# SITE ABANONMENT AND RESTORATION PLAN EXPLORATION OPERATIONS IZOK PROJECT NUNAVUT, CANADA

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# ABANONMENT AND RESTORATION PLAN
# EXPLORATION OPERATIONS
# IZOK PROJECT
# NUNAVUT, CANADA

March 27, 2007

| | | | |
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| Prepared By: | Sandra Rickard – Geologist<br>Wolfden Resources Inc. | Date: | March 27, 2007 |
| Reviewed By: | Andrew Mitchell - Project Manager<br>Wolfden Resources Inc. | Date: | March 27, 2007 |
| Authorized By: | John Begeman - Chief Operating Officer<br>Wolfden Resources Inc. | Date: | March 27, 2007 |

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# 1.0 PREAMBLE

The Abandonment and Restoration Plan is effective from July 29, 2006 to July 29, 2012 and applies to the Izok Project – Ham Lake Camp operated by Wolfden Resources in the Kitikmeot District of Nunavut, north latitude 65° 40' and west longitude 112° 50' . The project is under agreement with Nunavut Tunngavik Incorporated (NTI). Land Use permits with the Kitimeot Inuit Association (KIA), Indian and Northern Affairs Canada (INAC) and Nunavut Water Board (NWB) have been submitted concurrent with the submission of this document.

The locations of the drilling program areas are shown on Figures 1 to 4. The Ham Camp layout is shown on Figure 5.

The following formal distribution has been made of this plan: KIA, NWB, Ian Neill (Camp Manager, Wolfden Resources), John Begeman (Chief Operating Officer, Wolfden Resources Inc.) Ewan Downie (President and Chief Executive Officer – Wolfden Resources Inc.).

# 2.0 INTRODUCTION

This abandonment and restoration plan has been prepared as a document for the Ham Lake Camp, and for the drilling program to be carried within the Point Lake-Itchen Lake volcanic belt and the Takiyuak greenstone belt. The fly-in camp is located 265 km south of Kugluktuk and 360 km north of Yellowknife. The camp will support a population of up to 40 people and is open seasonably between mid February and mid December.

# 3.0 SCHEDULE

The seasonal shutdown of the camp site should take 5 days to complete and will take place after the drilling activities have ceased. The plan will be applied by the Izok project personnel under the supervision of the field supervisor.

# 4.0 SITE INFRASTRUCTURE

The camp is located on the South and East Shores of Ham Lake. The camp was established by the previous operator of the exploration project, Inmet Mining Corporation (Inmet). The camp includes an accommodation complex, diamond drill core logging and storage facilities, garages, fuel storage facilities and is served by a 2,500 foot long gravel air strip. The layout of the camp is shown on Figure 5.

From an inventory provided by Inmet, following is a list of the major components of the camp and ancillary facilities.

**Major Camp Equipment/Facilities**

13 – Travco trailer units
8 – 4' x 44' camp matting
1 – Oil fired incinerator (serial no. 18162)
1 – 10' x 44' Generator Building
2 – Cummins 150 kW diesel generators (serial no's. 44670421 and 4460441)
1 – Steel garage – 20' x 24'
2 – Wood frame, steel clad core storage warehouses
1 – Wood frame, aluminum clad 12' x 36' skidded core shack

**Fuel Tanks**

7 – 12,000 gal fuel skid mounted fuel tanks

**Mobile Equipment**

1 – Caterpillar D-6 Bulldozer
1 – Champion Motor Grader
1 – Fuel Trailer
1- 1992 Ford Supercab F-350 trucks (diesel)

A map showing the regional setting of the project areas is provided on Figure 1. This Abandonment and Restoration Plan can be extended to drilling operations that will be carried out at some distance from the camp. The outlines of these areas are shown on Figures 2 to 4. A map showing the layout of the camp and airstrip is provided on Figure 5.

# 5.0 FINAL ABANDONMENT AND RESTORATION PLANS

## 5.1. BUILDINGS AND CONTENTS

Reusable equipment including tents, tent metal frames, stoves, foam rubber mats, the kitchen stoves, refrigerators and other appliances and equipment, showers, hot water tank, and other portable components will be packaged and flown out from project site to Yellowknife. The Travco trailers will be removed from site for use elsewhere or disposal. The wood framed buildings will also be removed from site.

