluktuk on the returning mobilization cat train.

The Hope Lake camp will be mobilized in the spring of 2013 and completely commissioned in the summer of 2013. The remaining hazardous materials at Hope Lake will then be collected, consolidated and packaged during the summer of 2013 based from the Hope Lake camp. All the containerized hazardous materials from Husky and Willow Creeks consolidated and flown to the Hope Lake MPA in 2012 will then be prepared for offsite disposal from the Hope Lake camp in 2013.

In the summer of 2013 the tanks and materials demobilized from Hope Lake to Kugluktuk by the spring 2013 cat train will be demolished and packaged at the designated MPA in Kugluktuk and then placed in the designated TSA for barge shipment.

Overall Management of Hazardous Materials

Management of all hazardous materials will be supervised by Kurt Kure, a Professional Engineer qualified in hazardous waste management. Mr. Kure is trained and certified for TDGA and possesses over twelve years of waste management experience, The Hazmat Specialist and the Site Superintendents have successfully completed the 40 hour training course in compliance with OSHA 1910.120.

Training Program

Key personnel, previously identified, shall instruct and direct all workers with respect to waste management and safety practices. Health, safety and waste management procedures will be covered in the employee orientation and project startup session. Hazardous materials training has previously been provided to all employees scheduled to be involved in the work of removing PCB contaminated materials and will be refreshed through practical training for the various tasks as the project progresses. Daily safety meetings will be held onsite. Hazard Assessments and Job Safety Assessments (JSA) will be completed before the execution of critical tasks.
Safety instructions will be emphasized for the following work elements:

- personal protective equipment
- personal decontamination

- work procedures
- equipment decontamination
- emergency response procedures

Personal Protective Equipment (PPE) and Onsite Procedures

The personal protection and decontamination procedures for the handling and containerization of hazardous materials will vary depending upon the work activities and the potential risk of exposure by workers' to asbestos and/or other hazardous materials. The work to be undertaken at the Hope Lake site will likely require the use of Low and/or Moderate procedures described in the following paragraphs. Based upon an examination of the Demolition and Hazardous Materials tables, the Remedial Action Plan and the Environmental Site Assessments it is not expected that any High Risk procedures will be required.

Low Risk procedures will be used for the removal of non-hazardous materials and after all hazardous materials have been removed. Personal Protective Equipment (PPE) will include Tyvek coveralls over street clothes, steel toed rubber boots, hard hats, Nitrile gloves, safety glasses and half mask respirators as required. Water buckets and soap will be provided for washing prior to coffee and lunch breaks. A wash station will be provided for complete cleansing of the hands, face, arms, neck and ears at the conclusion of each work day.

Moderate Risk procedures will be used to remove any hazardous contaminated paint materials, small amounts of asbestos or uncharacterized wastes where there is a possible risk of exposure. Medium Risk PPE will be similar to Low Risk procedures except that secondary, cotton coveralls will be worn under the disposable Tyvek coveralls, half-face or full-face respirators with HEPA or combination organic vapor and HEPA depending upon the hazardous materials being dealt with. All workers will shower at the conclusion of each work day. The cotton coveralls will be washed regularly on site.

If any crew members are required to use respiratory protection for work under low or moderate risk conditions they will be fitted with respiratory protection using qualitative fit testing methods and instructed in its use. Workers will be provided with the type of respirator and filters required for the work activity on a daily basis. An irritant smoke will be used at the beginning of the project, when a new mask is issued or when a problem is identified to ensure a proper fit. Workers will perform a positive and negative fit test every time a mask is donned.

Asbestos Collection

Asbestos will be collected by workers who have had previous asbestos experience and training and under the supervision of the Hazardous Waste Specialist as per above. According to the RFP Specification Asbestos Inventory Table there is estimated to be approximately a total of 5.7 cubic meters of unconsolidated asbestos materials to be removed and containerized. From the RFP information, processing and handling of these

materials will likely be completed with low or moderate risk procedures as described below. The area where asbestos is found will be marked off during activities so that non designated workers will not be exposed. Non-friable and loose asbestos found on the ground will be wetted before being placed in labelled Asbestos bags and transported to the MPA described waste processing area to be shipped with other hazardous waste. Asbestos will be double bagged and placed into a wooden sea can container and banded closed prior to transport off-site and handled as non-hazardous waste. Containment will not be required as the asbestos waste found at the site is found outside with general debris and small collapsed structures. Notification will consist of a documented pre-project teleconference meeting with the Occupation Health and Safety Officer prior to starting the work as directed by the NU OH&S act.

Asbestos Abatement

Asbestos abatement to be undertaken prior to any demolition will be undertaken in accordance with the Asbestos Work Methodology Plan outlined below. Any asbestos boards or materials containing asbestos encountered during debris collection will also be handled and removed according to this Plan.

Regulatory Notification
Prior to the commencement of asbestos abatement work, the Asbestos Abatement Methodology will be reviewed by teleconference with the Workers' Safety and Compensation Commission (Northwest Territories and Nunavut) (WSCC) for review and acknowledgement. Minutes from the teleconference will be submitted to the DR. Once the asbestos abatement plan is acknowledged by the WSCC, a copy of the written acknowledgement will be submitted to the Departmental Representative (DR) as per the submittal schedule.

In addition, prior to the commencement of asbestos abatement work, copies of the Notice of Abatement Activities and the acknowledged Methodology will be provided to:

Health Canada
Occupational & Environmental Health Services
Suite 845 – Canada Place
9700 Jasper Avenue
Edmonton, AB, T5J 4C3

Human Resources Development Canada
Labour Branch
302, 10109 106 Street
Edmonton, AB, T5J 3L7

Regulatory Requirements
All asbestos abatement activities will be governed by the regulatory requirements of:

- Nunavut Safety Act – Asbestos Safety Regulations

- Canadian Environmental Protection Act
- Environmental Protection Act (Nunavut)
- Federal Transportation of Dangerous Goods Act (TDGA)
- NIOSH and OSHA Guidelines for Hazardous Waste Site Activities
- PWGSC requirements as set out in Section 01 41 00, Regulatory Requirements of the project specifications

Safety and Training

Established industry protocols will be used by all workers during abatement activities. A certified asbestos abatement specialist will be at the job site during abatement activities and will supervise abatement activities. All workers will have adequate training to ensure compliance with established regulatory requirements.

Supervision

The asbestos abatement specialist will have as minimum requirement a 24 hour Asbestos Abatement Course and at least 2 years' experience in Type 1, Type 2, Type 3 and Glove Bag Removal techniques and will be experienced in safety training. Local Inuit crew leaders and asbestos laborers who have conducted asbestos abatement at previous DEW-Line cleanups will be utilized as much as possible. Proof of Supervisors' training will be provided to the DR prior to the commencement of asbestos abatement work.

Safety Training

Prior to the commencement of work, the asbestos abatement specialist will provide refresher training to experienced asbestos workers and will train new workers. Instruction will include:

- Asbestos abatement methodology review
- Hazards of asbestos and health education information
- Proper use of respirators (including types, limitations, inspections, maintenance, decontamination and disposal, filter type and selection)
- respirator fitting and fit-testing
- other personal protective equipment requirements
- decontamination
- safe handling, labeling and containment requirements
- emergency response plans

As the asbestos to be removed appears to be both types 1 and type 3, the full range of procedures will be discussed and both powered and non-powered respirators will be used.

For the protection of workers who may be working near asbestos abatement work areas, all personnel will receive an overview of the hazards associated with asbestos in the worker orientation seminar.

Documentation of asbestos training for workers will be provided to the DR prior to the commencement of asbestos abatement work.

Fit Testing

Asbestos crew personnel will be instructed and fitted with respiratory protection using qualitative fit testing methods. An irritant smoke test will be used at the beginning of the job, when a new mask is issued or when a problem is identified to ensure a proper fit. Workers will perform positive and negative fit test every time the mask is donned. Workers will be provided with non-powered, half-face respirators with HEPA cartridge filters for minimum and intermediate precaution work and with powered respirators for maximum precaution work. All workers will be required to fill out a Respirator Fit Test Record. Documentation proving fitting and testing will be provided to the DR prior to the commencement of asbestos abatement work.

Respiratory Protection

All workers working in hazardous environments will be provided with adequate and appropriate respiratory protection for the types of hazards they may encounter at the Hope Lake and associated sites. These workers will ensure they are medically fit and capable to work under conditions requiring the use of respiratory protection and will be fit-tested prior to commencing work. They will be trained in the use and maintenance of their respiratory equipment. These workers will be trained in the use and maintenance of and will be fit-tested. This will include the following.

- Supplied air respirators for internal tank cleaning crews
- Half-mask, full-face mask and powered full-face respirators with HEPA, HEPA/OV and HEPA/general industrial filters for asbestos abatement work as is appropriate for the level of abatement.
- Half-mask respirators with OV filters for boxing of hydrocarbon soils, as deemed required by conditions
- Half-mask respirators for PAP packaging

Other Submittals

In addition to the submittals listed in previous sections, prior to the commencement of asbestos abatement work, EGT will also provide to the DR proof of Contractor's Asbestos Liability Insurance, product documentation for encapsulates, amended water and slow-drying sealer, and necessary permits for the transportation and disposal of asbestos waste.

Equipment, Materials and Small Tools

Asbestos abatement work can be labor intensive and will be completed primarily with small non-powered hand-tools including screwdrivers, knives, scrapers, pliers, hacksaws, vice-grips, pry-bars, and garden and paint sprayers. Small power tools such as reciprocal saws and drills are also employed.

Decontamination Facility

A standalone Decontamination Facility (Decon), which will be 14' by 16' hard sided controlled access tent on an elevated wooden frame foundation will be mobilized onsite and used as required. It will have an Equipment (Dirty) Room, a Shower Stall and a Clean Room. The three areas will be completely sealed from each other with a 6-mil polyethylene airlock and with double curtained doorways. All movement from Equipment Room to the Clean Room will be through the Shower Stall. There will be one access to the Clean Room and one to the Equipment Room. No eating or smoking will be allowed in the facility. The Decon will be cleaned and inspected daily. Wastes from the Decon, including used coveralls, respirator-filters and wipes, will be bagged and treated as asbestos waste. All shower water will be filtered through a 5-micrometer filter prior to discharge. The facility will have a washer and dryer on the clean side.

Preparation of Work Areas and Decontamination Facility

Preparation of Permits and Equipment

No work will begin until all necessary preparatory steps have been taken, including:

- obtaining all permits, regulatory approvals or authorizations
- required equipment, tools and waste receptors are in place or available
- decontamination facilities are set up and ready for use
- asbestos abatement worker training has been completed
- a site inspection has been conducted with the DR to verify remediation limits, and
- The approved final draft of the Asbestos Abatement Methodology has been reviewed with the DR.

Site Preparation

Prior to commencement of the asbestos abatement program, the location of the work area will be marked and delineated. Personnel will be provided with Tyvek coveralls and as required, fitted half-face respirators with HEPA filters for these activities, where deemed necessary by the Asbestos Specialist.

Exclusion Zones and Signage

Appropriate Asbestos Warning signs will be conspicuously placed at work area access locations including the decontamination facility and material transfer stations. In addition, it may be necessary to establish exclusion zones and buffer zones through the use of white Asbestos Warning tape, red Do Not Enter tape and yellow Caution tape.

Asbestos Removal

Dusting

Dust on surfaces likely to be disturbed will be removed with a HEPA vacuum.

Fiberboards or Panels

Any asbestos from fiberboard or panels will be removed intact. If materials are accidentally broken, they will be wetted immediately and double bagged. Surrounding areas will be cleaned with the HEPA vacuum. Removed panels, if intact, will be wiped or vacuumed and wrapped in poly for transport and disposal. During asbestos removal operations, a continuous cleanup, wetting and disposal program must be in place to prevent any unnecessary accumulations of dust and materials. After work is completed, drop sheets and containment barriers must be wetted, folded to trap dust prior to removal, and be disposed of as ACM waste.

Friable Asbestos

Friable asbestos will be removed using amended water spray. Following removal, all surfaces will be vacuumed or wiped down, then double bagged.

Piping and Tanks

Asbestos from any gasket material around the opening of the tanks:

- Delineate the work areas.
- Locate the Decon near the access/egress of each Work Area. Demarcate the area between the Decon and the Work Area as an Asbestos Hazard Area.
- Using an “open glove bag” technique, one worker will remove any covers to the tanks and then attempt to remove the asbestos gaskets. If necessary the worker will cut the asbestos as it is exposed. After removal, the opening of the tanks will be covered with duct tape. Once the bag is half full it will be sealed.
- After removal the asbestos will be taken to the bagging room where it will be cleaned, double bagged and taken to the disposal transfer area.

Asbestos Transport, Storage, and Disposal

Packaging

All asbestos material removed will be double-bagged in pre-labeled polyethylene bags or wrapped in polyethylene sheeting of a minimum 6-mil thickness. Friable asbestos will be sprayed with a wetting agent prior to bagging.

Containerization

All asbestos material will be double-bagged and placed in wood or steel containers and transported to the Temporary Storage Area at Hope Lake for eventual offsite disposal.

Record Keeping

A daily log will be kept of all asbestos abatement activities, particularly those related to workers, shifts, safety issues and breaches of safety protocols and confirmation of asbestos removal. A minimum of two photographs will be taken from two viewpoints for each clean-up / construction operation. A daily record of enclosure inspections will be kept as well as a final record of volume estimates and final disposal information.

Hazardous Debris Collection, Handling and Containerization

Hazardous debris listed in the RFP documents and expected to be found at the Hope Lake sites included batteries, ballasts, transformers, unknown drums and asbestos boards. All collection and any excavations will be directly supervised by supervisors with the Hazwoper 40 hour course, to monitor these types of wastes. All hazardous debris will be collected, handled, containerized and transported in accordance with the hazardous materials handling procedures outlined herein.

Material Processing Area

Prior to debris collection and excavation activities designated Material Processing Areas (MPA) will be established on level and/or gravel pads as close as possible and central to each work site's majority concentration(s) of non-hazardous waste and at least 30 meters away from any water body or drainage course. Prior to MPA construction baseline sampling will be conducted by the DR.

Materials required for the establishment of the MPA will be included in the mobilization equipment and materials list and will include liner and/or 6 mil poly and sandbags (to create a raised berm). Other materials which may be required, including plywood and lumber will either be mobilized to the site or will be salvaged from wooden debris at airstrip or APEC 5. This area will be stocked with spill containment kits, absorbent rags, overpack drums, 6 mil poly bags, shovels and other hand tools, fire extinguisher, first aid kit and eye-wash. PPE including rubber boots, disposable coveralls, rubber gloves, half-mask respirators will be stocked and available.

At each of the Husky and Willow locations there will be one MPA established. At the Hope Lake the access roads and trails have minimal embankment are narrow and therefore subject to potential degradation by heavy equipment. The establishment of two to three MPAs at Hope Lake will minimize the amount of heavy equipment travel and transport of the heavy waste materials at the Hope Lake site thus minimizing the overall environmental impact and requirement for additional, quarrying, hauling and road upgrade work.

Hazardous Waste Collection and Containerization

All debris collection which occurs on natural terrain (off existing pads, roads etc.) will be reviewed with the crews before work commences each day to ensure that all precautions are taken to minimize any environmental impacts. Environmental protective measures and materials will be employed where required. If problematic or sensitive areas are

encountered crews will be instructed to bring their concerns about these areas to the attention of the supervisor. Further analysis of the work will then be made to identify methods to reduce or eliminate any impacts.

Known hazardous material and non-hazardous debris will be collected and will be segregated based upon inspection during collection. Materials will be transported to the MPA by ATV and trailer. ATV helmets are mandatory for all ATV use.

Crews will be instructed that any ground debris which appears to be suspect as hazardous material or is unidentifiable or is found to have underlying stained soils will be flagged and left for further identification by Hazwoper 40 hour course qualified personnel and identified to the DR for classification. If determined to be Hazardous material or soils these will be managed according to the procedures described in the relevant sections of this proposal and as per all relevant regulations.

Any suspect materials will be handled as hazardous until characterized and determined as nonhazardous. Unknown materials will be set aside for testing as required in the designated MPA. As test results are received any unknown materials will be categorized and treated accordingly as hazardous or non-hazardous.

Any leaking or broken containerized material will be quickly and efficiently repacked in TDG approved plastic 'overpack' drums with leak proof lids, poly bags and/or poly lined, 4'x4'x6' banded wooden 'seacans' as appropriate for the circumstance. Any overt contamination in the vicinity of the compromised container will be containerized. A full range of spill contingency including overpacks, spill absorbents, berms, and geomembrane will be onsite and available to deal with any leaking containers or broken containers.

All hazardous debris will be collected, handled, containerized in poly lined, 4'x4'x6' banded wooden 'seacans' (seacan) or approved plastic 'overpack' drums with leak proof lids as required, and transported in accordance with the hazardous materials handling procedures outlined in the sections herein to follow. Specific hazardous materials will be treated as specified herein.

Collection of Partially Buried Hazardous Debris

Removal of any hazardous debris found to be partially buried will be first reviewed with the DR. Unless directed otherwise the debris will be carefully and completely removed by hand or an excavator, under the direction of the Hazmat Specialist, so as to allow replacement of the surface vegetation. If the removal/excavation appears to be substantial the DR will be consulted as to whether to remove or cut the item off below the surface.

Any underlying stained soils will be flagged and left for further identification by Hazwoper 40 hour course qualified personnel and identified to the DR for classification. If determined to be Hazardous soils these will be managed according to the procedures described in the Excavation of Contaminated Soils and as per all relevant regulations.

Barrel, Tank and Liquid Processing

All required barrel and tank sampling and processing are addressed in Barrel Processing.

Other Identified Hazardous Materials

Site hazmat from the demolition or from partially buried debris excavations will be identified and handled according to type as required.

Any lead-acid batteries will be wrapped with heavy duty poly and placed in a lined sea-can containing absorbent rags and absorbent fill material to cushion load and absorb spills. Containers will be labeled and shipped according to TDG regulations.

If PCB light ballasts are found they will be double-wrapped in poly, and packaged for shipping in overpack drums lined with absorbent rags and Floor-Dry to absorb any possible leaks and to cushion load. If PCB-containing transformers are discovered on site, these will be sampled and any liquids handled, packaged and shipped likewise. All handling of PCBs and suspected PCB containing materials will be conducted using respirators with Organic Vapor filters, disposable coveralls, nitrile gloves and goggles.

Mercury ballasts/thermostats will be handled, contained, packaged and shipped as per the methodology used for PCB ballasts, except that UN shipping number will change. PPE will be identical to that used for PCBs.

Leachable Lead Painted Materials

Removal of Contaminated Paint Materials

Prior to any demolition activity and the removal of leachable lead contaminated materials, all asbestos will be removed as per the Asbestos Abatement Work Methodology Plan previously described. During demolition the removal, handling and containerization of leachable lead contaminated materials will be undertaken in accordance with the plans and procedures outlined below.

Prior to the commencement of demolition work visible loose or flaked paint will carefully swept up. This paint will then be placed in double polyethylene bags and handled as hazardous material. The polyethylene bags will then be placed into the ISO Containers.

During the course of the removal activities workers will take proper care and precaution to minimize the disturbance of painted surfaces and the amount of heat that is created near these surfaces. Throughout the course of different activities as loose or flaked paint is encountered it will also be carefully swept up, double bagged and treated as hazardous material. Loose or flaking paint will be scraped off surfaces with scrapers and wire brushes.

Material removal from any structures will largely be conducted with small tools and manual demolition. Mechanical means including hand tools, nibblers, cutoff saws, and reciprocating saws will typically be used for cutting operations. All buildings and structures at Hope Lake are either primarily very small wooden structures in a dilapidated or collapsed condition. They can be quickly and easily demolished and containerized by the labor crews without the use of heavy equipment.

Chainsaws, cut-off saws, skill-saws and reciprocating saws will be used to cut wood to minimize space in the containers as long as work can be conducted without the release of saw-dust and paint chips. Proper eye protection including goggles and face-shields will be required along with respirators. Chainsaw use will require chainsaw pants and masks.

Cleanup and Decontamination

All rubber boots, gloves, tools and small equipment used for the work will be wiped off daily with moist disposable wipes. All wipes, used Tyvek coveralls and other contaminated materials generated as a result of coming into direct contact with hazardous materials will be disposed of and placed in double polyethylene bags. The bags will be treated as Hazardous Materials and stored in seacans. The seacans will be labeled and inventoried.

Containerization

The methodology used for the containerization of any hazardous materials will be identical to that successfully performed by EGT other DEW Line Sites. In 2001 Transport Canada changed the requirements for shipping hazardous materials and the Government of Canada proposed new methodologies for hazardous material containerization, subject to final on-site inspections and approvals by Transport Canada. EGT was the pioneer in this methodology working closely with DCC at the PIN-1 site in 2002 and gaining on-site approval by Transport Canada representatives. Later in the summer of 2002, EGT was awarded contracts by DCC to perform the same re-packaging of hazardous materials containers stored by DCC at BAR-4 and PIN-M DEW-Line sites. The current specification reflects this methodology developed at PIN-1 and Transport Canada's subsequent approval.

Preparation of Containers

ISO shipping containers for hazardous material shipment will be in new condition and will maintain current Transport Canada certification. Depending upon the characteristics of the hazardous materials and if and as required by TDGA and other applicable legislation the following preparation of containers will be undertaken. 1-1/4" steel strapping will be attached to the bottom fastening loops in the interior of the ISO shipping containers designated for the hazardous transport. The strapping will then be temporarily hung from the top loops of the containers. A layer of 6 mil poly sheeting will be spread over the floor and up the walls of the container at least 400 mm in height and

will be glued in place. Sheets of 12.5 mm (1/2") plywood will be attached to the floor over the poly and 2"x4" framed walls will be constructed on back and side walls to full container height so that all lateral pressure will be supported by the structural frame of the ISO container.

For ISO containers which contain only intermediate hazardous material containers, plywood will not be attached to interior side walls of containers. For ISO containers which contain any materials not entirely contained in intermediate containers, 12.5 mm (1/2") plywood will be attached to the interior of the wooden wall-framing to a height of 400 mm. Plywood used on framed end walls will be 1.4 m in height.

Loading of Containers

EGT will ensure that at all times like materials will be segregated and packaged together.

Materials that will fit will be placed in TDG approved intermediate (poly lined, 4'x4'x6' wooden banded 'sea-can') containers, with necessary dunnage to prevent shifting within intermediate containers. These intermediate containers will be placed into the ISO containers with wooden bracing attached to the floor to prevent their movement. The 1-1/4" steel strapping initially installed in the ISO containers will be used to strap containers in place.

Materials that cannot fit into intermediate containers will be placed directly into ISO containers either beside or on top of intermediate containers, or on their own, depending on size and circumstances. Materials, where possible, will be bundled together with strapping. Materials will be placed to minimize voids among the materials and gaps between side and end walls, to balance weight loads evenly within the ISO container, and to keep the center of gravity below the half-height of the container. Materials will then be strapped down by the 1-1/4" steel banding initially installed and attached to the container bottom fastening loops.

Closure and Storage of Containers

Depending upon the characteristics of the hazardous materials and if and as required by TDGA and other applicable legislation a wooden frame, with 1.4 m height plywood and 6 mil poly liner will be constructed at the opening end of the ISO container to prevent any movement of PAP materials.

All ISO containers will be clearly marked with contents as per any TDG or CEPA regulations and will have the required contractor-supplied labels attached. Containers will be locked and placed in the Temporary Storage Area to await off-site shipment. An inventory and photographic record of the contents of each container will be maintained and submitted to the DR.

Details of Hazardous Debris Transport and Disposal

The processed and packaged hazardous wastes described above in this section will all be transported from the MPAs and stored at designated Temporary Storage Areas (TSA) located at or close to the MPA's onsite. As with the MPA the TSA will be located on level and/or gravel pads and at least 30 meters away from any water body or drainage course. All TSA's will be selected and developed so as easily accommodate all the project processed waste materials to be shipped off site. Prior to TSA development and use baseline sampling will be conducted by the DR.

Wood blocking will be placed under the all containerized hazardous materials so that the containers do not freeze to the ground over the next winter and spaced so that blowing snow accumulation does not cause winter access difficulties

Prior to summer 2013 camp shut down all containers at the TSA will have been inventoried for their contents, labeled and numbered as to type of waste stream and location and manifested for transportation showing the final disposal location as per all applicable TDGA regulations and amendments and disposal tracking purposes. An inventory of all hazardous materials will be maintained and provided to the DR.

TDG and required Waste Manifests will also be completed for all regulated waste shipments from site, including PAP materials. Copies of the Waste Manifests will be forwarded to the Nunavut authority being the Environmental Protection Service, Department of Sustainable Development in Iqaluit, Nunavut.

ISO containers will be shipped from Hope Lake TSA to Kugluktuk during the 2014 cat train demobilization. At Kugluktuk they will be stored at a TSA until the summer barge season. They will then be loaded on barges in the summer of 2014 for removal from site. The full ISO containers will be transported from Kugluktuk to Inuvik, NT. After the barge reaches Inuvik the containers will be off loaded and either loaded directly onto flat deck trucks to be transported to the EGT designated disposal facilities listed below, or placed at a designated TSA located in the EGT Inuvik yard until trucks are available to transport the hazardous waste containers.

From Inuvik they will be transported by truck to either the CCS Landfill Facility at Fort Nelson or the Swan Hills Treatment Centre for final disposal by Earth Tech Canada Inc. depending upon the content of the containers and their requirements for disposal. All highway trucks and trailers will be inspected as per routine service inspections to ensure good operating condition prior to being loaded. All driver TDGA certificates will be verified current and copied. All personnel involved in the loading operations will be trained and licensed for TDGA handling.

