APPENDIX 11

ENNADAI LAKE
REMEDIATION PROJECT

SITE SPECIFIC HEALTH AND SAFETY PLAN

Kudlik Construction Ltd.
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SPECIFIC HEALTH AND SAFETY PLAN (H & S)

Ennadai Lake Weather Station Environmental Remediation Project

ENNADAI LAKE, NUNAVUT

Review: August, 2013

SPECIFIC HEALTH AND SAFETY PLAN (H & S)

Ennadai Lake Weather Station Environmental Remediation Project

ENNADAI LAKE, NUNAVUT

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August 2013

TABLE OF CONTENTS

APPENDIX

APENDIX 1:
- Acceptance Policy

APENDIX 2:
- Hazard assessment sheet
- Incident report form
- Inspection report form

1. INTRODUCTION

The purpose of this document is to present the site specific health and safety plan elaborated for the environmental remediation of the Ennadai Lake weather station located within the Kivalliq region of Nunavut. The site lies approximately 380 km west of Arviat, on the east shore of the north arm of the Ennadai Lake.

The remediation project was awarded to Kudlik Construction Ltd. in May 2013. In September 2013, heavy equipments, camp facilities, material and all consumables will be delivered by sealift to Arviat. All equipment, material and consumables required to achieve the remediation project will be transported by CAT train during the winter 2014 from Arviat to Ennadai Lake.

Figure 1: Site location

1.1 OBJECTIVE

The objective of this health and safety program is to inform and protect all personnel and visitors who will gain access to the work site regarding potential and known hazards on the site. In particular, the intent of the health and safety program is to

prevent and minimize exposure of workers to contaminants and to protect the public against any hazards or nuisance originating from the site. Please note that the health and safety program concerning the mobilization and the demobilization on the winter route is presented in a separate document (H & S Mobilization to Ennadai Lake)

The actual health and safety program describes the potential hazards, identifies the personnel and qualification of personnel in charge on site and outlines the procedures to be followed during the project.

The activities planned are subject to the "Nunavut Safety Act and Regulations", the "Canada Labour Code, Part II" and the “Occupational Health and Safety Regulations”. Quality of the workplace must conform to the Public Health Act (Nunavut), General Sanitation Regulations and Camp Sanitation Regulations. All latest revisions of the federal, provincial and territorial regulations must be respected.

The procedures and requirements in this document regarding health and security are based on a review of available information and on the evaluation of potential hazards on site. This document specifies the procedures and the level of personal protection equipment (PPE) to be used, to minimize the potential for accidents and to minimize the exposure of personnel during the activities on site.

All personnel on site, including PWGSC representatives, the employees of Kudlik Construction Ltd (KCL) and subcontractors involved in the activities on site, as well as visitors, are to comply with the content of this document. Each person working on site must read and understand the health and safety policy.

1.2 PROJECT DESCRIPTION

Since there is no road to reach Ennadai Lake, all the equipment and facilities required to achieve the project will be transported on a winter route (CAT train) during the winter 2014. The environmental remediation of the site will be achieved during the summer 2014 and will include the following major activities:

- Construction of an on-site Non-Hazardous Waste Landfill;
- Construction of a soil treatment area (landfarm)
- Excavation and collection, transport and on-site disposal of non-hazardous wastes to the Non-Hazardous Waste Landfill;
- Excavation and disposal of buried debris;
- Excavation of hydrocarbon contaminated soils and transport to the landfarm;
- Hydrocarbons contaminated soil treatment;

- Excavation, containerization, transport and off-site disposal of hazardous waste materials and contaminated soils;
- Demolition, segregation and disposal of buildings (including foundations) and infrastructures;
- Collection, sorting and containerization of hazardous surface debris;

The demobilization from Ennadai Lake to Arviat will be done during the winter 2015.

2. POLICIES AND WORKPLACE RIGHTS

2.1 SAFETY STATEMENT

In performance of its activities, Kudlik Construction Ltd. (KCL) is fundamentally concerned with:

- The safety and health of our employees, subcontractors, customers and the public.
- The protection of the environment.
- The protection of property.

Moreover, KCL is committed to:

- Abide by Safety, Health and Environment Acts and Regulations.
- Integrate Safety, Health and Environment matters in every organizational level and every field of activities of the Company.
- Maintain a safe and sound workplace and strive to eliminate preventable hazards that could result in injuries, illnesses, material damages, loss of production or environmental disturbance.
- Ascertain that all levels of management are accountable for the respect of this Safety, Health and Environment Policy
- Ascertain that all employees perform their duties in compliance with the company's Safety, Health and Environment Policy and rules. Every employee must work safely and care for the safety and health of co-workers.
- Verify that this Policy is complied with throughout the Company.

KCL's philosophy is to create an atmosphere that results in NO RISK to our workers, the public, the environment and our client. To fulfill this goal, KCL's senior management expects every employee to work to the highest degree of excellence in performing each job task safely.

To reduce the risk of incidents/accidents, all employees must work together in planning, analysing and identifying hazards before a job starts. Every employee must keep safety in mind, every day and all year long. By doing this, we will achieve our goal of no lost time injuries for any particular year. KCL feels confident that with the management and labour working together, we can succeed.

It is imperative that senior management, supervisor and every worker demonstrates a proactive approach to health and safety.

2.2 HARASSMENT POLICY

KCL's employees are entitled to a harassment free environment at all activities, events and meetings.

There are two fundamental principles to the labour movement: human rights and solidarity. Harassment strikes at the heart of both.

KCL will not tolerate nor condone behaviour that is likely to undermine the dignity or self-esteem of an individual, or which creates an intimidating, hostile or offensive environment. We must speak out against harassment and stand together to protect human rights.

Harassment is not a joke. It is an expression of perceived power by the harasser over another person, usually for reasons, over which the victim has little or no control. Prohibited grounds under Human Rights Codes across Canada can include sex, race, age, marital status, sexual orientation, disability, political or religious beliefs, and place of national origin.

Harassment can be defined as any action (verbal, psychological or physical) on a single or repeated basis which humiliates, insults or degrades and is known or ought reasonably to be known to be unwelcome by the victim of the harassment.

Harassment can include but is not limited to: unwanted comments, slurs, racist or sexist jokes, pictures or posters, bullying or intimidation, graffiti, physical contact of any kind, remarks about a person's appearance or personal life, unwelcome sexual advances or demands, suggestive looks or gestures.

KCL takes harassment complaints seriously. Complaints of harassment at KCL activities will be investigated by the site superintendent and reported to the project manager for any necessary follow-up. A substantiated complaint will result in action by KCL which could include the removal of the harasser from the site.

2.3 DISCIPLINARY POLICY

KCL has a zero tolerance policy in regard to procedure violations or the performance of unsafe actions. The acceptance policy, presented in the Appendix 1, must be signed by every KCL's employees and subcontractor's employees.

The following disciplinary measures will be applied in case of violations:

1ST SAFETY VIOLATION:

- Verbal reprimand with retraining as required.
- Documentation in the employee's file.

2ND SAFETY VIOLATION:

- Written reprimand
- Retraining as required
- Documentation in the employee's file

3rd SAFETY VIOLATION:

- Termination (the employee will be sent off-site)
- Documentation in the employee's file

All pertinent facts will be carefully reviewed, and the employee well be given a full opportunity to explain his or her conduct before any decision is reached. The project manager will give a second opinion concerning the unacceptable behaviour before termination occurs.

At any point, an employee displaying disregard for safety, or incorrigibility after violations, may be terminated at the discretion of management.

Employees working with the offender may be subject to the same reprimands as the offender, as determined by the superintendent. The voluntary protection intent requires them to report unsafe behaviour and all employees have STOP WORK authority.

2.4 WORKPLACE RIGHTS

Workers can make certain safety in the workplace is a priority by using workers' rights. The workers' rights are briefly explained hereunder.

2.4.1 Right to know

By knowing about workplace hazards, workers can make sure employers make work safer, provide protection to workers, and give training so that workers can work with the smallest possibility of injury or illness.

2.4.2 Right to participate

Workers have the right to participate in decisions affecting workplace health and safety. Federal, provincial, and territorial laws state that workers can get elected as paid worker representatives on workplace health and safety committees. Workers participating in health and safety decision making work with management on controlling or eliminating dangers in the workplace.

Workers and management on health and safety committees jointly find workplace hazards and recommend actions to make the workplace safer. The work of worker representatives is to act on behalf of workers' well being, and the work of committees is to give the employer advice on improving worker health and safety.

2.4.3 Right to refuse unsafe work

The right to refuse lets a worker step away from work she or he believes is unsafe. The right allows the worker to have the refused work investigated, and repaired if it's dangerous. During the investigation and repair, the right provides that the worker receives pay. And with the right to refuse, a worker is protected from an employer's possible reprisal, since it's illegal for an employer to fire or discipline a worker who refuses work she or he believes is unsafe.