## 5.2. WATER SYSTEM

Pump, tanks and hoses will be drained, dismantled, packaged and flown out to Yellowknife. The wooden pump shack built to protect the pump will be burned as for the other wood structures.

## 5.3. ELECTRICAL SYSTEM

The generator shed will be inspected for residual hazardous waste (oil, grease) and will be drained of its fuel. Remaining waste fuel and oil will be collected in the containers labeled for that use and used through the summer. The shed will be dismantled and burned. The soil will be inspected for contamination. Electrical wires, sockets, etc. will be taken down and either returned with camp material to Yellowknife, or flown out to an approved municipal discharge.

## 5.4. FUEL AND CHEMICAL STORAGE FACILITIES

Fuel inventory will be managed so as to retain only a minimum quantity of fuel on site to permit closure activities to take place. On full abandonment of the site, remaining fuel will be pumped from the large tank(s) in to drums and removed from site. The large fuel tanks and smaller containers such as drums and day tanks will be scrapped and removed from site or removed from site and sold. Propane cylinders will be flown out as well to source.

Chemical stored on site will consist of drill additives, oil, grease and household cleaners. All drill additives will be stored in or by the drill foreman shed. Household cleaners will mainly be stored in the kitchen. Upon camp closure, any unused drilling additive, oil or grease will be returned to the drilling company warehouse. Half empty containers will be taken off site to be properly disposed in an approved discharge. Empty containers will be disposed with regular garbage.

## 5.5. WASTE FACILITY AND INCINERATOR

Once the camp is entirely dismantled, all remaining combustible waste stored at this site will be burned. The incinerator will be dismantled, reusable parts will be returned to Yellowknife and the barrel will be discarded in an approved municipal discharge.

## 5.6. GREYWATER SUMP

The kitchen-dry greywater sump will be filled back and leveled.

## 5.7. BLACKWATER SUMP

Not applicable. The outhouses consist of “pacto” style toilets where waste is collected in a plastic bag lined container and content burned on a daily basis.

## 5.8. HELICOPTER PAD

The helicopter pad consists of a wooden platform built of a 2x4 base with plywood cover. Soil around the helicopter pad will be inspected for contamination. The wood will be burned as per other wooden structures on site.

## 5.9. CAMP SITE

The camp site will have a final inspection. Areas showing too much wearing evidences will be covered with a layer of peat moss and lightly fertilized to promote natural growth. Drill core to be left on site will be properly stored and secured.

## 5.10. DRILLING AREA RESTORATION

The drill will be dismantled into its main components as per the drilling contractor procedure, packaged and secured along with its ancillary equipment and rods. The drill will be flown out to another project or to a storage site designated by the drilling contractor. All drill sites will be inspected for soil contamination. Any remaining waste will be taken to camp to be burned if possible or to be flown out to an approved municipal discharge. Greywater and sludge sumps will be filled and leveled. A layer of peat moss will be spread on top and slightly fertilized to promote natural growth. As much as possible, drill sites will be restored immediately after the drill has been moved to the next site and sumps have drained enough to be leveled.

## 5.11. DOCUMENTATION AND INSPECTION

Photos of camp and drill sites prior to building of drilling will be taken. Monitoring will be done during occupancy and photos taken. Once the site restored, it will again be documented with photos. Soil contaminated by hydrocarbons and unnoticed before abandonment will be treated as per the spill contingency plan. A final site inspection visit with community representatives, the INAC Water Resources Officer as designated under the Nunavut Waters and Nunavut Surface Rights Tribunal Act, the KIA Land Use Inspector and in collaboration with NWB staff will be organized by the permit holder.

The INAC Water Resources Officer is: Andrew Keim, Water Resources Officer, Indian and Northern Affairs, Nunavut Field Operations, BUILDING 553, PO Box 100 , Iqaluit, Nunavut , Canada, X0A XH0, Telephone: (867) 975-4289 , Fax: (867) 979-6445.

# 6.0 SEASONAL SHUTDOWN AND RESTORATION PLAN

## 6.1. BUILDINGS AND CONTENT

All equipment will be stored inside the wooden buildings to ensure they will withstand the winter season. Canvas tents will be secured and braced internally to ensure they will withstand snow and wind loads. Wood structures will be secured with nailed plywood over windows and doors to prevent inadvertent opening. Snowmachines, argo's and quads will be stored inside the core shacks and shop building.

