



Via Email

Ms. Tyree Mullaney
Regulatory Officer
Mackenzie Valley Land and Water Board
PO BOX 2130
YELLOWKNIFE NT X1A 2P6

MAR 30 2017

Dear Ms. Mullaney:

Government of the Northwest Territories, Department of Transportation – Land Use Permit MV2010X0013 Renewal Application – Mackenzie Highway, NWT #1 Km 0 to Km 278.

The Department of Transportation is submitting the attached application for an LUP Renewal to replace the current permit, MV2010X0013. The project has not been modified from the original application and is exempt from preliminary screening. Enclosed are the following supporting documents:

1. LUP Renewal Application;
2. 1:50,000 maps of the project area;
3. List of Quarry and water withdrawal Locations;
4. Scanned copies of existing Quarry Permits;
5. Spill Contingency Plan;
6. Waste Management Plan; and,
7. Engagement Records and Engagement Plan.

Should you have any questions regarding the application please contact [Binay Yadav@gov.nt.ca](mailto:Binay.Yadav@gov.nt.ca), or [Jon Posynick@gov.nt.ca](mailto:Jon.Posynick@gov.nt.ca).

Sincerely,

Binay Yadav
Head, Technical Services
Department of Transportation

c. Norman McCowan, Officer, Resource Management, DOL

Jon Posynick, Environmental Analyst, DOT



Mackenzie Valley Land and Water Board
7th Floor - 4922 48th Street
P.O. Box 2130
YELLOWKNIFE NT X1A 2P6
Phone (867) 669-0506
FAX (867) 873-6610

Application for:

New Land Use Permit ☒ Amendment ☐ to **MV2010X0013 - RENEWAL**

1. Applicant's name and mailing address: Binay Yadav Department of Transportation Government of the Northwest Territories PO Box 1320 Yellowknife, NT X1A 2L9	Fax number: 867-873-0288
2. Head office address: 5015 49 th St. Yellowknife, NT X1A 2L9	Telephone number: 867-766-9086 extn. 31146 Fax number: Same as above. Telephone number: Same as above.
3. Other personnel (subcontractor, contractors, company staff etc.) Highway maintenance work locations are often temporary depending on the work being required and therefore the exact number of persons working at any site at any given time can vary greatly. TOTAL: 2-40 (Number of persons on site)	
4. Eligibility: (Refer to section 18 of the <i>Mackenzie Valley Land Use Regulations</i>) a)(i) a)(ii) a)(iii) b)X	
5. a) Summary of operation (Describe purpose, nature and location of all activities.) The 'Operation' will consist of the following: <ul style="list-style-type: none"> - The 'Operation' will consist of the following: - The continuous and ongoing operation and maintenance of the existing NWT Public Highway system within the permit corridor along the Mackenzie Highway (NWT #1) Corridor between kilometer 0 (AB/NWT Border) and kilometer 278 (Bouvier Creek) and includes: <ul style="list-style-type: none"> • Mackenzie Highway (NWT #1) Km 0-278; • The Kakisa and Hart Lake Access Roads; • Pullouts and rest areas; and, • Other minor roads and accesses along Mackenzie Highway Corridor – Waterfall Route and as listed under the Public Highways Act for the Government of the NWT, and includes all highways, roadways and other transportation infrastructure. - All operations and maintenance activities will be undertaken following the standards for highway maintenance as outlined in the Highway Maintenance Standards Manual, normal construction practices and in accordance with the various regulatory agencies, as applicable. Work activities will also include roadway and right-of-way maintenance, rehabilitation and reconstruction; bridge structures maintenance and replacement; culvert maintenance and replacement; establishment and maintenance of drainage channels; excavation of granular materials; production of aggregates and roadway surfacing. - The Permit area will be two (2) kilometers in width, one (1) kilometer on each side of the existing public highway/roadway centerline through the entire length of the permit corridor including access and minor roads as listed in the Public Highways Act; - To access existing or future quarry areas within and outside the two (2) kilometer corridor; 	