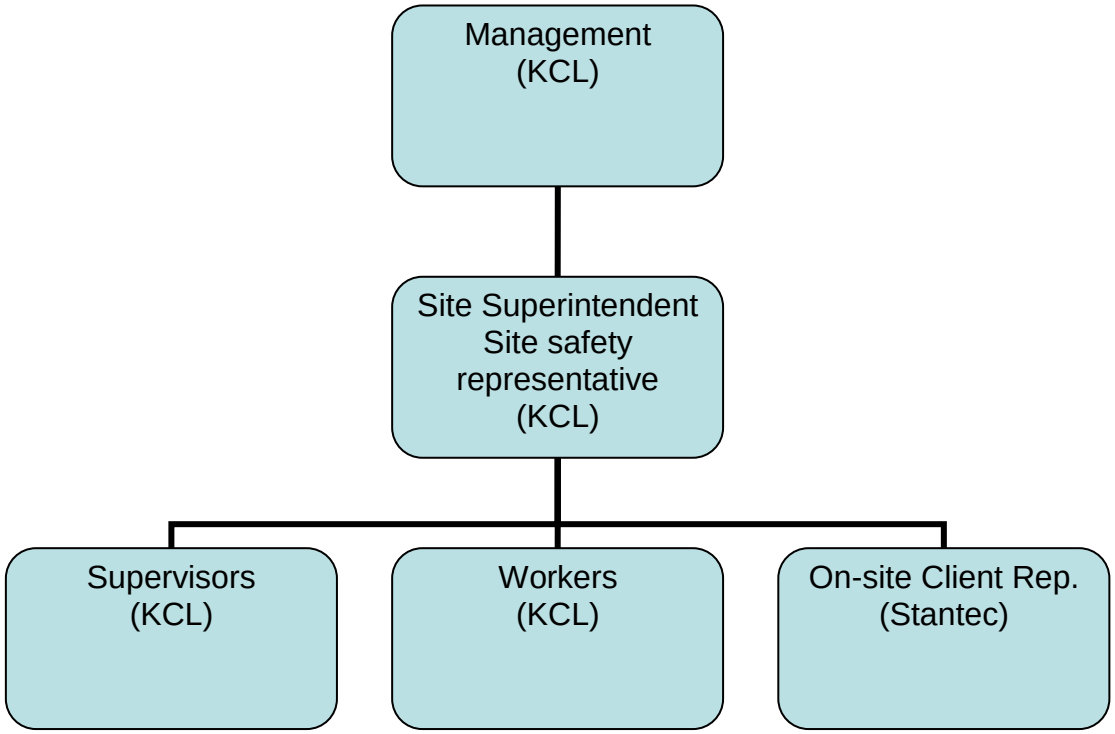
3. SAFETY RESPONSIBILITIES AND COMMUNICATIONS

The responsibility of health and safety for all workers begins with the attitude of each individual towards himself and fellow workers. Each employee must use all the precautions and judgement necessary to protect his health and safety and the health and safety of others. All employees have the responsibility to report any potentially hazardous situation to other workers involved, and to the site superintendent.

In the event that an employee finds himself in a potentially dangerous situation, he has the responsibility to stop immediately his activities. Work can resume only once the situation has been corrected and when the superintendent has given his approval. Under no circumstances will dangerous working conditions be tolerated.

3.1 LINE OF COMMUNICATION

Even if the safety is the responsibility of everyone, the following communication chart must be followed on site to report any health and safety issue:



3.2 SAFETY RESPONSIBILITIES

The main safety responsibilities of the following individuals are:

- KCL management is responsible to provide all material, resources and site supports to ascertain that operations are conducted in compliance with all acts and regulations in force;
- KCL superintendent is responsible for the implementation and the application of the Health and Safety Plan on site. He is also the site coordinator for any emergency situation;
- KCL site safety representative is responsible for helping the superintendent for the application of the health and safety plan. He is in charge of achieving all site safety inspections, filling all safety reports, keeping all records, organizing the health and safety committee and strongly consider their recommendations;
- All KCL employees and subcontractors must follow and respect the Health and Safety Plan. They must also report any health and safety issue to the health and safety representative or directly to the site superintendent;
- The client, as everybody else on site, must follow the health and safety plan, unless something different is dictated by his own safety policy.

3.3 COMMUNICATION DEVICES

3.3.1 Satellite phones and internet

The main camp satellite communication system includes 5 phone lines and two internet wireless network. Two phone lines are assigned to Stantec. The camp general phone line is located at kitchen. Personal calls can be done from the kitchen only (see the camp rules section). The emergency phone number lists are posted nearby each phone.

There are two backup systems for the camp communications. One portable satellite terminal (BEGAN) and two portable Irridum satellite phones are stored at the Kudlik office.

3.3.2 FM radio

Most of the vehicles are equipped with a mobile FM radio system. If your vehicle is not equipped with such a device, you shall carry a portable FM radio. All FM radios must be used on the channel 2. The communication base is located at the kitchen.

3.4 EMERGENCY PHONE NUMBERS

In case of emergency, the following phone numbers will be posted at the camp, the garage and the kitchen. The site superintendent is the on-site coordinator for any emergency situation. The ***Emergency Response Plan (ERP)***, presented in the section 11, must be consulted for further information regarding the management of emergency situations. The emergency list of phone numbers shown on the next page will be updated before starting each construction season. Some phone numbers, as the camp phone number, will be included later in this list.

EMERGENCY PHONE NUMBERS

Kudlik Construction Ltd	Business hours	After hours
Main Office, Iqaluit	(867) 979-1166	
René Déziel, General Manager	(866) 781-0704	(418) 571-8889
François Bourassa, Project Manager	(866) 781-0704	(418) 930-0850
Arviat	To be confirmed	To be confirmed
Henik Lake lodge	To be confirmed	
Ennadai Lake camp	To be confirmed	
Satellite Phone #1 (irridium)	To be confirmed	
Satellite Phone #2 (irridium)	To be confirmed	
Satellite Phone #3 (Bgan)	To be confirmed	
PWGSC		
Michael Bernardin, project manager	(780) 497-3853	
AANDC		
Erika Solski, project manager	(867) 975-4577	
RCMP		
Arviat	(867)-857-0123	
Environment		
Nunavut Spill Report Line	(867) 920-8130.	
INAC manager of field operations	(867) 975-4295.	
Air transportation		
Kudlik Aviation Inc. (dispatch)	(418) 930-3522	(418) 930-3522
Transwest Air (dispatch)	(877) 889-2677	(877) 889-2677
Kenn Boreck Air Ltd.	(867) 983 2415	
Keewatin Air	(877) 879-8477	
Custom Helicopters	(204) 338-7953	

4. SAFE WORK PRACTICE AND SITE RULES

To ensure a safe work environment, safe work practices and site rules must be applied at all times. Some important site rules are listed below. For safety rules regarding specific activities, further sections must be consulted for additional details.

4.1 DRESSING, HYGIENE AND BEHAVIOR

- Everybody on-site must wear the appropriate personal protective equipment (PPE).
- Loose clothing and long free hair, are forbidden around heavy machinery.
- Contact lenses are forbidden on working site.
- All personnel must have the appropriate personal hygiene to avoid the ingestion of contaminants or the dissemination of contamination.
- Smoking, eating and drinking is strictly forbidden, inside or close to a contaminated area.
- No one is to report for work in possession of, or under the influence of alcohol or drugs.
- Respect scheduled work hours.
- You must work as a team that is including everybody on-site.
- Intimidation, harassment, racism and any inappropriate behaviour will not be tolerated.

4.2 WILDLIFE

- A wildlife monitor will patrol the entire site with an ATV.
- Each wildlife monitor is responsible for his firearm maintenance and storage.
- One additional firearm will be stored in the Kudlik's office.
- Any wildlife encounters and sightings must be reported to the site superintendent and described into the progress weekly report.
- The presence of polar bear(s) must be reported immediately on the radio as a general call.
- When manual work is performed, a wildlife monitor must stay close to you, especially during foggy days.

4.3 WORKS WITHIN AND AROUND CONTAMINATED SITES

All contaminated areas are indicated on the contractual drawings. A general site map and copies of project drawings will be posted at the camp dinning room and at the DECON unit directly on site. Before initiating any works on site, you must verify with the

hazardous waste specialist that no contaminated soil is present in the working area. Signs will be posted around the areas where hazardous material can be found.

- All work in contaminated areas or involving hazardous or potentially hazardous material must be supervised by the hazardous material specialist.
- All work in the contaminated areas shall be performed by teams composed of a minimum of two persons.
- The area surrounding the exclusion zone will be considered as a potentially contaminated area.
- When possible, all personnel will work upwind from the excavating zones.
- When leaving the contaminated and buffer zones, all personnel must follow the decontamination procedures.
- Use the access road to move into and out of an excavation zone/area.
- All heavy machinery used in the contaminated zone, will remain in this zone until completion of work. Before leaving this zone, the equipment must be cleaned adequately.
- Keep your work area clean at all times placing any trash in the appropriate receptacles.
- Leave site with equipment in a secure and safe state, tidy, clean and ready to continue operations.