## 6.2. WATER SYSTEM

Pump, tanks and hoses will be drained and dismantled. Rented equipment will be flown out to owner. Hoses will be rolled and stored in the kitchen.

## 6.3. ELECTRICAL SYSTEM

The generator shed will be inspected for remaining hazardous waste (oil, grease) and will be drained of its fuel. Remaining waste fuel and oil will be collected in the containers labeled for that usage and used through the summer. The generator will be winterized and prepared for startup in spring. The soil surrounding the generator shed will be inspected for impact. Electrical wires, plugs and sockets will be stored in the kitchen.

## 6.4. FUEL AND CHEMICAL STORAGE FACILITIES

An inventory of remaining fuel will be made and full drums will be inspected and secured for the winter. Empty drums will be flown out to source. Empty propane cylinders will be flown out to source. Chemical stored on site will consists of drill additives, oil, grease and household cleaners. All drill additives will be stored in or by the drill foreman shed and secured for the winter. Empty containers will be disposed with regular garbage. The soil of the areas will be inspected for contamination.

## 6.5. WASTE FACILITY AND INCINERATOR

Once the camp has been dismantled and remaining buildings secured, all remaining combustible waste stored at this site will be burned. The incinerator will be dismantled and stored in the kitchen. The soil will be inspected for contamination.

## 6.6. GREYWATER SUMP

The greywater sump wood cover will be secured for winter.

## 6.7. BLACKWATER SUMP

Not applicable. The outhouses consist of “pacto” style toilets where waste is collected in a plastic bag lined container and content burned on a daily basis.

## 6.8. HELICOPTER PAD

The helicopter pad consists of a wooden platform built of a 2x4 base with plywood cover. Soil around the helicopter pad will be inspected for contamination.

## 6.9. CAMP SITE

Areas showing too much wearing evidences will be covered with a layer of peat moss and lightly fertilized to promote natural growth. Soil contaminated by hydrocarbons and unnoticed before abandonment will be treated as per the spill contingency plan. Drill core to be left on site will be properly stored and secured in cross stacked piles or wooden cores racks.