- To develop new or further develop existing borrow areas to obtain granular borrow materials, common materials, blast rock (including use of explosives), rip-rap, clay, sand and gravel, from areas outside the existing 60 meter wide Public Highway corridors through applications to the GNWT-Department of Lands for Quarrying Permits;
- To carry out geotechnical investigations in the search for gravels and rock and for gathering preliminary engineering information for the design of foundations for roadways, bridges and other structures (as required);
- To place and maintain granular stockpiles at existing or approved quarry sites for the purpose of ongoing operations and maintenance of the public highway system within the permit corridor;
- To place temporary construction/work camps at existing quarry or previously developed sites within the permit corridor for the purpose of carrying out operations and maintenance of the public highway system and other roadways within the permit corridor;
- To temporarily store construction, operations and maintenance equipment at the various existing quarry or other previously developed sites within the permit corridor while carrying out these activities in the area;
- To access water sources for the ongoing operations and maintenance for the public highway system within the permit corridor;
- To have right of access to one kilometer (1000 meters) on each side (left and right) to the public highway/roadway center line for the purpose of carrying out granular and geotechnical investigations, quarry pit development, drainage channel construction, stockpiling granular and other construction materials and placement of temporary construction/work camps;
- To construct and maintain sand and sand/salt storage facilities at strategic locations along the designated highway corridor; and,
- To construct, operate and maintain pullouts/rest areas at strategic locations along the designated highway corridor.

b) Please indicate if a camp is to be set up. (Please provide details on a separate page. If necessary.)

- The placement of temporary construction/work camps may be required to carry out temporary construction/roadway improvement activities with regards to the ongoing operation and maintenance of the public highway system within the permit area (i.e. gravel production, granular resurfacing, chipseal overlays, culvert maintenance and replacement, embankment widening and improvements, right-of-way maintenance). These temporary construction/work camps will be set up in existing or previously developed quarry areas (See attached mapping). **The layout of each camp can vary greatly depending on the number of people needed onsite but may require trailers to be used for accommodations, cooking, etc.**

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

The following items include the potential impacts associated with the on-going land-use operations and maintenance within the permit area:

- There are three potential impacts to soil within the permit area. The first potential impact is in the form of erosion due to the stripping of vegetation during the development of borrow areas from heavy equipment movement. The second impact is soil contamination from potential spills of fuel or other foreign materials. The third impact is from the storage of materials such as blast rock, building materials and cleared vegetation.
- There should be minimal impact on ground water as the majority of the work will be carried out within the public highway right-of-way and on existing infrastructure and roadway surfaces.
- It is possible that construction activities will have short-term localized impact on the surface water quality due to the stripping of vegetation or during the placement of embankment materials causing erosion or migration of fine grained soils to enter water bodies. The main potential impact to surface water quality may occur during spring freshet and during heavy rainfall periods.
- Noise levels may potentially be a nuisance to fish and wildlife within a specific area during the construction or maintenance activities. However, these impacts are small and isolates to a confined space or location for short periods of time.
- The use of construction equipment and refueling vehicles will have temporary, non-measurable, and unavoidable impacts on air quality. The effects of these activities are an unavoidable impact of any activity requiring the use of heavy equipment.
- The operation and maintenance of the public highway system, access roads, airports/airstrips and associated transportation infrastructure within the permit area will have minimal impact on vegetation of the area.
- Impacts to mammals, birds and fish in the vicinity of the public highway corridor, access roads and airports/airstrips within the permit area is expected to be minimal, of short duration, and localized.
- There should be no permanent negative impacts on the habitat and communities in the permit area.
- Through due diligence and proper mitigation measures, impacts on the land, water, animals, fish and people should be minimal.
- Wherever possible, DOT will adhere to bird nest timing windows before clearing activities within the project area occur. Where clearing work is needed within the timing window, a search of the area will be completed by an avian biologist or a knowledgeable person. Confirmed nesting locations will be avoided.
- The monitoring of pit run borrow and stockpile locations, occurs on a regular basis as part of highway inspections. DOT will undertake mitigation measures in an effort to prevent bank swallows and the Common Nighthawk from nesting within quarry stockpiles, overburden, or on exposed soil banks.
- The Project footprint is pre-disturbed and is unlikely to have a significant impact on wildlife or on habitat.