<u>Designated Waste Disposal Facilities</u>

All hazardous materials and non-hazardous materials will be disposed of at the following designated disposal facilities. The exception is with batteries which will be disposed by recycling through Wide Sky Landfill Services, Whitehorse, Yukon. .

- SENA Waste Services, Swan Hills Treatment Centre, Swan Hills, Alberta
- CCS Midstream Services, Northern Rockies Landfill, Ft. Nelson, BC
- Richmond Steel Recycling Ltd., 9623 – 78th St., Fort St. John, BC

It is expected that final disposal of all Hope Lake wastes at the above facilities will occur in late October 2014.

Copies of disposal receipts from the above disposal facilities will be provided as required in the specifications.

3.14.6 Non-Hazardous Debris

The EGT Site Superintendent with the assistance of the EGT foreman will manage and supervise the collection, packaging, containerization and transport of all non-hazardous wastes and debris. The EGT Site Superintendent has successfully completed the 40 hour (Hazwoper) training course in compliance with OSHA 1910.120. Additionally EGT also has numerous experienced hazmat workers and foremen who will undertake this non-hazardous material work.

Personal Protective Equipment

The specific activities undertaken and associated protective equipment will vary somewhat according to the location and type of work. Basic required PPE for any site work includes hard hats; CSA approved steel-toed boots, gloves, coveralls, and safety glasses. Any work involving grinding or chipping requires double eye protection including safety glasses and full-face shields. Chainsaw use is limited to experienced approved chainsaw operators and requires the use of chainsaw pants, gloves, hearing protection and a chainsaw face-shield.

Any cutting work using oxygen/acetylene cutting torches will be conducted by one certified experienced cutter. Welding gloves, leather chaps, and respiratory protection may be required. No cutting with torches will be done on painted or galvanized metal. Most debris handling and demolition procedures are described in the previous section, Hazardous Waste. Further description of specific procedures for handling, processing and containerization of Non-Hazardous Debris is provided below.

Work Sequence and Planning

A detailed, general description for how the execution and sequencing of the work will be completed in 2012 and 2013 is described in Mobilization and Demobilization, Hazardous Debris sections. Most particularly the sequence in 2012 and 2013 for the collection, consolidation, packaging and storage of non-hazardous waste parallels that for these activities related to hazardous waste section. Therefore, to avoid repetition only a condensed version of this sequence is described below. Following these specific

methodologies for collection, consolidation, containerization, storage and transport of the various waste streams is detailed in the subsequent headings within this Section.

2012 Program

All three work sites will be accessed by helicopter during the summer of 2012 to collect process and consolidate the non-hazardous debris. Prior to the commencement of operations various items will be transported by fixed wing aircraft to Hope Lake. An initial crew will be deployed to Hope and establish a working base at Hope Lake.

Together with the establishment at Hope Lake of a Material Processing Area (MPA) for the hazardous waste a general stockpiling and packaging area for Non-Hazardous materials will also be established.

After the working base has been established at Hope Lake, crews will deploy to the remote locations, Husky Creek and Willow Creek, to sort and package loads to be repositioned to Hope Lake by sling-load beneath rotary wing aircraft, to excavate contaminated soils and to incinerate untreated wood debris. Drums and debris will be packaged to be repositioned to Hope Lake by sling-loads beneath rotary-wing aircraft.

Collection and packaging of non-hazardous debris and barrels during the summer of 2012 will commence first at Husky Creek with drums and some non-hazardous debris being moved and consolidated at Hope Lake. Some of the larger and heavier debris will be consolidated at a Temporary Storage Area at Husky Creek (North), close to the Bombardier and Hydrocarbon Impacted Soil excavation. This TSA will follow the same guidelines and requirements as the Hope Lake TSA. Following completion of work at Husky Creek collection and packaging of non-hazardous debris and drums at Willow Lake will be undertaken with the debris then being consolidated at Hope Lake or packaged and contained at a Willow Creek (Main) TSA. These areas will also be confirmed with the DR on the Pre-Mobilization Site Visit or during initial site inspection during the 2012 work.

Drums at Hope Lake will also be consolidated at the Hope Lake MPA during the summer of 2012. This is addressed in the Barrel Processing section in this document.

2013 Program

The non-hazardous wastes not flown to Hope Lake in 2012 will have been packaged and stored at designated Temporary Storage Areas at the Husky and Willow sites for pickup and removal by the mobilization cat train during the spring of 2013. The processed and containerized non-hazardous debris stored at the Temporary Storage Areas in the summer of 2012 will then be transported to Kugluktuk on the returning mobilization cat train.

The Hope Lake camp will be mobilized in the spring of 2013 and commissioned in the summer of 2013. The remaining non-hazardous debris at Hope Lake will then be collected, consolidated and packaged during the summer of 2013 based from the Hope

Lake camp. All the non-hazardous debris from Husky and Willow Creeks consolidated and flown to the Hope Lake MPA in 2012 will then be containerized and prepared for offsite disposal from the Hope Lake camp in 2013.

Details of Non-Hazardous Debris Collection Methodology

The procedures and methodology for all debris collection which occurs on natural terrain (off existing pads, roads etc.) will be reviewed with the crews before work commences each day to ensure that all precautions are taken to minimize any environmental impacts. Environmental protective measures and materials will be employed where required. If problematic or sensitive areas are encountered crews will be instructed to bring their concerns about these areas to the attention of the supervisor. Further analysis of the work will then be made to identify methods to reduce or eliminate any impacts.

Scattered Site Debris

Most of these items will be collected by labor crews using ATVs and trailers. ATV helmets are mandatory for all ATV use. Any larger collected items that cannot be further reduced will require to be moved by loader. Some larger or more remotely located items may also have been moved during summer 2012 using helicopter. Crews will be instructed that any ground debris which appears to be suspect as hazardous material or is unidentifiable or is found to have underlying stained soils will be flagged and left for further identification by Hazwoper 40 hour course qualified personnel and identified to the DR for classification. If determined to be Hazardous material or soils these will be managed according to the procedures described in the relevant sections and as per all relevant regulations.

Items will be cut to size using hand tools, cut-off saws, reciprocating saws, chain saws, skill saws or other means to facilitate interim consolidation and transport to the MPA. Cutting torches will not be used on painted or galvanized metal and will only be used by selected trained individuals. Items will be cut to minimize their volume at the MPA so they can be consolidated most effectively and efficiently on or in packaging as described below for transport off site.

Non - Hazardous Wood

A non-hazardous wood storage and incineration area location will be selected with the approval of the DR for each of the three work sites. Due to the relatively small quantities of untreated wood at Husky Creek, the Site Superintendent may decide to relocate untreated wood from Husky Creek to Hope Lake in the summer of 2012. These designated areas will be on a gravel pad well away from any camp, airstrip or work locations with wind exposure minimized as much as possible. Untreated wood collected on site, pallets and any untreated wood from the small structure demolitions will be cut up with saws to size and transported to the designated incineration areas. Incineration events will be planned and notice provided to the DR during the site safety meetings. The use of any saw requires eye protection. Only trained operators will be allowed and

permitted to use chain saws. The use of chain saws requires chain saw pants and chain saw face-shield. Water tight steel burn tray/bin(s) with a minimum of 300 mm high sides will be used for all wood incineration. Helicopter slung burn-bins will be utilized for remote sites. Fire extinguishers, pails of water, shovels and other hand tools will be at hand during all incineration operations. Incineration will not take place during high wind events or when wind is blowing in a direction that may blow smoke toward the camp or obscure aircraft operations. All ash generated by incineration will be collected and containerized in a lined wooden seacan container after each event so as to protect it from the effects of wind and rainfall.

Upon completion of all project wood burning the seacan container top will be sealed with steel banding and stored in the designated Non-Hazardous Temporary Storage Areas (TSA) for off-site shipment and disposal. Ash will be sampled and tested to determine final disposal options and will be handled, manifested and shipped according to any applicable TDGA regulations if required.

Tanks/Piping/Barrels

Sampling, testing, cleaning and processing of tanks and barrels are addressed in the Barrel Processing and Hazardous Waste sections. If these items were not deemed hazardous they will have been cleaned, if required and processed and containerized for off-site shipment and disposal. Smaller tanks and barrels which have been cleaned or which are deemed clean will be stood on end and flattened under the bucket of the loader or excavator to reduce them to less than ¼ their original volume.

Structure Demolition

Once hazardous materials and asbestos abatement have been completed, a quantity of non-hazardous structural or building materials will remain. This will primarily consist of wood framing and general debris. These will generally be dismantled by hand using power tools such as reciprocating saws, cut-off saws, skill-saws and chainsaws. Since most of the structures at Hope Lake are small and in a dilapidated condition it is not expected that heavy equipment will be required for demolition. However, the onsite heavy equipment including the loader and excavator will assist, if required in demolishing any of the larger items. Untreated wood which can be cut down to size will be incinerated as described above. Metals will be cut to reasonable sizes to reduce the bulk and will then be processed as described below.

All non-hazardous structure demolition materials not burnt will be transported by ATVs and trailers, loader or truck for packaging for off-site shipment.

Drill cores located at the APEC 5 location at Hope Lake will be cross restacked on 4x4 boards so they are stable and have their labels visible, as per the specifications.

Collection of Partially Buried Non-Hazardous Debris

Removal of any debris found to be partially buried will be first reviewed with the DR. Unless directed otherwise the debris will be carefully and completely removed to allow replacement of the surface vegetation. If the removal or excavation appears to be substantial the DR will be consulted as to whether to remove or cut the item off below the surface.

Workers will assess and sort the debris visually since much of the debris is common. Items that are readily identified as Hazardous or are unknown, the collection and/or removal will be stopped and reported to the DR. Following consultation and testing by the DR the hazardous or unknown material will then be handled and processed as Hazardous Waste if necessary.

Nonhazardous debris will be sorted into treated wood, untreated wood, metals and other materials. Untreated wood will be incinerated. Treated wood, metal and other non-hazardous debris will be cut up or flattened and otherwise processed as described below and stored in the TSA.

Excavation of Culverts

Culverts as detailed on the drawings will be removed using the Excavator with the assistance of the 950 loader. If necessary they can be removed by laborers with shovels and transported with ATVs and trailers. Prior to removal work, or any work adjacent to a waterway, commencing the project Erosion, Sediment and Drainage Control Plan will be reviewed and implemented. Work Adjacent to Waterways procedures as per the specifications Section 01 35 43 Environmental Procedures will be followed in addition to DFO requirements. Erosion control materials will be installed to minimize erosion and sediment release during the culvert removal work. Road bed granular material will be graded back to blend and slope the new waterway bank. Excavated areas will be sloped to allow natural drainage or as directed by the DR. Removed culverts will be transport to the MPA for consolidation with the other non-hazardous wastes.

Compressed Gas Cylinders

Compressed Gas Cylinders will be vented. The tops of compressed gas cylinders will then be cut off and placed with other non-hazardous consolidation and packaged items.

Details of Non-Hazardous Debris Containerization, Transport and Disposal

Unless otherwise specified in the work descriptions, all non-hazardous waste will ultimately be transported for containerization and storage at designated Temporary Storage Areas located on level and/or gravel pads as close as possible and central to each work site's majority concentration(s) of non-hazardous waste. There will be one TSA established at each of Husky Creek (North) location and one TSA at the Willow Creek (Main) location.

At Hope Lake the access roads and trails have minimal embankments, are narrow and therefore subject to potential degradation by heavy equipment. Two or three TSAs at Hope Lake will minimize the amount of heavy equipment travel and transport of the heavy waste materials at the Hope Lake site thus minimizing the overall environmental impact and requirement for additional, quarrying, hauling and road upgrade work. [It has been proposed that TSAs be established at APEC 3, APEC 4 and between the NW end of the airstrip and APEC 5.]

At the TSAs the sorted, cut and/or crushed wastes will be consolidated and packaged most effectively and efficiently for off-site transportation.

Non-hazardous waste will be packaged by either banding to pallets, containerizing in wooden sea cans or ISO shipping containers to provide the optimum transport efficiency to Kugluktuk while satisfying industry and relevant regulatory requirements. Wood blocking will be placed under the all containerized debris so that the containers do not freeze to the ground over the next winter and will be spaced well apart so that blowing snow accumulation does not cause winter access difficulties. Prior to summer 2013 camp shut down all containers at the TSAs will be labeled and numbered as to type of waste stream, location and manifested for transportation and disposal tracking purposes. An inventory of all non-hazardous materials will be maintained and provided to the DR upon request.

The containers will remain at the Hope Lake TSA location until the winter of 2014 when they will be shipped to Kugluktuk by cat train. The containers will then be stored at a designated TSA located in Kugluktuk until the summer of 2014.

During the summer of 2014 any further consolidation or containerization of the non-hazardous debris required for further transport requirements by barge and truck will be completed at the Kugluktuk TSA. All containerized non-hazardous wastes will then be loaded onto barges during September 2014 for transport to Inuvik, NT.

After the barge reaches Inuvik the containers will be off loaded and either loaded directly onto flat deck trucks to be transported to the EGT designated CCS Landfill at Ft. Nelson, BC, or placed a temporary storage yard located in the EGT Inuvik yard until trucks are available to transport the non-hazardous waste containers to the CCS landfill at Ft. Nelson, BC. All highway trucks and trailers will be inspected as per routine service inspections to ensure that they meet all regulatory requirements, have the required emergency and safety gear and are in good operating condition prior to being loaded. All personnel involved in the trucking and loading operations will be experienced, trained and licensed for this work as required.

EGT has obtained letters from CCS Midstream Services and Earth Tech Canada Inc. confirming their ability to accept and dispose of the Non-Hazardous materials generated by the Hope Lake project.

It is expected that final non-hazardous waste disposal at CCS Ft. Nelson, BC landfill will occur in late October 2014.

Copies of disposal receipts from the above disposal facilities will be provided as required in the specifications.

Health and Safety Considerations

EGT is committed to establishing a safe and healthy work environment for all our personnel on all EGT Projects. This is our first priority on every job and task we undertake on the Project. We will endeavour to protect the health and safety of all individuals who work on or are affected by our activities while maintaining the highest standards of environmental performance.

EGT is committed to providing active leadership and participating in safety, occupational health, environmental protection and loss control programs. This commitment will be demonstrated by operating in a manner that avoids or mitigates adverse health, safety and environmental impacts.

EGT's HSE commitments and expectations are outlined in the EGT HSE Procedures Manual and its Safe Work Procedures Manual supplemented by the Hope Lake Project in the Hope Lake, Willow Creek and Husky Creek Site Specific Health and Safety Program (SSHSP).

Helicopter slinging operations

EGT's helicopter subcontractor Kitikmeot Helicopters will provide training to EGT personnel on procedures around helicopters, the preparation and handling of sling loads, safe distances and approaches to operating helicopters and other concerns related to helicopter safety. EGT will abide by their procedures for sling loads and take direction from their operator/pilots at all times. EGT handheld frequencies will be provided to Kitikmeot Helicopters so that EGT ground personnel and the helicopter pilot can be in radio contact. Kitikmeot Helicopters will contribute to the Orientation that will take place prior to the start of the project and will participate fully in daily safety meetings and tailgate meetings.

Chainsaw and cut-off saw operation

Chainsaw and cut-off saw operation can be dangerous and will only be performed by trained individuals and will require hot-work permits daily prior to starting work. Hearing loss is also of concern with these high powered hand tools and cup hearing protection will be required as part of PPE along with other specialized PPE described above required for these tasks.

Cutting torch operation

Cutting torches will be used as minimally as possible and will typically be used on site only by the mechanic. If required for demolition or debris cutting purposes, only adequately trained experienced individuals will be allowed to use cutting torches. All use of cutting torches requires a fire watch, fire extinguishing equipment to be on hand and daily hot-work permitting.

3.14.7 Barrel Processing and Liquid Wastes

Introduction

Drum caches and scattered barrels are a ubiquitous feature of most northern remedial projects. EGT has developed barrel opening, sampling, transportation, contents consolidation, drum washing and crushing procedures to safely and effectively manage drum caches and barrels and their contents without causing further environmental degradation through spills or endangering workers in the process. The barrel sampling and characterization procedures were prepared using the *AANDC Abandoned Military Site Remediation Protocol 2009* as the basis. Barrel opening, consolidation and transportation procedures are adapted from best practices listed in the HAZWOPER 40hr Training Material including the *National Contaminated Site Health and Safety Training Manual, Hazardous Waste Handbook 3rd Edition* as well as EGT's field experience.

Personal Protective Equipment

The specific activities undertaken and associated protective equipment will vary somewhat according to the location and type of work. Basic required PPE for any site work includes hard hats; CSA approved steel-toed boots, gloves, coveralls, and safety glasses. PPE required beyond the basic listed here may include a respirator with organic vapor cartridges, rubber safety boots, double gloves (chemically resistant on the outside, and latex or vinyl on the inside) and petroleum resistant splash suit and face shield.
A decontamination procedure has been established at the barrel sampling area(s) to prevent tracking potentially contaminated liquids outside of the sampling area(s), which will include a foot wash basin and a container for disposal of dirty disposable PPE.

One person will be designated to work outside of the sampling area to be safety watch in case of unexpected hazards.

Work Sequence and Planning

The various work items described in the following sections will occur in the 2012 and 2013 work seasons. Drums will be inspected, opened and sampled and selectively consolidated and gathered to central locations at the Hope Lake site from the Husky Creek and Willow Creek sites in the 2012 summer field season. Consolidated drums from the Willow Creek and Husky Creek remote sites will be collected and brought to the Hope Lake processing area in the summer of 2012 by helicopter.

The majority of the consolidation, cleaning and disposal of non-hazardous liquids at Hope Lake would occur in the 2013 summer season after characterization results have been received and a central drum processing/cleaning area has been established at Hope Lake. Transport of the bulked hazardous drums and liquid waste for incineration from Hope Lake to Kugluktuk would occur in the spring of 2014. Incineration of the liquid waste would then occur in Kugluktuk during the summer of 2014.

Drum Inspection and Opening

The work sequence and planning developed by EGT for barrel processing and liquid waste containments and disposal has been designed to maximize efficiency and minimize impacts upon the environment. Most particularly EGT emphasizes that by undertaking the sampling program in 2012 they would be able to clearly identify all barrels, tanks and their contents which are present onsite and plan the 2013 summer season cleaning and disposal program with accurate information on the quantities and types of liquids. This will allow EGT to have a definite, clearly described plan with their requirements for personnel, overpacks and any additional consolidation tanks clearly identified prior to the cat train mobilization in 2013. When work commences in the summer of 2013 the tasks can then be undertaken in the most effective and efficient manner with a minimization of any environmental risks or impacts.

The drums will be visually inspected for indications of the drum contents, the condition of the drum and other potential hazards such as bulging, corrosion, physical damage or leaks before they are handled. If upon cursory inspection, the drum has contents it will be marked for later identification when moving and consolidating waste. The drums will be stood upright, if not prone to leaking, and opened manually with non-sparking drum opening tools for collection of characterization sample. If the drum cannot be stood upright the contents will be removed to a sound drum using a pneumatic diaphragm pump.

Drums may be moved from remote sites to a central location for opening and sampling. If the drum is not completely sound it will be placed in an overpack drum with granular absorbent scattered in the bottom before transport or the contents removed to a similar functional drum.

During the opening, the breathing zone may be monitored for volatile organic compounds if there may be indications of hazards. Face shields, hydrocarbon resistant rain gear and possibly half mask air purifying respirators (APR) with organic vapor cartridges, contingent on air testing results, will be used in addition to typical PPE. All opening and sampling activities will be monitored by a 40 hour Hazwoper trained supervisor with previous drum handling experience.

Sampling and Characterization

The following is an excerpt from the *AANDC Abandoned Military Site Remediation Protocol* and will be the general blueprint for sampling of drum contents and characterization for disposal.

"Once open, barrels will be sampled by personnel wearing proper personal protective equipment as described below. Samples of the contents of all barrels shall be extracted using a drum thief and placed into a pre-labeled glass vial. The number and type of liquid phases, and their respective thickness, and the size of each barrel are to be recorded.

In instances where there are a large number of barrels with obviously similar contents, these can be grouped together and 30 to 40% of the barrels in the group sampled. Barrels containing less than 50 mm of liquid may be combined with compatible material prior to sampling.

All barrels shall be clearly numbered using spray paint or other suitable paint marker. The number on this label should be the only sample coding provided to the laboratory.

The barrel locations and barrel sample descriptions should be recorded.
Samples should be kept at ambient temperatures and shipped by guaranteed freight to laboratories where they should be kept cold pending analysis.

Analytical data obtained for the samples collected from barrels located at the site should be compared to the criteria. Barrel contents are identified as organic or aqueous and the concentrations of glycols, alcohols, PCBs, chlorine, cadmium, chromium and lead are determined. The flash point of organic waste and aqueous waste (> 2% glycols/alcohols) must also be determined. Uncontaminated aqueous phases can be disposed of on the land according to the discharge criteria; uncontaminated organic phases can be incinerated; contaminated aqueous material should be scrubbed free of organic material; and contaminated organic material should be disposed of as hazardous material.

Liquid samples shall be inspected and classified as either containing water or organic materials. Samples thought to contain water shall be analyzed to confirm that they are indeed water, and contain less than 2% glycols or alcohols.

The contents of barrels containing organic materials, including aqueous samples which contain more than 2% glycols or alcohols, shall be tested for flash point, PCBs, total chlorine, cadmium, chromium and lead following the targeted barrel testing approach presented in Figure 1. Analyses will be conducted on a rush basis where indicated. In addition, major organic components should be identified e.g. fuel oil, lubricating oil.
If on-site incineration of waste is not planned, waste samples need only be tested for flash point, PCB, and pH (at regular turnaround time) in order to classify the waste for transport and disposal options.

Contents of barrels which contain two or more phases shall have all phases analyzed; the organic phases as described above and the aqueous phase to ascertain whether it contains less than 2% organic substances. In addition, the aqueous phase shall be tested for any components found in the organic phases above the criteria provided in the protocol.

Barrels containing only rust and sediment shall be treated as empty barrels.

Barrel contents comprising water only (less than 2% glycols or alcohols) shall be transferred to an open vessel such as a utility tub or half-barrel and any organic material removed by agitation with a pillow or segment of oil absorbent material. The water shall be tested prior to discharge in accordance with wastewater discharge criteria. Where water meets criteria, it may be discharged to the ground a minimum of 30 meters distance from natural drainage courses. Used oil absorbent material shall be treated as described in the following subsection.

Barrel contents which are composed of water with glycols and/or alcohols or organic phases, and which contain less than 2 ppm PCBs, 1000 ppm chlorine, 2 ppm cadmium, 10 ppm chromium, 100 ppm lead, and that have a flash point between 25°C and 225°C, may be disposed of by incineration. Alternatively these contents may be disposed of off-site at a licensed disposal facility. The solid residual material resulting from incineration shall be subjected to a leachate extraction test. Material found to not be leachable shall be disposed of as Tier II contaminated soil. Leachable material shall be treated as hazardous waste and disposed of off-site at a licensed disposal facility.

Barrel contents, which contain greater than 2 ppm PCBs, 1000 ppm chlorine, 2 ppm cadmium, 10 ppm chromium or 100 ppm lead, or that have a flash point below 25°C or greater than 225°C shall be disposed of off-site at a licensed disposal facility. Contents may be combined with compatible materials for shipping purposes."

<u>Handling, Consolidation and Disposal of Liquid Wastes</u>

Liquid wastes will be characterized according to the criteria listed above and sorted into three groupings for disposal.

Organic wastes suitable for incineration will be transferred at the central drum processing facility, for consolidation and drum cleaning, into a collection tank for transport to Kugluktuk where the wastes will be incinerated in Westland Model CY-30 Waste Oil Incinerator. Liquid wastes will be transferred into the collection tank using a pneumatic diaphragm pump within the lined barrel washing station.

The hazardous wastes which are not suitable for incineration or discharge will be consolidated with other similar wastes. They will be transferred into sound drums and palletized for shipping south to the selected disposal facility. The drums will be labeled and manifested according to TDGA regulations by trained personnel.

Aqueous wastes which are suitable for disposal on the land based on sample result of like drums will be dumped into a container and agitated with absorbent rags before discharge at least 30m from a natural drainage course.

Disposal by Incineration

A Westland Incinerator Company Ltd Model CY-30 Incinerator will be used to incinerate waste fuel in Kugluktuk. In yard tests in Inuvik EGT has achieved a burn rate for old diesel in excess of 350 liters per hour for a clean burn and over 400 liters per hour with slight smoke. This type of incinerator is designed to be used on a continuous basis and only turned off for scheduled routine inspection and maintenance. Under the manufacturer's Operating Instructions, Start-up Procedures List, Item 12, a cool-down time of a minimum of 12 hours is required for the unit with all three of the unit blowers operating. The implication is the generator will have to be running all night to cool down the unit after a day shift, if only one shift (day) is contemplated, which in turn means that an operator will have to be in attendance to monitor the equipment. EGT will schedule two 12-hour shifts per day for the incineration to permit 24-hour operation of the unit.

The primary generator for this unit will be a trailer-mounted 30kW diesel generator; the back-up generator will be a skid-mounted 24kW diesel generator.

Fuels will be collected during the day shift to compliment incinerating, either through direct pumping into a feed tank for the incinerator or collection with the loader. The night shift would concentrate on monitoring the incinerating of fuel and no fuel will be collected during the night shift.

All waste hydrocarbons and hydrocarbon sludge will be incinerated in Kugluktuk. Quantities will be measured by means of a fuel meter, a rotating turbine type compatible with hydrocarbon use, which will be mounted upstream of the incinerator fuel supply line to the waste burner. Any resultant waste that cannot be incinerated will be placed in UN tight-head over-pack drums for removal from site.