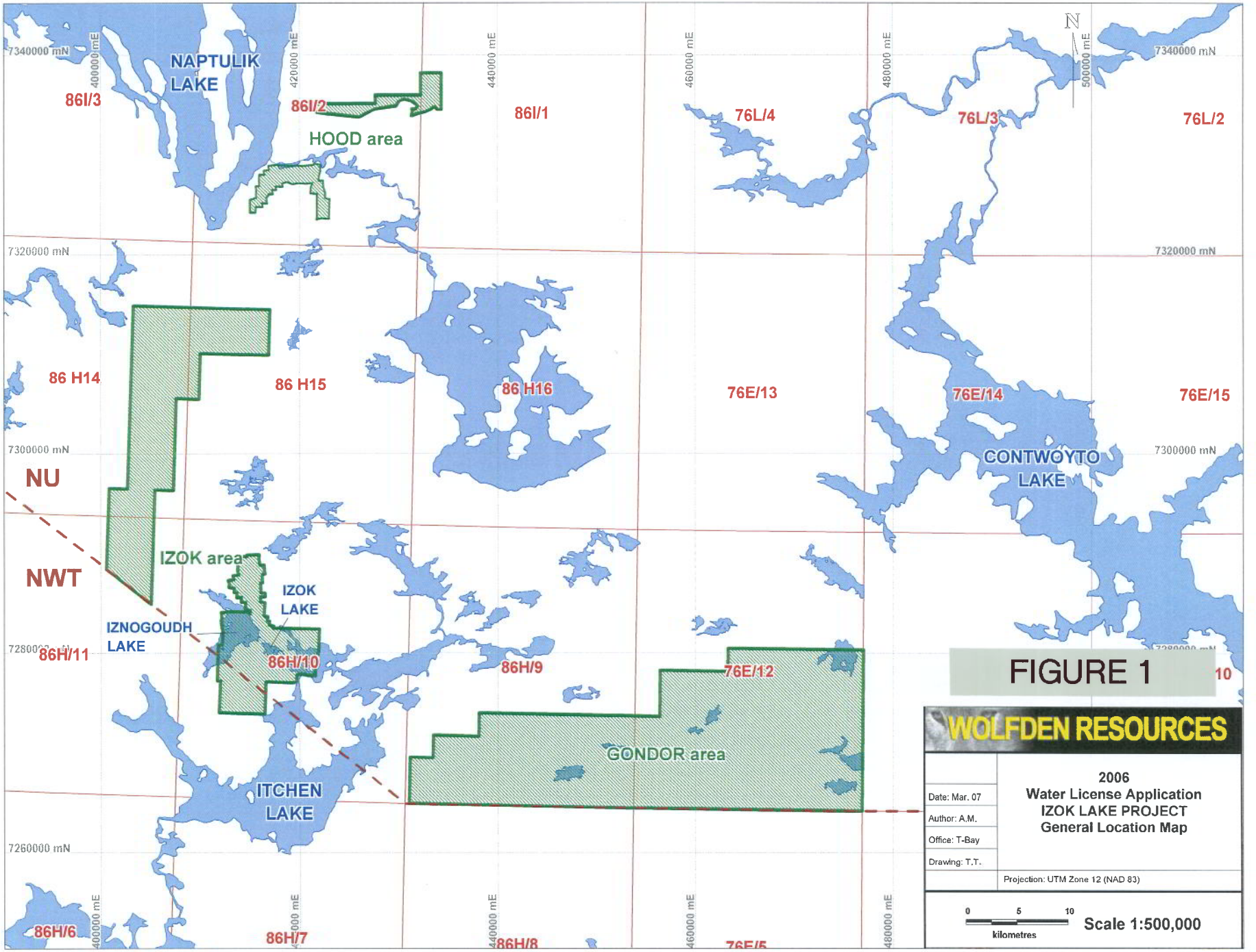
## 6.10. DRILLING AREA RESTORATION

The drill will be dismantled into its main components as per the drilling contractor procedure, packaged and secured along with its ancillary equipment and rods. The drill will be left on solid ground until next season. All drill sites will be inspected for soil contamination. Any remaining waste will be taken to camp to be burned if possible to be flown out to an approved municipal discharge. Greywater and sludge sumps will be filled and leveled. A layer of peat moss will be spread on top and slightly fertilized to promote natural growth. As much as practical, drill sites will be restored immediately after the drill has been moved to the next site and sumps have drained enough to be leveled.

## 6.11. DOCUMENTATION

Equipment and buildings left on site will be inventoried. Photos of camp and drill sites prior to drilling will be taken. Monitoring will be done during occupancy and photos taken. Once the site secured for the winter, it will again be documented with photos.

# FIGURES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86I/3
86I/2
HOOD area
86I/1
76L/4
76L/3
76L/2
N
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400000 mE
420000 mE
440000 mE
460000 mE
480000 mE
500000 mE
7320000 mN
86 H14
86 H15
86 H16
76E/13
76E/14
76E/15
CONTWOYTO LAKE
7300000 mN
NU
NWT
IZOK area
IZOK LAKE
IZNOGOUDH LAKE
86H/11
86H/10
86H/9
76E/12
GONDOR area
ITCHEN LAKE
7260000 mN
86H/6
86H/7
86H/8
76E/5
10
FIGURE 1
WOLFDEN RESOURCES
2006
Water License Application
IZOK LAKE PROJECT
General Location Map
Date: Mar. 07
Author: A.M.
Office: T-Bay
Drawing: T.T.
Projection: UTM Zone 12 (NAD 83)
0 5 10
kilometres
Scale 1:500,000

