APPLICATION FOR LAND USE PERMIT

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Application Fee	Land Use Fee	General Receipt No.	Date (YYYYMMDD)	Class	Permit Number

To be completed by all applicants ▶ ○ New Application ● Amendment

1. Applicant's Name and Mailing Address (Full name, no initials)	Facsimile Number
Ray Alisauskas Science and Technology Branch, Environment Canada 115 Perimeter Road, Saskatoon, SK S7N 0X4	306 975-4089 Telephone Number 306 975-4556
2. Head Office Address as above	Facsimile Number 306 975-4089 Telephone Number 306 975-4556

Field Supervisor	Radio Telephone	E-Mail Address	Telephone Number
Dana Kellett		dana.kellett@ec.gc.ca	306 975-5509

3. Other Personnel (Subcontractor, Contractors, Company Staff, etc.)

Total ▶

4. Qualifications
Refer to Section 21 of the *Territorial Land Use Regulations*
a(i) ☐ a(ii) ☐ a(iii) ☐ b ☑ c ☐

Number(s) exploration permit mineral claims (If applicable)

5. a) Summary of Operation (Describe purpose, nature and location of all activities.)
Refer to Section 22(2)(b) of the *Territorial Land Use Regulations* (Use last page of form if necessary.)

See last page, and accompanying diagrams.

b) Please indicate if a camp is to be set up (Use last page to provide details.)

Yes, see last page.

6. Summary of potential environmental and resource impacts
(Describe the effects of the proposed program on land, water, flora and fauna and related socio-economic areas.)
(Use separate pages if necessary.)

Water is used for domestic purposes only, and is generally less than 20 gallons per day. Grey water is disposed of by soil leaching, at least 100 m from the nearest high water mark. Combustible waste is incinerated. Organic waste and ash from incinerated waste are buried in pits, at least 100 m from the nearest high water mark. Excavation of pits for disposal results in disturbance to vegetation, but is minimal in extent. Human activities in the immediate vicinity has resulted in avian avoidance of these areas for nesting, but the radius of disturbance seems to be less than 200-300 m.

7. Proposed Restoration Plans (Please use last page if required.)

See last page.

8. Other rights, licences or permits related to this permit application (Mineral claims, Yukon timber permits, water licences, etc.) (Please use last page if required.)

Canadian Wildlife Service Sanctuary, Scientific, and Bird Banding Permits, Nunavut Water Board Permit, Nunavut Wildlife Research Permits, Canadian Council of Animal Care Permits

Roads ▶ ○ Is this to be a pioneered road? ○ Has the route been laid out or ground truthed?

9. Proposed Disposal Methods (Please use last page if required.)

a) Garbage	b) Sewage (Sanitary and Grey Water)
incinerated, and non-combustables to Cambridge Bay/Saskatoon	In pits at least 100 m from high water marks
c) Brush and Trees	**d) Overburden (Organic soils, waste material, etc.)**
Not applicable	Not applicable

10. Equipment (Includes drills, pumps, etc.) (Please use last page if required.)

Type and Number	Size	Proposed Use
boats and outboard motors, 3-4	14-16' boats, 16 hp Go Devil outboards	transport of field crews
water pump, 1	Honda WX10 (small)	domestic water delivery to main cabin
generator, 1	Honda 4500X	backup power for domestic use
snow machines, 2	340 cc	transport of field crews and equipment
twin otter		transport of field crews
helicopter	206L	transport of field crews

11. Fuels	Number of Containers	Capacity of Containers
☐ Diesel		
☑ Gasoline	12	205L
☑ Aviation Fuel	30	205L
☑ Propane	10-15	100lb
☑ Other: naptha	10	4L

12. Containment Fuel Spill Contingency Plans (Please attach separate contingency plan if necessary.)
See attached.

13. Methods of Fuel Transfer (To other tanks, vehicles, etc.)
Manual pumps.

14. Period of Operation (Includes time to cover all phases of project work applied for, including restoration.)
Seasonally: 5 May to 20 August, annually.
Project is ongoing; no projected end date at this time.

15. Period of Permit (Up to two years, with maximum of one year extension.)	Start Date	Completion Date
Two years	2014-06-12	2016-06-11

16. Location of activities by map co-ordinates (Attach maps and sketches.)

	Degrees	Minutes	Seconds		Degrees	Minutes	Seconds
Minimum Latitude ▶	67	14	14	Minimum Longitude ▶	100	15	33
Maximum Latitude ▶	67	14	22	Maximum Longitude ▶	100	15	51

Map Sheet Number
66 N/1 1:50,000 scale

17. Applicant (Print Full Name)	Signature	Date
Ray Alrsauskas	R. Alrsauskas	23/Apr/14

18. Fees

○ Class **A** - $150.00 ○ Class **B** - $150.00 ▶		$150.00
Land Use Fees: Less than or equal to 2 hectares ▶	$50.00	$ 50.00
For each additional hectare over 2 hectares or portion of a hectare ▶	X $50.00 =	
Total application and land use fees ▶	federal gov't exempt?	

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19. Calculation of area involved (Includes access, staging areas, airstrips, campsites, etc.)