A wheeled loader with forks will be used to unload (load), assemble (disassemble) and tow the incinerator to the designated location at Kikiak's yard in Kugluktuk. The incinerator will be positioned in the middle of a 30' x 30' piece of 60mil Arctic Geo-membrane, covered with a protective layer of heavy geo-textile. The Loader will be used to create berms around the edges of the material to provide a minimum berm height of at least 300 mm. Geo-membrane/geo-textile will be run up the inside of the berm and down the other side where a meter of fabric all round will be held down with rocks and other native material. The intent of this approximately 20' x 20' bermed area is to capture any fuel oil or waste that might leak from a ruptured hose or fitting on the incinerator.

EGT plan to utilize two feed tanks for the incineration, which will be tied together with a hose manifold. The intent of this 'twinned' system is to promote more efficient burning of sludge, which will not be as readily combustible as the lighter fuels. Fuels/sludge will either be pumped into both feed tanks or pumped directly from the site incineration waste

bulk tank. These tanks will be set up in a bermed enclosure at least 12m from the incinerator – berm construction to be as per the incinerator berm.

The generator will be set up a minimum of 12m away from the incinerator inside containment (drip tray) to ensure that any oil leaks or fuel spills, as a result of fuelling operations, are contained.
The following spare parts for the incinerator will be onsite:

- Replacement motors for all three blowers
- Replacement burner for start-up

Cleaning of Tanks

EGT's experience on previous DEW-Line sites in the western arctic indicates that the large fuel storage tanks on site are likely empty of fuels and sludge and are quite clean. The tank cleaning procedure, if required, is as follows:

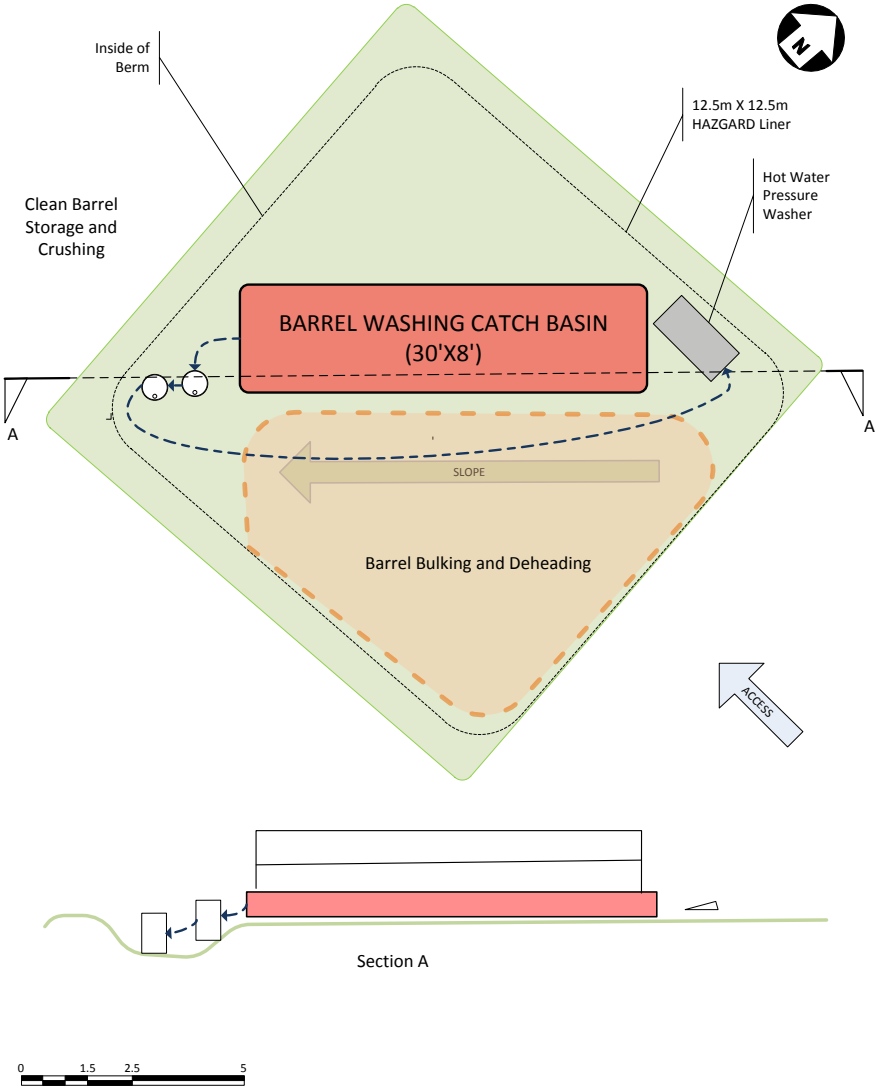
- Tank condition and contents will be initially examined through covers on top of tanks.
- Tanks that are empty or near empty will have man-hole covers from sides of tanks removed to allow natural ventilation of fumes.
- Residual fuels/liquids will be drained from tanks for incineration as required.
- LEL/O2 meters will be used to assess air quality in tanks prior to any required cleaning, sludge processing or demolition.
- Tank cleaning will be conducted as per the Work Procedures listed in the EGT Work Procedures Manual. These procedures were original developed by Dowland Contracting Ltd. an Inuvialuit subcontractor with extensive experience in tank entry and cleaning at both active and de-activated DEW-Line and SRR sites. This may involve Self Contained Breathing Apparatus entry, depending upon air quality test results and tank conditions. Only confined-entry certified personnel will be permitted to enter any tank using approved procedures. Work will meet the standards set out in ANSI/API 2015 - 6th Edition August 2001 Requirements for Safe Entry and Cleaning of Petroleum Storage Tanks.
- As required, tanks will be washed with steam/hot water, rinsed and wiped. Wash water will be collected and sampled to meet Waste Water Criteria prior to release.

Tank cleaning effluent will be allowed to settle for a couple of days in 205L drums before the water in the drum is decanted into another clean drum for testing to confirm if water meets wastewater discharge criteria. A pump with a water/oil separator will be used for this decanting. If the water meets the specifications then it will be pumped to a location

acceptable to the DR. Other effluent will be incinerated along with aged diesel or other fuel. It is fully expected that, other than non-hydrocarbon sludge, all tank cleaning effluent can be disposed of via incineration.

Cleaning of Barrels

Barrel cleaning is conducted using a three-level containment system. Barrels are inverted on a metal rack in a metal wash-berm and are steamed using a wand sprayer. The water in the wash berm drains through a barrel filter containing absorbent rags. The barrel then drains into a lower barrel filter also containing absorbent rags. Water from this lowest barrel filter is then pumped back to supply the steamer unit. In this way wash water is constantly being filtered and recycled through the system. Absorbent rags are removed throughout the process and will be sampled, packaged and shipped for off-site disposal according to TDG regulations. Minimal remaining wash water will be sampled according to Waste Water Discharge Criteria. In previous DEW-Line cleanups this method has always led to minimal water use and successfully meeting discharge criteria.



Drums which have been identified as being painted with leachable lead paint will be segregated and packaged separately as the will be sent in accordance to TDG requirements to the designated facility of disposal.

Crushing, Disposal and Containerization of Barrels and Tanks

During the course of the all barrel and tank handling, transport, removal and containerization activities workers will take proper care and precaution to minimize the disturbance of painted surfaces and the amount of heat that is created near these surfaces. Throughout the course of different activities as loose or flaked paint is encountered it will also be carefully swept up, double bagged and treated as hazardous material. Loose or flaking paint will be scraped off surfaces with scrapers and wire brushes.

Prior to crushing and containerization the site superintendent and/or foremen will ensure that all barrels and tanks are clean and ready for crushing. Barrels which have been cleaned or which are deemed clean will be stood on end and flattened under the bucket of the loader or excavator to reduce them to less than ¼ their original volume. Smaller tanks (e.g. typical 250 gallon heating fuel tanks) will be flattened by the loader and excavator while the larger tanks will be cut into sections which are manageable and can be containerized.

ISO shipping containers and wooden seacans used for containerization will be in new condition and will have current Transport Canada certification. After the barrels and small tanks have been crushed at the Hope Lake site they will be containerized in ISO shipping containers and wooden seacans as per any TDGA regulations. They will then be moved to the Temporary Storage Area (TSA) at Hope Lake.

Wood blocking will be placed under the all containerized barrels and tanks so that the containers do not freeze to the ground over the next winter and spaced so that blowing snow accumulation does not cause winter access difficulties. Prior to summer 2013 camp shut down all containers at the TSA will be labeled and numbered as to type of waste stream and location and manifested for transportation and disposal tracking purposes. An inventory of the barrel and tanks containers will be maintained and provided to the DR upon request.

The containers will remain at the Hope Lake TSA location until the winter of 2014 when they will be shipped to Kugluktuk by cat train. The containers will then be stored at a designated TSA located in Kugluktuk until the summer of 2014.

The large 75,000 liter tanks will be mobilized in the spring of 2013 to Kugluktuk. The large tanks, after being cut into sections will be containerized according to any TDGA regulations in Kugluktuk during the summer of 2013. The full containers will be transported and stored at the Kugluktuk TSA.

All containerized barrels and tank wastes will then be loaded onto barges during September 2014 for transport to Inuvik, NT.

After the barge reaches Inuvik the containers will be off loaded and either loaded directly onto flat deck trucks to be transported to the EGT designated CCS Landfill at Ft. Nelson, BC, or placed a temporary storage yard located in the EGT Inuvik yard until trucks are available to transport the containers to either the CCS landfill at Ft. Nelson, BC or the Earth Tec facility at Swan Hills depending upon the characterization of the waste as hazardous or non-hazardous. All highway trucks and trailers will be inspected as per routine service inspections to ensure that they meet all regulatory requirements, have the required emergency and safety gear and are in good operating condition prior to being loaded. All personnel involved in the trucking and loading operations will be experienced, trained and licensed for this work as required.

EGT has obtained letters from CCS Midstream Services and Earth Tech Canada Inc. confirming their ability to accept and dispose of the waste materials generated by the Hope Lake project.

3.14.8 Demobilization

Spring 2014 Cat Train Demobilization

As described in other sections of this proposal all site work including but not limited to waste containerization, removal of culverts, site regarding and surveying will be been completed at the end of the summer 2013 operations shut down. As the Hope Lake personnel requirements near Project completion they, and associated supplies, will be demobilized from site on the weekly scheduled site flight(s) prior to the final shut site and camp shut down.

As the project work nears completion portions of the Discovery camp will be dismantled in succession and the soft sided components and equipment demobilized Yellowknife by plane. The lumber components will then be dismantled, stacked, banded and stored with the other support equipment at the designated storage area in preparation for demobilization. The hard camp trailer units will be last to be decommissioned at which time the final flight charter will remove all remaining personnel from the Hope Lake site.

All equipment and materials will have been left on high dry gravel at the end of the airstrip or the designated TSAs and blocked off the ground as required to simplify winter removal. All equipment will have been cleaned and decontaminated at the completion of any contaminated project work areas and prior to parking at the storage area.

EGT will demobilize of all equipment, materials and wastes from Hope Lake to Kugluktuk by cat train during the spring of 2014.

The same experienced personnel, equipment, routing, preliminary route scouting and snow cat route construction employed and described in the Mobilization section will be again utilized to complete the Hope Lake cat train demobilization safely and with the least environmental impact. All the equipment utilized for the mobilization will have remained in Kugluktuk during 2013 for this 2014 demobilization work.

Prior to the initiation of project work a pre-job safety meeting will be held with all personnel/subcontractors to review specific work characteristics, the work plan, potential hazards and environmental concerns and practices as per the EGT HSE program and the Hope Lake, Willow Creek and Husky Creek Site Specific Health and Safety Plan. At this time specific emphasis will be made to review all aspects of the demobilization work including cat train operations procedures, cold work procedures, sleigh loading/offloading procedures, fuel transfer procedures and the review of fuel spill response equipment that will be sent with the EGT/Kikiak cat train equipment.

Once the initial snow cat trail construction advance crew reaches Hope Lake they will start up the hard camp trailer units to serve as the cat train Hope Lake accommodation base. The cat train demobilization loads from Hope Lake will be in reverse order to the mobilization. The containerized waste loads will be removed first and placed at the designated Kikiak TSA in Kugluktuk.

During site work all hazardous waste materials for offsite transport and disposal will have been containerized, labeled and manifested as per all applicable CEPA and/or TDGA Regulations and amendments and stored at the Hope Lake TSA.

Once all equipment and materials have been removed the trailer units will be shut down and hauled to Kugluktuk. On the final return trip all creek crossing snow fills will be carefully removed by the loader and/or EX200 excavator.

It estimated that the cat train demobilization will require 5 round trips from Kugluktuk taking an estimated 24 days to complete.

All work will be closely supervised by the EGT Superintendent to ensure that all work is completed as per EGT construction safety and environmental procedures. All project equipment will be in continual radio contact with each other and satellite phone with the Kugluktuk base as per the project journey management protocols. A wildlife monitor will accompany the cat train at all times.

Daily safety meetings with all personnel will include review of cat train procedures, winching, loading, offloading, weather conditions, potential hazards and environmental concerns and practices as per the EGT HSE program and the Hope Lake, Willow Creek and Husky Creek Site Specific Health and Safety Plan as required.

Summer/Fall 2014 Barge/Truck Demobilization

Following the spring 2014 cat train demobilization from Hope Lake to Kugluktuk all containerized wastes and equipment will remain stored at the Kikiak Kugluktuk secure TSA and equipment storage yards until shipment by barge on NTCL's regularly scheduled community resupply return trip from Kugluktuk to Inuvik, NT. Any EGT equipment will be first (be) off loaded in Tuktoyaktuk on the way to Inuvik. After the barge reaches Inuvik the waste containers will be off loaded and either loaded directly

onto flat deck trucks to be transported to the EGT designated disposal facilities listed below, or placed at a designated TSA located in the EGT Inuvik yard until trucks are available to transport the hazardous waste containers.

From Inuvik they will be transported by truck south for disposal at the designated disposal facilities. All highway trucks and trailers will be inspected as per routine service inspections to ensure good operating condition prior to being loaded. All driver TDGA certificates will be verified current and copied. All personnel involved in the loading operations will be trained and licensed for TDGA handling.

During the summer 2014 a Hope Lake, Willow Creek and Husky Creek post work site inspection will be arranged with the DR to inspect the sites for final completion and to pick up any remaining debris or blocking not seen or able to be removed during the spring demobilization.

4.0 TRAINING

E. Gruben's Transport Ltd. recognizes the value of establishing Training Programs in order to provide higher levels of safety in the workplace, higher levels of personnel competence and confidence, opportunities for personal advancement, greater levels of satisfaction amongst personnel in our employ, as well as to satisfy regulatory requirements. We also believe greater and broader training amongst all levels of our personnel will help us produce a higher quality of work for our clients and will result in greater opportunities for the company to gain new work and new clients.

E. Gruben's Transport Ltd. will provide and/or support includes both formal and informal training, on-the-job and classroom training, safety-specific and skill-specific training.

Training and skills-assessment will begin on hiring. New employees will receive basic orientation on safety standards and procedures which are standard procedures for company operations.

Basic Safety Program training, WHMIS, First Aid and TDG programs will be carried out periodically in house as required. As well, programs in Safety Program Supervision, Hazard Identification and Control and Incident Investigation will be provided to supervisory personnel at minimum, in order that such information and developed procedures can be passed down to all personnel through safety meetings.

Programs such as HAZMAT, Wildlife Monitor, ATV Safe Operation, Light Duty Vehicle Operator, Heavy Equipment Training, Class 3 and Class 1 Driving Courses, Contaminated Soils and PCB Hauling, and Asbestos Abatement Courses will be offered as operations require.

Many subjects related to new tasks and procedures, or to address newly identified hazards, will be addressed at safety meetings and daily tailgate meetings.

Much of the training which takes place falls under the general heading of On the Job Training.

4.1 On the Job Training (OJT)

The purpose of on-the-job training (OJT) is to address the development of on-going job skills. With a disciplined approach to OJT, the worker is provided with the practical knowledge and skills required to perform a job task in a safe, efficient manner that complies with company procedure.

OJT Procedures
OJT must be provided as a means of transferring task knowledge from competent workers to workers who do not have operational experience to conduct the task safely.

Personnel competent in work site and related job tasks must provide on-the-job training as prescribed in documented procedures.
Basic Steps for OJT include:

- Provide written procedures and demonstrate to the trainee how you want it done;
- Observe the trainee as he/she does the task;
- Correct any mistakes made by the trainee in a professional manner – be patient;
- Have the trainee repeat the task until he/she does it right – to your satisfaction; and,
- Have the trainee do it one more time for good measure to reinforce the memory of how to do it correctly.

OJT can also be an effective follow-up to reinforce classroom instruction.

OJT Record Keeping
A record of OJT must be signed by a supervisor and the worker to acknowledge task competency and is maintained on file within the company.

4.2 Mandatory Certification Training

Federal, Provincial and Territorial legislation stipulates mandatory certification training requirements for operations under their specific jurisdiction. The following outlines requirements for Transportation of Dangerous Goods (TDG) and Workplace Hazardous Materials Information System (WHMIS) training.

Other mandatory training specific to operation may be required. Supervisors will refer to the pertinent legislation that applies to their operation to ensure compliance to legislated training requirements.

4.2.1 Workplace Hazardous Materials Information System (WHMIS)
All personnel at Hope Lake will have received WHMIS training.

4.2.2 Transportation of Dangerous Goods (TDG)

Personnel who will be required to handle or package Dangerous Goods for shipping will be TDG certified. EGT will provide this training during worker orientations or in the field as required.

4.2.3 Training Specific to Hope Lake

All personnel working at Hope Lake will have received the Site Specific Worker Orientation, will have received WHMIS training and any training required for their particular tasks at the site. All training records will be available on site. This may include:

- Confined Space Certification
- Asbestos Worker Training
- First Aid
- Working at Heights

Confined Space Certification

There should be no requirement for workers to enter confined spaces at Hope Lake; however EGT do have competent workers trained and available to undertake these type operations as needed.

Asbestos Worker Training

This training is outlined in Section 3.14.5

First Aid

First Aid training for EGT employees will be conducted to ensure that all regulatory requirements are met or surpassed and will be provided as required.

5.0 COMMUNICATION

5.1 Role of Communication

The important role that communication plays in health, safety and environmental protection cannot be overemphasized.

Important messages need to be communicated numerous times in different ways to ensure the people listen and understand. To make communication effective the organizational climate must encourage people to listen actively. This means encouraging people to check their interpretations, ask when they do not understand, voice their opinions, and let people know they have been understood.

Being a good corporate citizen is supported by open and honest communication with your workforce, the local communities and your business partners.

This section emphasizes two critical communication areas:

1. Management communication; and,

2. Company Safety Meetings such as:
    - Regular weekly management meetings
    - Regular monthly management meetings
    - Daily health, safety and environment meetings
    - Daily tailgate meetings

The more employees and contractors know about the HSE program, the better able they will be to support it.

In initiating communications, management makes itself more accessible to others working within the company. This will ultimately result in greater participation of workers, contractors and subcontractors in the development and maintenance of HSE programs. It will also lead to higher morale and improved health, safety and environmental performance along with improved workplace productivity.

5.2 Communication Frequency

Regular communication with employees, contractors and subcontractors should include describing the company's commitment to HSE performance and explaining why health, safety and the environment are important and whom the affect.

These communication opportunities will be held when senior managers and the majority of employees, contractors and subcontractors are present.

It is important for management and supervisors to tour work sites observe work practices and talk to workers about HSE issues. The frequency of tours will vary according to our type of operations and locations of our sites.

Conducting safety orientations, providing instruction and practice with experienced guidance and meeting mandatory training requirements are part of a good communication process.

Special programs like the new worker program, and specialized training and information sessions will demonstrate the commitment EGT has for their workers, the environment and the communities in which we work.

5.3 Management Communication

Management will communicate clearly and regularly the company's commitment to excellent HSE performance to all workers, contractors, subcontractors, suppliers, clients, and other stakeholders.

5.4 Communication of Expectations

Establishing expectations with people requires regular communication of the following topics:

- HSE program goals and performance expectations;
- Why HSE is important and who it affects;
- Hazardous conditions and corrective measures;
- Allocation of HSE responsibilities;
- Best practices;
- Incident and accident reporting procedures; and,
- Regulatory issues.

5.5 Types of Communication

To communicate company commitment to health safety and environmental excellence, management will do any or all of the following:

- Go to work sites to observe operations and engage workers in discussions of HSE matters;
- Send motivational letters or memos to employees;
- Participate in committees and meetings;
- Include HSE topics as regular agenda items in meetings;
- Highlight HSE accomplishments at company functions;
- Provide detailed job instruction for new, transferred or temporarily assigned personnel;
- Hold regular safety meetings for all staff;
- Recognize workers who work safely; and,

- Provide regular feedback to all employees on safety performance or concerns.

5.6 Site Specific Communication

Site specific communication systems and procedures will be set up to accommodate work or situations, which fall outside the camp, especially those in isolated locations. The journey management system will be employed for any work conducted outside of general camp and work locations or when individuals are required in unusual circumstances to work alone. The working alone policy will be followed in all situations where these circumstances exist. No one will travel outside of the general camp areas without the permission of the supervisor and they must be accompanied by a wildlife monitor. See Appendix E for Wildlife Response Plan.

6.0 MEETINGS

To bring people together on a regular basis to hear and talk about the different HSE programs, procedures, and topics will help to set clear expectations and foster commitment to incorporate what workers learn into their day-to-day activities.

The communication guidelines contained below are not intended to be exhaustive, but are representative of HSE directives.

6.1 Regular or Start-Up Health, Safety & Environmental Meetings

All operator work groups engaged in northern operations shall participate in regularly scheduled safety meetings at least monthly or weekly for construction. Additional specific meetings are called as required (i.e. pre-job and tailgate meetings).

It is essential that site leadership attend and participate in as many safety meetings as possible.

Safety meetings are held to ensure that all personnel understand the operational steps and protective measures pertaining to the potential hazards of the job. The specific purposes of these meetings can include:

- Comprehensive identification of safety issues;
- Pre-job and/or task analysis for hazard prevention;
- Establishing protocols; and,
- Emergency response requirements at the beginning of a project or scope of work.
- Areas of concern and opportunities for improvement;
- Review of hazards and potential risks;
- Identify “next steps”;
- Set time and date for next meeting; and,
- Identify possible issues to be covered in the next meeting.

6.2 Pre-Shift Meetings

Pre-Shift Meetings shall be held before:

- Starting work each morning;
- Starting a new shift; and,
- Undertaking of non-routine jobs.

Additional meetings are also held when:

- There has been a significant change in the way work is being carried out; and
- The supervisor deems it appropriate.

The objectives of the pre-shift meetings are to:

- Keep all members of the work team informed of the day-to-day opportunities and challenges for working safe;
- Inform workers of the forecasted daily activities;
- Identify the unique hazards and required control measures to prevent injuries;
- Review basic safe work practices;
- Inform workers of the activities of the other workers and how their activities will interact; and
- Allow a shift supervisor to assess the emotional and physical capacity of crew and ensure all are prepared for work.

The pre-shift meeting allows the shift supervisor to:

- Ensure all on site personnel are appropriately trained to carry out their assigned duties;
- Ensure certifications and permits are valid and current;
- Identify possible human hazards such as:
    1. Physical and/or emotional fatigue;
    2. Use of medication;
    3. Stress;
    4. Emotional distress; and
    5. Effects of drugs or alcohol;
- Identify interpersonal issues among the team;
- Manage new or green workers in order to identify to the rest of the crew;
- Ensure that new workers have completed pre-job orientations and required safety training; and
- Identify and control work site visitors.

During the pre-shift meeting emergency response procedures are reviewed including:

- Current activities;
- Meeting area in case of an emergency;
- Procedures to account for all employees, visitors and contractors;
- Assigned roles of all personnel;
- Response protocol specific to the area of activity;

- Location of safety stations on site (firefighting equipment, first aid, eyewash, and communications)
- Emergency escape procedures and routes;
- Shut down procedures;
- Rescue and medical duties for assigned employees; and,
- Procedures for reporting an emergency.

6.3 Tailgate Meetings

Tailgate meetings occur as and when needed and are the responsibility of all workers.

Supervisors or workers can initiate tailgate meetings when the need arises in order to identify a safety issue or review the appropriate work or safety procedure associated with a work assignment. Tailgate meetings should be called whenever the conditions of the job change (for example, for changing weather, different available equipment, change in personnel) or whenever the task itself changes. They should be called when new potential hazards are identified. They should also be called whenever workers or supervisors feel that more complete communication and understanding of the task at hand is desirable.

6.4 Orientations

Pre-job and pre-employment orientations provide the opportunity to present an overall picture of the company's HSE program and commitment, the rights and responsibilities of both workers and management, the company's expectations and policy's, as well as details of particular contracts and client requirements. This also provides the opportunity for new employees to complete employment sign-up procedures and the gathering of required employee information for employee files.

The orientation, because of its in-depth approach, can set the overall tone for the entire term of a new employee's employment, as well as reinforce attitudes and policies for returning employees, and introduce new procedures and policies.

The orientation may be the first opportunity the company has to thoroughly indoctrinate and thoroughly warn an employee about the work situation he or she is entering.

It is critical that all new employees should receive an orientation and that all long-term employees should receive a new orientation at the beginning of every major work season.