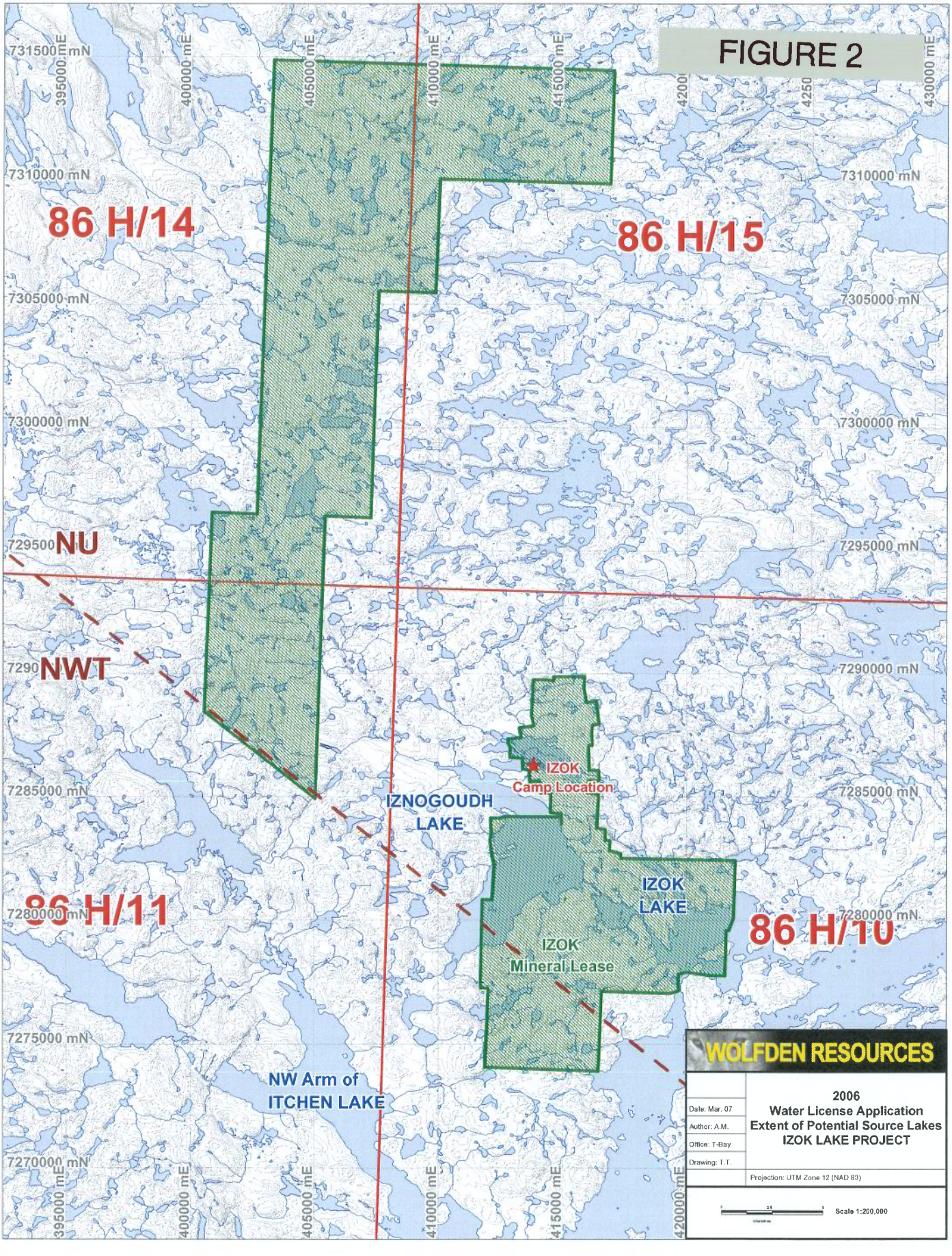
FIGURE 2
731500 mN
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400000 mE
405000 mE
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415000 mE
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4250
430000 mE
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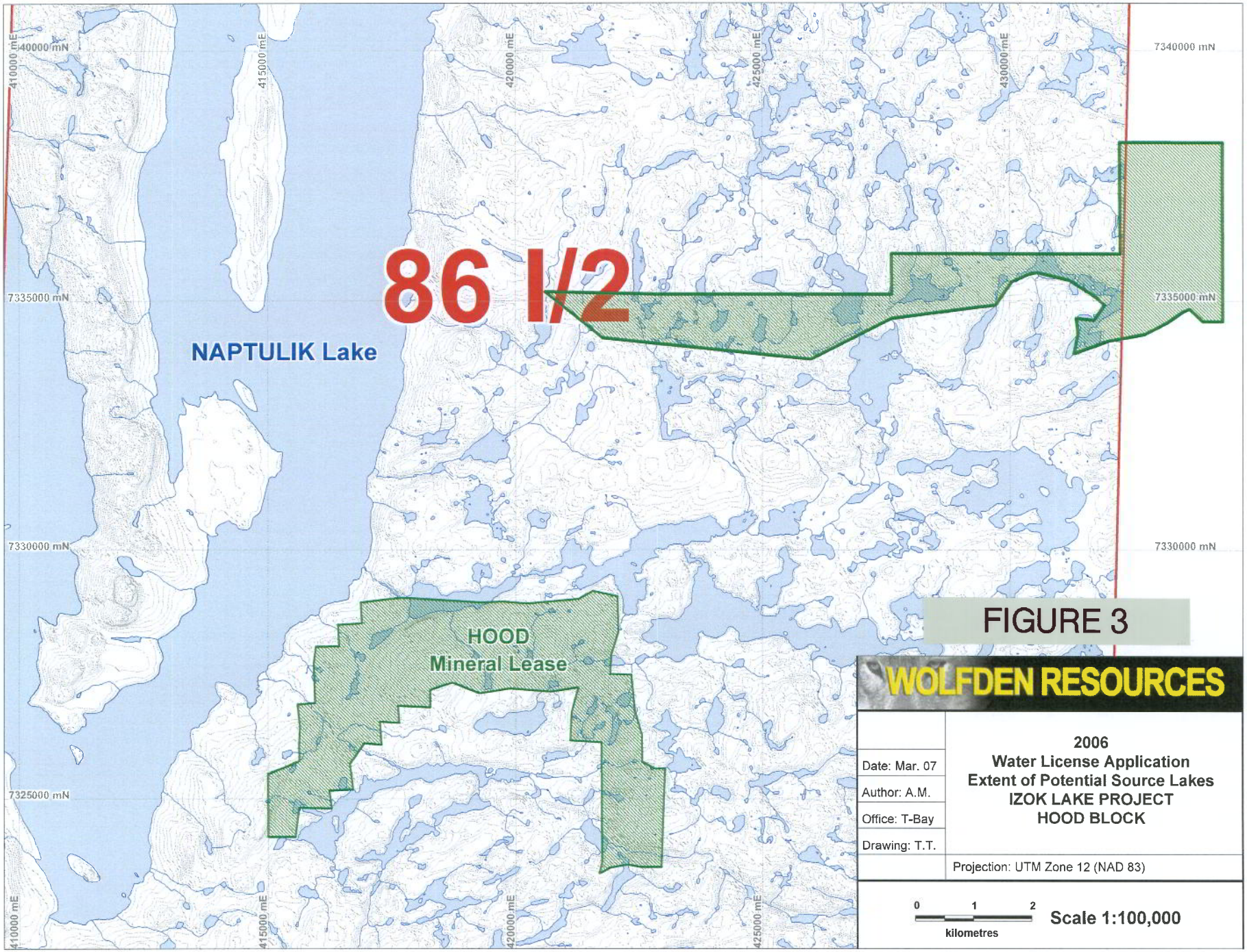
86 H/14
86 H/15
7305000 mN
7300000 mN
729500
NU
7295000 mN
7290
NWT
7290000 mN
IZOK
Camp Location
7285000 mN
IZNOGOUDH
LAKE
IZOK
LAKE
86 H/11
7280000 mN
86 H/10
IZOK
Mineral Lease
7275000 mN
NW Arm of
ITCHEN LAKE
7270000 mN
WOLFDEN RESOURCES
Date: Mar. 07
Author: A.M.
Office: T-Bay
Drawing: T.T.
2006
Water License Application
Extent of Potential Source Lakes
IZOK LAKE PROJECT
Projection: UTM Zone 12 (NAD 83)
Scale 1:200,000