4.4 CUTTING OR WELDING

- Welding is strictly forbidden in the contaminated areas.
- Fire extinguishers must be available and close at hand wherever oxyacetylene cutting is being done.
- Workers involved in welding should not carry butane lighters.
- Oxygen or acetylene torches must not be used to blow dust from work surfaces, clothing or skin.
- Use only a spark lighter to ignite torches. Never use matches or cigarette lighter;
- Inspect lines for damage prior to use.
- Wear clothing made from heavyweight, tightly woven, 100% wool or cotton to protect from UV radiation, hot metal, sparks and open flames. Flame retardant treatments become less effective with repeated laundering.
- Keep clothing clean and free of oils, greases and combustible contaminants.
- Wear long-sleeved shirts with buttoned cuffs and a collar to protect the neck. Dark colours prevent light reflection.
- Tape shirt pockets closed to avoid collecting sparks or hot metal or keep them covered with flaps.
- Pant legs must not have cuffs and must cover the tops of the boots. Cuffs can collect sparks.
- Repair all frayed edges, tears or holes in clothing.

- Wear high top boots fully laced to prevent sparks from entering into the boots.
- Use fire-resistant boot protectors or spats strapped around the pant legs and boot tops, to prevent sparks from bouncing in the top of the boots.
- Remove all ignition sources such as matches and butane lighters from pockets. Hot welding sparks may light the matches or ignite leaking lighter fuel.
- Wear gauntlet-type cuff leather gloves or protective sleeves of similar material, to protect wrists and forearms. Leather is a good electrical insulator if kept dry.
- Direct any spark spray away from your clothing.
- Wear leather aprons to protect your chest and lap from sparks when standing or sitting.
- Wear layers of clothing. To prevent sweating, avoid overdressing in cold weather. Sweaty clothes cause rapid heat loss. Leather welding jackets are not very breathable and can make you sweat if you are overdressed.
- Wear a fire-resistant skull cap or balaclava hood under your helmet to protect your head from burns and UV radiation.
- Wear a welder's face shield to protect your face from UV radiation and flying particles.

4.5 VEHICLES AND EQUIPMENT USAGE

- The driver must have a valid driver’s licence with the appropriate class for the type of vehicle he is operating.
- Anyone using a company vehicle must respect all applicable rules and regulations.
- Vehicular speed limit on site is 40 km/hr.
- Do not circulate on undisturbed areas unless it is really necessary.
- Getting in or stepping out of a vehicle in motion, is prohibited.
- Riding in box of pickups is forbidden.
- Never use a loader bucket to go into an excavation or to move around the site.
- Before utilizing a company vehicle, the driver must perform the following checks: brakes, lights (headlights, signal, back up, brakes), horn, back-up alarm (if equipped), tires, mirrors, fuel and other fluids, fire extinguisher. Any defect or problem must be reported to the superintendent and the master mechanic.
- All vehicles must be maintained according to the company’s maintenance program;
- Permission must be obtained to disconnect, alter and/or move existing equipment. Review the work with your supervisor beforehand.
- Should any “spills” occur, report immediately to the superintendent.
- Never, but never, stand under overhead loads.

5. CAMP RULES

Any concerns or issues regarding the camp rules must be addressed to the on-site safety representative or to the site superintendent. For any repairs or maintenance, please contact the camp manager.

5.1 GENERAL REGULATIONS

Behaviour: Mutual respect amongst camp residents must be adhered to, at all times. Any person showing a lack of respect, towards a fellow resident will be advised immediately by the site superintendent. Inappropriate behaviour will not be tolerated.

Male, Female Washroom/Shower Time: Privacy during male/female use of camp washrooms and showers must be respected at all times. Camp personnel is encouraged to keep shower time to a minimum, by utilizing both shower facilities, at the same time whenever possible.

Cleanliness: All camp personnel are required to keep shower and washroom facilities clean after usage. The same principal applies to individual rooms which may eventually be transferred to other personnel arriving on site.

Smoking: Smoking is forbidden in all buildings.

Alcohol: All alcohol and drugs are forbidden on site.

Use of Vehicles In and Around Camp Site: Vehicle parking should take place in an orderly fashion, as to minimize the amount of space required.

Personal effects: Kudlik Construction Ltd. is not responsible for lost, stolen or damaged personal effects.

Laundry: Washers and dryers are at your disposal for your clothes. However, please use them reasonably; they are not made for clothes covered with mud. An identified washer is available for washing coveralls.

5.2 ROOMS

When you arrive, the camp manager will assign you a room. The door key will be given to you and you shall return it before you leave. If you wish to have your room cleaned

up, you must leave the door unlocked. On your arrival, the bed will have clean sheets and blankets. If you want new sheets and pillows, just put the dirty sheets in the laundry basket and get new ones.

5.3 SPECIAL DIET, HEALTH PROBLEM AND MEDICAL SUPPORT

For your own safety, allergies, food intolerance or special diet and any medical problem must be indicated on your hiring form and reported to the emergency medical technician (EMT) and the site safety representative when you arrive on site. If you feel sick or you need medical assistance, please consult the EMT at his camp office.

5.4 COMMUNICATIONS

Since all communications with outside communities must be done by the satellite lines, personal calls for employees are restricted to 30 minutes per week. Considering the amount of workers at the camp, the duration of each phone call should be less than 15 minutes.

Internet is accessible for everyone living at the camp through a wireless network. Please use your common sense while using internet, downloading or sending heavy files is penalizing everyone.

5.5 MEAL SCHEDULE

It is really important to respect the meal schedule. If you cannot make it on time, please advise the cook.

Meal service schedule:

Breakfast:	6:00-6:30
Lunch:	12:00-12:30
Dinner:	19:00-19:30

5.6 PASTIMES

The use of company's vehicles for pastime activities is not permitted. For any past time activities outside of the camp perimeter, the following safety rules must be taken:

- Advise the safety representative or a camp resident of your destination and the length of your absence;
- Advise the same person when you are back at the camp;
- Never leave alone;
- Always transport on you the proper communication device (portable radio or satellite phone).

Hunting on site is strictly prohibited. Fishing on and off site is permitted with proper licence.

A search party will be organized, in the event of a prolonged absence.

5.7 ENVIRONMENT

Practice proper and responsible waste and resource management, whenever possible, this includes proper garbage disposal and water management. Excessive wasting and open fires are prohibited. Please refer to the waste management plan.

Since all domestic garbage will be incinerated, it is really important to place any hazardous debris as batteries and printer ink cartridges into the pre-identified container. For any question regarding the special waste management, please consult the camp manager or the hazardous material specialist. An inventory of the hazardous material present on site will be updated by the hazardous material specialist.

5.8 SAFETY

Everyone at the camp site must adhere to all safety and regulatory signage as well as the health and safety policies. You must be familiar with all emergency procedures, exits, signals and alarms. Drills for emergency procedures will be scheduled once a month by the safety officer.

Keep accesses to fire equipment clear at all times and immediately report any damaged fire or safety apparatus to your supervisor. Keep clothing or other flammable goods away from baseboard heaters.

In case of emergencies, you might hear the following alarms at the camp:

1. General alarm: Everybody must go to the meeting point as soon as possible, outside of the kitchen building. The alarm switch is located nearby the meeting point.

2. Wildlife alarm (horn): You must stay in your room, turn on your portable radio and wait for further instructions. This alarm indicates a polar bear intrusion on the camp site. You will be advised through radio when the emergency situation will be ended.

3. Smoke detector alarm: When you hear this type of alarm, verify immediately the source, call for help and always report any event involving smoke to the camp manager.

6. HAZARD IDENTIFICATION FOR CONSTRUCTION ACTVITIES

PWGSC has mandated KCL to perform the environmental remediation of the Ennadai Lake radio station by achieving selective excavation of contaminated soils, removal of hazardous materials from excavation, buildings, equipments and structures. The work is also involving the demolition of various structures and the removal of all visible debris. The hazard identification was achieved in regards to these activities. For all cleanup activities to be performed, a hazard assessment sheet will be filled on site by the site safety representative prior to the beginning of the activity. The form is presented in the appendix 2.

6.1 SITE CONDITIONS

Information concerning hazardous waste present in buildings or structures and on the soil contamination level was obtained from past site characterization. Contaminants with concentrations exceeding criteria were found in different locations on site.

The hazardous wastes found in buildings or on different structures to be demolished are mainly leachable paint material and asbestos. Some structures and equipment are also covered with PCB amended paint (PAP).

