

Spill Contingency Plan for Mackay Lake Lodge March 25, 2013

Background;

Mackay Lake Lodge was first licensed in 1983 and the original Land Lease was acquired at that time by the Rocher, family from Yellowknife. In 1989 the lodge was purchased by Mackay Lake Lodge '89 Ltd with a group of shareholders from Behchoko, in the name of Sa Cho Developments Ltd (Charlo, Zoe, Erasmus, Jaeb) and True North Safaris Ltd. (Jaeb family) The original land lease covered the esker that the lodge buildings are on and in the 1990's a lease was acquired for the construction of an airstrip adjacent to the lodge lease. The lodge has operated for 30 years and employed about 30 seasonal workers until the closure of caribou sports hunting in 2009.

The management and marketing of the lodge had been contracted to True North Safaris Ltd. (TNS). The lodge is licensed for 24 guests, by the GNWT as a Tourist Establishment and carries a \$5,000,000 public liability insurance policy.

It is in the barren lands, adjacent to the Tippet to Contwoyto ice road, on the south shore, about midway along the 100 mile (160 kilometer) long Mackay Lake about 150 air miles and 200 ice road miles, North East of Yellowknife.

The Lodge facilities include a boat and float plane docking area, the row of guest cabins, staff quarters, kitchen/dining building, lounge/conference centre, workshops, storage facilities, outhouses, showers, laundry building and airstrip. The cost of the investment books at about, 1 million dollars, now depreciated, and represents the life savings of some of the shareholders.

While the viability of the lodge revolved around income from caribou hunters, other client groups included fishers, film crews, mining exploration companies and conference and workshops groups. The "Original Productions", film crew stayed at the lodge one winter, while filming the first "Ice Road Truckers" TV series and the British Broadcasting Corporation (BBC) filmed "Caribou in the Rut" for the Frozen Planet series. Mining exploration companies used the lodge for accommodations and meals and corporate clients, including the GNWT & NWT Housing Corporation, used it for meetings, workshops & training programs..

The viability of the lodge revolved around the caribou hunting, and this facilitated the employment of Dogrib elders, who taught the younger staff and demonstrated for clients, the traditional ways, including tumpline packing, making dry meat, giving thanks & and drum dances. Mackay Lake Lodge became famous for its quality of service, trophy hunting, and cultural experiences. It was one of the premiere destinations in the NWT for a number of years and contributed significantly to the local economies and supply of caribou meat to the families of the shareholders and staff.

However, in 2006 the GNWT began reducing the caribou sport hunting tags and in 2009 they banned all caribou sport hunting in the Wildlife Management Unit "R". As a result, the lodge has not operated full time since the hunting ban and the shareholders are looking for ways to diversify the operations and avoid bankruptcy.

To this end, we are now informed by AANDC that the “USE” on the land lease, which had been grandfathered from 1983, has to be amended from Outfitting, hunting and fishing lodge, to include the other activities. The provision of accommodations and meals has to now include filming, training and mining exploration crews. We are also told that we will need a land use permit from the MVLWB.

This application for a land use permit includes a spill contingency plan and a waste management plan. It should be noted that we are **requesting to continue with the practise of burning garbage and burying our own non-combustibles, at our own land fill site..** The established site is completely away from the lake, on a side hill of the esker and we can continue to bury the ash and non-combustible materials, as we have been doing for 30 years. Trucking ashes and non-combustibles back to the Yellowknife land fill would only burn more fossil fuel in the trucks and would have no positive environmental impact. Our existing land fill was inspected and approved in the past.

We are planning to replace the existing diesel generator system with alternative energy, including wind and solar power, and request that the land use permit allow us to make a timely transition that will eventually include the replacement of the existing generator building. As it is, there is no obvious negative environmental impact but, there may be some accumulation of exhaust and oil over the three decades of operation. The existing generators offer no immediate threat to the environment, animals, plants nor water & fish, but will be replaced with a view to being more environmentally friendly.

Spill Contingency Plan

The primary goal of the Management at Mackay Lake Lodge will be to avoid having any spills, as we have done in the past. Training and orientation for staff and clients will be an important part of achieving this goal. Avoiding spills and then dealing with a contingency plan will be emphasised as part of our staff training and recruitment policy. Spill contingency will now be part of our regular client orientation meetings that we have on the day of their arrival or will become part of a contract if a client or corporate entity, wants to lease and operate the lodge.