86 I/2
NAPTULIK Lake
HOOD
Mineral Lease
7340000 mN
7335000 mN
7330000 mN
7325000 mN
410000 mE
415000 mE
420000 mE
425000 mE
430000 mE
FIGURE 3
WOLFDEN RESOURCES
2006
Water License Application
Extent of Potential Source Lakes
IZOK LAKE PROJECT
HOOD BLOCK
Date: Mar. 07
Author: A.M.
Office: T-Bay
Drawing: T.T.
Projection: UTM Zone 12 (NAD 83)
0 1 2
kilometres
Scale 1:100,000

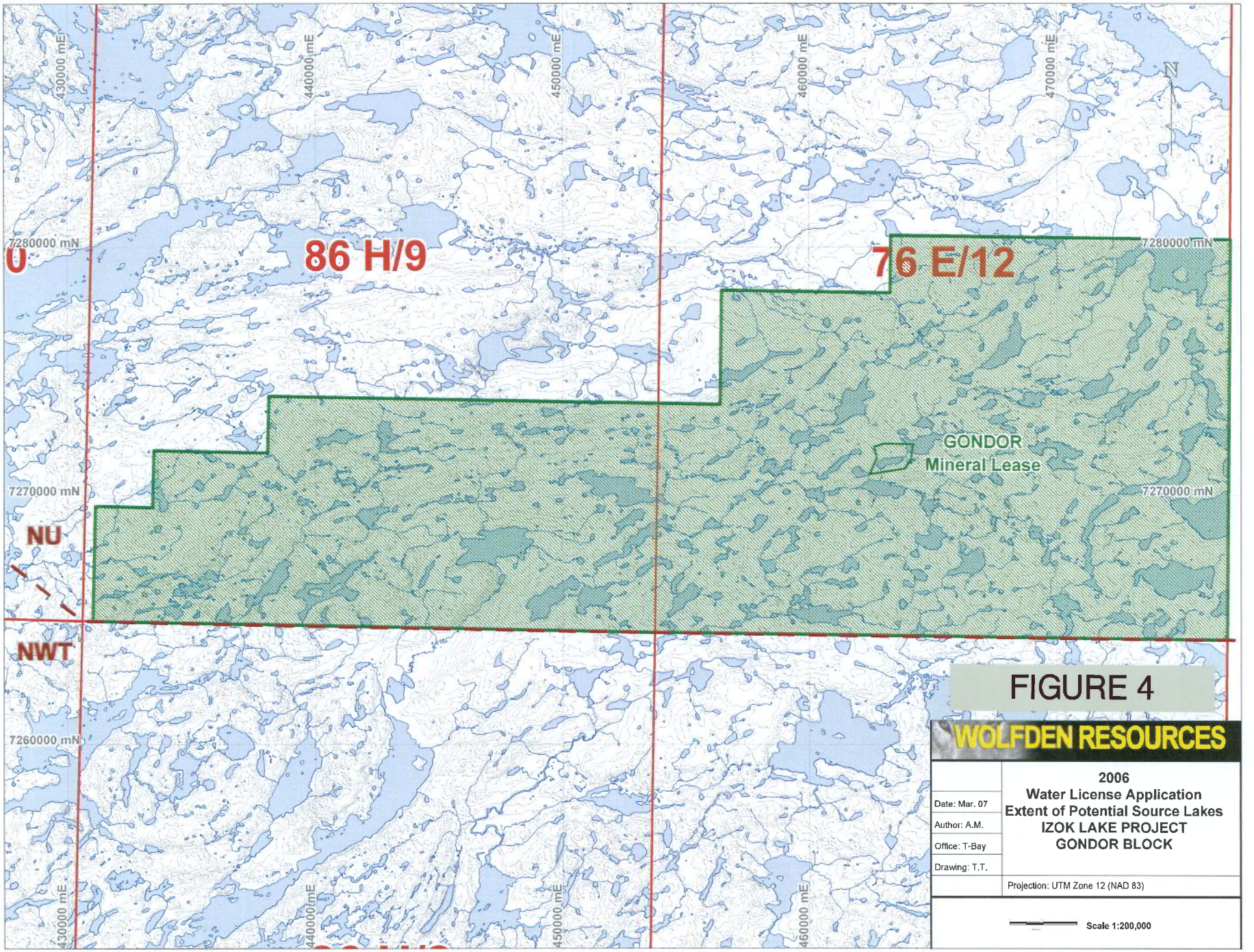
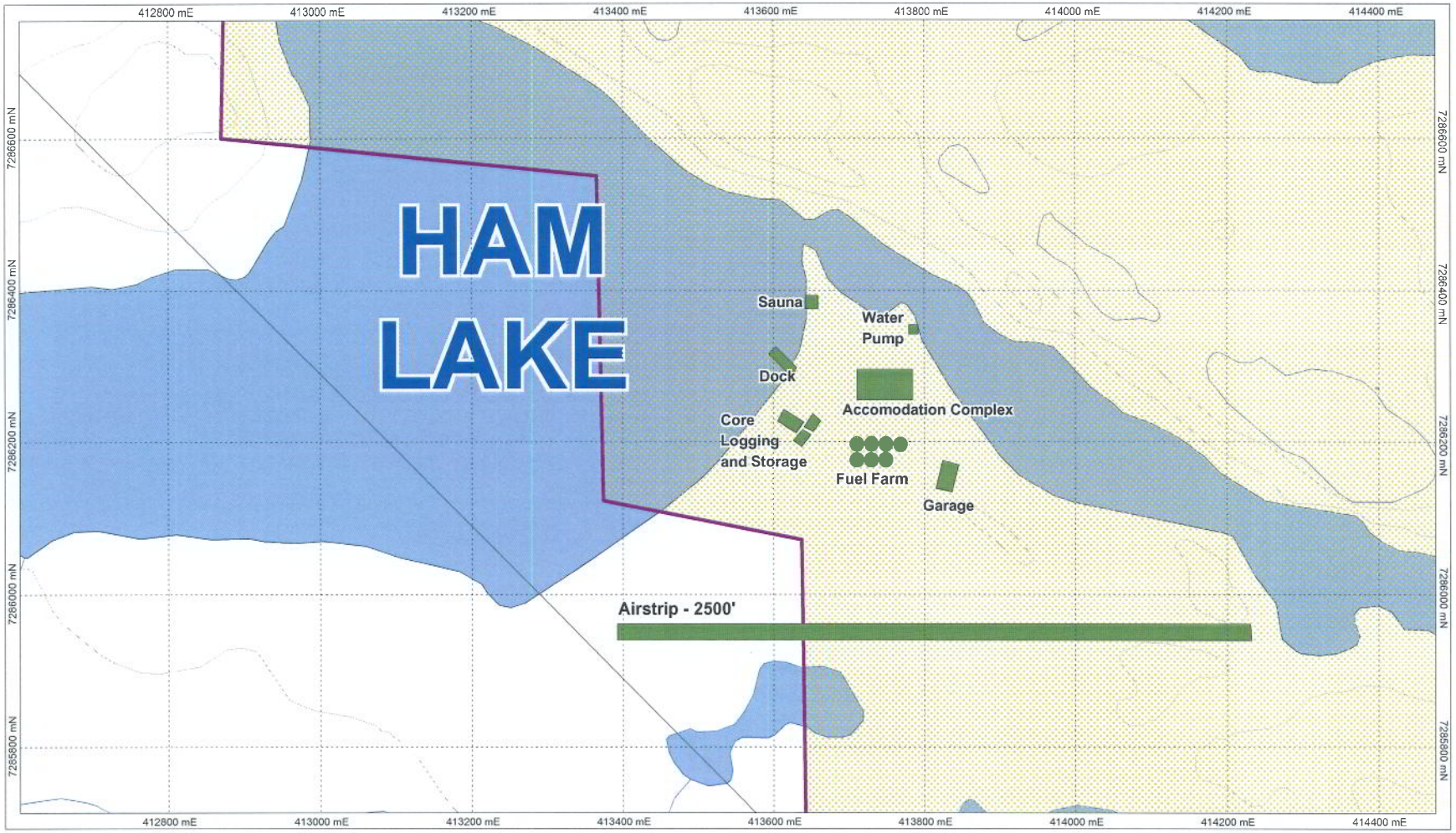



FIGURE 4

WOLFDEN RESOURCES

| | |
|---|---|
| | 2006<br>Water License Application<br>Extent of Potential Source Lakes<br>IZOK LAKE PROJECT<br>GONDOR BLOCK |
| Date: Mar. 07 | |
| Author: A.M. | |
| Office: T-Bay | |
| Drawing: T.T. | |
| | Projection: UTM Zone 12 (NAD 83) |
| | Scale 1:200,000 |




0 200 400
metres

# FIGURE 5

**WOLFDEN RESOURCES INC.**

| | |
|---|---|
| | **IZOK/HOOD PROJECTS**<br>**Water Licence Application**<br>**Nunavut Water Board**<br>**Camp layout** |
| Date:25/5/2006 | |
| Author: S.Rickard | |
| Office: Thunder Bay | |
| Drawing: IN/SR | |
| Scale: 1:6,000 | Projection: UTM: NAD 83, Zone 12 |