Concerning the excavation activities, metals and hydrocarbons contaminated soils will have to be excavated, containerized or treated. One buried debris site to be excavated could contain various amounts of hazardous and non-hazardous materials as well as contaminated soils.

6.2 POTENTIAL HAZARDS

The potential hazards for activities involving hazardous material and contaminated soils are:

- Vapour inhalation;
- Skin exposure and contaminants absorption by the skin;
- Accidental ingestion (mouth) of contaminants or of food accidentally contaminated by hazardous substances;
- Dangers inherent to excavation work;
- Common accidents on a work site.

The most significant factors leading to an exposure are related to direct skin contact with hazardous material, and inhalation during work. Any activity that may result in such a situation is to be controlled by the following measures:

- Use of work methods that minimize potential hazards;
- Appropriate use of personal protective equipment (PPE);
- Personal hygiene measures;
- Monitoring (air, water, and soil).

In view of the required tasks for this project, hazardous situations for the workers are minimized when every employee is familiar with and respects all regulations and procedures, by wearing prescribed PPE and by following monitoring information (level of contamination of air, water and soil). Nevertheless, everyone must be alert at all times to variations in working conditions since exposure to the mentioned contaminants, at high concentrations may be harmful. This is outlined in the Material Safety Data Sheets, (MSDS) which are available at KCL site office.

Measures are provided for the control of potential hazardous materials, such as, flammable or corrosive liquids, oxygen and acetylene, propane, dust, fumes, gases, vapours, power tools and electrical equipment. Care must be taken in all activities, such as transporting, handling and storage. All necessary precautions must be applied, such as tagging and locking out, hearing protection and injury prevention.

6.2.1 Flammable Liquids

Flammable and combustible liquids vaporize and form flammable mixtures with air when in open containers, when leaks occur, or when heated. The most common flammable liquid that will be used on site will be diesel fuel. However, the following flammable liquids will also be brought on site:

- Gasoline
- Solvents
- Lubricants

These flammable liquids can be found also in drums through buried or surface debris.

6.2.1.1 Precautions

The main objective in working safely with flammable liquids is to avoid accumulation of vapours and to control sources of ignition.

Besides the most obvious ignition sources, such as open flames from Bunsen burners, matches and cigarette smoking, less obvious sources, such as electrical equipment, static electricity and gas-fired heating devices should be considered. The following precautions must be taken when you are manipulating flammable liquids:

- Control all ignition sources in areas where flammable liquids are used. Smoking, open flames and spark producing equipment should not be used;
- All flammable liquids must be transported and stored in approved containers bearing “FM” and ULC labels. Containers must not be dented and/or damaged, caps and/or fittings present and properly secured;
- Flammable liquids must be transported in an upright position, braced or otherwise secured to prevent overturning;
- Gasoline engines should be shut off and allowed to cool, before refuelling;
- Never use gasoline as a cleaner.

6.2.2 Corrosive liquids

Corrosive liquids (e.g. mineral acids, alkali solutions and some oxidizers) represent a very significant hazard because skin or eye contact can readily occur from splashes and their effect on human tissue generally takes place very rapidly. Since all vehicle batteries contain sulphuric acid, precautions must be taken when a battery is charged or a jump start is performing.

6.2.2.1 Precautions while charging a battery

The room or compartment in which the battery is being charged should be well ventilated. Follow precautions to prevent battery explosion. Explosive mixtures of hydrogen gas are being generated during battery charging. This gas can be exploded by a torch, match flame, lighted cigarette, sparks from loose connections or metal tools making contact between the terminals or the ungrounded terminal and adjacent metal parts which are grounded. The following precautions must be taken when charging a battery:

- Always shield eyes when working around the battery;
- It is recommended that filler caps, where used, be left on the battery during charging. Additionally, a wet cloth should be placed over the battery and vent;
- DO NOT ATTEMPT TO CHARGE A FROZEN BATTERY;
- Always turn the charger to the "OFF" position before connecting the leads to the battery;

- Never break a "live" circuit of the battery terminals or touch the charger leads when the charger is "ON". This could create a spark which could ignite the explosive gases in the battery. Always turn the charger "OFF" before removing a charger lead from the battery.

6.2.3 Compressed Gases

The following compress gases will be used on site:

- Oxygen
- Acetylene
- Propane
- Nitrogen

These compressed gas bottles can also be found through buried or surface debris. If a cylinder is not identified, or if you are not sure of the identification, please advise immediately the hazardous material specialist before taking any further action.

6.2.3.1 Precautions

Compressed gases can be toxic, flammable, oxidizing, corrosive, inert or a combination of hazards. In addition to the chemical hazards, compressed gases may be under a great deal of pressure. The amount of energy in a compressed gas cylinder makes it a potential rocket. Appropriate care in the handling and storage of compressed gas cylinders is essential.

- Avoid dropping, dragging or sliding cylinders. Use a suitable hand truck or cart equipped with a chain or belt for securing the cylinder to the cart, even for short distances;
- Do not permit cylinders to strike each other violently. Cylinders should not be used as rollers for moving material or other equipment;
- Cylinder caps should be left on each cylinder until it has been secured against a wall or bench or placed in a cylinder stand, and is ready for installation of the regulator. Cylinder caps protect the valve on top of the cylinder from damage if knocked;
- Never tamper with pressure relief devices in valves or cylinders;
- Use only wrenches or tools provided by the cylinder supplier to remove a cylinder cap or to open a valve. Never use a screwdriver or pliers;
- Keep the cylinder valve closed except when in use;
- Position cylinders so that the cylinder valve is accessible at all times;

- All cylinders must be secured to a wall, bench or fixed support using a chain or strap placed 2/3 of the way up. Cylinder stands are an alternative to straps.
- Do not store full and empty cylinders together;
- Oxidizers and flammable gases should be stored in areas separated by at least 20 feet or by a non-combustible wall;
- Cylinders should not be stored near radiators or other heat sources. If storage is outdoor, protect cylinders from weather extremes and damp ground to prevent corrosion;
- No part of a cylinder should be subjected to a temperature higher than 52°C. A flame should never be permitted to come in contact with any part of a compressed gas cylinder;
- Do not place cylinders where they may become part of an electric circuit;
- Ensure that the cylinder is properly and prominently labelled as to its contents;
- NEVER place acetylene cylinders on their side.

6.2.4 Dust, Fumes, Gases and Vapours

All workers are provided with suitable respirators appropriate to the hazard and are trained to use and maintain the respirators properly during training sessions.

Should a worker perceive an odour through the cartridges or experience difficulty breathing through the respirator, he should without delay report back to the change room and obtain a new respirator or cartridges.

6.2.5 Power Tools

Power tools must be used only by workers who have been instructed to operate the tools properly and safely. It is not permitted to alter or modify any power tools. Working in confined space, hearing protection should be worn.

6.2.6 Material Handling

Whenever practical, heavy lifts shall be executed with mechanical lifting devices. Workers should know their physical limitations and the approximate weight of materials they are trying to lift.

Workers are encouraged to get help, when a lifting task may be more than they can safely handle.

When manual handling is required, dollies, trucks and similar devices should be used.

6.2.7 Electrified apparatus

All apparatus capable of being electrically energized or dynamically activated must be de-energized by locking it out, physically disconnecting or otherwise rendering the apparatus inoperable.

Switches, power sources, controls, interlocks and other such devices must be appropriately tagged and personally locked off by every employee involved in the operation.

Where several workers or trades are working on the circuit, provisions for additional locks must be made through the use of a multiple lockout device. This arrangement can accommodate any number of locks by placing another multiple lockout device in the last hole of the previous device.

Every worker must attach to this lock a durable identifying tag.

The de-energized electrical system must be discharged, by short circuit and phase to ground. A temporary ground cable must be attached to the system and remain in place, until work is completed.

A record must be kept of the devices opened, locked-off or otherwise rendered inoperable so that all these devices can be reactivated once work is completed.

Always place sign(s) on the system indicating that it is not to be energized or operated and those guards, locks, temporary ground cables, chains, tags and other safeguards are not to be tempered and/or removed until work is completed.

6.2.8 Excessive noise

With activities involving excessive noise, hearing protections should be used. The maximum allowable noise exposure is 85 decibels for eight hours, and for a longer period, the limit becomes 80 decibels.

Hearing protection is available on site in the following general types:

- Disposable earplugs made of pliable material, one size fits all, but can be used only once.
- CSA approved earmuffs which can be worn with or without safety hat, when fitted properly and worn, generally provide more protection than earplugs.

6.2.9 Confined Space

A confined space may be defined as a tank, a process vessel, a trench, or any other enclosed area that was not conceived for human occupation, except for occasional work. Such a space has limited access for entrance and exiting, poor natural ventilation, an atmosphere that may be deficient in oxygen or that may contain hazardous substances.

Level A or B is required for working in such a location. An example would be inspection, sampling or maintenance work in a tanker or tank used to hold contaminated water or solvent, or in a water treatment filter.