7.0 ACCIDENT/INCIDENT INVESTIGATION & REPORTING

7.1 Introduction

Investigation and reporting are critical steps in preventing a similar incident or accident from recurring. The investigation is intended to determine the root cause or causes of an incident or accident as opposed to finding fault. Incidents will be reported on accident/ incident forms, and supervisors are to submit these reports to their head office within **24 hours** of an incident. Superintendents shall then determine the need for and, if necessary, direct detailed investigations with the assistance of the Safety Manager or their designate. All incidents will be reported to the DR at HOPE LAKE **immediately and will be followed by a written report within 24 hours**, who will take whatever action they deem necessary.

Incident and accident reporting is also useful because it helps identify:

- Training Needs;
- Problems with work procedures;
- Problems with work site conditions;
- Needs for Personal Protective Equipment PPE, Safety & Emergency Equipment;
- Failures in communication

It also helps collect information necessary for completing insurance reports, for complying with regulatory requirements and for gathering statistical information used to calculate statistics and identify incident trends so that the effectiveness of the HSE program can be measured.

The steps in developing an investigation analysis procedure should include:

- Implementing an incident reporting system;
- Preparing investigation procedures;
- Establishing a progress to ensure required corrective actions are completed; and
- Sharing the lessons learned from the incident investigations with workers to prevent a recurrence.

7.1.2 Types of events to investigate and report include

- Fatalities;
- Injuries or occupational illnesses that prevent a worker from performing regular tasks;
- Injuries that can be treated at the work site and injuries that require treatment by a medical professional;
- Any emergency or loss, such as a motor vehicle accident, fire, explosion, vandalism;
- Environmental damage or loss; and,
- Near misses;

Supervisors will manage the response to the event and notify the appropriate authorities where necessary.

7.1.3 When to prepare reports

Reports of an incident should be prepared immediately after the event has occurred and kept on file to ensure requirements for regulatory compliance have been met.

In the case of serious accidents and environmental incidents, the accident/incident scene should be preserved to ensure important evidence is not lost or disturbed and details are not forgotten. The law mandates this for a serious injury accident or fatality.

To ensure incident reporting is consistent, appropriate report forms should be available at all work sites as required by regulatory agencies and company policy.

7.1.4 Implementation

All E. Gruben's Transport Ltd. personnel must be encouraged to report all incidents and must be informed that this is part of their responsibilities as employees.

E. Gruben's Transport Ltd. has developed incident report forms and has provided training for senior management and job supervisors to complete investigations and complete the required paperwork.

7.1.5 Incident Investigation and Follow-Up

Incident investigation and follow-up assists in determining root causes of incidents and helps prevent incidents from recurring. This can only be done with proper investigation and analysis.

Job Supervisors are initially responsible for the investigation of all incidents, regardless of their severity. Depending on the actual or potential severity of the incident an alternate investigation leader may be appointed. The E. Gruben's Transport Ltd. Safety/Loss Control Officer will provide assistance as required, as will any members of the senior management team. Senior management will also review all Incident Investigations.

Findings from investigations may to the recommendation that changes be made to work procedures, methodologies, management systems and corporate policies.

7.1.6 Training

Superior quality can be delivered to an investigation if the investigation team leader has been trained in investigation techniques. Depending on the severity of the incident, insurance investigators or government authorities may also be required to conduct an investigation and/or may require information provided by in-house investigations.

There is a benefit in training work site supervisors in investigation techniques and providing them with a logical approach in determining the underlying or root causes of incidents. E. Gruben's Transport Ltd. has provided Incident Investigation training to all its senior management and job supervisors, and will continue to provide training as new supervisors come into the system. These skills are transferable and can be used to evaluate hazardous job site situations to prevent incidents.

7.1.7 Investigative Purpose

The purpose of investigations is to identify direct and underlying factors that contributed to an incident and the root causes behind those factors.

7.1.8 Investigative Procedure

After being notified of an incident, the on-site supervisor should survey the area to determine if the work must be stopped to prevent injuries and preserve evidence. The on-site supervisor notifies his management and an investigation leader is appointed. The following decisions must be made:

- Determine if government authorities and insurance investigators should be called; and
- Determine if legal advice is required;

The investigation leader directs the gathering of evidence, which is to include:

- Interviewing witnesses and the people involved;
- Photographing the site to record evidence and damage; and
- Creating scale drawings and diagrams.

If insurance investigators or government or other regulatory authorities are called in, the investigation leader will assist them as required.

Once evidence has been collected, then the investigator can complete the investigation process, which includes:

- Determining the immediate and root causes of the incident;
- Completing the investigation report;
- Developing recommendations to prevent a recurrence;
- Prioritizing a list of corrective actions identifying responsible parties and target dates for completion;
- Submitting completed reports and recommendations to management and, if required, to the insurance company and government;
- Discussing the report and recommendations with everyone who was working on the site at the time of the incident and with all other employees that are affected by the incident; and,

Consideration should also be given to circulating any learning and recommendations throughout industry.

Individuals who are assigned action items then carry out the investigator's recommendations and provide feedback to management on a monthly basis until all actions are completed and signed off. Once there is verification that all recommended corrective actions have been completed, the incident report will be closed out.

7.1.9 Incident Statistics

Incident statistics are compiled for use in the company's HSE performance assessment and for third party use.

Frequency of lost-time injury incidents (including fatalities) and severity of lost-time injury incidents are calculated quarterly.

Calculations are based on the following:

Lost Time Injury Frequency = Number of lost-time injuries x 200,000/Number of hours worked.

Recordable Injury Frequency = Number of lost-time injuries + Number of medical aid injuries Number of restricted work injuries x 200,000/Number of hours worked.

Injury severity = Number of lost days x 200,000/Number of hours worked.

Rates are a better measure than simply counting the number of incidents because they take into account the level of worker activity. Therefore, a comparison of performance between time periods is valid.

7.1.10 Incident Reporting & Investigation Summary

Proper incident reporting and investigation processes will ensure that E. Gruben's Transport Ltd. is:

- Accountable for any actual or potentially serious events;
- Better able to determine the root cause of the incident; and
- Enabled to make the changes necessary to avoid any re-occurrences.

This process also enables the company to demonstrate its responsibility to the workforce, their families, and the communities in which we work.

7.2 Accident/Incident Investigation Procedures

Accident/incident investigation is a vital part of E. Gruben's Transport Ltd. Health and Safety Program. No other activity produces quicker results than the prompt reporting and investigation of accidents and "near miss" incidents. Therefore, we provide the following written procedures and guidelines for use in the completion of Accident/Incident Investigations:

Investigation of an incident or accident involves much more than filling out a report form. It is a process of gathering factual information and drawing conclusions; the report form is only the documentation and the summary of that process.

The purpose of an accident investigation is to determine the causes and put corrective measures in place to prevent a recurrence. It is not to find fault or fix blame. Serious accidents or incidents with a high potential for injury or damage will require an in-depth investigation but every incident is a signal of problems that need to be corrected.

7.2.1 Understanding Accidents

Many theories and models exist that explain how accidents happen. How an accident investigation is conducted will, in many cases, depend on the investigator's beliefs about the causes of accidents. A particular accident theory can strongly influence the organizations investigation process and can provide direction to its entire occupational health and safety management system. It is important therefore to explore our understanding of accident causation.

7.2.3 Incident

In order to better understand the investigation process, it is important to clarify our definition of the terms "accident" and "incident". These can include:

- Injury, illness or disease or fatality;
- Damaged tools, equipment or machinery; and
- Damaged material or property, including environmental damage.

This differs from dictionary definitions of "accident" which tend to emphasize factors such as "happening without observable cause" "arising from unknown causes" etc. This leaves the perception that accidents just happen and that they cannot be prevented.

In the HSE environment, the term "incident" is used in a broad sense to include accidents and other unplanned events which, under slightly different circumstances, could have resulted in harm to people or damage to equipment, machinery or property. These are often referred to as "near misses" or "close calls".

This then is the unplanned event that precedes the loss or close call. It is the exposure to the hazard or the contact that could result in harm or damage. Incidents are commonly classified as follows:

- Struck against (running or bumping into);
- Struck by (hit by a moving object);
- Fall to lower level (either the body falls or the object falls and hits the body);
- Fall on same level (slip and fall, top over);
- Caught in (pinch and nip points);
- Caught on (snagged, hung);
- Caught between (crushed or amputated);
- Contact with (electricity, heat, cold, radiation, caustics, toxics, noise); and

- Overstress/overexertion/overload

7.2.4 Immediate Causes

These are the hazards that existed immediately prior to the occurrence of an incident or accident. A hazard is defined as any unsafe practice or unsafe condition that has the potential to cause injury, illness, disease or damage to property, equipment and the environment. Immediate causes are usually easily identified and they are broken down into two types.

These are Unsafe Practices and Unsafe Conditions.

7.2.5 Unsafe Practices

These are the hazardous practices and behaviors that permit the occurrence of an incident, for example, failure to lock out equipment, failure to wear eye protection, overloading, poor driving practices, etc.

7.2.6 Unsafe Conditions

These are hazardous conditions that permit the occurrence of an incident, for example, inadequate guards or barriers, defective tools, poor housekeeping, weather conditions, etc.

Many investigators have a tendency to focus only on the immediate causes of an accident. But in order to prevent a repetition of what happened, you must dig deeper. It may be tempting to pin the accident on something a worker did or did not do and let it go at that. However, there is rarely, if ever, a single cause behind an incident or accident. Even the simplest incidents occur from a combination of causes.

Immediate causes are also called direct causes. They are the symptoms of deeper problems and the investigation must go beyond the immediate causes to identify the underlying causes.

7.2.7 Underlying Causes

These are real causes behind the symptoms; the reasons why the immediate causes existed. The underlying causes are not as apparent as the immediate causes. They are also referred to as root causes, basic or indirect causes.

Underlying causes can be identified by asking probing questions about the unsafe practices and unsafe conditions identified as the immediate causes. Here are some examples:

- Why was the equipment not locked out? Is there a lockout/tag-out procedure in place? Are workers aware of the procedure? Are workers trained in using the procedure?

- Why did the worker not wear eye protection? Is eye protection available? Is the wearing of eye protection enforced by the supervisor? Was the worker aware of the need for eye protection?
- Why did the worker remove the guard? Was there a lack of maintenance? Is the machine poorly designed? Was the worker aware of the hazard?
- Why was debris on the floor? Was this a rushed job? Is there any individual accountability for clean-up?
- Analysis of the answers to these probing questions will lead to the identification of underlying causal factors in two main categories – personal and work environment:

Personal Factors:

- Inadequate physical capability
- Inadequate mental capability
- Physical stress
- Mental stress
- Lack of knowledge
- Lack of skill
- Improper motivation

Work Environment Factors:

- Inadequate leadership/supervision
- Inadequate engineering
- Inadequate purchasing
- Inadequate maintenance
- Inadequate tools and equipment
- Inadequate work standards
- Wear and tear
- Abuse/misuse

Management System Defects:

Underlying causal factors can be linked to defects in the health and safety management system. There are three key areas to consider:

- System Components: The system may be lacking some important elements.
- System standards: The standards are not clear or specific enough. They may be inappropriate.
- Conformance with System Standards: People in the organization are not following or complying with the established standards.

7.3 Why Investigate?

Accidents are caused. They don't just happen. The causes of accidents can be determined through proper investigation; therefore injuries can be prevented if the causes of accidents are corrected. Unless the causes are corrected, the same thing could happen again and again.

The most important reason for investigation accidents is to prevent injury and illness to workers. There are other reasons to consider such as the costs of accidents and the legal requirements to investigate.

7.4 Legal Requirements

7.4.1 Occupational Health and Safety Act:

The NWT/NU Safety Act applies whenever there is a serious injury on a worksite, or an incident that has the potential for causing serious injury to occur. If an injury or incident listed below occurs at a worksite, the employer responsible for the worksite must notify a Workplace Health and Safety Inspector as soon as possible. Examples include:

- An injury or accident that results in death;
- An injury or accident that results in a worker being admitted to an unplanned or uncontrolled explosion, fire or flood that causes a serious injury or that has the potential of causing a serious injury;
- The collapse or upset of a crane, derrick or hoist; or
- The collapse or failure of any component of a building or structure necessary for the structural integrity of the building or structure.

In addition, the employer is required to investigate any other serious injury or any other incident that has the potential for serious injury. Since these “other” serious injuries and incidents are not defined in the Act it is important that E. Gruben's Transport Ltd. investigation policy clearly identify them.

7.4.2 Workers’ Compensation Act

While E. Gruben's Transport Ltd. will be dealing primarily with the NWT/NU Safety Act, there are other obligations and responsibilities under the Workers’ Compensation Act whenever a worker suffers personal injury on the worksite, or is entitled to medical aid as a result of an accident. If the accident is likely to disable the worker for more than the day of the incident, E. Gruben's Transport Ltd. is required to:

- Report the accident to the Worker’s Compensation Board within **72 hours**;
- Notify the Board within **24 hours** of learning that the worker has returned to work or is able to do so;

The Workers’ Compensation Act contains additional details about what E. Gruben's Transport Ltd. is required to do, and to make available in regard to accident investigations. E. Gruben's Transport Ltd. must be familiar with the Workers’ Compensation Act and what is expected in case of an accident.

7.5 What Should Be Investigated?

It is obvious that accidents resulting in death or serious injury must be thoroughly investigated.

However, studies show that for every accident resulting in death or serious injury there were a large number of similar accidents and incidents (unplanned events) resulting in property damage, minor injuries with no injuries at all. Therefore, minor injury accidents, near-miss incidents and property damage accidents with the potential for serious injury should be investigated to identify and mitigate root causes.

7.6 Who Should Investigate?

The supervisor should investigate the accidents and incidents in his or her area of responsibility. As discussed earlier, E. Gruben's Transport Ltd. as an employer; has a legal requirement to investigate those incidents defined in legislation. A definition of employer in the Act is “any person designed by an employer or his representative”. This could be the foreman, the lead hand, the superintendent, etc.

A team approach is recommended and whenever possible the supervisor should be assisted in the investigation by a safety committee member or the AHJ health and safety coordinator (if one exists). Safety is a line function; therefore the prime responsibility for accident/incident investigation lies with the supervisor.

7.7 Reporting of Accidents/Incidents

Prompt reporting of an accident/incident to the supervisor is essential. This enables the supervisor to carry out an investigation while the events are still fresh in the minds of those involved.

7.7.1 Failure to Report an Accident/Incident

Workers fail to report accidents or incidents for some or all of the following reasons:

- Fear of discipline;
- Concern for their own safety record;
- Concern for reputation;
- Fear of medical treatment and/or medical personnel;
- Desire to avoid work interruption;
- Desire to keep a clear record;
- Desire to avoid “red tape”;
- Concern for the reaction of other workers (peer pressure); and
- Lack of understanding of the importance of reporting.

Supervisors can encourage reporting by:

- Reacting positively to the report;
- Training employees in reporting procedures and emphasizing its importance;
- Acting promptly on the report;
- Providing feedback; and
- Following up with corrective measures.

7.8 Investigation Preparation

Preparation for an investigation begins with the development of an investigation process described in E. Gruben's Transport Ltd. investigation policy. The policy outlines the intent of the investigation and the procedures E. Gruben's Transport Ltd. uses in reporting an accident or incident and proceeding with investigation. Areas that are included in the policy are:

- What types of incidents and accidents are to be investigated;
- Notification procedures and contact list (i.e. OH&S, Emergency Response, family members, etc.);
- People involved in the investigation team;
- What report form(s) are used for various investigations; and
- The review process after the investigation is complete.

Most supervisors do not conduct many investigations in their career, which makes the investigation procedures a seldom performed task within many organizations. A regular review of the AHJ investigation policy and procedure will assist in prompt and correct response by front line supervisors at the worksite.

Before undertaking an investigation, the supervisor must have the necessary tools to do the job, including:

- Training in accident investigation techniques;
- Safety equipment clothing for the area(s) likely to be entered;
- Required permits and notification forms;
- An Investigation kit which should include the following
    1. Investigation Report Forms
    2. Investigation guide or checklist
    3. Writing material for notes, statements, sketches, etc.
    4. Pencils, pens
    5. Photographic or video equipment, if appropriate (cannot be used in an explosive atmosphere)
    6. Testing equipment
    7. Measuring tape
    8. DO NOT ENTER tape

APPENDIX A

Hope Lake, Willow Creek and Husky Creek Hazardous Material Audit

The following materials have been identified as hazardous waste materials at the Hope Lake, Willow Creek and Husky Creek Sites. More detailed inventories may be found in the tender documents.

HAZARDOUS MATERIALS

Site Material Description Volume

Husky Creek
Compressed Gas Cylinder 1 m3 (could not confirm content)
Drums (205 L Leachable lead paint) 13 drums

Willow Creek
Fibreboard and Insulating Materials (Asbestos containing) 2 m3
Batteries 1 m3
Drums (205 L) 355 drums

Hope Lake
Batteries 1 m3
Light Ballasts, Fire Extinguishers, Fluorescent Lights 2 m3
Electrical Insulators, Gaskets, Mastic (Asbestos containing) 5 m3
Caterpillar (Leachable Lead Paint) 3 m3
Tanks (Leachable Lead Paint) 619 m3
Small Drums (Leachable Lead Paint) 24 drums
Drums (205 L) (Leachable Lead Paint) 1,143 drums
Drums (205 L) Organic content) 14,300 L
Container (Contents) 342 L
Propane cylinders 11 m3 (does not include propane content)

Other hazardous materials that may be encountered on the site or in landfill excavations include:

Waste Oil	Asbestos	Meters
Sewage	PCB transformers	Copper wire
Lead-based paints	Scrap metal	Batteries
Fuel drums	Corrosion inhibitors	Corrosives
Lime	Antifreeze	AVGAS (Aviation fuel)
Dynamite	Plastics	Paper

EGT will bring the following products to Hope Lake in order to carry out contract work.

EGT will provide and keep on-site MSDS for all of these products and any other WHMIS regulated products we bring to the site.

- Diesel fuel
- Gasoline
- Grease
- Lubricating oils
- Transmission Fluid
- Methyl Hydrate
- Compressed oxygen and acetylene
- Compressed propane
- Compressed medical oxygen
- Compressed helium
- Antifreeze
- Liquid bleach
- Isobutylene (calibration gas)
- Spray Paint
- Spray Adhesive
- Camp cleansers and disinfectants

APPENDIX B

HOPE LAKE FIRE SAFETY PLAN

Fire, especially a fire in our camp structure, is potentially the most catastrophic event which could occur on this project. Because of our inability to pump significant amounts of water Fire Prevention practices take on even greater significance and must be strictly adhered to.

Muster Station - A muster station will be designated at the site in order to gather all personnel and conduct a head-count should a camp evacuation be required. Personnel lists and bed–assignment lists will be updated daily/as-and-when site personnel change. The Medic, the Site Superintendent and a designated member of the camp staff will have copies of updated rosters and updated rosters will be posted in the muster station. The head count will be conducted by the member of the camp staff.

Smoke Detectors - Smoke detectors will be tested and in place in all bedrooms, recreation areas, kitchen and camp storage areas and office facilities.

Camp Alarm System - Because the camp complex will be comprised of a number of separated buildings, the alarm systems in the main camp buildings will not set off the alarm systems in the other. Instructions for the use of pull-stations will also require use of vocal warnings in combination with compressed-gas signal horns, which will be placed by camp exits. This will be reinforced in site orientations, safety meetings, fire drills and posted Camp Response Procedures.

Fire Extinguishers - Fire extinguishers will be inspected and placed at all camp entrances, in the kitchen, the generator building/shop and in all of the camp out-buildings as well as at fuel storage tanks. All RTV's and heavy-equipment on site will also be equipped with ABC fire extinguishers. Containment areas will be required to have ABC extinguishers easily accessible within containment. Any use of gasoline powered tools, welders, cutting torches and sparking tools such as grinders will require that extinguishers be on hand.

Exit/Emergency Lighting - All exits will be marked with battery-backed "EXIT" lights. Emergency battery-backed flood lighting will be in place in all hall-ways and common areas.

Signage - All extinguishers and pull-stations will be clearly marked. Every bedroom and common room will have a camp-plan posted with marked primary and secondary evacuation routes. Every bedroom and common room will also have Camp Fire Response Procedures and Camp Rules posted.

Fire Response Team - A Fire Response team will be designated by the Site Superintendent and will be led by the Site Superintendent. The Fire Response team will be responsible for evacuation and systematic room and bed checks, fire isolation and suppression and muster-site head counts.

Camp Fire Response Procedures - Camp Response Procedures will be posted throughout the camp facilities. A copy of Camp Response Procedures is attached.

Smoking and Open Flame - Smoking will only be allowed in the designated "smoking shack". This is a small building equipped with high-powered exhaust fans separated from the main camp building but part of the camp complex. Smoking will be prohibited in all other camp areas. No candles or other sources of open flame will be permitted in the camp complex. Smoking will also be prohibited within 30 meters of any fuel storage, re-fueling operations and gasoline powered tool storage and operation.

Cutting and Welding/Hot Work Permits - Cutting and welding anywhere outside of the shop area or by anyone other than the site mechanic will require daily task-specific "hot-work" permits. "Fire watch" personnel with extinguishers may be designated as part of the hot-work permitting process. All use of gasoline powered tools and sparking tools within containment areas will require daily permitting.

Orientation and Training
The Hope Lake Fire Safety Plan and Camp Fire Response Procedures will be addressed and reinforced during the Worker Orientation Seminar, at on-site orientations and at weekly safety and daily safety/tailgate meetings. Fire drills will be practiced once the camp is operational.

Emergency Rations and Clothing
The Site Supervisor and Medic will coordinate and place emergency rations, equipment and clothing in a safe and secure place away from the main camp area, which could be used in emergency situations. The camp roster will be updated and placed at this location as required.

CAMP FIRE RESPONSE PROCEDURES

1. **If you notice a fire in the camp or if a smoke alarm activates, pull the nearest Alarm Pull Station. Call out "FIRE! FIRE! FIRE!"**

2. **Ensure your own safety. Begin to evacuate personnel from camp, beginning in rooms closest to fire and moving away from fire. Notify personnel in other camp buildings and trailers (well-site offices, labs and "smoke-shack") using a constant blast on compressed gas signal horn mounted at building exits and/or verbal warnings.**

3. **If the fire is small and isolated, attempt to extinguish using fire extinguisher. If the fire is beyond control attempt to isolate and evacuate immediately to the Muster Station for head count.**

4. **Personnel not directly involved in room-checks or fire suppression should move directly to the Muster Station.**

5. **The Site Superintendent or his designate will take control of fire suppression activities.**

We have a minimal ability to pump water to fight fires in this camp. We must **PREVENT FIRES**.

1. Observe camp prohibitions on smoking and open flames.

2. Become familiar with emergency exit routes.

3. Keep exits from being obstructed.

4. Keep fire extinguishers and emergency pull stations from being obstructed.

5. Do not tamper with, remove or disengage smoke detectors, alarm systems or fire suppression equipment.

6. Actively participate in safety meetings, training and fire drills.

APPENDIX C

MEDICAL EMERGENCY RESPONSE
Hope Lake Cleanup

The Site Medic will take charge of all medical emergency situations. The Site Superintendent will provide and arrange for assistance, help arrange potential medical evacuations ("med-evacs") and will assume control of the situation at the direction of the Medic.

In the case of a medical emergency the alarm should be raised to the Medic and the general site population by calling on the radio, "MEDIC! MEDIC! MEDIC!
[Three blasts of a compressed gas horn will also be considered an emergency signal.]

All other radio communication must immediately cease. All other site work must immediately cease and personnel must stand-by for instruction. The Medic will respond to the radio call, will gather relevant information, and will direct the appropriate response. The Site Superintendent and other supervisory personnel will stand-by to assist.

First Aiders at the site of the incident/injury will provide First Aid until the Medic arrives on scene.

Emergency medical equipment on-site will include burn kits, Medic First Aid supplies, back-board/stretcher, individual/vehicle First Aid kits, medical oxygen, eye-wash stations.

All vehicles must carry First Aid kits.

All medical evacuations must be arranged through the Kugluktuk Health Center at: 867-982-4531 and/or Adlair Aviation: 867-983-2569

Alternate medical evacuation can be arranged by contacting Air Tindi: **867-669-8200**

Yellowknife Stanton Territorial Hospital – 867-669-4111

Other Emergency Contact numbers	
Aklak Air Ltd.	867-777-3555
Canadian Helicopters	867-777-2424
E. Gruben's Transport Ltd. (TUK)	867-977-7000
EGT after-hours	867-678-0045

See complete list of Emergency Contact Numbers in front of Site Specific Health and Safety Plan. Emergency Contact Number list will also be posted in EGT Site Office, Other Site Offices, Medic's Room and beside each outside phone line.

In the event of a serious accident the Workers' Safety and Compensation Commission must be contacted immediately. WSCC Accident/Incident Reporting line: 867-669-4439 or 1-800-661-0792. All minor incidents must also be reported to WSCC within 48 hours.

It will be the responsibility of the Site Superintendent, with the assistance of the Medic, to follow up on all accident/incident reporting. All medical emergency situations will be investigated according to Accident Investigation Procedures in EGT HSE manual.

APPENDIX D

OPERATION AND MAINTENANCE OF AN AED

Operation of an Automated External Defibrillator (AED)

An **automated external defibrillator** or **AED** is a portable electronic device that automatically diagnoses the potentially life threatening cardiac arrhythmias of ventricular fibrillation and ventricular tachycardia in a patient, and is able to treat them through defibrillation, the application of electrical therapy which stops the arrhythmia, allowing the heart to reestablish an effective rhythm.