We have a number of qualified and experienced staff who have been doing a good job over a number of years and we will add the spill contingency awareness to the role of our camp staff and managers.

The equipment at the lodge includes catch tray containers that are used during fuel transfers and spill kits to be used if a spill were to occur.

The lodge is equipped with ATVs & trailers and tractors with front end loaders and these could be used to create containment berms and remove and replace any contaminated material.

- a) True North Safaris Ltd is the company that will own and operate Mackay Lake Lodge and the President/General Manager, Gary Jaeb will be responsible for the Spill Contingency Plan;

Gary Jaeb

Box 26, 132 Enterprise Drive
Yellowknife, NT. X1A 2N1

Office 867 873 8533
Home 867 920 2072
Cell 867 446 1074
Satellite 1-780 628 1316

b) 24 hour contact

Gary Jaeb

when the lodge is open 1 780 628 13 16

when lodge is not open 1 867 446 1074

The Manager/Jaeb is responsible for briefing all staff and clients as to the location of fuel storage, the spill contingency plan, the use of the catch containers when doing fuel transfers, the need to immediately report and take steps to contain a spill should one occur, the location and use of spill kits and reporting requirements, if a spill does occur.

After containment of any spill, the appropriate clean up and reporting actions would be initiated.

The Manager is responsible for initiating the action plan, alerting staff at the site and directing the response for containment and clean-up activities. Reporting to the 24 –Hour Hotline at 1 867 920 8130 and alerting other agencies as deemed necessary including EPA, AANDC, ENR and would include, for example, consultation with the Inspection agency on a case by case basis to determine the appropriate disposal of contaminated soil.

- c) Mackay Lake Lodge is located on AANDC lease no 75 M/15-1-16 and the airstrip is adjacent No 75 M/15-3-5 63degrees 51 minutes North Latitude & 110 degrees 35 minutes West Longitude

The lodge consists of a dock and boat launch at the west end of the lease and a series of cabins and main buildings are lined up along the esker followed by a shower house, generator building and workshop. The airstrip lease butts against the lodge lease to the east

- d) The lodge uses **diesel fuel** for its power generator and some space heaters in buildings, at this time. We use some **regular gasoline** for the equipment including tractors, trucks, ATVs and boats at the lodge and we store and supply some **avgas** and **jet B** fuel for aircraft. Lubricants, including motor oils, are stored in the boat house and workshop. It is highly unlikely that the combined fuel storage would exceed **100 drums at any one time**.

Storage is in 45 gallon drums so that the likelihood of a major spill is very remote.

Most of the **buildings are heated with propane** and 5 thousand gallon tanks are looped with underground piping.

At the west end of the lodge lease, the esker runs into the lake and forms a sheltered Bay where the boat and float plane dock, boat house and a guide cabin is located. At any given time, one or two drums of regular and mixed gasoline may be stored near the docks for refueling the boats. There are catch trays to be used when gasoline is being transferred to boat tanks and there is a spill kit at the boat house

should a spill occur. Occasionally aircraft are refuelled at the dock and Av gas or Jet B is brought there from the storage area at the runway apron, only as needed.

Most of the buildings and cabins are now heated with propane. One guest cabin and three staff tent frames have oil fired space heaters. **Catch trays** will be installed under the tanks and the lines that supply the oil heaters will be wrapped with **absorbing insulation**..

At the east end of the lodge lease, near the apron of **airstrip lease**, there is a large flat area of esker that **is used as a lay down and staging area** for gasoline, diesel fuel and Av Gas and Jet B fuels. The lay down area is large and relatively flat, and is slightly sloped, away from the lake, ensuring that any spill could be contained and cleaned up and not get into the lake water.

There are **catch trays** here to be used while doing fuel transfers and a **spill kit** is available.

Fuel is stored in 45 gallon drums and at any one time would not exceed 100 drums.