No one has permission to work in such a space, unless authorized by, and in the presence of the site safety representative. Furthermore, anybody involved in confine space works must have received the proper training. In such a case, the following safety procedures apply:

- Test for oxygen deficiency, combustibility and concentrations of air contaminants prior to entering and when inside.
- Maintain adequate ventilation.
- Wear PPE appropriate to potential hazards.
- Seal off connecting pipes and eliminate all potential ignition sources.
- Attach worker and have rescue worker(s) immediately outside the confined space.

In some instances, an excavation itself can become a confined space. Vapours of chlorinated solvents are heavier than air (for example perchloroethylene and tetrachloroethane have relative densities of 5.8, air being 1). The absence of wind, the presence of solvents directly exposed to air, conditions of warm of sunny weather are all factors that will make the bottom of an excavation behave more like a confined space and less like a work area in open air.

Consequently a number of monitoring, protection and mitigation measures will be taken in order to insure the safety of the workers, namely:

- Cover the soil with tarps whenever and wherever soil does not have to be inspected or handled.
- Organize and maintain pumping to avoid any pooled solvent.
- Keep the surfaces wet to cut down on evaporation losses.
- Continuous air monitoring with an O_2/LEL analyzer.
- Continuous air monitoring with a photo ionizer.
- Audible and visible alarms for these two detectors.

- Wearing PPE appropriate to the conditions.
- Work in teams, each worker staying in eye and radio contact with the others.
- Interrupt work and leave the excavation area if conditions become unsafe (because of O_2, TLV or heat stress for example).

6.2.10 Cold Stress

Workers should be protected from exposure to cold so that the deep core temperature does not fall below 36°C; lower body temperatures will very likely result in reduced mental alertness, reduction in rational decision making, or loss of consciousness with the threat of fatal consequences. Pain in the extremities may be the first early warning of danger from cold stress. During exposure to cold, maximum severe shivering develops when the body temperature has fallen to 36°C. This must be taken as a sign of danger to the workers and exposure to cold should be immediately terminated for any workers when severe shivering becomes evident. Useful physical or mental work is limited when severe shivering occurs.

6.2.10.1 General requirements

Since prolonged exposure to cold air or to immersion in cold water, at temperatures even well above freezing can lead to dangerous hypothermia, whole-body protection must be worn. Furthermore, all employees must have warm emergency clothing available at all times during wet or cold weather.

Adequate insulating dry clothing to maintain core temperatures above 36°C must be worn by workers if work is performed in air temperatures below 5°C. Wind chill cooling rate and the cooling power of air are critical factors. The higher the wind speed and the lower the temperature in the work area, the greater the insulation value of the protective clothing required. A wind chill chart will be posted at the camp and copies will be available at the site office.

Unless there are unusual or extenuating circumstances, cold injury to other than hands, feet, and head is not likely to occur without the development of the initial signs of hypothermia. Superficial or deep local tissue freezing will occur only at temperatures below 0°C regardless of wind speed. However, older workers or workers with circulatory problems require special precautionary protection against cold injury. The use of extra insulating clothing and/or a reduction in the duration of the exposure period are among the special precautions which should be considered.

For exposed skin, continuous exposure should not be permitted when the air speed and temperature results in an equivalent chill temperature of -32°C or below.

At air temperatures of 5°C or less, it is imperative that workers who become immersed in water or whose clothing becomes wet be immediately provided a change of clothing and be treated for hypothermia.

If the available clothing does not give adequate protection to prevent hypothermia or frostbite, work should be modified or suspended until adequate clothing is made available or until weather conditions improve.

6.2.10.2 Cold-related illness and treatment

Frostbite

If exposure occurs in temperatures that are below freezing, frostbite or trench foot (immersion foot) may accompany or complicate the symptoms of hypothermia. Frostbite is the freezing of living tissues with a resultant breakdown of cell structure. Injury due to frostbite may range from superficial redness of the skin, slight numbness, and blisters, to the obstruction of blood flow (ischemia), blood clots (thrombosis), or skin discoloration due to insufficient oxygen in the blood (cyanosis). Frostbite may occur if the skin comes into contact with objects with a surface temperature below freezing, such as metal tool handles. Trench foot is caused by continuous exposure to cold combined with persistent dampness or immersion in water. Injuries in this case include permanent tissue damage due to oxygen deficiency, damage to capillary walls, severe pain, blistering, tissue death, and ulceration. Additionally, cold exposures may either induce or intensify vascular abnormalities. These include chilblain (a swelling or sore), Raynaud's disease, acrocyanosis (blueness of hands and feet) and thromboangiitis (inflammation of the innermost walls of blood vessels with accompanying clots formation). Workers suffering from these ailments should take particular precautions to avoid chilling.

Treatment

- Wrap the victim in woolen cloth and keep dry until he or she can be brought inside.
- Do not rub, chafe, or manipulate frozen parts.
- Bring the victim indoors.
- Apply warm towels or immerse the area in circulating lukewarm water for twenty minutes. Hot water should not be used and the area should not be rubbed in any

way. If blisters are present, leave them intact. Never thaw affected body parts if the victim has to go back out into the cold. The affected area may be refrozen.

- Do not hold the affected area near fire since the area may be burned due to the reduced feeling in the area.
- Offer the patient warm coffee or tea, if alert, but never alcohol.
- Have the victim gently exercise the affected parts once they are thawed.
- Seek medical aid for thawing of serious frostbite.

Hypothermia

Hypothermia damages both the body's internal temperature mechanisms (hypothalamus) and the peripheral mechanisms to prevent heat loss (vasoconstriction and perspiration.) These effects may last up to three years.

Treatment

- Bring the victim into a warm room or shelter as quickly as possible.
- Remove all wet clothing
- Provide an external heat source since the body cannot generate its own heat. Wrap the victim in pre-warmed blankets, place him or her in the liner of a portable hypothermia treatment unit, put the torso (not the extremities) into a tub of warm water or use body-to-body contact to re-warm the body core. These measures will slowly reopen the peripheral circulation, minimizing the possibility of after-shock or after-drop (the flowing of cooled, stagnated blood from the limbs to the heart), which may cause ventricular fibrillation, cardiac arrest, or death.
- Do not allow the victim to sleep.
- Give warm, sweet drinks, no alcohol or pain relievers.
- Keep the victim still. Do not try to walk.
- Do not rub numb skin
- Get medical help as soon as possible

7. DEFINITION OF WORK ZONES

For the definition of personal protective equipment (PPE) requirements and in order to prevent accidental spreading of hazardous substances by workers and equipment from contaminated to non-contaminated areas, each working areas where contaminated material can be found will be divided in 3 zones:

- The contaminated zone (also called exclusion zone): area where contaminants are present;
- Buffer zone (also called transition zone): area of transition surrounding the contaminated zone where the quality of working conditions may become degraded;
- Clean zone (also called free zone): a non-contaminated area, where workers should not be exposed to hazardous working conditions;

These zones will ensure the protection of workers on site, the confinement of contamination and activities in each appropriate location, and provide guidelines for the evacuation of personnel in case of an emergency. All movements of personnel and equipment on site is controlled and kept to a minimum to prevent potential contamination, in the clean zone.

7.1 CONTAMINATED ZONE

The contaminated zone is the area of known or potentially present contamination. All personnel and equipment movement are to be controlled at the entrance and exit of each zone. All personnel must wear proper individual protective clothing.

All personnel leaving a contaminated zone must remove all outer protective clothing. Nobody shall leave the work area, while wearing outer protective clothing, except in case of an emergency.

7.2 BUFFER ZONE

The buffer zone is the area of transition between contaminated and non-contaminated zones. For the demolition activities, the buffer zone is the decontamination unit, a container specially made and divided in two sections, where the employees get dressed and undressed with adequate PPE. Regarding the excavation activities, the transition

zone is a define area, where the wheels of vehicles are cleaned prior to exit to the clean zone. Entrance and Exit Protocol

8. PERSONAL PROTECTIVE EQUIPMENT (PPE)

All employees must wear the appropriate personal protective equipment (PPE) while on site. The goal is to protect and isolate individuals from chemical and physical dangers present on site. The selection and careful use of PPE must result in complete protection of the respiratory system, skin, eyes, face, hands, feet, head, body and hearing.

8.1 SITE REQUIREMENTS

For each activity, the proper level of protection was determined. However, when changes in the working conditions occur, a planned level of protection may not be sufficient. In such a case, the affected work zone will be evacuated until the conditions and protection requirements are re-evaluated by the superintendent with the help of the hazardous material specialist and the site safety representative.

8.1.1 General activities

For anybody working on site, the following safety equipment must be worn for regular activities where hazardous material or contaminated soils are not involved:

- Safety boots
- Safety hat
- Safety glasses
- Lather gloves
- Reflecting vest

Safety hats, glasses, gloves and reflecting vest will be provided to everybody. However, all workers must bring their own safety boots on site.