7. Proposed restoration plan (please use a separate page if necessary).

- Areas that have been stripped of the organic or vegetated layer will be seeded with an approved seed mix as identified by the GNWT Department of Environment and Natural Resources.
- Any abandoned sections will be seeded and allowed to re-vegetate with area shrubs and bushes naturally.
- Any sumps or other excavations will be filled in and graded to match the surrounding area.
- All temporary camp locations that have been stripped or compacted will be re-graded to loosen any compacted soils and will then be seeded and allowed to re-vegetate naturally with other grasses, shrubs, and bushes.

8. Other rights, licences or permits related to this permit application (mineral rights, timber permits, water licences, etc.)

- As in the 'Description of Undertaking' – All public roads within the Permit area as identified in the Public Highways Act which includes; Mackenzie Highway (NWT #1) KM 0 to KM 278; Kakisa Access Rd (12.9 km); Hart Lake Access Rd. (1.3 km); other GNWT administered roadways, facilities and transportation infrastructure.
- See attached list of quarry permits and associated locations.
- See attached map.

9. Proposed disposal methods.

To complete this section of the application form, a Waste Management Plan for the proposed activities is to be developed in accordance with the Board's *Guidelines for Developing a Waste Management Plan* (click [here](#) to access) and submitted as an attachment to the

a) Garbage

All combustible garbage will be burned on site in an approved container as determined by the Inspector. Any non-combustible materials will be taken to an approved community waste facility.

c) Brush & trees

As per requirements as listed under the conditions for the Quarry or other Permits; salvage or disposed of by burning, etc.

b) Sewage (Sanitary & Grey Water):

Sumps & or sewage tracks to local community Sewage or liquid waste facilities.

c) Overburden (Organic soils, waste material, etc.):

Wherever applicable and feasible, organics will be stockpiled for erosion control, pit restoration, etc.

10. Equipment (includes drills, pumps, etc.) (Please use separate page if necessary.)

Type & number	Size	Proposed use
Tracked Dozers	D3 through D9	Clearing right-of-way, drainage channels and granular borrow site, clearing granular investigation cutlines, pushing roadway construction material on the roadway and in borrow area, pushing borrow materials and leveling stockpiles, etc.
Hydraulic Excavators (Wheeled and Tracked)	E70 through 245B	Excavating drainage channels, excavating at culvert removal and installation sites, excavating at bridge sites, excavating borrow sites and loading haul vehicles, making repairs to roadway embankment, clearing right-of-way, granular investigations (test pitting), etc.
Loaders (Wheeled and Tracked)	Various	For loading haul trucks, moving granular materials at work areas, stockpiling granular materials, feeding crusher and asphalt plants, etc.
Motor Graders	Various	For roadway maintenance and road repairs, grading granular surfacing, right-of-way maintenance, snow ploughing, borrow source maintenance, etc.
Compaction Equipment	Various	To compact roadway surface and surfacing, compact roadway embankment, compact around culvert installations, etc.