An automated external defibrillator is used in cases of life threatening cardiac arrhythmias which lead to cardiac arrest. The rhythms that the device will treat are usually limited to:

1. Pulseless Ventricular tachycardia (shortened to VT or V-Tach)
2. Ventricular fibrillation (shortened to VF or V-Fib)

In each of these two types of shockable cardiac arrhythmia, the heart is active, but in a life-threatening, dysfunctional pattern. In ventricular tachycardia, the heart beats too fast to effectively pump blood. Ultimately, ventricular tachycardia leads to ventricular fibrillation. In ventricular fibrillation, the electrical activity of the heart becomes chaotic, preventing the ventricle from effectively pumping blood. The fibrillation in the heart decreases over time, and will eventually reach asystole.

AEDs, like all defibrillators, are not designed to shock asystole ('flat line' patterns) as this will not have a positive clinical outcome. The asystolic patient only has a chance of survival if, through a combination of CPR and cardiac stimulant drugs, one of the shockable rhythms can be established, which makes it imperative for CPR to be carried out prior to the arrival of a defibrillator.

Effect of Delayed Treatment

Uncorrected, these cardiac conditions (ventricular tachycardia, ventricular fibrillation, asystole) rapidly lead to irreversible brain damage and death. After approximately three to five minutes, irreversible brain/tissue damage may begin to occur. Research indicates for every minute that a person in cardiac arrest goes without being successfully treated (by defibrillation), the chance of survival decreases by 10 percent.

Requirements for use

AEDs are designed to be used by laypersons who ideally should have received AED training. This is in contrast to more sophisticated manual and semi-automatic defibrillators used by health professionals, which can act as a pacemaker if the heart rate is too slow (bradycardia) and perform other functions which require a skilled operator able to read electrocardiograms.

Preparation for operation

Most manufacturers recommend checking the AED before every period of duty or on a regular basis for fixed units. Some units need to be switched on in order to perform a self-check; other models have a self-check system built in with a visible indicator.

All manufacturers mark their electrode pads with an expiration date, and it is important to ensure that the pads are in date. This is usually marked on the outside of the pads. Some models are designed to make this date visible through a 'window', although others will require the opening of the case to find the date stamp.

It is also important to ensure that the AED unit's batteries have not expired. The AED manufacturer will specify how often the batteries should be replaced.

Mechanism of operation

The use of easily visible status indicator and pad expiration date on one model of AED

An AED is external because the operator applies the electrode pads to the bare chest of the victim, as opposed to internal defibrillators, which have electrodes surgically implanted inside the body of a patient.

Automatic refers to the unit's ability to autonomously analyze the patient's condition and to assist this, the vast majority of units have spoken prompts, and some may also have visual displays to instruct the user.

When turned on or opened, the AED will instruct the user to connect the electrodes (pads) to the patient. Once the pads are attached, everyone should avoid touching the patient so as to avoid false readings by the unit. The pads allow the AED to examine the electrical output from the heart and determine if the patient is in a shockable rhythm (either ventricular fibrillation or ventricular tachycardia). If the device determines that a shock is warranted, it will use the battery to charge its internal capacitor in preparation to

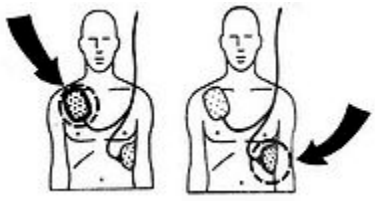
deliver the shock. This system is not only safer (charging only when required), but also allows for a faster delivery of the electrical current.

When charged, the device instructs the user to ensure no one is touching the patient and then to press a button to deliver the shock; human intervention is usually required to deliver the shock to the patient in order to avoid the possibility of accidental injury to another person (which can result from a responder or bystander touching the patient at the time of the shock). Depending on the manufacturer and particular model, after the shock is delivered most devices will analyze the patient and either instruct CPR to be given, or administer another shock.

Many AED units have an 'event memory' which store the ECG of the patient along with details of the time the unit was activated and the number and strength of any shocks delivered. Some units also have voice recording abilities to monitor the actions taken by the personnel in order to ascertain if these had any impact on the survival outcome. All this recorded data can be either downloaded to a computer or printed out so that the providing organization or responsible body is able to see the effectiveness of both CPR and defibrillation. Some AED units even provide feedback on the quality of the compressions provided by the rescuer

AEDs (manufactured after late 2003) have tended to utilize biphasic algorithms which give two sequential lower-energy shocks of 120 - 200 joules, with each shock moving in an opposite polarity between the pads. This lower-energy waveform has proven more effective in clinical tests, as well as offering a reduced rate of complications and reduced recovery time

Simplicity of use



Usual placement of pads on chest

Unlike regular defibrillators, an automated external defibrillator requires minimal training to use. It automatically diagnoses the heart rhythm and determines if a shock is needed. Automatic models will administer the shock without the user's command. Semi-automatic models will tell the user that a shock is needed, but the user must tell the machine to do so, usually by pressing a button. In most circumstances, the user cannot override a "no shock" advisory by an AED. Some AEDs may be used on children - those under 55 lbs. (25 kg) in weight or under age 8. If a particular model of AED is approved for pediatric use; all that is required is the use of more appropriate pads.

All AEDs approved for use in the Canada use an electronic voice to prompt users through each step. Because the user of an AED may be hearing impaired, many AEDs now include visual prompts as well. Most units are designed for use by non-medical operators.

Their ease of use has given rise to the notion of public access defibrillation (PAD), which experts agree has the potential to be the single greatest advance in the treatment of out-of-hospital cardiac arrest since the invention of CPR.

Maintenance of AED

The status indicator must be checked daily. You must look for a flashing black hourglass, which means that the device is all set for use. If you cannot see a flashing black hourglass on the automated external defibrillator, you must notify an authorized person that will check your device. A trained person must perform these checks each day.

A check must be carried out on a monthly basis, and this should be done by an AED Coordinator. After having used an AED, the AED Coordinator will have to restock any used electrode pads, replace the batteries, PC cards and kit gloves. The unused supplies must be checked so as to be intact and within the expiry dates. The batteries must be replaced and a battery insertion test (BIT) must be carried out before putting the AED back in use - this is a key factor in AED maintenance procedures.

Automated External Defibrillator Maintenance Tips

You have to make sure that the cover has no fissures or loose components. All the cables of the device must be without fissures, cuts or broken wires. The exterior and the connector must be cleaned and disinfected to prevent any contamination with unnecessary bacteria. A cleaning of the whole AED unit may be done. Take a look in the User's guide to find a suitable cleaning agent. Check the status indicator after each use to see if it is ready for use. Also check the energy delivery, ECG analysis results, the indicators and if the voice or audible prompts still function. Make sure the emergency AED kit contains all the equipment needed for intervention. It is highly important that these devices are kept in proper conditions and checked regularly so that no incident will take you by surprise. There are also maintenance-free AEDs available on the market.

The Good Samaritan Law and AEDs

When facing an AED intervention, you must be ready to perform CPR, and you will also have to be ready for blood exposure. In Canada there is the good faith policy that functions in emergency intervention cases. This means that any person using an AED in emergency falls under the Good Samaritan Laws. So the person performing resuscitation using an AED kit will not be held responsible for the harm or death that might be the consequence of an AED intervention.

This is regarded as non-intentional harm and therefore the person who has failed to bring the patient back to life cannot be held legally responsible. So in Canada the Good Samaritan Law provides protection both for the trained and untrained AED users. However, inattentive use of an AED may cause involuntary manslaughter and sometimes may end up with legal charges. This gives us even more reasons to consider AED maintenance as an important task.

APPENDIX E

Hope Lake Wildlife Response Plan

EGT as part of the overall objective to provide a safe working environment for all personnel, EGT has developed a wildlife management plan for the remediation of the Hope Lake, Willow Creek and Husky Creek sites. This plan will define the frequency of patrols, rules for onsite storage of firearms, terms of use for firearms, record keeping, reporting procedures, training requirements related to firearms, wildlife deterrent methodology, safe ATV operations, and radio operations.

The Hope Lake, Willow Creek and Husky Creek sites are a traveling and hunting ground for Grizzly bears. We would expect that grizzly bears may be encountered at any point during the work season.

Caribou, musk ox, wolverine, arctic fox, squirrels, lemmings and an assortment of water fowl have been known to frequent the area around Hope Lake.

E. Gruben's Transport Ltd. plan is based primarily on avoidance and deterrence for the protection of both our personnel and wildlife. Our practices will be designed to not attract wildlife to the worksite, to avoid contact when possible, to deter contact when necessary, to report potential problems to the relevant authorities, and only as a last resort to destroy a particularly troublesome bear when human life is in danger.

Site Cleanliness/Garbage

Site cleanliness will be emphasized regularly at daily safety meetings and at orientations. Camp garbage will be incinerated daily at minimum and garbage awaiting incineration will be kept in a covered metal container or will remain within the camp complex until it can be incinerated.

Wildlife Monitors

EGT will maintain one (1) full time wildlife monitor at the Hope Lake site during all times that camp and site operations occur. Wildlife monitors will accompany crew working at the Willow Creek and Husky Creek sites. EGT will provide additional wildlife monitors on-site at Hope Lake and the related sites as required. The wildlife monitors will be on-site at all times from the initial mobilization phase and throughout the duration of the construction season. Wildlife monitors will be sourced through our Inuit prime subcontractor, Kikiak Contracting Ltd. and will be hired from the community of either Kugluktuk. Wildlife monitors will be experienced hunters and marksman with personal knowledge of the Hope Lake area and environment.

Each wildlife monitor will possess; a valid FAC, a properly functioning rifle of no less than 30 caliber, ample supply of ammunition, mobile handheld radio, and a properly functioning ATV. Bear deterrent "screamers" and "bangers" will be supplied to the

Wildlife Monitor for use if necessary. Wildlife Monitors will accompany any workers working away from immediate vicinity of camp/construction areas. They will make regular patrols prior to and after work activities and as directed by the Site Supervisor to ensure personnel are safe. In the event that PWGSC personnel or EGT/Kikiak crew need to travel a distant from the camp where radio communications may not function properly one of the two handheld satellite phones being kept onsite for use as back-up phones will be utilized.

Monitors will keep a log of all wildlife sightings and EGT will submit a report to the DR weekly, which will include all wildlife encounters and sightings. Wildlife monitors will be rotated every 2 weeks. Copies of all training plans and wildlife monitor certifications will be submitted to the DR.

Handling of Firearms

Wildlife Monitors will handle all firearms in accordance with the Canadian Firearms Act.

Firearms Act Section 15 - An individual may load a firearm or handle a loaded firearm only in a place where the firearm may be discharged in accordance with all applicable Acts of Parliament and of the legislature of a province, regulations made under such Acts, and municipal by-laws.

Storage of Non-Restricted Firearms

Wildlife Monitors will store all firearms in accordance with the Canadian Firearms Act.

Firearms Act Section 5 (1) - An individual may store a non-restricted firearm only if
(*a*) it is unloaded;
(*b*) it is
(i) rendered inoperable by means of a secure locking device,
(ii) rendered inoperable by the removal of the bolt or bolt-carrier, or
(iii) stored in a container, receptacle or room that is kept securely locked and that is constructed so that it cannot readily be broken open or into; and
(*c*) it is not readily accessible to ammunition, unless the ammunition is stored, together with or separately from the firearm, in a container or receptacle that is kept securely locked and that is constructed so that it cannot readily be broken open or into.
(2) Paragraph (1)(*b*) does not apply to any individual who stores a non-restricted firearm temporarily if the individual reasonably requires it for the control of predators or other animals in a place where it may be discharged in accordance with all applicable Acts of Parliament and of the legislature of a province, regulations made under such Acts, and municipal by-laws.
(3) Paragraphs (1)(*b*) and (*c*) do not apply to an individual who stores a non-restricted firearm in a location that is in a remote wilderness area that is not subject to any visible or otherwise reasonably ascertainable use incompatible with hunting.

Transportation of Non-Restricted Weapons

Wildlife Monitors will transport all firearms in accordance with the Canadian Firearms Act.

Firearms Act Section 10 (1) - An individual may transport a non-restricted firearm only if
(*a*) except in the case of a muzzle-loading firearm that is being transported between hunting sites, it is unloaded; and
(*b*) in the case of a muzzle-loading firearm that is being transported between hunting sites, its firing cap or flint is removed.
(2) Subject to subsection (3), an individual may transport a non-restricted firearm in an unattended vehicle only if
(*a*) when the vehicle is equipped with a trunk or similar compartment that can be securely locked, the non-restricted firearm is in that trunk or compartment and the trunk or compartment is securely locked; and
(*b*) when the vehicle is not equipped with a trunk or similar compartment that can be securely locked, the non-restricted firearm is not visible from outside the vehicle and the vehicle, or the part that contains the non-restricted firearm, is securely locked.
(3) If, in a remote wilderness area that is not subject to any visible or otherwise reasonably ascertainable use incompatible with hunting, an individual is transporting a non-restricted firearm in an unattended vehicle that is not equipped with a trunk or similar compartment that can be securely locked, and the vehicle or the part of it that contains the non-restricted firearm cannot be securely locked, the individual shall ensure that the non-restricted firearm
(*a*) is not visible; and
(*b*) is rendered inoperable by a secure locking device, unless the individual reasonably requires the non-restricted firearm for the control of predators.

Perimeter Trip Wire Alarm Fence

If bear become problematic and are regularly sighted or observed in the vicinity of the camp by the monitors, a wildlife perimeter trip wire alarm system will be available with the camp facility. I could be erected around the camp or satellite tenting areas if required. All site personnel will be trained in the use and risks of this system should it be activated.

Hunting

No hunting will be allowed by any personnel employed at the work-site. No personnel other than the Wildlife Monitors will be allowed to possess firearms at the site.

Training

The Worker Orientation Seminar will include training on what to do if a bear is sighted, the role of the Wildlife Monitors, the hunting and firearms restrictions on site, wildlife

harassment, the importance of site cleanliness and correct garbage handling, and the operation of the perimeter trip wire alarm. Some of the consequences of a shot bear will also be explained including that a bear shot is a bear that comes off quota for local or sports hunters and that no-one gets to keep the shot bear.

Training for Wildlife Monitors will include safe ATV use, safe storage and handling of firearms on ATV's and in the camp complex, bear response pre-planning, use of bear deterrent "screamers" and "bangers" and detailed field responsibilities when conducting general site inspections and when accompanying field workers.

Reporting

Wildlife Monitors will report all bear sightings to the Site Superintendent who will assist the Wildlife Monitors in completing the Bear Sighting Reports kept on file in the Site Superintendent's office. These files will be maintained so that a history of sightings/incidents can be developed in case a bear needs to be removed or, in the worst case, destroyed.

APPENDIX F

Site Specific Spill Contingency Plan
Hope Lake Cleanup

Introduction

The project objective is to cost effectively remediate and restore the remote Arctic Abandoned Mine Site known as Hope Lake and the related sites at Willow Creek and Husky Creek, while minimizing disturbance to the sensitive arctic ecosystem.

Hope Lake is located about 75 km southwest of Kugluktuk, Nunavut. The site is located approximately 34km west of the Coppermine River, and 20 km northeast of the Dismal Lakes in the Kitikmeot Region of Nunavut. The site is large in area, and part of it is situated on the southern shore of Hope Lake, a moderately sized water body. The Hope Lake site is a result of exploration activity. Exploration was carried out by Coppermine River Limited (CRL) and a second company called Hearne Coppermine Limited (Hearne), and culminated in production of a detailed plan for a mine and an associated community, which was written in 1968. However, no mining activity, other than exploratory drilling and geological surveys, ever occurred at Hope Lake. The associated sites of Husky Creek and Willow Creek are approximately 20 km and 10 km respectively from the Hope Lake sites. The objectives of the project are to cost effectively and safely clean up and restore the Hope Lake and the associated sites at Husky Creek and Willow Creek while minimizing disturbance to their sensitive ecosystems.

The nearest community and charter base is Kugluktuk, located approximately 75 km to the Northeast of the Hope Lake site. The Husky Creek and Willow Creek sites are between Hope Lake and Kugluktuk. Yellowknife is located approximately 594 km to the south of Kugluktuk. Inuvik is about 475 km to the northwest of Kugluktuk. This project, are subject to the terms of the Nunavut Comprehensive Land Claim Agreement (CLCA).

E. Gruben's Transport Ltd. (EGT) of Tuktoyaktuk is the prime contractor responsible for the cleanup of the Hope Lake, Willow Creek and Husky Creek sites. Responsibility and authority for the remediation of the Hope Lake and associated sites is currently retained by Indian and Northern Affairs Canada (AANDC). To achieve the goal of site remediation and restoration AANDC has retained the services of Public Works and Government Services Canada (PWGSC) to provide technical support, contract administration and Site supervision. The site is located within Nunavut Territory and subject to the terms of the Nunavut Comprehensive Land Claim Agreement (CLCA).

The remediation work for the Hope Lake, Willow Creek and Husky Creek sites requires the handling and disposal of both non-hazardous and hazardous materials. The work has been designed based upon the remedial guidelines and clean-up criteria of the AANDC Abandoned Military Site Remediation Protocol. Any hazardous materials encountered on site will be handled according to regulations stipulated by the Canadian Environmental Protection Act (CEPA), Transportation of Dangerous Goods Act (TDGA) and the

Nunavut/NWT Guideline for the General Management of Hazardous Waste as applicable. The remediation materials will be managed, collected, consolidate and packaged for offsite disposal. The non-hazardous and hazardous materials will be transported to Kugluktuk by cat train for disposal. Some will be transported by barge and truck to a non-hazardous landfill; however there are certain hazardous materials that will require professional and careful handling, packaging and offsite southern transportation and disposal at licensed hazardous waste facilities.

Work on the site will include upgrading of site roads and airstrips to facilitate construction activities; demolition, segregation and disposal of building remnants and infrastructure; collection, sorting, on-site transport and incineration of non-hazardous, unpainted, untreated combustible waste; collection, sorting, off-site transport from Hope lake to Kugluktuk of non-hazardous and hazardous waste. The excavation and disposal of contaminated soils, as required; construction, excavation of buried debris, segregation of debris into waste streams (hazardous and non-hazardous); transport and disposal of waste, off-site transport and disposal of designated contaminated soil to the designated waste disposal facility; collection, excavation, sorting, containerization and off-site transport to the designated hazardous waste disposal facility of all hazardous demolition, hazardous debris, hazardous soils and hazardous liquids; collection, cleaning and disposal of barrels and contents, on-site incineration of barrel contents that meet the DLCU Barrel Protocol criteria including solid and liquid non-hazardous wastes; dewatering and re-grading of site works and backfilling and grading of all excavated areas using local borrow material.

Mobilization to Kugluktuk will take place via Northern Transportation Company Limited (NTCL) barge in September of 2012. Cat Train mobilization the Hope Lake site will take place in March – April 2013. Contract work will be conducted through the summer of 2012 and 2013. Demobilization from the site will take place in August of 2014.

Spill Prevention

EGT pre-emergency planning emphasizes the prevention of spills through training, refueling procedures and to ensure that adequate and appropriate equipment is available in the unlikely event of a spill.

Diesel P-50 fuel will be delivered to Kugluktuk via sea-lift (barge). Upon arrival the fuel will then be transferred by properly trained and certified personnel into sleigh mounted fuel tanks and delivered to Hope Lake via Cat Train in March – April, 2013. The storage tanks that EGT intends to use will be transported to the site empty via Cat Train and registered with Environment Canada on the “Federal Identification Registry for Storage Tank Systems” (FIRSTS) database.
Each tank will be set up in accordance with the “Environmental Code of Practice for Above Ground Storage Tank Systems Containing Petroleum and Allied Petroleum Products Guidelines”. The tanks will be fully certified tanks that meet the CEPA (1999), and the “Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations SOR/2008-197”.

Gasoline for Hope Lake and the associated sites will be transport to the site by fixed winged aircraft in steel drums. Due to the small amount of gasoline required at the Hope Lake site, gasoline will be shipped and stored in 205 liter steel drums. The gasoline drums will be individually identifiable, labeled to industry standards and all information necessary for health, safety and environmental purposes will be made available. Appropriate MSDS will be maintained at site. All barrels will be stored in accordance with the land use permit, and labeled with AANDC's name and EGT's name, stored on pallets in an upright position and banded to the pallets. All fuel storage will be in an area that complies with all applicable regulations and approved by the Departmental Representative. EGT and the marine transport company have very specific written barge fuel transfer procedures which will be strictly followed during loading and offloading work. Site storage tanks will be filled to 85% capacity to allow for expansion of fuel as it warms.

All fueling activities will be conducted by properly trained staff, and only those personnel authorized will be permitted to dispense fuel. Fuel usage records will be maintained on-site and will be kept to track individual unit usage as well as task usage.

Fire extinguishers, emergency spill equipment, including appropriate personal protective equipment, a minimum of two fuel pumps, empty drums, and absorbent materials sufficient to cleanup a 1000 liter spill will be positioned at all fuel storage sites. Smoking will be strictly prohibited within 100 meters of this area and No-Smoking signs will be posted. Spill mats or spill trays will be utilized under all mobile fueling containers. All mobile fuel equipment will be equipped with spill kits.

Contractor's fuel storage tanks will be located adjacent to the camp generator building. Fuel storage tanks will be located greater than 30 meters from the closest body of water.

There will be no bulk storage of oils, lubes, antifreeze in containers larger than 45 gallon drums. All will be supplied to site in 45 gallon drums and 5 gallon (22.5 l) pails or smaller containers. All drums will be new.

Propane will be used onsite for the camp facilities and will be stored in 1000 lb. propane tanks and 350 lb. "pig" tanks. Propane for shop use will be supplied in 100 lb. and 20 lb. cylinders.

Tanks, drums and cylinders belonging to EGT will be clearly marked with spray paint and stencils to distinguish them from tanks, drums and cylinders belonging to others on site.

MSDS will be available for all consumable products on site and all EGT personnel will have received WHMIS training. All handling and transport of dangerous goods will be supervised by TDG certified personnel.

Vehicles will be parked over drip trays.

The Equipment Foreman will inspect all fuel storage tanks daily. Wildlife monitors will also be required to conduct daily checks of fuel storage facilities as part of their normal rounds of inspection.

See attached fueling and fuel transfer procedures.

Spill Response

The site superintendent will develop an onsite Emergency Response Plan, which will establish muster points, evacuation routes, the safe distances of approach and places of refuge prior to the commencement of work and provide a copy to the DR. It will include the directions and methods of contacting and acquiring emergency medical transportation to the nearest or most appropriate medical center. Medical Aid will be provided by the onsite Medic.

All ATV's and heavy equipment will carry small "equipment" spill kits. The foreman's ATV, the generator shack, fuel storage tanks and refueling areas will have more substantial "drum" spill kits. All vehicles will carry a small quantity of oil absorbent rags. All mobile equipment will have company frequency radios, as will the EGT site office and the Medic.

All spills will be reported and recorded for internal records. Minor spills will be reported to the Equipment Foreman by radio. The Equipment Foreman will assess the situation, including the potential risks to personnel, will decide on the most appropriate immediate response and will report to the Site Superintendent. This may simply involve applying sorbent pads or shoveling of granular materials into plastic bags for transfer to the PHC soils treatment area for on-site treatment or possibly boxing soils in 2.3 cu. m. sea-cans with hydro-carbon resistant liner.

A larger, more catastrophic spill would result in Emergency Response Procedures. The same emergency radio procedures will apply as for a medical emergency. The person who discovers the spill will use the radio call, "MEDIC! MEDIC! MEDIC!" This will signal all site personnel to cease any other radio use, cease other work and stand by for further direction. The Medic will take charge of all medical emergencies on site, but in this case pass control of the situation to the Equipment Foreman and/or Site Superintendent as soon as the emergency situation has been identified as a fuel spill.

The response to a larger spill may involve allocating heavy equipment and/or allocating personnel to the task. Appropriate PPE for the task will be checked and a Job Safety Analysis. The hazard assessment with reference to the applicable MSDS will be conducted prior to the cleanup effort.

Containment and Recovery

The safety of all personnel will be the first consideration in any containment and recovery operations.

Containment may be performed by hand or with the use of heavy equipment. Sand or soil berms can be constructed and booms can be deployed. Leaks can be plugged using patches, plugs and plugging compounds. Product can be pumped out or suctioned out of leaking containers when applicable.

Recovery of spilled/leaked product could involve pumping, direct suction into vacuum tank on truck or pumping into suck-on tank mounted on the bed truck, shoveling of contaminated soil by hand or with heavy equipment, transfer to portable tanks or drums or to fixed tanks.

As well as a supply of heavy equipment (1 excavator, 1 loaders, 2 dozers, 1 rock truck, 2 RTV, 1 ATV) and a ready and plentiful supply of labor, we have at the site considerable other materials and equipment for the purposes of our contract work which could be used for spill containment and recovery. These include:
Drum Spill Kits: Polyethylene overpack drum containing 2 ea. 10' socks, 5 ea. 4' socks, 1 lb. pre-mixed plugging compound, 50 pads, 5 pillows, 1 drain cover, 1 caution tape, 2 pairs of nitrile gloves, 2 ea. safety goggles, 2 coveralls, 10 disposal bags.

Equipment Spill Kits: Nylon carry bag containing 1 ea. 10' sock, 30 pads, 1 pillow, 1 lb. pre-mixed plugging compound, 1 lb. dry plugging compound, 1 pr. nitrile gloves.