8.1.2 Specific activities

The following specific activities are requiring additional personnel protective equipment:

- Demolition -PCB amended paint material removal;
- Welding
- Demolition -Asbestos removal;
- Excavation -Contaminated or hazardous soils containerization;
- Excavation -Buried debris sorting;

- Surface debris -Barrel processing.

Level C (EPA) of personal protective equipment was planned for these project activities. This level of protection was used on other DEW line cleanup to perform the same activities. It includes the following equipments:

- Air purifying respirator with organic vapour and HEPA combination filters.
- Chemical resistant coveralls.
- Chemical resistant inner and outer gloves.
- Chemical resistant construction footwear.
- Hard hat.
- Face shield or chemical splash goggles.
- Disposable boot covers.

8.2 DRESSING AND UNDRESSING PROTOCOL

The proper way to put on protective clothing is as follows:

1. Surgical gloves.
2. Cotton overalls.
3. Tyvek or polylaminated coveralls.
4. Construction footwear.
5. Boot covers (or rubber boots).
6. Tyvek bonnet (hood).
7. Respirator.
8. Hard hat.
9. Outer gloves.

Before leaving the dressing area, verify satisfactory fit of the mask-to-face-seal. Facial hair (beard) is not permitted. To check mask tightness, place hands over cartridge ends and breathe in: in doing so, the mask should stick to face and air should not pass. Should this not be the case and/or if you are doubtful, change the mask.

The proper way to disrobe is as follows:

1. Remove outer gloves.
2. Remove hard hat.
3. Remove glasses or eye/facial protection.
4. Remove respiratory mask.
5. Remove bonnet (hood).

6. Remove boot covers.
7. Remove construction footwear.
8. Remove coverall (Tyvek or polylaminated).
9. Remove surgical gloves.
10. Remove working clothes (cotton coveralls).

Disposable safety equipment such as gloves, coveralls, boot covers, etc. must be removed and stored adequately in the decontamination unit or disposed in the assigned drum.

8.3 PERSONAL HYGIENE

Decontamination is a critical element in terms of health and safety on site; more specifically, the removal of contaminants on PPE and machinery. Decontamination protects workers from hazardous substances which may contaminate respiratory devices, tools, vehicles and other equipment used on site, and eventually transit through protection clothing. Decontamination also protects all personnel on site, by minimizing transfers of harmful materials to clean zones. The following basic hygiene measures must be adopted by everybody using PPE:

- Every employee must wash his/her hands and face carefully with soap and water before eating, drinking, smoking, or using the bathroom. Meals are to be taken in designated area only and no protection equipment is allowed in those areas.
- At the end of every shift, all personnel must wash or take a shower. Every skin area that may have been in contact with contaminants must be washed with soap and water. All working clothes (worn under protective clothing), should be cleaned frequently.
- The decontamination process includes the removal of all contaminated and stained clothing during work and at the end of the work day. While removing contaminated clothes, special care should be given to prevent contact between contaminants and skin. Contaminated clothing should then be placed in designated drum(s).
- Equipment used, must be cleaned and disinfected wherever there is a potential skin/equipment contact. Wash solutions and wipe material will be kept in the decontamination area for this purpose.
- Observe site specific protocols on washing and removing boots and other equipment before entering the dressing room and/or clean area;

8.4 TRAINING

At the beginning of each working season, all employees will be trained on PPE during the worker orientation seminar. The general training will include the following topics:

- The minimum level of PPE required on site;
- Where are located the contaminated areas;
- Protocols for entry and exit into a contaminated area;
- When extra PPE is necessary;
- Which type of extra PPE will be necessary to access contaminated areas.

All employees who will be involved in activities where PPE level C is required will receive additional training by the hazardous material specialist. During that training, the following subject will be discussed:

- How to properly put on, take off, adjust and wear the PPE;
- Where and how to dispose of contaminated PPE;
- The limitations of the PPE;
- Respirator fit testing;
- PPE inspection and care.

Training records of all employees will be kept on site.

9. SAFETY MEETINGS, INSPECTIONS AND REPORTS

To ensure proper understanding of the health and safety plan by everyone on site and to test its application, a series of meeting and inspections will be performed by the project manager, the site superintendent or the on-site health and safety representative.

9.1 WORKER ORIENTATION SEMINAR

Everyone who will access the site must attempt the worker orientation seminar. During this meeting, presented at the beginning of every working season, the health and safety plan will be presented and explained. Attendants must sign the presence sheet.

9.2 JOB HAZARD ANALYSIS

Prior to start any new activities, a job hazard analysis will be performed in order to identify potential hazards and determine the require level of PPE. Hazard assessment sheets will be kept in the health and safety file.

9.3 WEEKLY GENERAL SAFETY MEETINGS

Once a week, the site superintendent will hold a general safety meeting at the cafeteria. The following safety subjects or concerned might be discussed:

- Describe all assigned tasks and their potential hazards;
- Personal protective equipment;
- Coordination of all activities;
- Identify all safety measures to prevent injuries;
- Plan for emergency situations;
- Describe any change in the health and safety plan;
- Obtain workers' opinions on site conditions, affecting security;
- Obtain workers' opinions on the health and safety plan effectiveness.

A summary of discussed subjects and a copy of the presence list will be part of the weekly progress report submitted to PWGSC.

9.4 TOOL BOX MEETINGS

Tool box meetings will be held on a daily base by the team supervisors or by the site superintendent in order to reinforce the site safety regulations. Tool box meetings must be also done at the beginning of all new activities. Attendance records will be kept in the health and safety file.

9.5 JOINT WORK SITE HEALTH AND SAFETY COMMITTEE

A Joint work site health and safety committee (JWSHSC) will be held every two weeks. The committee will consist of workers and management members. The on-site health and safety representative will organize the meeting, take the minutes and follow the recommendations. The names of the committee members will be posted in the dining room.

9.6 INSPECTIONS

To ensure the correct application of the health and safety plan, a weekly inspection of the site, installations, equipment, conditions and activities will be performed by the site safety representative or the site superintendent or the camp manager and a PWGSC representative. These inspections will follow the check list presented in the appendix 2.

9.7 REPORTS

After any accident, incident or near miss, the supervisor and worker directly involved in the area, shall assist the health and safety representative to complete the accident report. All personnel witnesses may be questioned, if needed. The accident report form is included in Appendix A. All accident or near miss reports shall be forwarded to the project manager and to the PWGSC site representative.

When somebody is getting injured on site, a report must be filled by the employee and by the site safety representative. Both reports must be sent to the WCB office within 24 hours.

The weekly progress report submitted to PWGSC will include a health and safety section where all related activities will be presented.

10. FIRE SAFETY PROGRAM

10.1 FIRE PREVENTION

All non essential ignition sources must be eliminated where flammable liquids, are used or stored. The following is a list of some of the more common potential sources:

- Open flame, such as cutting and welding torches, furnaces, matches, and heaters, should be kept away from flammable liquids operation. Cutting or welding on flammable liquids equipment should not be performed unless the equipment has been properly emptied and purged with a neutral gas such as nitrogen.

- Chemical sources of ignition such as d.c. motors, switches, and circuit breakers, should be eliminated where flammable liquids are handled or stored. Only approved explosion-proof devices should be used in these areas.

- Mechanical sparks: These sparks can be produced, as a result of friction. Only non sparking tools should be used in areas where flammable liquids are handled or stored.

- Static sparks: These sparks can be generated as a result of electron transfer between two contacting surfaces. The electron charge can raise the temperature above the ignition temperature. Every effort should be made to eliminate the possibility of static sparks. Also proper bonding and grounding procedures must be followed when flammable liquids are transferred or transported.

Material that can contribute to a flammable liquid fire should not be stored with flammable liquids. An example of incompatible liquids is oxidizers and organic peroxides, which, on decomposition, can generate large amounts of oxygen.

Generally, flammable gases pose the same type of fire hazards as flammable liquids and their vapours. Many of the safeguards for flammable liquids also apply to flammable gases. Other properties such as toxicity, reactivity, and corrosivity, must be taken into account. Also, a gas that is flammable could produce toxic combustion products.

10.2 FIRE PROTECTION

A portable fire extinguisher is a ‘‘first aid’’ device and is very effective, when used while the fire is small. The use of a fire extinguisher that matches the class of fire, by a person who is well trained, can save both lives and property. Portable fire extinguishers must be installed in workplaces, regardless of other fire fighting measures. The successful performance of a fire extinguisher, in a fire situation largely depends on its proper selection, inspection, maintenance, and distribution.

Fires are classified into four general categories depending on the type of material or fuel involved. The type of fire determines the type of extinguisher that should be used to extinguish it.

Class A Fires involve materials such as wood, paper, and cloth, which produce glowing embers.