Asphaltic Pavers and Recycler	Various	To place asphaltic surfacing.
Rotary Drills	Various	To carry out granular and geotechnical investigations, prepare for piling installations at bridge or ferry sites, to prepare for blasting at quarry sites, etc.
Gravel Crushing Plants (Cone and Jaw)	Various	To produce specified granular materials
Single Axle, Tandem Axle and Tridem Axle Haul Trucks	Various – water tankers, sewage tanks, rock, gravel, sanding trucks and plow trucks	For snow ploughing and road maintenance, watering on the road, hauling granular and rock materials to work site, stockpiling granular materials, gravel surfacing, sanding on the road, hauling construction materials, hauling water for work camps, sewage and waste removal.
Tractor Trailers	Various	To move equipment to, from and within work site and borrow areas (low/high boys), etc.
Rock Trucks	Various	To move rock between quarry areas, to haul construction materials within work area, etc.
Tractor Mowing Machines	Various	To clear right-of-ways.
Fuel Tankers	Various to 40,000 litres	To resupply fuel storage tank, to refuel equipment, etc.
Pile Drivers	Various	For installing piles at bridge sites and ferry facilities, etc.
Draglines	Various	For recovering granular materials dredging at bridge sites and ferry crossings, etc.
Cranes	Various	For hoisting and placing bridge components, removing and installing culverts, setting up asphalt and crushing plants, loading and unloading equipment, loading, unloading and placing temporary camp facilities, etc.
Service Vehicles	Various – pickup trucks, utility service trucks, flat decks, etc.	To support and maintain all equipment required for the ongoing operation and maintenance of the public highway system, roadways, access roads and airports/airstrips, etc.
Temporary Construction/Work Camp Facilities	2 to 40 man camps	To support delivery of the ongoing operation and maintenance of the public highway system, roadways, access roads and airports/airstrips, short term construction activities, temporary ice/winter road construction and maintenance camps along potential winter road portions of the permit area, etc.
Tree Harvesters/Mulchers	Various	For right-of-way clearing, borrow site clearing, etc.
Generators	Various	For temporary camps, lighting units, crusher plants, asphalt plants, to power small tools and equipment, etc.
Various small equipment – rock pickers, soil cultivators, roadway sweepers, post hole drills, post drivers, water pumps, rig mats, patching units, tar pots, tampers, compressors, jack hammers, etc.	Various	To support the delivery of the ongoing operation and maintenance of the public highway system, access roads, airports/airstrips, temporary construction camps, temporary ice/winter road construction and maintenance camps, etc.

11. Fuels	()	Number of containers	Capacity of containers	Location
Diesel		Varies – All containers are non-permanent/portable	Up to 50,000L, combined total.	Temporary camps and worksites along the ROW.
Gasoline		Varies – All containers are non-permanent/portable		
Aviation fuel				
Propane				
Other				

12. Containment fuel spill contingency plans.

A spill contingency plan for the proposed activities is to be developed in accordance with INAC's *Guidelines for Spill Contingency Planning, April 2007* (accessible [here](#)). This plan is to be submitted as an attachment to the application form.

The primary goal is to avoid spills or the unnecessary release of materials. In the unlikely event of a spill or release of materials, quick response will become the objective. The SCP defines the responsibilities of site personnel and the required procedures for a quick response by emphasizing the need to reduce the safety hazards and minimizes the impacts on the environment. See attached.

13. Methods of fuel transfer (to other tanks, vehicles, etc.)

Fuel tanks vary in size' fuel will be delivered by a certified carrier (as per current and future Contract arrangements). Tanker delivery trucks of the bulk fuel will deliver the fuel to the Department's or Contractor's enviro-tanks, staged at various locations along the highway system. These are portable, **double walled** fuel tanks and are transported to and from temporary construction/work camp locations established to carry out the undertakings, as described herein, for the ongoing maintenance and operations of the public highway system and other transportation infrastructure within the permit area as required. **Spill kits and secondary containment are required at all refueling locations. See attached map(s) for refueling locations (quarries).**

14. Period of operation (includes time to cover all phases of project work applied for, including restoration)

The work will be ongoing 365 days a year for all aspects of the primary highway and community access roads system (all weather roads). Winter roads are primarily on a seasonal basis from mid-October, start of the construction season, and open to the general Public 'light traffic' in December and closed to all Public traffic by the first week in April of each year.

Estimated work duration, examples:

Road/Highway Maintenance - 24 hours – 6 weeks

Maintenance Granular Crushing Operations - 4 to 6 weeks

Highway Upgrade – 6 months to 24 months.

15. Period of permit (up to five years, with maximum of two years of extension).

As the work will be ongoing, the original permit request is for a five (5) year permit period. Extension will be applied for as required.