Total Area (Ha)	Less than or equal to 2 hectares	Total (For Fee Calculation)

20. Application Checklist

- ☐ a) Application Signed and Dated
- ☐ b) Fees Attached
- ☐ c) Map Included
- ☐ d) Address and Telephone Number
- ☐ e) Screening Report
- ☐ f) Timber Permit Applied for - Yukon
- ☐ g) Fees Attached
- ☐ h) Lease Applied for

Remarks (Please use last page if additional space is required.)

Accepted by	Date (YYYYMMDD)

21. Additional Information (Attach additional pages if necessary.)

Section 5: An ongoing study of the population ecology of arctic nesting waterfowl, specifically lesser snow, Ross's, greater white-fronted, and cackling geese, king eiders, and long-tailed ducks, has occurred annually in Queen Maud Gulf Bird Sanctuary since 1991. The primary field site is Karrak Lake, the site of one of the largest known lesser snow and Ross's goose nesting colonies in the Sanctuary. Each year, the abundance of each of the above-mentioned species nesting in the area is estimated, as are metrics associated with population dynamics, such as clutch size, egg survival, nest survival, and adult survival. These metrics are invaluable for addressing management concerns of harvested species, both within Canada and internationally within North America. Further, factors thought to influence reproductive ecology, such as spring chronology, meteorological conditions, and small mammal abundance, are monitored in order to explain annual variation in productivity. Dynamics of various pathogens are investigated in arctic foxes, small mammals, and geese. Research on population ecology of arctic fox is also conducted, as well as less-intensive studies on herring and glaucous gulls, arctic terns, red-throated loons, shorebirds, and passerines. Observational data on grizzly bears, wolverine, and wolves are also recorded.

A research station, established in 1991, is located at the main field site at Karrak Lake (67° 14' N, 100° 15' W). It consists of six plywood buildings ranging in size from 8x12' to 20x20' (see attached schematic), and is occupied by 4-15 personnel annually during 5 May to 20 August, for approximately 550 person-days per year. A 12x16' cabin was constructed approximately 15 km north of the Karrak Lake Research Station in 2010, at 67° 21' N, 100° 21 W (see attached schematic). Over time, the goose nesting colony has grown substantially and the nesting distribution of birds has shifted to the north-west, such that the Karrak Lake Research Station is now located at the colony periphery. Increasingly, many regions are becoming difficult to access by foot, and this new cabin facilitates easier access to much of the colony.

Access to the study area is by air, either fixed-wing (twin otter) or helicopter, depending on the time of year. Helicopters are used for surveys within the Sanctuary, occasionally to deliver ground crews to remote areas of the colony, and to capture flightless geese. Snow machines are used early in the field season, prior to arrival of geese. Small boats fitted with 16 hp outboard motors and canoes are used to traverse Karrak Lake, as well as nearby Adventure Lake. The main mode of transportation, however, is on foot.

Water is used for domestic purposes only, and is generally less than 20 gallons per day. Grey water is disposed of by soil leaching, at least 100 m from the nearest high water mark. Combustible waste is incinerated. Organic waste and ash from incinerated waste are buried in pits, at least 100 m from the nearest high water mark. Glass, metal, and other non-combustible waste is shipped to Cambridge Bay, Nunavut, or Saskatoon, Saskatchewan for disposal or recycling.

Section 7:

Final Restoration

The final restoration at both of the above-mentioned locations will commence once research programs are complete. All work under this plan will be complete prior to the date of expiry of all water licenses, land use, and sanctuary entrance permits. Photos of restored areas will be taken. The details of restoration are as follows:

Fuel cache: All fuels (jet a, gasoline, naphtha, lubricating oils and fluids) and empty drums will be removed from the site. Contaminated soil, if present, will be handled as stated in the Spill Contingency Plan (Nunavut Water Board submission).

Buildings: All buildings on site are constructed of lumber, and will be combusted. Ash will be buried in disposal pits.

Chemicals, metals, and other non-combustible materials: All chemicals such as paints, adhesives, etc., of which there is very little, will be removed from the site. Metal, motors, and other non-combustibles will be shipped to Cambridge Bay for disposal, or to Environment Canada facilities for surplus.

Sumps and disposal pits: Sumps and disposal pits for sewage, non-combustible food waste, and ash are back-filled and leveled annually upon seasonal camp closure, and the same will be conducted at restoration.

Progressive Reclamation

On an annual basis, some progressive reclamation occurs. Empty fuel drums, propane cylinders, non-combustible household trash (glass, tin), non-functional motors (except those saved for parts), and hazardous materials (spent batteries) are shipped to Cambridge Bay or Saskatoon, Saskatchewan, for disposal or recycling. Disposal pits are back-filled regularly throughout the season; recolonization of these areas by vegetation is less than 5 years post-disturbance.

Note: Lat/long coordinates are for Karrak Lake Research Station, above.

North Cabin (F-14) coordinates are: min lat 67° 20' 55", max lat 67° 20' 59", min long 100° 20' 59", max long 100° 21' 08". Map sheet 66 N/1 1:50,000 scale. All fuel is stored at Karrak Lake Research Station, save for ~8L naptha.