50 bundles (100 ea.) sorbent pads,
15-20 polyethylene overpack drums
50 bags floor-dry sorbent
90 2.3 cu. m. wooden 2.3 sea-cans surplus to identified contract needs
50 hydrocarbon resistant sea-can liners surplus to identified contract needs
100 6 mil poly sea-can liners surplus to identified contract needs
Steel garbage sloops
Fuel transfer pumps
Steel barrel wash tray
Empty steel drums
Sorbent booms, shovels, 6 mil poly bags, respirators

Training

Site personnel will be trained on refueling procedures and on spill response. Spill response training will include site layout and identification of storage areas, how to initiate the spill response system, safety concerns related to spills including fire and explosion, personal exposure risks to potentially hazardous materials and the PPE which may be required to handle spills, environmental risks to both ground and waterways, approaches and options to containment and cleanup utilizing the various materials and equipment available onsite, the deployment of booms and other absorbents, the use of

spill kits and their contents including the use of plugs and plugging compounds, reporting requirements

Reporting

All fuel spills will be reported **to the DR, EGT CEO/Project Manager, Superintendent of Operations and Safety Manager immediately** and recorded internally.

Spills greater than 100 liters on land and 20 liters on water will be reported to the **NWT/NU Spill Line at 867-920-8130** (NWT/NU Spill Line Fax 867-873-6924). NWT/NU Spill Report Forms will be kept in the Site Superintendent's office.

The Site Superintendent will be responsible for all reporting and incident investigation requirements on site and will have full authority to ensure the safety of site personnel, to respond to spills immediately and to take any actions he deems necessary to prevent an escalation of any unplanned event or spill. **The CEO/Project Manager, the Superintendent of Operations and the Safety/Loss Control Manager will provide advice, logistical and technical support and financial authorities to respond to any unplanned event or spill as required.**

Chief Executive Officer/Project Manager	**TEL: 867-977-7008**
Russell Newmark	**CEL: 867-678-0040**
Superintendent of Operations	**TEL: 867-977-7017**
Doug Saunders	**CEL: 867-678-0045**
Safety/Loss Control Manager	**TEL: 867-977-7014**
Randy G. Hein	**CEL: 403-638-9636**

Other useful contact numbers include:

GNU, Environmental Protection		867-975-6000
	(Fax)	867-975-6099
GNU, Water Board		867-360-6338
	(Fax)	867-360-6369
GNWT, Environmental Protection		867-873-7654
	(Fax)	867-873-0221
AANDC, Yellowknife		867-669-2500
	(Fax)	867-669-2709
Environment Canada		867-669-4700
	(Fax)	867-873-8185

E.GRUBEN'S TRANSPORT LTD

FUELING UP EQUIPMENT AND VEHICLES

When approaching fueling station you must first observe the area for any unusual appearances.

- **Fuel on the ground**
- **Hoses and nozzle on the ground**
- **Nozzle torn off hose**
- **Hose torn off pump or tank**

If you notice anything like that, immediately report it to your supervisor, before fueling up.

- **Before you begin fueling procedures shut off engine.**
- **Put drip pan into place.**
- **Clean around fill cap (dust, mud, snow, ice, etc.).**
- **Open filler cap carefully, a vacuum might be present.**
- **If filler cap can't be reached from the ground and you must climb onto the equipment, use extreme caution, especially during adverse conditions (wet, mud, snow and ice. If no steps or platforms are available use an appropriate ladder.**
- **Avoid going up steps or ladder with hose**
- **Turn pump on if so equipped and / or open valve at tank.**
- **Begin fueling, don't leave nozzle unattended. NEVER rely on automatic shut off.**
- **Don't overfill tank leave room for expansion.**
- **When finished reverse procedure.**
- **Use three point contacts when ascending or descending.**
- **In case of a spill protect yourself, fuels can cause severe eye and skin irritations, contain the spill if possible, report the spill.**

READ LABELS OR MSDS, in particular FIRST AID MEASURES

- **Make sure pump and / or valves are turned off and hose put back in proper place.**
- **Don't forget to put cap back on**

This Job procedure is to be utilized as a guide only. Worksite practices and/or worksite conditions may necessitate change to the content, or order, of task steps in order to complete the job safely & efficiently.
Common sense should prevail

E.GRUBEN'S TRANSPORT LTD.

FLUID TRANSFER GUIDELINES

Many spills occur during routine fueling, pumping, and other fluid transfer operations. Most of these spills can be avoided by paying attention and taking simple precautions. EGT has developed field-wide fluid transfer guidelines, which are summarized below.

- **Do not operate equipment unless trained by a competent person.**
- **Check all vehicles and equipment. If a leak is apparent, or there are other obvious problems with the equipment; stop the job and have repairs done. Surface liners or drip pans may be used to contain leaks for a short time during critical operations; however, liners are not an acceptable substitute for maintenance.**
- **Park vehicles and equipment away from water bodies, tundra, and wildlife habitat. Do not park on the edges of the pad.**
- **Position equipment so that valves, piping, tanks, etc., are protected from damage by other vehicles or equipment.**
- **Verify that adequate surface liners and absorbents are on hand.**
- **Make sure all equipment is properly grounded.**
- **Inspect hoses, connections, valves, etc., before starting any fluid transfers. Be sure that valves are in proper position and each connection is tightened properly.**
- **Before starting, check all tank and container levels, valves, and vents to prevent overfilling or accidental releases.**
- **Surface liners or drip pans are required under all potential spill points.**
- **Maintain a constant line-of sight with critical components throughout fluid transfer procedure. Be prepared to stop the transfer immediately if you notice any leaks. Do not attempt to fix a leak while fluid is being transferred. Never leave fluid transfer operations unattended. After transfer is complete, continue to take precautions while breaking connections. When finished, check the area for spills. Report all spills immediately to your supervisor and the 24-hour Spill Report Line (867) 920-8130.**

This Job procedure is to be utilized as a guide only. Worksite practices and/or worksite conditions may necessitate change to the content, or order, of task steps in order to complete the job safely & efficiently.
Common sense should prevail.

APPENDIX G

Land Use Permit
(When Available)

APPENDIX H
WATER LICENSE FOR HOPE LAKE

(WHEN AVAILABLE)

APPENDIX I

ASBESTOS ABATEMENT

APPLICATION(S): The purpose of this procedure is to establish a standard for the safety of workers involved with asbestos abatements. This procedure will identify potential hazards and the minimum requirements to be followed while entering, exiting and working in and around an asbestos abatement. All employees involved with asbestos abatements must be protected against hazards which have the potential to cause injury or death, such as, fire and explosion, engulfment, exposure to asbestos. Asbestos Abatements can have many different applications. Some of these different applications could be as follows :

• Building Exteriors (Siding panels, roof panels, thermal spray on overhangs, stucco brick and block mortar)
• Flooring (vinyl tiles, sheet vinyl flooring, floor leveling compound)
• Ceilings (ceiling tiles, acoustic finishes, drywall jointing materials)
• Walls (drywall jointing materials, stippled finishes, thermal spray, cement panels)
• Service Areas (insulation in boilers, vessels, incinerators; insulation on pipes, ducts chillers, walls, floors, ceilings)
• Structural (fireproofing spray)
• Pipes (insulation on exposed or concealed pipes, gaskets in flanged pipe joints)
• Miscellaneous (wire insulation, fume hoods, lab counters, fire dampers theatre curtains welding blankets/screens duct tape)
• Outdoor

This document is intended for the purposes of reference and review for the members of the work crew(s) that will be expected to perform this specific task at the job site. In all cases the work crew that is to perform the required task should initiate or review and then sign-off on a separate work site / task specific Job Safety Analysis (JSA) prior to performing the work.

STANDARD REFERENCE PROCEDURES

PROCEDURES

1. Define Job Requirements

• Hold pre-job meeting with all workers that will performing duties on the work-site (includes all & sub-contractor's workers)
• Review the specific techniques & methods for all the job-processes to be carried out at this work-site
• Determine the level of abatement required
• Complete the Daily Tailgate Meeting, Job Safety Analysis (JSA), The Emergency Response Plan (ERP)

2. Establish A Specific Safety Perimeter To The As Defined Asbestos Abatement Area(S) – An Actual Physical Barrier Or Warning Tape May Be Used.

• Ensure that a safe restrictive distance from any public access is controlled, identified & always maintained
• Define the controlled access entry to both the general & specific entry areas of the asbestos abatement

3. Set Up A Designated Decontamination Facility
• The facility must have a clean, shower and dirty area.

4. Gather & Inspect All The Equipment To Be Used In The Asbestos Abatement
• All equipment must be in acceptable working condition

5. Perform Air-Quality Testing, if required
• Initial testing may be required prior to beginning the asbestos abatement
• A regular schedule for testing should be finalized & maintained throughout entire process, if required

6. Set-up Asbestos Abatement Enclosures / Equipment – Review Work Procedures & Emergency Response Plan (ERP)
• Documented procedures & plans must be reviewed & signed-off by all those workers involved in performing tasks

7. Enter Into The Enclosure
• Dependent on vertical or horizontal application(s) - the as documented entry procedures must be followed

8. Perform Required Procedures In The Enclosure
• All required procedures are to be documented & must be followed
• Any specific work required to be performed during this operational task - must have a further hazard assessment completed on it. (e.g.: Torch-Cutting operation would require a Hot Work Permit, etc…)

9. Exit The Enclosure and Decontaminate
• Regardless of what type of Abatement Procedure was followed (low, moderate, high) anyone exiting the enclosure must decontaminate themselves.

10. Decontaminate All The Equipment That Was Used In The Asbestos Abatement Procedure
• All equipment is to be prepared / dismantled for storage & must be inspected for improprieties or breakage
• Where rejected equipment is found – it must be “Locked or Tagged Out”, With the equipment being removed from service / use until properly repaired or replaced.

11. Dismantle the Abatement Enclosure
• Wet the enclosure material as it is being folded into itself during the dismantling procedures
• Ensure the enclosure is treated as asbestos contaminated materials

12. Secure Work-site Area(s) To The As Specified Post-work Safety Status

• Finalized worksite inspection should be completed
• Site to be left in agreed upon physical state

Areas of Risk	Mandatory Protective Methods/Measures	Additional Measures
HEAD	CSA certified & approved hard hat. The hard hat is to be worn in the manner the manufacturer suggests - with the peak facing forward. The exterior of the hard hat will be maintained in a clean condition. Only required stickers will be on the hard hat.	Chin straps may be required as per the actual requirements of use. Seasonal liners may be used as they are required.
EYE / FACE	CSA certified & approved safety eye glasses. Prescription eye wear must also be CSA approved complete with side-shields or they can be covered using a standard issue pair of safety glasses. CSA approved goggles can also be used as main or alternate protection	An approved face shield may be used for additional protection but CSA approved eye wear must still be worn underneath.
RESPIRATORY	Workers individually & personally issued / fitted ½ mask respirator must be available on the worksite. Where applicable a risk assessment for respiratory protection will dictate the need for mandatory use & type of respirator that would be required.	A full-face respirator is available for use. Any newly issued mask must be fit-tested before being used by the operator.
BODY	Standard issue reflective coveralls are to be worn on the worksite by workers. Where dictated by being on petroleum based worksites, coveralls must be of the fire-rated NOMEX type. When on nonpetroleum based worksites, cotton coveralls are acceptable to wear.	When acceptable – a florescent vest with approved reflective striping may be worn as a minimum requirement.
HAND	Standard issue leather-palmed gloves must be on the worksite & readily available to the worker(s). Where dictated these same style of gloves	Seasonal & many other styles of chemical resistant gloves can be made

	may be required to be kept on the workers person once they have entered onto the worksite.	available to workers.
FEET	CSA certified & approved safety boots must be worn. Boots must have leather uppers & measure a distance of 6 inches minimum, from the ground. This policy applies to all boots - including any type of rubber or winter style of boots worn for seasonal protection.	Boots must be maintained in acceptable condition. Any worn holes or cuts to the outer shell of the boot are not acceptable.
CHEMICAL	Chemical resistant gloves (SOLVEX & NITRILE) along with TYVEK outerwear suits & personal respirators will be made available on the worksite. Where identified - in the as dedicated exclusion zone(s) the appropriate protective clothing must be worn.	When chemical protection rules are in effect, the appropriate decontamination facilities must also be in place.
FIRE / BURNS / EXPLOSIONS	When working on any petroleum based worksite all sources of ignition must be maintained under control at all times. The appropriate & dedicated fire extinguishers must be available on site at all times. Smoking is allowed only in the as designated area(s).	An emergency response plan including firefighting procedures will be documented & posted on the worksite.
ENVIRONMENTAL	At least one (1) standard issue EGT spill kit will be located on the worksite at all times. Any on site fuel or chemicals will be properly stored & maintained to prevent any spilling of materials. Proper berms, cabinets or spill pallets can be utilized for this purpose.	An onsite MSDS binder or data system will be available for immediate reference for any substance as required for environmental protection
TASK SPECIFIC	A full body harness with “D” ring and attached lifeline is to be worn at all times by all those entering into the designated area. This full body harness shall be properly worn by the designated personnel.	Life jackets shall be worn if the workers are exposed to falling into liquid of sufficient depth for drowning.

If required, air quality monitoring of the abatement area must be maintained throughout the entire process.

JOB SAFETY ANALYSIS

BASIC JOB STEPS	IDENTIFIED & POTENTIAL HAZARDS	HAZARD MITIGATION/CONTROLS
1. Define Job Requirements • Hold pre-job meeting with all workers that will performing duties on the work-site (includes all subcontractor's workers) • Review the specific techniques & methods for all the job-processes to be carried out at this work-site • Determine the asbestos abatement as being either a low, moderate or high risk activity • Complete the Daily Tailgate Meeting, Job Safety Analysis (JSA), The Emergency Response Plan (ERP). • Ensure a proper decontamination facility is available. **** NOTE **** **The hazard**	• Inexperienced / untrained workers • Improper PPE, tools or equipment • Injury to EGT, subcontractor or third-party workers on and adjacent to - the actual work-site • Damage to equipment, structures, vehicles or other equipment located on the actual work-site • Equipment failure	An experienced supervisor is to be on the work-site at all times, while all the required job-specific work is in process • Supervisor to ensure all required work is executed in compliance with all permits & governmental regulations • Worker(s) trained to complete assigned tasks (for the applicable job specific requirements on the necessary work procedures) • Physical inspection of all worksite areas (includes the removing / identifying of specific hazards & related areas) • Completion of the Daily Tailgate Meeting • Ensure that a Job Safety Analysis (JSA) for the entire job-task is completed. All members of the work crew required to perform the job task must review and sign-off on having read and understood the specifics of the JSA in question • Complete ERP • Daily (Pre-use) inspection procedures of all equipment / tools (Equipment Log) • Use of Field Level Risk Assessment Cards • Review all on-site Safety program applications • All personnel entering worksite will receive a site-specific orientation

assessment specific to this asbestos abatement will be detailed in the JSA. This JSA process must be completed & signed-off prior to anyone entering into the designated exclusion zone		
2. Establish A Specific Safety Perimeter To The As Defined Asbestos Abatement Exclusion Zone – An Actual Physical Barrier Or Warning Tape May Be Used • Ensure that a safe restrictive distance from any public access is controlled & always maintained • Define the controlled access entry to both the general & specific entry areas of the abatement area	• Slips, trips & fall hazards • Uneven ground areas • In-experienced worker(s) • Unexpected fall from a height • Equipment failure	• An experienced supervisor is to be on the work-site at all times, while all the required job-specific work is in process • Supervisor to ensure all required work is executed in compliance with all permits & governmental regulations • Awareness of the existing ground surfaces & other previously recognized hazards that workers are required to travel over / around • Physical inspection of all worksite areas (includes the removing / identifying of specific hazards & related areas) • Worker(s) trained to complete assigned tasks (for the applicable job specific requirements on the necessary work procedures) • Wearing of an approved harness & equipment for a fall restraint application must be in effect for all those that will enter the as designated area(s) – both general & specific area(s)
3. Gather & Inspect All The Equipment To Be Used In The Confined Space Entry • Where applicable all / any equipment that requires certification must be inspected &	• Slips, trips & fall hazards • Uneven ground areas • In-experienced worker(s) • Unexpected fall / entry into confined space • Pinch-points • Muscle strain / injury	• Awareness of the existing ground surfaces & other previously recognized hazards that workers are required to travel over / around • Worker(s) trained to complete assigned tasks (for the applicable job specific requirements on the necessary work procedures) • Wearing of an approved harness & equipment for a fall restraint application

validated as being certified • All equipment must be in acceptable working condition	to workers from lifting / carrying equipment	must be in effect for all those that will enter the as designated area(s) – both general & specific area(s) • Identify all pinch-points for this task; inform workers to keep hands / fingers from these same as identified & as designated areas • Ensure workers know & understand their own personal limitations when they are required to perform any manual lifting operations. • When required to lift - use the proper lifting techniques: lift with legs, keep back straight, position load close to body, do not twist when lifting & get assistance if weight is more than 50 lbs. • A continual check of weather conditions is a mandatory requirement, cease work if electrical storm is threatening or is in progress.
3. Gather & Inspect All The Equipment Used In The Asbestos Abatement • Where applicable all / any equipment that requires certification must be inspected & validated as being certified • All equipment must be in acceptable working condition	• Slips, trips & fall hazards • Uneven ground areas • In-experienced worker(s) • Unexpected fall from a height • Pinch-points • Muscle strain / injury to workers from lifting / carrying equipment	• Awareness of the existing ground surfaces & other previously recognized hazards that workers are required to travel over / around • Worker(s) trained to complete assigned tasks (for the applicable job specific requirements on the necessary work procedures) • Wearing of an approved harness & equipment for a fall restraint application must be in effect for all those that will enter the as designated area(s) – both general & specific area(s) • Identify all pinch-points for this task; inform workers to keep hands / fingers from these same as identified & as designated areas • Ensure workers know & understand their own personal limitations when they are required to perform any manual lifting operations. • When required to lift - use the proper lifting techniques: lift with legs, keep back straight, position load close to

		body, do not twist when lifting & get assistance if weight is more than 50 lbs.
4. Perform Air-Quality Testing (if required) • Initial testing must be completed prior to anyone entering the abatement area • A regular schedule for testing should be finalized & maintained throughout entire process, if required.	• Slips, trips & fall hazards • Uneven ground areas • In-experienced & untrained worker(s) • Unexpected fall from a height • Equipment failure • Exposure to the atmospheric hazard	• Awareness of the existing ground surfaces & other previously recognized hazards that workers are required to travel over / around • Worker(s) trained to complete assigned tasks (for the applicable job specific requirements on the necessary work procedures) • Wearing of an approved harness & equipment for a fall restraint application must be in effect for all those that will enter the as designated area(s) – both general & specific area(s) • A ½ mask, full face or power air purifying respirator must be available on site & worn when required (minimum requirement = 1 unit for every entrant , 1 unit for every designated rescuer) • Tyvek coveralls, Nitrile gloves (sealed to the coverall) and rubber boots (sealed to the coverall) are required to be worn in the containment area • A continual check of weather conditions is a mandatory requirement, cease work if electrical storm is threatening or is in progress.
5. Set-up Containment Area, Removal Procedures & Emergency Response Plan (ERP) • Documented procedures & plans must be reviewed & signed-off by all those workers involved in performing tasks	• Slips, trips & fall hazards • Uneven ground areas • Pinch-points • Muscle strain / injury to workers from lifting / carrying equipment • In-experienced & untrained worker(s) • Unexpected fall from a height • Equipment failure • Exposure to the atmospheric hazard	• Awareness of the existing ground surfaces & other previously recognized hazards that workers are required to travel over / around • Worker(s) trained to complete assigned tasks (for the applicable job specific requirements on the necessary work procedures) • A stand-by worker must always : remain present at the Containment Area point of entry when someone has entered into the containment area - Have suitable means of communicating an emergency situation

**** NOTE **** **Stand-by worker at Containment Area point of entry must be available onsite during the time workers are in the containment area**		to the emergency response contact - Have a suitable means of direct communication with workers who entered into the containment area • Wearing of an approved harness & equipment for a fall restraint application must be in effect for all those that will enter the as designated area(s) – both general & specific area(s) • Identify all pinch-points for this task; inform workers to keep hands / fingers from these same as identified & as designated areas • A ½ mask, full face or power air purifying respirator must be available on site & worn when required (minimum requirement = 1 unit for every entrant , 1 unit for every designated rescuer) • Tyvek coveralls, Nitrile gloves (sealed to the coverall) and rubber boots (sealed to the coverall) are required to be worn in the containment area • Ensure workers know & understand their own personal limitations when they are required to perform any manual lifting operations • When required to lift - use the proper lifting techniques: lift with legs, keep back straight, position load close to body, do not twist when lifting & get assistance if weight is more than 50 lbs.
6. Enter Into The Confined Space • Dependent on the determined risk activity - the as documented entry procedures must be followed	• Slips, trips & fall hazards • Muscle strain / injury to workers from lifting / carrying equipment • In-experienced & untrained worker(s) • Equipment failure • Exposure to the atmospheric hazard	• Awareness of the existing ground surfaces & other previously recognized hazards that workers are required to travel over / around • Worker(s) trained to complete assigned tasks (for the applicable job specific requirements on the necessary work procedures) • A stand-by worker must always : remain present at the Containment Area point of entry when someone has entered into the containment area - Have suitable

		means of communicating an emergency situation to the emergency response contact - Have a suitable means of direct communication with workers who entered into the containment area • Wearing of an approved harness & equipment for a fall restraint application must be in effect for all those that will enter the as designated area(s) – both general & specific area(s) • A ½ mask, full face or power air purifying respirator must be available on site & worn when required (minimum requirement = 1 unit for every entrant , 1 unit for every designated rescuer) • Tyvek coveralls, Nitrile gloves (sealed to the coverall) and rubber boots (sealed to the coverall) are required to be worn in the containment area • Entry into the Containment Area is prohibited if the worker is not wearing a respirator and the required task specific PPE • Ensure workers know & understand their own personal limitations when they are required to perform any manual lifting operations. • When required to lift - use the proper lifting techniques: lift with legs, keep back straight, position load close to body, do not twist when lifting & get assistance if weight is more than 50 lbs. • Air quality checks must be maintained on a regular basis throughout the entire period of entry into the containment area if determined they are required.
7. Perform Required Procedures In The Confined Space • Dependent on the determined risk activity – the as	• Slips, trips & fall hazards • Muscle strain / injury to workers from lifting / carrying equipment • In-experienced & untrained worker(s)	• Awareness of the existing ground surfaces & other previously recognized hazards that workers are required to travel over / around • Worker(s) trained to complete assigned tasks (for the applicable job specific requirements on the necessary work

documented entry procedures must be followed **** NOTE **** **Any specific work required to be performed during this operational task – must have a further hazard assessment completed on it. (e.g.: Torch-Cutting operation would require a Hot Work Permit, etc…)**	• Equipment failure • Exposure to the atmospheric hazard	procedures) • A stand-by worker must always : remain present at the Containment Area point of entry when someone has entered into the containment area - Have suitable means of communicating an emergency situation to the emergency response contact - Have a suitable means of direct communication with workers who entered into the containment area • Wearing of an approved harness & equipment for a fall restraint application must be in effect for all those that will enter the as designated area(s) – both general & specific area(s) • A ½ mask, full face or power air purifying respirator must be available on site & worn when required (minimum requirement = 1 unit for every entrant , 1 unit for every designated rescuer) • Tyvek coveralls, Nitrile gloves (sealed to the coverall) and rubber boots (sealed to the coverall) are required to be worn in the containment area • Ensure workers know & understand their own personal limitations when they are required to perform any manual lifting operations. • When required to lift - use the proper lifting techniques: lift with legs, keep back straight, position load close to body, do not twist when lifting & get assistance if weight is more than 50 lbs. • Air quality checks must be maintained on a regular basis throughout the entire period of entry into the containment area if determined they are required.
8. Exit The Confined Space • Dependent on the determined risk activity – the as	• Slips, trips & fall hazards • Muscle strain / injury to workers from lifting / carrying equipment • In-experienced &	• Awareness of the existing ground surfaces & other previously recognized hazards that workers are required to travel over / around • Worker(s) trained to complete assigned tasks (for the applicable job specific

documented entry procedures must be followed	untrained worker(s) • Equipment failure • Exposure to atmospheric hazard	requirements on the necessary work procedures) • A stand-by worker must always : remain present at the Containment Area point of entry when someone has entered into the containment area - Have suitable means of communicating an emergency situation to the emergency response contact - Have a suitable means of direct communication with workers who entered into the containment area • Wearing of an approved harness & equipment for a fall restraint application must be in effect for all those that will enter the as designated area(s) – both general & specific area(s) • A ½ mask, full face or power air purifying respirator must be available on site & worn when required (minimum requirement = 1 unit for every entrant , 1 unit for every designated rescuer) • Tyvek coveralls, Nitrile gloves (sealed to the coverall) and rubber boots (sealed to the coverall) are required to be worn in the containment area • Ensure workers know & understand their own personal limitations when they are required to perform any manual lifting operations • When required to lift - use the proper lifting techniques: lift with legs, keep back straight, position load close to body, do not twist when lifting & get assistance if weight is more than 50 lbs. • Air quality checks must be maintained on a regular basis throughout the entire period of entry into the containment area if determined they are required.
9. Decontamination Procedures • Controlled access to the contamination	• Slips, trips & fall hazards • In-experienced & untrained worker(s)	• Awareness of the existing ground surfaces & other previously recognized hazards that workers are required to travel over / around

area must be continually maintained • Entrance / Exit to decontamination area(s) must be clearly identified • Appropriated separate “Sanitary / Clean“ & “Unsanitary / Dirty“ must be maintained in the decontamination area	• Exposure to atmospheric hazard through inhalation during the decontamination procedure • Further cross contamination with other ‘clean’ area(s) associated with the worksite	• Worker(s) trained to complete assigned tasks (for the applicable job specific requirements on the necessary work procedures) • Ensure all exclusion zones have been appropriately identified & that access to all identified areas is both restricted & controlled • The appropriate cartridge respirator – ½ mask or full face mask & Tyvek disposable suits, gloves must be worn by all those that are required to perform any work that is required to be carried out inside of the designated exclusion zones or unsanitary / dirty areas • Decontamination area must be clearly identified with “Sanitary / Clean” & “Unsanitary / Dirty” entrances / exits clearly marked. • Appropriate wipe cloths & disposal containers for used clothing & materials must be clearly identified at the decontamination trailer location. • A clean water source must be maintained on site at the decontamination area
10. Dismantle the Asbestos Abatement Containment Area • All equipment used in the containment area is to be prepared for storage, cleaned & must be inspected for cleanliness • Where rejected equipment is found – it must be re-cleaned to prevent exposure of other workers to asbestos • All equipment used to construct the	• Slips, trips & fall hazards • Uneven ground areas • In-experienced & untrained worker(s) • Unexpected fall from a height • Pinch-points • Muscle strain / injury to workers from lifting / carrying equipment • Exposure to atmospheric hazard	• Awareness of the existing ground surfaces & other previously recognized hazards that workers are required to travel over / around • Worker(s) trained to complete assigned tasks (for the applicable job specific requirements on the necessary work procedures) • Wearing of an approved harness & equipment for a fall restraint application must be in effect for all those that will enter the as designated area(s) – both general & specific area(s) • Identify all pinch-points for this task; inform workers to keep hands / fingers from these same as identified & as designated areas • A ½ mask, full face or power air