Class B Fires involve flammable gases, liquids, and greases, including gasoline and most hydrocarbon liquids which must be vaporized for combustion to occur.

Class C Fires involve fires in live electrical equipment, or in materials near electrically powered equipment.

Class D Fires involve combustible metals, such as magnesium, zirconium, potassium, and sodium.

Extinguishers will be selected according to the potential fire hazard, the construction and occupancy of facilities, hazard to be protected, and other factors pertinent to the situation.

Extinguishers will conspicuously be located and readily accessible for immediate use in the event of fire. Inside the offices, rest rooms, the garage and construction camp, they will be located along normal paths of travel and egress.

Extinguishers will clearly be visible. In location where visual obstruction cannot be completely avoided, directional arrows will be provided to indicate the location of extinguishers. The arrow will be marked with the extinguisher classification.

Classes A-B-C extinguishers are selected for the construction camp, rest rooms, offices and on-site activities.

Portable extinguishers will be maintained in a fully charged and operable condition. They will be kept in their designated locations, at all times, when not used. When extinguishers are removed for maintenance or testing, a fully charged and operable replacement unit will be provided.

10.3 FIRE SAFETY INSPECTIONS

The site safety representative is responsible for conducting work site surveys that include observations of compliance with the Fire Safety Program. These surveys include observations of work site safety issues. They specifically address proper storage of chemical and supplies, unobstructed access to fire extinguishers, and emergency routes. Also, inspection of extinguishers and smoke alarms are conducted.

10.4 TRAINING

A fire fighting team will be trained in order to response efficiently in case of major fire. This team will include the site safety representative and 4 workers. The names of the fire fighting team will be posted at the dinning room, at the recreation room and at KCL's office. Each member will be trained on how to use the fire fighting equipment, how to use the personnel protective equipment and on the procedures to be taken for different fire scenarios.

All employees will be trained on how correctly to use the different types of fire extinguishers and basic procedures and precautions to adopt in case of fire.

10.5 FIRE ALARMS

A smoke detector is installed in each room and each camp module. These detectors must be active and shall not be obstructed. A camp alarm can be activated for major emergency. The interrupter is located outside of the kitchen, beside the entrance door. When the camp alarm is rigging, everybody must go to the meeting point, in front of the kitchen.

10.6 FIRE EMERGENCY PROCEDURES

If you discover a fire, follow the procedures presented in section 11; "CONTINGENCY AND EMERGENCY RESPONSE PLAN" of this document.

11. CONTINGENCY AND EMERGENCY RESPONSE PLAN

Emergencies must be considered as a potential threat. Sudden and unexpected events require both immediate response and adequate preparedness.

Any danger on site can result in an emergency: chemical products, lack of attention, or physical dangers can all act individually or be combined and create spills, toxic atmospheres, injuries or other types of dangerous situations.

If an unexpected and potentially hazardous situation occurs, as indicated by instruments, visible chemical compounds, unusual or excessive odours, etc., employees must temporarily cease operations, go toward a secure zone and contact their supervisor who will immediately inform the site superintendent and the site safety representative. Appropriate measures will be taken according to the nature of the incident.

All health and security procedures in this plan are based on the best available and current information. Unknown conditions may exist, and conditions can change. This health and safety plan cannot take into account all unknown factors and predict all contingencies. If levels of contamination encountered in soils and groundwater is higher or different than anticipated, or should there be an occurrence outside of the scope of this health and safety plan, activities on site should be interrupted. A re-evaluation should be conducted with the project manager and the superintendent to ensure appropriate health and safety measures are taken.

11.1 MEDICAL EMERGENCY PROCEDURES

A full time emergency medical technician will be assigned on site. An EMT is a highly trained medical professional who responds to medical and trauma emergencies in the pre-hospital setting ("in-field") for the purpose of stabilizing a patient's condition before and during transportation to an appropriate medical facility. His function also includes the following tasks:

- Perform a daily sick parade;
- Administrate medications as per symptom relief;
- Maintain all medical services areas in a manner promoting safety, cleanliness and hygiene.

In case of emergency, the EMT will be assisted by an off-site medical director that can be contacted 24 hours per day.

In the event of a worker or a client representative getting injured on site, the following procedures will be followed:

- A general call on radio requiring immediate assistance must be made at first. Mention the exact location and a brief description of the situation. Contact the EMT for further assistance;
- Provide first aid and follow EMT instructions by the time that he is coming on site;
- Transport the injured person to the first aid facilities and the EMT will complete the patient evaluation.

If the patient needs evacuation for further medical assistance, the emergency evacuation procedure must be initiated by the ERC in coordination with the site superintendent. Unless contraindications issued by the Medic, the patient will be transferred to the Rankin Inlet health center for further assistance. From there, decisions will be taken by the health center personnel if the patient needs to be transferred to Yellowknife or any other hospitals for further assistance.

In the case where the patient must be evacuated directly from Ennadai Lake to an hospital, the ERC, with the help of the Medic coordinator, is in charge of collecting all information required to organize and coordinate the evacuation. Considering the geographical position of the site, the medical evacuation would be done to Yellowknife. Each of the following organizations will be contacted in case of emergency evacuation to Yellowknife:

- Emergency Medical Evacuation
  Kewatin Air
  Rankin Inlet
  Tel. (888)-760-4344
  or
  Transwest Air
  Stony Rapids
  Tel. (877) 889-2677
- Stanton Territorial Health Authority, Yellowknife
  Anita Wilkinson - Manager Medical Travel –
  (867) 669-4202

11.2 FIRE

11.2.1 Fire at the camp facilities

Since the dormitory units are built with steel container, there is no risk of fire propagation between units. Each room (2 rooms per container) is equipped with a fire alarm detector and a 5 pounds fire extinguisher. An additional fire extinguisher is also installed in each dormitory porch.

The kitchen and the garage are the buildings where the risk of fire is higher. Both buildings are equipped with 10 pounds ABC fire extinguishers well identified. Additional fire fighting equipment is located nearby the kitchen, in a container identified FIRE FIGHTING EQUIPMENT.

Each generator unit is equipped with one portable fire extinguisher. In case of fire, the following actions must be taken without putting one's life in endanger:

- Turn off the main power switch;
- Turn off the generator;
- Close the valve on the fuel line

If any fire alarm is ringing, it is the responsibility of everyone to immediately verify the nature of the problem. A camp alarm can be activated for major emergency. The interrupter is located outside of the kitchen, beside the entrance door. When the camp alarm is ringing, everybody must go to the meeting point, in front of the kitchen.

When a fire is discovered in a building, the following actions must be taken:

- Evacuate immediately all personnel outside the building;
- During the day shift, call on radio for immediate assistance;
- During the night, activate the camp alarm for assistance;
- Without putting your life in danger, use available fire extinguisher to control the fire;
- If possible, isolate the fire to prevent spreading;
- If possible, shut down the power switch in the electrical panel or disconnect the building power by removing the quick connector;
- Get extra fire fighting equipment from the emergency supplies.

In case of major fire event, the site superintendent will coordinate the fire fighting operations. As mentioned previously, the extra fire fighting equipment is stored nearby

the kitchen in a container identified: FIRE FIGHTING EQUIPMENT. It is including the following equipment:

- Additional portable extinguishers;
- Hoses, nozzles and fittings for the water truck;
- One submersible pump
- One generator 2,5 KW

In the case where a fire would cause severe damages to the camp, the emergency procedure will be implemented in order to evacuate the camp occupants. The emergency response coordinator (ERC) would be contacted and appropriate decision would be taken according to the gravity of the situation.

11.2.2 Fire on site

In the event that a fire or an explosion would occur in a working area, you must evacuate the area first. Since some contaminants might be present, make sure to keep enough distance between you and the fire. Always stay upwind from the fire to avoid any potentially armful smokes. A general call on the radio must be made. Unless somebody's life is in danger, do not attempt to extinguish the fire. The site superintendent will give further instructions and initiate the fire fighting procedure.

11.3 POLAR BEAR INTRUSION ON THE CAMP SITE

During the day, if a polar bear is seen at or near the camp site, everybody must be advised through radio. Since the wildlife monitors are generally working on site, a firearm and a bear repellent/deterrent kit is available at the kitchen. The firearm is locked in a cabinet but the repellent/deterrent material is available in the unlocked cabinet. The camp manager and the site safety representative are the only persons who have the firearm cabinet key. If no one's life is in danger, the camp personnel should stay inside and leave the wildlife monitors taking the appropriate actions.

11.4 FOOD RESUPPLY DELAY

Since the only link for camp food resupply is by air and considering the weather limitations for landing at Ennadai Lake, food delivery delays or cancellations might be experienced. The food inventory will be kept updated and frequent resupplies are planned. A certain inventory of frozen food, dry food and canned food will always be kept in order to face unusual situations.

11.5 SPILL

Procedures regarding spills are present in a separate document called SPILL CONTINGENCY PLAN.