Any gravel/esker material that has been contaminated by minor spills, has been removed and replaced with fresh material. The **contaminated material** has been spread on the runway to help repair any wash outs and cut down on dust and allow for natural airing and reclamation. The land use inspectors will be consulted to have their input to future **disposal methods**.

The diesel generator building may have some accumulation of leaks and exhaust. We did completely remove the stained material from around the fuel tank area two years ago and we are planning to check it again this summer. Our longer range plan is to replace the diesel generators with a wind and solar generation system as we have time and money. Any existing contamination under the building poses no threat to any wildlife, vegetation or water at this time..

e) Site maps attached





Reporting and alerts

- f) The guides and camp attendants carry mobile radios and the dining room, lounge, manager and staff quarters have base radios that are on 24/7. The managers' office has the intercom & marine base station plus the satellite phone and aircraft radios.
- The camp staff involved in any spill would call the camp manager and if the spill was considered serious, a siren & general alert would be put out on the radio system including the aircraft frequency if the runway was affected.
- The manager would then take control and advise every one of the location of the spill and any necessary safety precautions to be taken and report to the 24-hour spill report line @ 1 867 920 8130.
- Following the general alert, assistance at the spill site would be initiated.. Tractors/ATVs and or shovels and a spill kit would be dispatched to the spill site.

Containment action, if required, would be completed followed by a general alert to stand down once any potential safety concerns were addressed.

The cleanup and removal and replacement of any contaminated soils would be done.

Contaminated soil would be put into empty 45 gallon barrels and stored at the lay down area until the disposal method was determined, either spread on the run way or stored for removal on the ice road.

Reports to the appropriate authorities would be made including the land use inspection office at AANDC.

- g) The spill contingency plan is activated by the reporting in person, or by radio, of any spill to the site manager. The manger then sends out a general alert, initiates the containment, clean-up and disposal of the contaminant so it is no longer a threat to the environment.
- h) Training of lodge staff has included operation of equipment including; boats, ATVs, tractors, trucks & communication equipment. Skills and knowledge in first aid, fire arm safety, and a site orientation. We will now include the spill contingency plan in our staff training and client orientation sessions.
- i) Equipment locations;
 - Fire extinguishers and smoke detectors are located in all of the buildings.
 - Communication equipment includes hand held, marine frequency radios that are carried by the guides and camp staff, base radios are located in the public areas like the dining room and lounge as well as staff and manager offices and cabins. Satelite phones and aircraft radios are located in the office and lounge.
 - Atv's (3) are usually at the work stations, including the docks, runway and lounge
 - Tractors (2) and trucks (3) are stored at the garage near the runway apron when not in use.
 - Spill kits are near the dock and garage.

If the lodge is rented or leased to a corporate group or mining exploration company, we will enter into a formal agreement with them to become knowledgeable about our contingency plan and to implement it along with their own land use permits and contingency plan if they have one for another area.

Waste Management Plan

True North Safaris Ltd has been managing Mackay Lake Lodge for going on 25 years and we have developed waste management plans that not only meet the approval of the regulatory agencies and inspectors, but satisfy a strict code of conduct for our own environmentally friendly shareholders and clientele.

1. **Heating system;** We have converted most of our central heating to propane from oil and the existing oil stoves will be equipped with catch trays and absorbing insulation.
2. **Power generator;** We are planning to replace the diesel generators with wind and solar power and will improve our containment and catch trays and will continue with our practise of removing and replacing any contaminated soil from leaks and exhaust.
3. **Outboard Motors.** We are replacing the two stoke outboards with four stroke engines that burn 50% less gasoline and do not emit the oil /carbon exhaust. Catch trays will continue to be used when refueling boats and equipment and any contaminated fuel will be used as an accelerant for burning garbage.
4. **Recycling Program;** We have implemented recycle programs to include all metal, plastic and glass food and beverage containers and we return our fuel drums and oil containers for recycling as we have room on aircraft or on the winter roads. Recycling containers are located in all of the guest cabins, lounge, dining room and at the boat launch and are marketed "for recycling". Our house-keeping staff collects the contents and stores them for shipping back to Yellowknife as we have room on aircraft or on the winter road, for recycling.
5. **Incinerator & garbage disposal.;** We have converted a 500 gallon fuel tank into an incinerator with a metal door and garbage that is stored inside is protected from wildlife and the wind and elements. The incinerator is located at our land fill/burying site at the far end on the runway. Garbage is collected daily and is separated and transported by ATV to the incinerator. We use all left over and dirty gasoline, diesel fuel, Av Gas and Jet B as accelerant to burn the garbage. The garbage is left in the incinerator and turned over a number of times before it is put into containers for burying. This results in multiple burns so that what is left is relatively clean ashes, metal, and glass non combustibles.
6. **The land fill site;** We have established a burying site that has met the approval of the land use inspectors during the time that our lease was grandfathered and allowed for burying. The land fill site is at the far end of the runway on the esker and is away from the big lake and any water shed. We have loaders and equipment to excavate and completely bury the ashes and non-combustibles so that there is no threat to any wild life or the environment. We will continue to re-cycle all that can be recycled.
We are asking that the regulatory agencies, AANDC & MVLWB allow us to continue with our practise of repeated incinerating and burying non-combustible garbage.
7. **Grey water and sewage disposal;** It must be noted that the lodge buildings, and all grey water and sewage disposal, makes use of the natural esker/gravel material on which it is built.