Containment Area must be wetted and folded into itself in preparation for disposal.		purifying respirator must be available on site & worn when required (minimum requirement = 1 unit for every entrant , 1 unit for every designated rescuer) • Tyvek coveralls, Nitrile gloves (sealed to the coverall) and rubber boots (sealed to the coverall) are required to be worn • Where equipment has come in contact with asbestos or some other type of contaminated materials, all equipment in question must be properly and thoroughly decontaminated of the offending materials before they leave the worksite. • Ensure workers know & understand their own personal limitations when they are required to perform any manual lifting operations. • When required to lift - use the proper lifting techniques : lift with legs, keep back straight, position load close to body, do not twist when lifting & get assistance if weight is more than 50 lbs.
11. Re-gather & Inspect All The Equipment That Was Used During The Asbestos Abatement • All equipment is to be prepared / dismantled for storage & must be inspected for cleanliness, improprieties or breakage. • Where rejected equipment is found – it must be re-cleaned and/or “Locked and Tagged Out” With the equipment being removed from service until	• Slips, trips & fall hazards • Uneven ground areas • In-experienced & untrained worker(s) • Pinch-points • Muscle strain / injury to workers from lifting / carrying equipment	• Awareness of the existing ground surfaces & other previously recognized hazards that workers are required to travel over / around • Worker(s) trained to complete assigned tasks (for the applicable job specific requirements on the necessary work procedures) • Identify all pinch-points for this task; inform workers to keep hands / fingers from these same as identified & as designated areas • A ½ mask, full face or power air purifying respirator must be available on site & worn when required (minimum requirement = 1 unit for every entrant , 1 unit for every designated rescuer) • Where equipment has come in contact with asbestos or some other type of contaminated materials, all equipment in question must be properly and thoroughly decontaminated of the

properly repaired.		offending materials before they leave the worksite. • Ensure workers know & understand their own personal limitations when they are required to perform any manual lifting operations. • When required to lift - use the proper lifting techniques: lift with legs, keep back straight, position load close to body, do not twist when lifting & get assistance if weight is more than 50 lbs.
12. Disposal of Asbestos Contaminated Materials Gathered During the Abatement Work	• Slips, trips & fall hazards • Uneven ground areas • In-experienced & untrained worker(s) • Pinch-points • Muscle strain / injury to workers from lifting / carrying equipment • Improper Transportation of Dangerous Goods	• Worker(s) trained to complete assigned tasks (for the applicable job specific requirements on the necessary work procedures) • Awareness of the existing ground surfaces & other previously recognized hazards that workers are required to travel over / around • Worker(s) trained to complete assigned tasks (for the applicable job specific requirements on the necessary work procedures) • Identify all pinch-points for this task; inform workers to keep hands / fingers from these same as identified & as designated areas • All asbestos containing materials must be enclosed in plastic bags (6 mil thicknesses) or other as designated appropriate containers. Containers / bags must be labeled as per the Local Guidelines for Working With Asbestos and / or Transportation of Dangerous Goods Regulation • A ½ mask, full face or power air purifying respirator must be available on site & worn when required (minimum requirement = 1 unit for every entrant , 1 unit for every designated rescuer) • Where equipment has come in contact with asbestos or some other type of contaminated materials, all equipment in question must be properly and

		thoroughly decontaminated of the offending materials before they leave the worksite. • Ensure workers know & understand their own personal limitations when they are required to perform any manual lifting operations. • When required to lift - use the proper lifting techniques : lift with legs, keep back straight, position load close to body, do not twist when lifting & get assistance if weight is more than 50 lbs.
13. De-Brief Work Crew • Meet with all members of the work crew(s) involved – input & feedback is required from all & must be documented	• Improper information gained or omitted for any future reference procedural verifications or improvements to process	• Worker(s) trained to complete assigned tasks (for the applicable job specific requirements on the necessary work procedures)
14. Secure Work-site Area(s) To The As Specified Post-work Safety Status • Finalized worksite inspection should be completed • Site to be left in agreed upon physical state	• Slips, trips & fall hazards • Uneven ground areas • In-experienced worker(s)	• Awareness of the existing ground surfaces & other previously recognized hazards that workers are required to travel over / around • Worker(s) trained to complete assigned tasks (for the applicable job specific requirements on the necessary work procedures) • Complete a final physical inspection of all the entire worksite area(s). Documentation & photos of completed work area(s) should be taken.

APPENDIX J

Hope Lake Cold Weather Survival Plan

Cold weather survival planning is nothing more than realizing something could happen that would put an individual or group in a survival situation and, with that in mind, taking steps to increase their chances of survival. Thus, survival planning means preparation.

THE HOPE LAKE LOCATION

Hope Lake is located about 75 km southwest of Kugluktuk, Nunavut. The site is located approximately 34km west of the Coppermine River, and 20 km northeast of the Dismal Lakes in the Kitikmeot Region of Nunavut. The site is large in area, and part of it is situated on the southern shore of Hope Lake, a moderately sized water body. The Hope Lake site is a result of exploration activity. Exploration was carried out by Coppermine River Limited (CRL) and a second company called Hearne Coppermine Limited (Hearne), and culminated in production of a detailed plan for a mine and an associated community, which was written in 1968. However, no mining activity, other than exploratory drilling and geological surveys, ever occurred at Hope Lake. The associated sites of Husky Creek and Willow Creek are approximately 20 km and 10 km respectively from the Hope Lake sites. The objectives of the project are to cost effectively and safely clean up and restore the Hope Lake and the associated sites at Husky Creek and Willow Creek while minimizing disturbance to their sensitive ecosystems.

The nearest community and charter base is Kugluktuk, located approximately 75 km to the Northeast of the Hope Lake site. The Husky Creek and Willow Creek sites are between Hope Lake and Kugluktuk. Yellowknife is located approximately 594 km to the south of Kugluktuk. Inuvik is about 475 km to the northwest of Kugluktuk. This project, are subject to the terms of the Nunavut Comprehensive Land Claim Agreement (CLCA).

The Hope Lake site conditions in general are typical of its Arctic surroundings consisting of permafrost barren glacial/gravel topography.
The most significant physical aspects about the site are:

- Barge access is required for mobilization and demobilization of the majority of equipment, materials and offsite disposals. The coastal access to Kugluktuk is only ice free and accessible by existing barge services from August to late September.
- The site is snow free, thawed and relatively dry between late June and late September.
- The Hope Lake site has one airstrip that is approximately 458 m long with a northeast-southwest orientation. The airstrip is generally in good condition. A fresh water lake is located north of the airstrip. Gravel access roads link the airstrip and fresh water lake to the station facilities.
- Mobilization to Kugluktuk will take place via Northern Transportation Company Limited (NTCL) barge in early to late September of 2012. Contract work will be

conducted through the summer of 2012 and 2013. Demobilization from the site will take place in August of 2014

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EMERGENCY PLANNING

The work to be conducted at Hope Lake will take place during the summer and early fall, so it is unlikely that the majority of workers would be subjected to severe cold conditions; however precautions will be taken to ensure workers would have the basic necessities, such as food, water, shelter, suitable warm clothing and heat in an emergency. These provisions will be delivered to the site via Cat Train and secured on site prior to mobilization of the work crew.

Workers at Hope Lake in the worst case scenario could lose the camp and supplies and be weathered in for a period of time. Due to the site's isolation it could take several days to be rescued, especially in the fall. It is important that suitable supplies be assigned and secured. A means of communication, such as a satellite phone, up to date camp resident list and emergency first aid supplies will be placed with the emergency rations in a secure container away from the main camp to ensue suitable provisions and a means of communication are available in the unlikely occurrence of a catastrophic event.

Workers will be briefed to ensure that they fully understand the requirement to keep warm clothing readily available for emergency situations in the event it would be necessary to evacuate the camp and be unable to return.

JOURNEY MANAGMENT

The EGT Supervisor will have overall responsibility and will act as the Journey Manager, or will appoint a designate. **There is a very remote chance that workers could be stranded in the outer limits of the work site by a freak storm, which would necessitate them to hold up for 1-2 days or be involved in a situation where a plane went down and the passengers survived the crash and they would have to survive for between 1-6 days awaiting rescue. The following procedures have been developed to monitor all travel outside of the camp.**

Procedure

Workers will check the local weather conditions prior to departing for their destination. In the event that severe weather is forecasted for the Hope Lake region travel plans will be delayed until more favorable conditions exit. The Environment Canada weather conditions will be downloaded daily from the internet and will be posted in the Supervisor's office and on the camp bulletin board. All travel outside the camp will require approval from the Supervisor only if weather conditions are favorable. Workers will file a Journey Management Plan with the Supervisor prior to departure and the details will be placed on the Journey Board.

The information required will include:

Date of Journey

Driver/Pilot's Name

Passenger Name(s)

Destination

Departure Time and Location

Route Details

Check-in Time(s) and Location(s)

Estimated Time of Arrival

Radio Frequency and Phone Numbers if Applicable

In addition, all vehicles and equipment operating for EGT must be equipped with the appropriate emergency equipment. This includes appropriate winter clothing with reflective striping, survival kit, road hazard kit, first aid kit and fire extinguisher. The Supervisor will verify travelers' have all the required equipment prior to departure.

The driver, operator or pilot upon arrival at their destination will close out the journey with the Journey Manager. At that time the details will be recorded on the Journey Management form, which will be kept on file.

Based on the details above the journey will be monitored and any deviation from the original plans or unforeseen delays must be reported by radio, telephone or internet to the Journey Manager. The Journey Manager will update the information on the form and make the necessary adjustments on the Journey Board.

In the event there is an overdue journey base on the estimated time of arrival the Journey Manager will attempt to contact the driver, operator or pilot and if a significant amount of time has elapsed without contact, which would be approximately two hours from the ETA, the Journey Manager will enact procedures to search for the vehicle, equipment or aircraft.

EGT COLD WEATHER SURVIVAL PLAN

In the event that workers are lost or isolated from the camp area, such as a plane crash it is important to have an understanding of the arctic and basic survival techniques. EGT has supplied the following information to assist in preparation for emergency survival situations.

The arctic tundra is one of the coldest of all places in the world and marked by extremely low temperatures, little precipitation; short growing seasons and poor nutrients. These conditions make for one of the most difficult survival scenarios on Earth. In addition to the standard survival procedures, including carrying a full survival kit, tundra and other cold-weather environments demand a set of procedures all their own.

Think Clearly

In any survival situation, and particularly one as challenging as a tundra-based one, it pays to stay calm and think clearly and logically. It is more difficult to satisfy basic water, food and shelter needs in a cold environment than in a warm environment. Even if the basic requirements are covered, a person must also have adequate protective clothing

and the will to survive. The will to survive is as important as the basic needs. It is important that a person maintain the will to survive, and act according to a logical plan.

Clothing

Before setting out into tundra or other cold-weather environment, dress properly. It is essential to have a quality waterproof/breathable jacket and pants. Exercise of any kind will result in perspiration regardless of temperature. This perspiration can saturate the wrong types of clothing, making a person moist and cold. To prevent this issue, use good base-layer garments that wick perspiration away and keep a person dry. Garments should be made from wool, polyester, treated silk or other suitable materials. Be sure to wear a mid-layer between the base and outer layers to provide ample insulation for the weather. Do not overdress because this will increase perspiration and heat loss. Keep clothes clean and dry.

Keep the head and hands covered. Wear dark sunglasses (glacier glasses) that protect the eyes from the sunlight and glare off the snow

Water

Drink water regularly as water will be lost through perspiration. Studies have shown that cold weather presents an increased risk of dehydration because people don't feel as thirsty in cold weather. Drink regularly and be aware that darker urine indicates dehydration and the need for water.

While water won't necessarily be in short supply thanks to snow, frost, ice and running water, it will be more difficult to keep water in its liquid state in the cold. Store a water bottle underneath clothing to keep it warm. Do not eat snow or ice in place of drinking water as this can lower the body temperature. It's also important to clean water using a filter, chemical treatment or boiling. Despite images of crystal-clear, glacial waters, water from tundra-based sources can still contain harmful parasites, viruses and bacteria. Ice formed from salt water loses salinity over time and it is suggest looking for salt-water ice chunks that are bluish in color and rounded on the edges. Melted ice provides more water than melted snow.

Keep Clean

During a trying survival situation, taking a shower will be the last thing on the mind. However, washing helps prevent skin rashes that can develop into more serious problems. Wash the areas of the body where sweat and bacteria can gather including under the arms, on the feet and in the crotch. Change socks and underwear as often as possible.

Medical Conditions

Beware of cold-related medical conditions, including hypothermia. Recognize the symptoms and know what to do. Pay particular attention to your own body as well as the

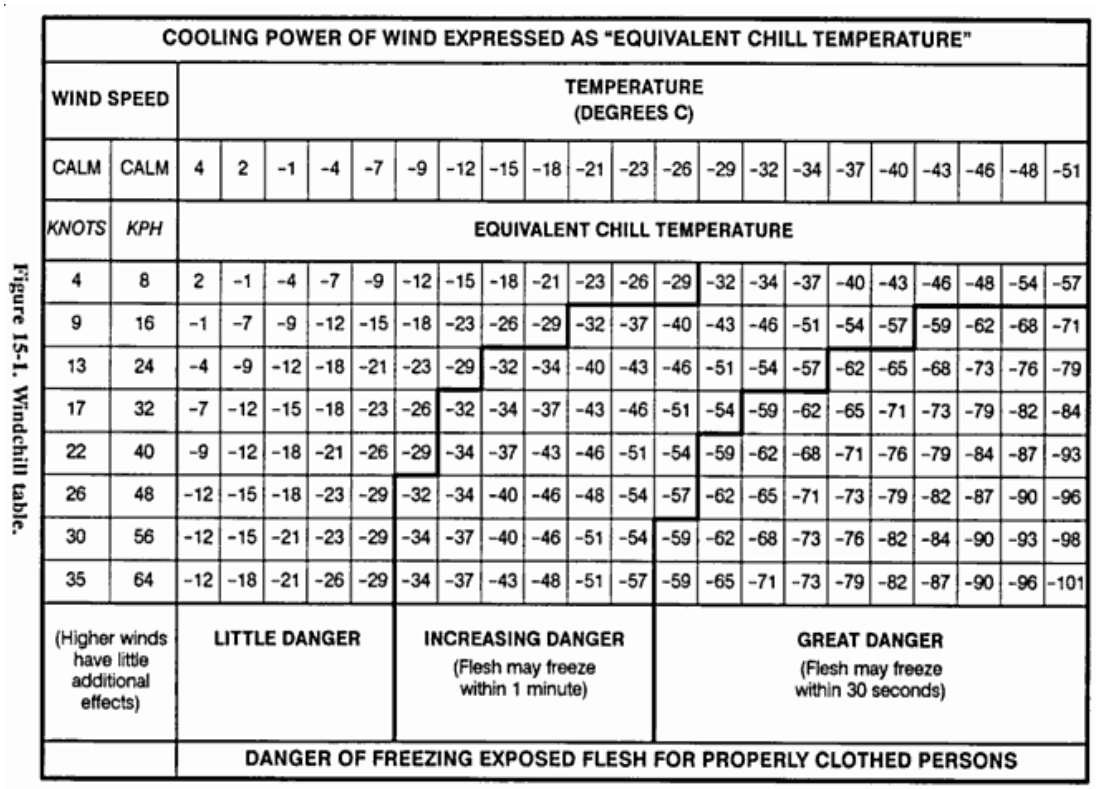
other members of the group. The initial symptoms of hypothermia include shivering and slower thinking/irrationality. Later symptoms include muscle rigidity, loss of consciousness and death. If someone in the party begins experiencing symptoms, it's vital to get out of the cold and bring the body temperature up.

Other conditions brought on by cold weather include frostbite and snow blindness. Learn the symptoms and treatments of these conditions before venturing out into the cold.

Shelter

Snow is an excellent insulator and is highly sculptable. If there is no shelter, it is possible to make a variety of shelters out of snow. Familiarity with the different types of snow shelters and how they're made is advisable. Igloos are an excellent form of shelter when on a flat, open area with hard, wind-packed snow. A snow cave will work when building a shelter into the side of a hill. Be aware wind-chill increases the hazards in cold regions. Wind-chill is the effect of moving air on exposed flesh. For instance, with a 27.8-kph (15-knot) wind and a temperature of -10 degrees C, the equivalent wind-chill temperature is -23 degrees C. The following chart gives the wind-chill factors for various temperatures and wind speeds.

Remember, even when there is no wind, you will create the equivalent wind by skiing, running, riding in an open vehicle, quad or snowmobile and working around aircraft that produce wind blasts.



COOLING POWER OF WIND EXPRESSED AS "EQUIVALENT CHILL TEMPERATURE"																					
WIND SPEED		TEMPERATURE (DEGREES C)																			
CALM	CALM	4	2	-1	-4	-7	-9	-12	-15	-18	-21	-23	-26	-29	-32	-34	-37	-40	-43	-46	-48	-51
KNOTS	*KPH*	EQUIVALENT CHILL TEMPERATURE																			
4	8	2	-1	-4	-7	-9	-12	-15	-18	-21	-23	-26	-29	-32	-34	-37	-40	-43	-46	-48	-54	-57
9	16	-1	-7	-9	-12	-15	-18	-23	-26	-29	-32	-37	-40	-43	-46	-51	-54	-57	-59	-62	-68	-71
13	24	-4	-9	-12	-18	-21	-23	-29	-32	-34	-40	-43	-46	-51	-54	-57	-62	-65	-68	-73	-76	-79
17	32	-7	-12	-15	-18	-23	-26	-32	-34	-37	-43	-46	-51	-54	-59	-62	-65	-71	-73	-79	-82	-84
22	40	-9	-12	-18	-21	-26	-29	-34	-37	-43	-46	-51	-54	-59	-62	-68	-71	-76	-79	-84	-87	-93
26	48	-12	-15	-18	-23	-29	-32	-34	-40	-46	-48	-54	-57	-62	-65	-71	-73	-79	-82	-87	-90	-96
30	56	-12	-15	-21	-23	-29	-34	-37	-40	-46	-51	-54	-59	-62	-68	-73	-76	-82	-84	-90	-93	-98
35	64	-12	-18	-21	-26	-29	-34	-37	-43	-48	-51	-57	-59	-65	-71	-73	-79	-82	-87	-90	-96	-101
(Higher winds have little additional effects)		LITTLE DANGER					INCREASING DANGER (Flesh may freeze within 1 minute)						GREAT DANGER (Flesh may freeze within 30 seconds)								
		DANGER OF FREEZING EXPOSED FLESH FOR PROPERLY CLOTHED PERSONS																			

Figure 15-1. Windchill table.

Food

Food can be scarce on the tundra, depending upon the time of year. Food sources will vary depending upon where you are and what time of year it is. Before setting out, be sure to study the natural food sources, both plant and animal, and bring the appropriate tools for killing and preparing food. Also, bring a supply of food, water and rations in the event it is needed.

Navigation

Navigation can be particularly difficult in cold-weather environments, as whiteouts and snow-covered terrain can make it difficult to discern direction. Avoid traveling during snowstorms and be sure to carry an appropriate map and compass. Beware that compasses are unreliable when you are close to the North Pole. When walking use a pole to probe the snow or ice in front of travel to test its integrity. Make or carry snowshoes for use if faced with deep snow.

APPENDIX K
HOPE LAKE REMOTE WORK PLAN

EGT Remote Area Work Plan

The following plan has been established to prepare for and to work safely in an isolated and remote area, such as Hope Lake. Operating in isolated and remote situations requires knowledge of maps and mapping reading, local topography, nearby inhabitants and locations within that area, survival techniques and human needs relating to survival situations, clothing requirements for heat and cold protection, basic first aid, and the operation of communication equipment and distress signaling.

Plan for operating at Hope Lake

1. EGT has operated in the Arctic Region for many years and is very familiar with the operating environment and conditions. Information relating to the specific operating environment at Hope Lake have been established, organized and recorded through site visits, research and familiarity with similar projects.
2. Detailed operating plans have been established and perfected at numerous other work sites, which have been successfully cleaned up by EGT. Travel and transportation plans have been developed and logistical arrangements have been made to ensure timely deployment of equipment, camps and workers. Emergency and disaster contingency plans have been made and fallback position requirements have been established in consultation with EGT management and supervisory staff.
3. The appropriate authorities will be notified of the action plans and time schedules according to the contract.
4. The relevant maps, drawings and specifications have been identified and sourced relative to the area and work.

Prepare for operating in Hope Lake

1. The majority of the personnel, who will be working at Hope Lake are local inhabitants from communities located nearby and are familiar with the area. The other workers assigned to the project will provide expertise and bring with them considerable knowledge related to the environment and work. All workers will be adequately trained and prepared for the work activities or travel associated with this project.

2. The equipment will be serviced and prepared for use in the prescribed work location including the camp, heavy equipment and ancillary support equipment. The camp, equipment and supplies will be transported to Kugluktuk by a barge

company, who are very familiar with ice and sea conditions in the arctic and will be transported along prescribed routes.

3. The barge company will have researched sea and ice conditions prior to departure and will receive advice and authorities to travel from EGT management.

4. The planned activities and itinerary will be established based on weather and sea conditions and will be accurately reported and recorded prior to departure in accordance with contract requirements.

Prepare for emergency situations

1. Adequate provisions will be transport with the camp and equipment to meet expected operational and possible emergency needs. Additional provisions, supplies and parts will be transported to the site on a weekly as required by aircraft.

2. The EGT Operations Manager in consultation with the Project Manager will conduct the initial planning to supply all the necessary equipment and supplies and will regularly monitor the needs at the Hope Lake location to ensure the structured usage of available provisions and resources.

3. The operating plan will be structured to include an orientation and training for workers unfamiliar with remote area survival techniques prior to deployment to Hope Lake.

4. An emergency management and response plan and procedures for Hope Lake will be included as an integral part of operating plans and EGT company policy.

Operate in remote environments

1. The activities and work at Hope Lake will be completed according to instructions and established time schedules set out in the contract.

2. All activities and work carried out at Hope Lake will be executed in accordance with prescribed EGT safe work procedures and policy.

3. Emergency situations will be handled in accordance with prescribed EGT procedures and company policy.

4. Established reporting procedures will be followed on completion of planned activities as per the contract and EGT company policy.

Remote environments

Any work place where the ability to get help because of distance is such that personal safety may be at risk.

Types of working situations
Working alone or in teams.

Methods of planning
Establishment of time schedules and intended outcomes in consultation with managers and supervising staff.
Provisioning for extreme circumstances, including worst case scenario.
Identification of alternative routes, available water supplies and travel conditions such as checks of actual and forecast weather conditions.
Consideration of any unplanned deviation from the planned route, itinerary or timing including the work processes involved.
Establishment of rescue plans and the consideration of what circumstances might require such an operation to be mounted.

Company procedures and policy
Guidelines and reporting procedures for personnel operating in remote environments.

Documentation
Personal diary records as well as property records.

Operational strategies
Planned provision of water and other survival clothing and requisites sufficient to meet the needs of all personnel.

Structured usage of provisions
Available provisions and resources used at a rate that sustains the individual or party and will last if possible until the end of any possible delays or emergency situations.

Emergency equipment
First aid supplies, spare parts, telephones, two way radios and repair tools for the selected form of transportation, retrieval, communications, prescribed emergency equipment for water travel and emergency beacons and other position location devices.

Emergency planning
Establishment of contingency plans ("fallback position").

Personnel briefings
Provision of advice on intended routes, work locations, maps and direction finding equipment.

Training in remote area survival techniques
Managing emergencies, location and/or distilling of water, provision and erection of shelter, conservation of energy, the identification and use of wild food, GPS position

locating, setting out beacons and distress signaling, staying put or remaining with transport and communicating with rescue teams.

Personal equipment
Water generating, shade generating gear and non-perishable survival rations, and clothing to provide for the worst case scenario.

Forms of communication
Two-way radio, satellite radio/phone, marine radio or mobile telephone.

Methods of distress signaling
EPIRBs (Emergency Position Indicating Radio beacons) signaling mirrors, fire or signals scratched on the ground.

Appropriate authorities
The property manager, other staff or recognized regulatory authorities (e.g., Police, Maritime Safety Authority, Territorial Emergency Service, and Civil Aviation Authority).

Emergency situations
Vehicle or equipment breakdown, lack of food, water or protective clothing, flood, fire or storm.

Relevant licensing
Operating vehicles on roads, heritage reserves or public reserves, radio communications equipment.