11.6 AIRPLANE MISSING

In the situation where a plane is experiencing troubles or is missing, the following authority must be contacted:

Civil Air Search and Rescue Association (CASARA) – Nunavut
Chris Lalande, Zone Commander (Iqaluit)
(867) 975-1000

APENDIX 1

ACCEPTANCE POLICY

Health and Safety Plan

Ennadai Lake Weather Station Environmental Remediation Project

Attachments:

- Acceptance policy

ACCEPTANCE POLICY

I received a copy of the Specific Health and Safety Plan for the following project: *Environmental Remediation of the Ennadai Lake Weather station.* I read this program, I agree with its content and I understand that my access to the site could be denied due to violation of any clauses concerning health and safety requirements as described in this document.

EMPLOYEE

Signature: _____

Name: _____

Date: _____

SUBCONTRACTOR

Company: _____

Signature: _____

Name: _____

Date: _____

APENDIX 2

FORMS

Health and Safety Plan

Ennadai Lake Weather Station Environmental Remediation Project

Attachments:

- Hazard assessment sheet
- Incident report form
- Inspection report form

Kudlik Construction Ltd.

Hazard Assessment Form - Ennadai Lake Weather Station Environmental Remediation

Area: **Ennadai Lake**	**Project start date:**
Task:	**Project finish date:**

Task Activity Description

	Project start date:
	Project finish date:

Hazards Identified During Assessment

Safety Hazards	Biological Hazard

Physical Hazards	Ergonomic Hazards	Chemical Hazards

Hazards controlled as per:

Personal Protective Equipment Required

Respirator:	Dermal Protection	Head / Eye Protection
YES [ ] NO [ ] TYPE	YES [ ] NO [ ] TYPE	YES [ ] NO [ ] TYPE
Half-face respirator [ ]	Leather gloves [ ]	Hard hat [ ]
OV/HEPA filter (as [ ]	Long rubber gloves [ ]	Safety glasses [ ]
per air monitoring	Cotton coveralls [ ]	Face Shield [ ]
PAPR(Powered Air [ ]	Reflective vest [ ]	Chemical glggles [ ]
Purifying Respirator	Nitril gloves [ ]	Ear plugs and/or muffs [ ]
Dust masks [ ]	Coveralls / Tyvek suits [ ]	**Foot Protection**
	rain suit [ ]	YES [ ] NO [ ] TYPE
		Leater safety boots [ ]
		Rubber safety boots [ ]

Controls Required

Area defined	Air monitoring	Confined Space permit
YES [ ] NO [ ]	YES [ ] NO [ ]	YES [ ] NO [ ]
Fire extinguishers ABC	Decon measures	Tool Box & Formal Meeting
YES [ ] NO [ ]	YES [ ] NO [ ]	YES [ ] NO [ ]
Two-way communication	Soil Testing	Water Truck
YES [ ] NO [ ]	YES [ ] NO [ ]	YES [ ] NO [ ]
Eye wash station	Spotter	Truck Shower
YES [ ] NO [ ]	YES [ ] NO [ ]	YES [ ] NO [ ]
Polar Bear monitor	Hot Work Permit	Soil Testing
YES [ ] NO [ ]	YES [ ] NO [ ]	YES [ ] NO [ ]

Kudlik Construction Ltd

Name:	Signature:

INCIDENT AND NEAR MISS REPORT

No

N°:

Project:	Type of Incident:
Project No.:	☐ Internal (operations, audit) ☐ Spill ☐ Damaged Equipment
	☐ Injury ☐ Fire ☐ Leak
Preventive Action ☐	☐ Supplier: ☐ Other
Corrective Action ☐	☐ Client complaint:

Situation Description	Impact
Date (y-m-d): Time:	

Prepared by: Position: Date (y-m-d):

Immediate Actions (special instructions)

Verified by: Site services supervisor: Date (y-m-d):

Actions taken to prevent a reoccurrence of the incident

Approved by: Site services supervisor: Date (y-m-d):

Verified by:		(CQE)		Date (y-m-d):	
Other by:		(Position:	)	Date (y-m-d):	

INCIDENT REPORT

1.1.1.1.2.1 FINAL VERIFICATION

Corrective/Preventive Action: _____ By: _____ Date (y-m-d): _____

Comments: _____

Estimated Cost:		Details of Costs Annexed:	☐ Yes ☐ No

SAFETY INSPECTION RECORDING FORM

Kudlik Construction Ltd.

Work Site Safety Inspection Date: _____

Project: Ennadai Lake Inspected by: _____

Items to watch for:

1	Safety Policy posted, Manual available	10.	Hoarding and heating	18.	Safety Harnesses
2	Housekeeping	11.	Excavation slope protection	19.	Safety training
3	First-aid	12.	Electrical wiring, cords	20.	Vehicle speed
4	Scaffolds and ladders	13.	Adequate lighting	21.	Ventilation
5	PPE - Hard hats/boots/glasses/etc.	14	WHMIS information available	22.	Toxic material storage
6	Hoisting and rigging	15.	Explosive actuated tools	23.	Warning signs, labels
7	Proper lifting	16.	Fire protection equipment	24	Smoking restrictions
8	Hand and Power tools maintained	17.	Handrails/openings covered	25.	Materials safely stored
9	Site secure from public				

#	Hazard Classification Rating (A,B,C)	Description of Hazard (unsafe condition/practice/ procedure)	Corrective Action Plan (describe action(s) taken or to be taken; responsibility assigned to; and by what date)

SITE INSPECTION CHECKLIST

Kudlik Construction Ltd.

Project: **ENNADAI LAKE** **Time:** _____

Inspected By: _____ **Date:** _____

Public Safety	❑ Barricade ❑ Adjoining property ❑ Sidewalks/roads clean	❑ Signage ❑Traffic Control ❑ Fencing/hoarding	❑ Safe public passage ❑ Overhead hazards ❑ Signage
Excavation	❑ Engineer drawings ❑ Engineer inspections ❑ Safe access	❑ Shoring or sloping at ¾ hor. to 1 vert. for banks over four feet high	❑ Shoring conditions ❑ Location of underground utilities
High Voltage Powerlines	❑ Clearance being maintained	❑ Assurance in writing from utility	❑ 30M33 form on site
Asbestos-Containing Materials	❑ Identified	❑ Removed by qualified personnel	❑ Clearance letter available
Structure	❑ Material stock piling ❑ Overhead hazards ❑ Safe access	❑ Illumination ❑ Housekeeping ❑ Floor openings protected	❑ Guardrails ❑ Overhead hazards ❑ Foundation
First-aid	❑ Attendant ❑ Communication and availability	❑ First-aid Kit ❑ Transportation to medical aid	❑ Record Treatment book
Personal Protective Equipment	❑ Hard hats ❑ Safety footwear ❑ Safety glasses	❑ Hearing protection ❑ Fall Protection Equipment ❑ Gloves	❑ Life jackets ❑ Respirators
Traffic Control	❑ Barricades or cones ❑ Trained flag person(s)	❑ Stop paddles, flags ❑ Wide load sign working	❑ High visibility vests
Cranes	❑ Operator Inspections ❑ Log book	❑ Manufacture's manual ❑ Safety latches	❑ Oil leaks ❑ Sling charts
Rigging, Slings and Chains	❑ Check for wear ❑ Stretched links	❑ S.W.L. tags on ❑ Hooks	❑ Properly stored

INSPECTION CHECKLIST

Kudlik Construction Ltd.

Lifting Equipment and Shoring	❑ Hose ❑ Hydraulic jacks ❑ Screw jacks	❑ Pump jacks ❑ Rollers ❑ Pillow Blocks	❑ Timbers
Tools and Equipment	❑ Chain saw ❑ Powder actuated tools ❑ Lock-out procedures	❑ Circular saws ❑ Hand tools ❑ Operating Procedures	❑ Drills ❑ Guards
Oxy-Acetylene	❑ Bottles tied up ❑ Flash back arrestors ❑ Regulator working	❑ Hoses in good shape ❑ Lifting cage ❑ Safety goggles available	❑ Lens on regulators ❑ Regulator stored free of grease
Ladders	❑ Non slip base ❑ Extends 3' beyond platform	❑ Rungs not defective ❑ Angled at 4:1 ratio	❑ Rails not defective ❑ Workers not on top two steps
Scaffolds	❑ All braces on ❑ Level and plumb ❑ Secured to structure	❑ All connections on ❑ Guardrails	❑ Firm base ❑ Planks (min. 20" platform)
Fire Prevention	❑ Fire extinguishers	❑ Exits	❑ Flammables stored safely
WHMIS	❑ Labels on ❑ Protective and spill equipment available	❑ MSDS for controlled products	❑ Workers trained in controlled products
Safety Program	❑ Toolbox talk minutes ❑ Safety Orientation	❑ Following site rules ❑ Training procedures	❑ Following safe work