Our grey water and sewage is piped into buried containers that seep into the esker away from the lake. The larger buildings, including the kitchen and lounge, share a large log cribbed & covered container that allows the liquid to seep into the esker. The guest cabins have both outhouses and flush toilets which are piped into the outhouse holes. The outhouse holes are cribbed and are 6 to 8 feet deep and act as septic fields. The other buildings including the shower house and laundry have their own septic tanks which seep/drain into the back side of the esker, away from the lake.

Our current sewage and grey water disposal system has met all health and environmental inspection requirements in the past, and will be maintained.

8. **Kitchen slop and fish guts and caribou waist** will be removed daily to an island across the lake that has a large crack in the bed rock. This is an established practise at the lodge as these items are not easily burnt without large quantities of gas and/or diesel fuel and removing them from the lodge area helps prevent attraction by predators including bears, foxes, wolves, sea gulls and ravens.
9. **Our water supply** is pumped from the lake into a holding tank where it is treated and then piped to all the buildings. We use propane fired hot water heaters for the kitchen, lounge, laundry and shower house.

10. Waste types, storage and disposal methods

- **Sewage and grey water** are piped into septic fields on an ongoing basis as they are generated and as the toilets are flushed. The water supply from the lake is pumped automatically into a holding tank which connects to a pressure system that supplies all of the cabins, showers, laundry building, kitchen and lounge. The quantities are very much a function of the number of people at the lodge and the amount of showers, flush toilets and laundry
- **Garbage and recyclables** are collected daily from containers located by the cabins, kitchen, lounge, boat dock and staff areas. Recyclables are stored for transport back to Yellowknife. Garbage is taken to the incinerators and burnt daily with the ashes and debris remaining in the incinerator for multiple burning sessions until it is removed to containers for burial or transportation back to Yellowknife.
- **Fish guts, kitchen slop,** and caribou waist is put into 5 gallon pails for daily removal to the crack on the island. ***It should be noted that separating the slop and guts from the garbage eliminates the need for a gun fired incinerator.***

Waste Management Plan Summary Table for Mackay Lake Lodge

Type of Waste	Estimated volume/mass generated	Storage/treatment	Disposal
Sewage and grey water	3000 L/day	n/a	Buried containers that seep into septic fields located in an esker that slopes away from the lake and is more than 150 m away from the shoreline
Waste oils, oil filters	40 litres and 10 filters are used seasonally	Waste oil is stored in 5 gallon pails with lids until it is used to burn garbage. It is secured in the workshop and generator buildings.	Used as an accelerant in the Incineration
Camp waste (packaging, empty boxes, food waste)	Boxes and containers arrive on the planes once/week; average 6/week. Food slop/waste is generated in the kitchen and teepee about 5 gallons per day	Boxes and packing are stored in a covered container beside the lounge for re-use or recycling. Food slop is stored in 5 gallon buckets with lids under the sink until it is taken to the boat dock.	Food waste is taken to a crack in a rock on an island daily Plastics bottles are stored for recycling and plastic wraps are either stored with the cardboard for re-use or incinerated
Household recyclables	Milk, egg, cooking oil, containers are about 10 per week	They are stored in the pantry or the cellar. Other recyclables are stored in recycling containers at the various buildings and are then moved to a tent frame/storage area pending shipment	Shipped to Yellowknife via winter road or aircraft as space permits.
Hazardous wastes (batteries, solvents, paint)	About 20, 12volt tractor and boat batteries are on site and those not on machines are in the generator shed or workshops for recharging	Batteries and paints and solvents are stored in the workshops or the secure lock up in the lounge. Old batteries are stored in the generator shed.	Paint and solvents are burnt if they are not useable. Empty paint containers and old batteries are shipped to the Yellowknife land fill.