Specific knowledge
Knowledge and understanding are essential to apply this standard in the workplace, to transfer the skills to other contexts and to deal with unplanned events. The knowledge requirements for are listed below:

- Map reading and navigation skills including direction finding (e.g., GPS, use of compass, stars or watch).
- Local topography, nearby inhabitants and locations within that area.
- Survival techniques and human needs relating to survival situations.
- Clothing requirements for cold and heat protection.
- Basic first aid.
- Abilities in making a fire, cooking and wild food gathering.
- Water supplies, sources and generation methods.
- Emergency vehicle and mechanical equipment repair.

- The operation of communication equipment (e.g., field communications by two-way, satellite telephony and HF radio), and distress signaling including use of signaling mirrors.
- Weather and weather indicators.
- Basic rope skills including useful knots (reef, clove hitch, bowline); simple lashings and tying down loads.

APPENDIX J

Hope Lake, Husky Creek and Willow Creek Helicopter Operations and Slinging

SLING LOAD OPERATIONS

One of the features of the helicopter, which sets it aside from other aircraft, is the ability to transport many different types of loads suspended from a cargo hook. This unique transportation method allows the helicopter to deliver cargo where even it cannot land, and to perform highly specialized tasks such as water bucketing, logging, and aerial construction. It is essential that to carry out safe slinging operations, the pilot and ground personnel involved be thoroughly conversant with the techniques required.

Any slinging that is done operationally; pilots will carefully select the routes that they will fly to ensure that they do not overfly occupied areas to minimize the danger to persons or property. Sections 602.16 and 602.23 of the **Canadian Aviation Regulations** are applicable to all operations.

PRE-FLIGHT CHECKS

Prior to conducting any slinging operations pilots should carry out the following checks in addition to their normal pre-flight inspection:

1. check the cargo hook is correctly fitted and undamaged, and that all suspension, electrical and mechanical cables are secure and there is no evidence of fraying or chafing;

2. check that the normal release mechanism is fully functional by physically checking that the hook opens when the release is activated;

3. check that the emergency release system is functional by physically checking that the hook operates when the emergency release is activated;

4. inspect all slings, straps, and nets for general condition. Frayed and worn equipment could present a hazard in flight. Ensure that the available equipment is capable of safely carrying the weight of the planned load; and

5. inspect your mirror and position it so that you can see comfortably from your seat.

Pilots having satisfied themselves that all helicopter and sling equipment is serviceable, they may brief any ground personnel that they may have assisting them. Slinging operations requires a qualified ground crew, appropriated equipment and a good coordination of the team. It is important that pilots clearly establish what signals they will use during the operation, including the actions of both the ground crew and themselves,

should an emergency occur during the hook-up or load release phases. Standard hand signals to be used during slinging are shown in the following diagram.

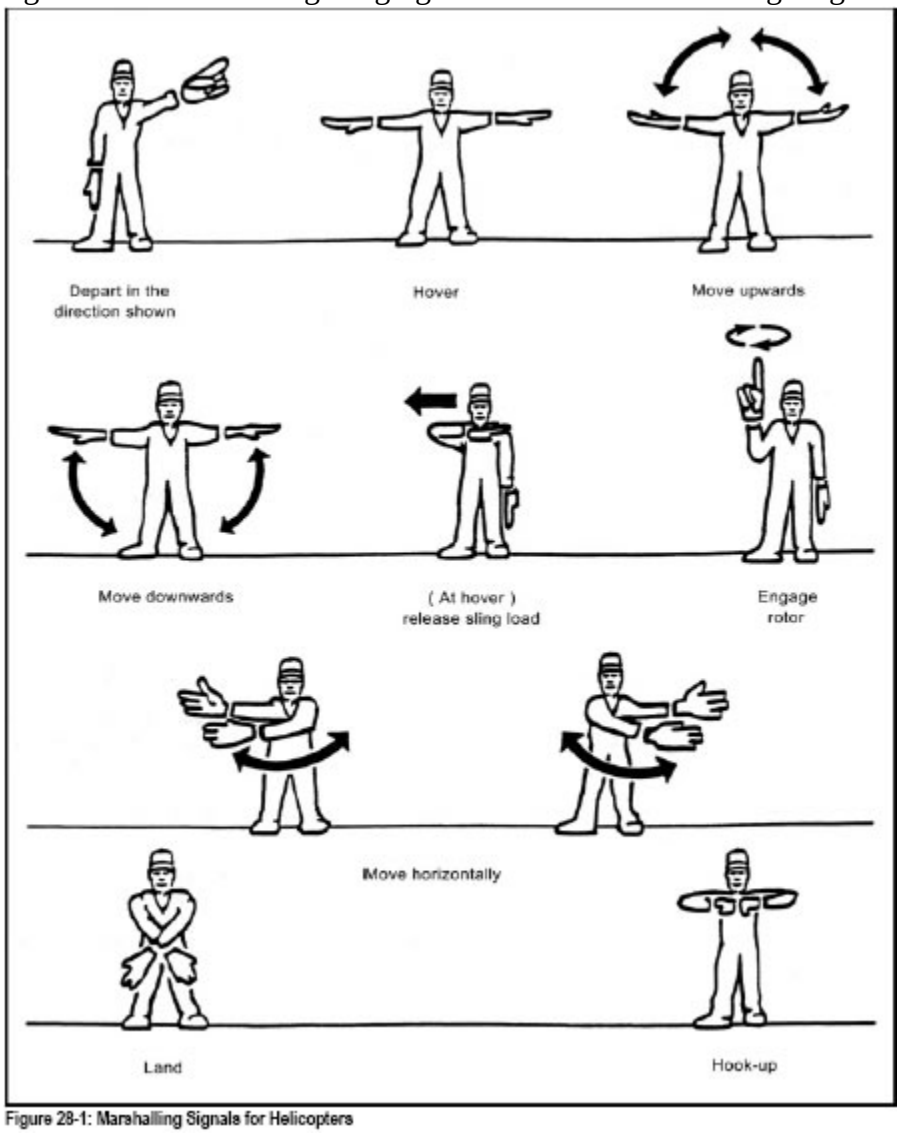


Figure 28-1: Marshalling Signals for Helicopters

All external loads may be categorized as one of: high density, low density or aerodynamic. The high-density load will be stable while the low density will be decidedly unstable; the aerodynamic load may exhibit both characteristics. Pilots should study the load to determine which description best suits it, and then estimate how it will likely fly.

PICKING UP THE LOAD

Whenever possible, position the load so that pilots can hover the helicopter into wind during the pick-up procedure. This will provide for the most stable hover. If assisted, the marshaller should be positioned in plain view, back to the wind. Usually this will be slightly right of directly in front of the cockpit, about 50 feet away from the helicopter. This position will allow the marshaller to monitor the load as it is lifted off the ground, and to observe a wide area around the helicopter in the interest of safety. It will also make

sure that the pilot can see the marshaller. Once in the hover over the load, at the appropriate height, pilots will select some easily visible references. Pilots will keep these in view as they increase the hover height after hook-up to maintain as vertical a liftoff as possible.
During the hook-up, ground personnel should not position themselves between the load and the helicopter; this point will be included in your pre-flight briefing. Once the load is attached to the hook, pilots may commence a slow vertical ascent until the sling becomes taut and the helicopter is centered over the load. Pilots will brief the marshaller to position the helicopter directly over the load once they have lifted into the hover. Continue increasing collective while crosschecking the manifold pressure gauge (or torque meter on turbine engine helicopters) to determine whether sufficient power is available for the transition to forward flight. This portion of the takeoff should be made smoothly to ensure that the load is secure and properly rigged prior to the transition
.

THE TAKEOFF

Once pilots are satisfied that all criteria have been met for flight, initiate an altitude over airspeed transition to forward flight. This type of takeoff will ensure that obstacle clearance is achieved rapidly. When at a safe height, allow the airspeed to increase slowly to a speed that will allow the most control over the load. Check for limitations in the flight manual, in any event it is of little advantage to fly faster than 90 mph with any sling load. As the speed increases, pay attention to the flying characteristics of the load and, should oscillations begin, smoothly reduce the airspeed. In this way, pilots will establish the maximum safe flying speed for their load. Once safely into forward flight, select the cargo hook master switch to “off” (if your helicopter is so equipped).

It is important to reduce the airspeed at the first sign of an oscillation, but do not lower the collective rapidly. All control inputs should be gentle and smooth. Reducing collective (and thereby airspeed) and entering a shallow bank has often proven effective in reducing load oscillations.

APPROACH TO RELEASE POINT

If at all possible, pilots will plan their approach into wind to preclude the possibility of entering a situation where there is insufficient power available to arrest the descent. An approach angle slightly steeper than normal will ensure that obstacle clearance is provided until the helicopter is over the load release point. Attempt to “fly the load”, observing its speed over the ground, to avoid overshooting the release point. Perform a pre-landing check and set the cargo hook master switch to “on”. Control your rate of descent.

RELEASING THE LOAD

When the helicopter has stabilized over the load, pilots will smoothly lower the collective to begin a controlled rate of descent, until the load is on gently placed on the ground. Further lower the collective to create slack in the sling. Depending on the weight of the

load, there may be a considerable reduction in collective at this point. Once the sling is slack, pilots will release the hook. Before clearing the area, verify that the load has in fact released, and the sling has not hung up, by checking in the mirror or moving a little to one side.

SAFETY PRECAUTIONS

A study of helicopter accidents in Canada will reveal that many are associated with slinging operations. Most are preventable. Pilots will plan the slinging they undertake, estimate the flying characteristics of the load, and fly with accuracy and precision. Never let the oscillations of the load reach a magnitude that endangers the pilot and the helicopter; far better to jettison the load than to lose the helicopter. In the event of any emergency in flight jettison the load.

UNUSUAL LOADS

Over the years, pilots will be asked to sling different loads. In the diagrams below are several ideas, which have worked over the years. Most loads should be comparable to one of the following:

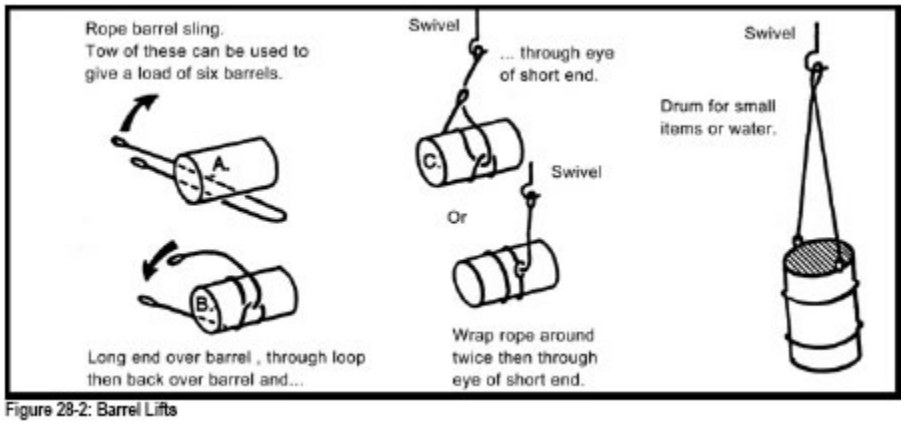


Figure 28-2: Barrel Lifts

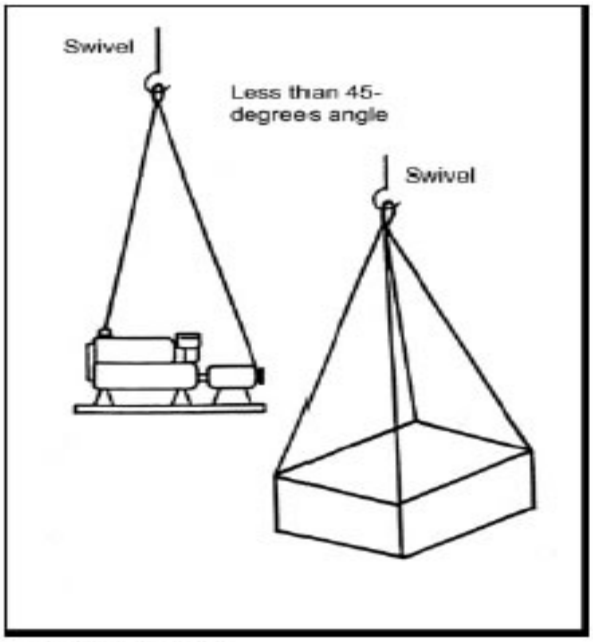


Figure 28-3: Sling Lifts

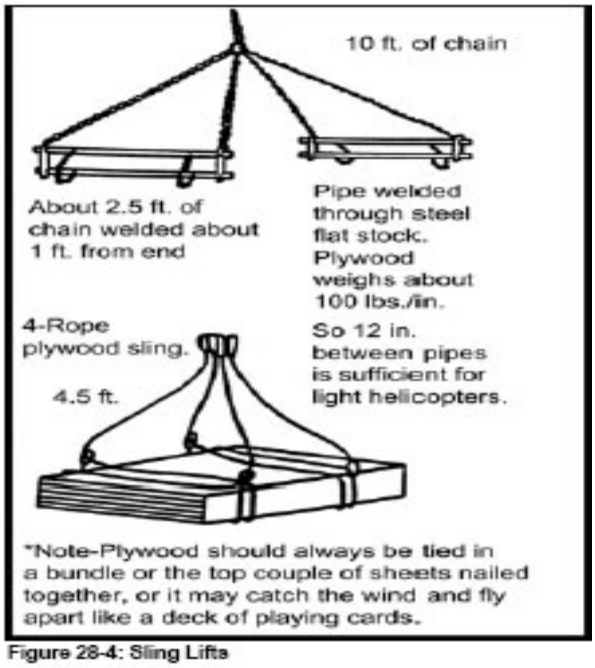


Figure 28-4: Sling Lifts

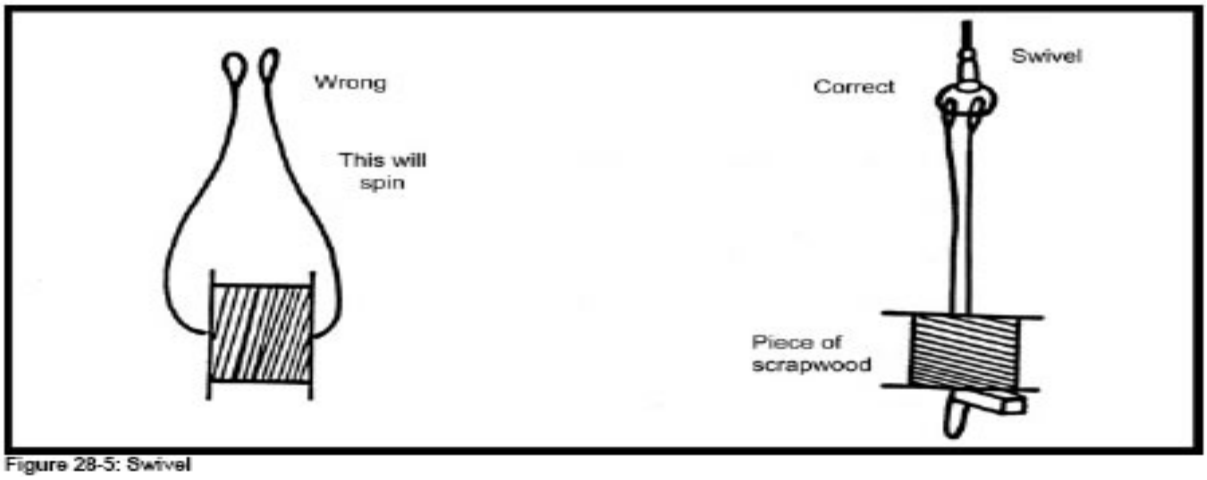


Figure 28-5: Swivel

OPERATIONAL TIPS

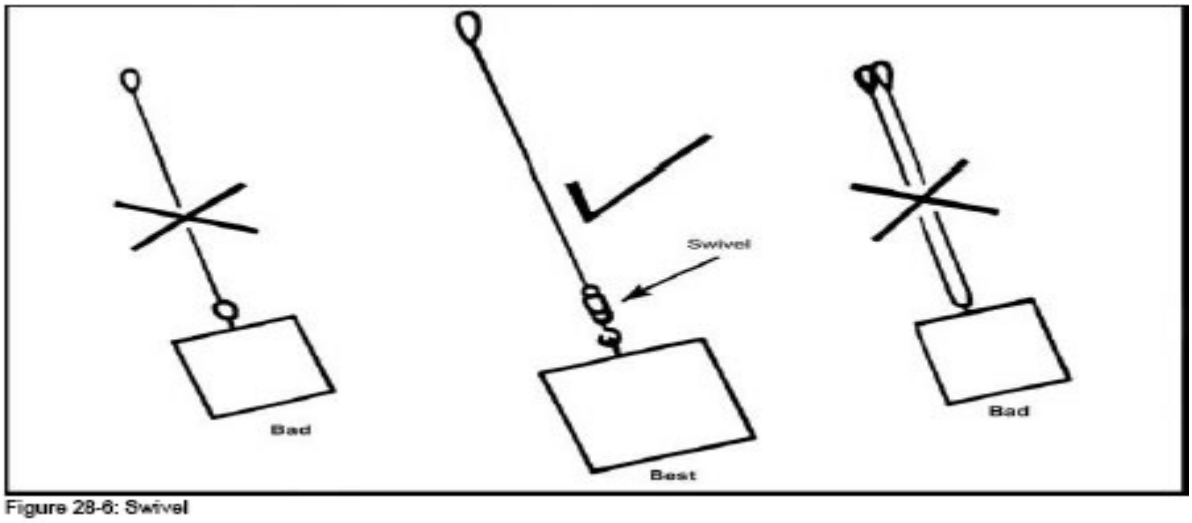


Figure 28-6: Swivel

1. **Always** use a swivel.
2. If possible operate from level, large areas.
3. Keep area clear of debris; hats, scarves, tarps, boards, etc.
4. Resist the urge for more speed.
5. Empty barrels are a poor load, FULL barrels are good one.
6. On aerodynamic loads spoil the lift with a tree or barrel.
7. In #6, the heavier the load the better it flies.
8. Always keep RPM on high side.
9. Beware of static electricity.
10. On approach, control the rate of descent carefully.
11. Plan the best fuel load according to the sling operation.
12. Clear area after delivery of load as quickly as possible; remember the crew on the ground has no protection from the downwash.

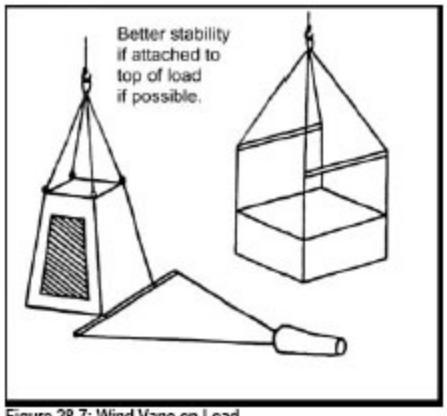


Figure 28-7: Wind Vane on Load

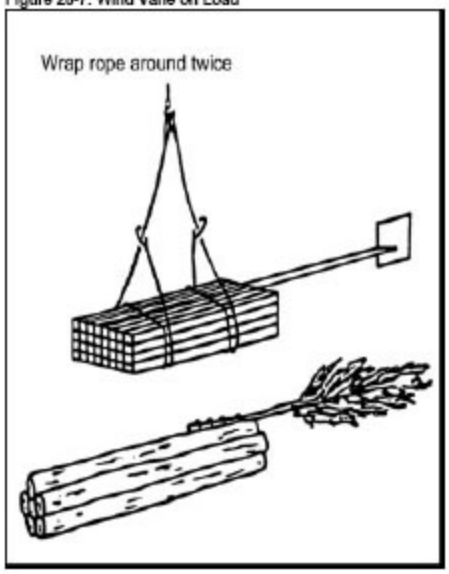


Figure 28-8: Wind Vane on Load

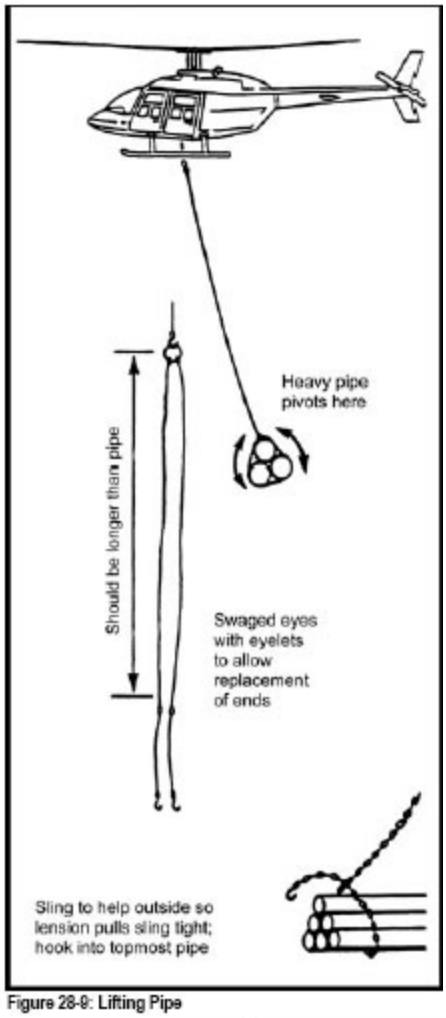


Figure 28-9: Lifting Pipe

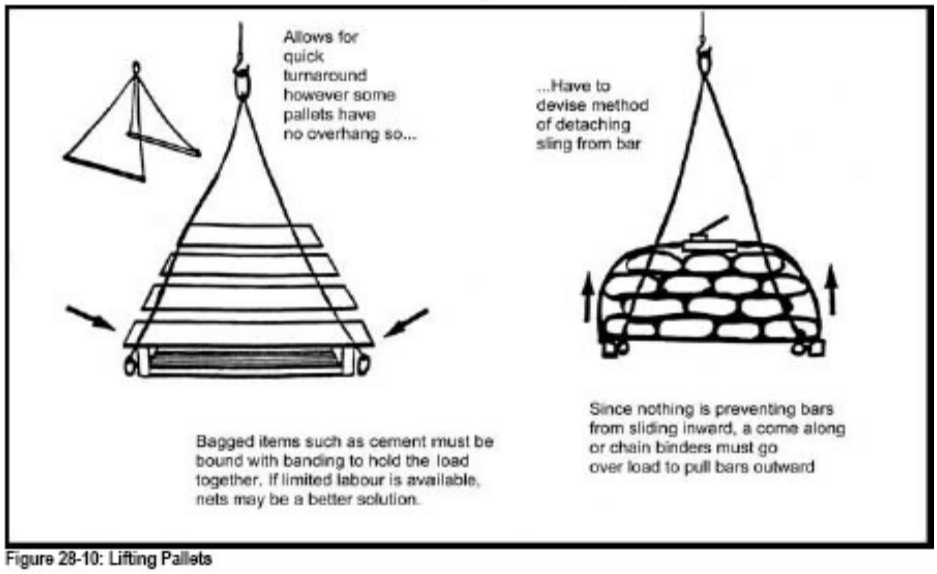


Figure 28-10: Lifting Pallets

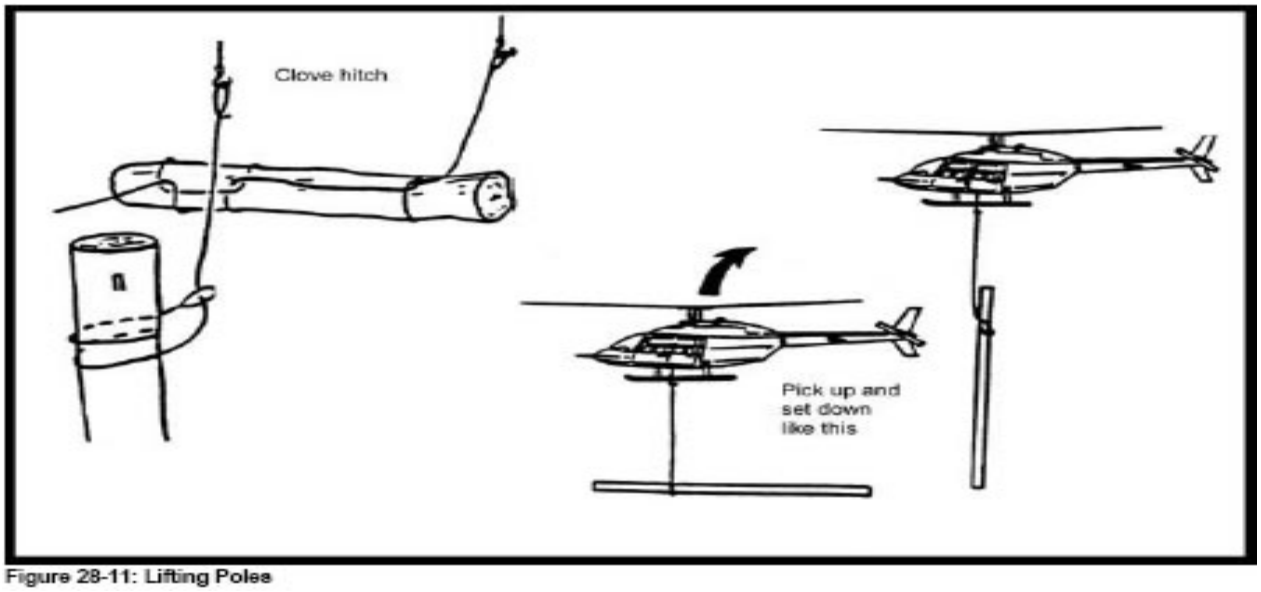


Figure 28-11: Lifting Poles