These calculations are based on an average occupancy of 30 people, although the number of people on-site will vary during the year from zero to 48.

Greywater calculation is based on a rate of 100 L/day which is approximately one-third of the Canadian daily domestic water consumption rate, and similar to the water consumption rate for other stationary camps.

Camp waste calculation is based on an estimated waste production of 0.5 pounds per day.

From: [Miki Ehrlich](mailto:Miki_Ehrlich@mvvlwb.com)
To: permits@mvvlwb.com
Subject: FW: MV2013J0006 - Revised SPC and WMP - May21-13
Date: Friday, May 31, 2013 10:53:52 AM
Attachments: [MV2013J0006 - Revised SPC and WMP - May22-13.docx](#)

Please post to [MV2013J0006 – Initial application - Application and Related Docs](#)
Title: MV2013J0006 – True North Safaris – Revised Spill and Waste Management Plans – May21-13

From: Gary Jaeb [<mailto:gary@truenorthsafaris.com>]
Sent: Wednesday, May 22, 2013 10:20 AM
To: Miki Ehrlich
Subject: Re: MV2013J0006 - Revised SPC and WMP - May21-13

Miki
You know that i think this this is all OK
Gary

From: [Miki Ehrlich](mailto:Miki_Ehrlich@mvvlwb.com)
Sent: Wednesday, May 22, 2013 9:10 AM
To: [Gary Jaeb](mailto:gary@truenorthsafaris.com)
Subject: RE: MV2013J0006 - Revised SPC and WMP - May21-13

Thanks Gary,
Please take one more look at the table which I have updated with the info you sent – it is attached.
Let me know if it is good to go. Then I can deem the application complete and start the review process.

Miki

From: Gary Jaeb [<mailto:gary@truenorthsafaris.com>]
Sent: Tuesday, May 21, 2013 2:48 PM
To: Miki Ehrlich
Subject: Re: MV2013J0006 - Revised SPC and WMP - May21-13

The waste oil is secured in the workshop and generator buildings.
We used to paint about 1/3 of the exteriors of the buildings every year until the caribou ban in 2009..since then non..but have never disposed of unused paint as oil based paints keeps from year to year. There is a number of empty paint cans in storage for removal when necessary We have a special storage container/plywood shed adjacent to the Generator shed for paint containers
solvents & paint thinners are also stored there or in the workshop and in some cases in the lock up in the lounge.

Car batteries last years if maintained and kept charged and we keep the good ones and the bad ones either in the generator shed or workshops when they are not on a machine or

boat. The bad ones are set aside in the generator shed for removal to the Yellowknife land fill sight.

I am not sure how many flash light size batteries are used but the old ones are put into gallon paint cans in the lounge storage area for removal on a back hauls.

From: [Miki Ehrlich](#)

Sent: Tuesday, May 21, 2013 1:28 PM

To: '[Gary Jaeb](#)'

Subject: RE: MV2013J0006 - Revised SPC and WMP - May21-13

It looks good Gary.

A few small questions to answer (within the table if possible):

- Where are the pails of waste oil stored until incineration?
- Approximately how many waste batteries (household size and for vehicles) are generated per year; how much waste paint solvent as well

Thanks,

Miki

From: Gary Jaeb [<mailto:gary@truenorthsafaris.com>]

Sent: Tuesday, May 21, 2013 1:10 PM

To: Miki Ehrlich

Subject: MV2013J0006 - Revised SPC and WMP - May21-13

Miki check this one and call me 873 8533

Gary