16. Location of activities by map co-ordinates (attach maps and sketches) - NAD83 ****

– see attached mapping

Minimum latitude (degrees, minutes, seconds)
60 00 00

Maximum latitude (degrees, minutes, seconds)
61 09 30

Minimum longitude (degrees, minutes, seconds)
116 08 00

Maximum longitude (degrees, minutes, seconds)
119 03 41

Map Sheet no. 85C/2; 85C/7; 85C/8; 85C/9; 85C/15; 85C/14; 85F/3; 85F/4; 85E/1; 85E/2; 85E/3

17. Applicant

Print name in full Binay Yadav

Signature

Date

March 30, 2017

18. Fees

Type A - \$150.00 **

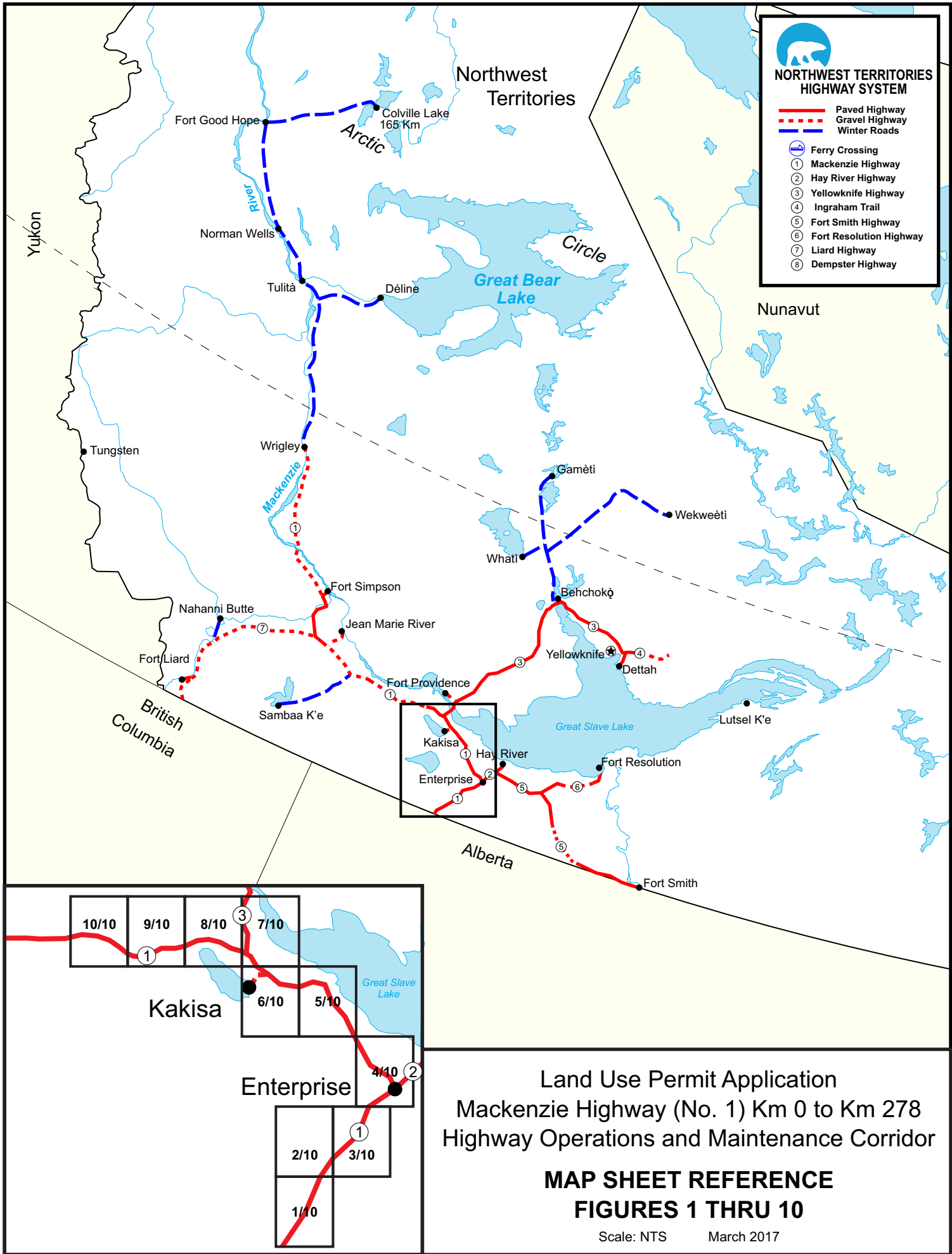
Type B - \$150.00 **

(**Application Fees are Non-Refundable**)

Land use fee: _____ hectares @ \$50.00/hectare
Assignment fee \$50.00

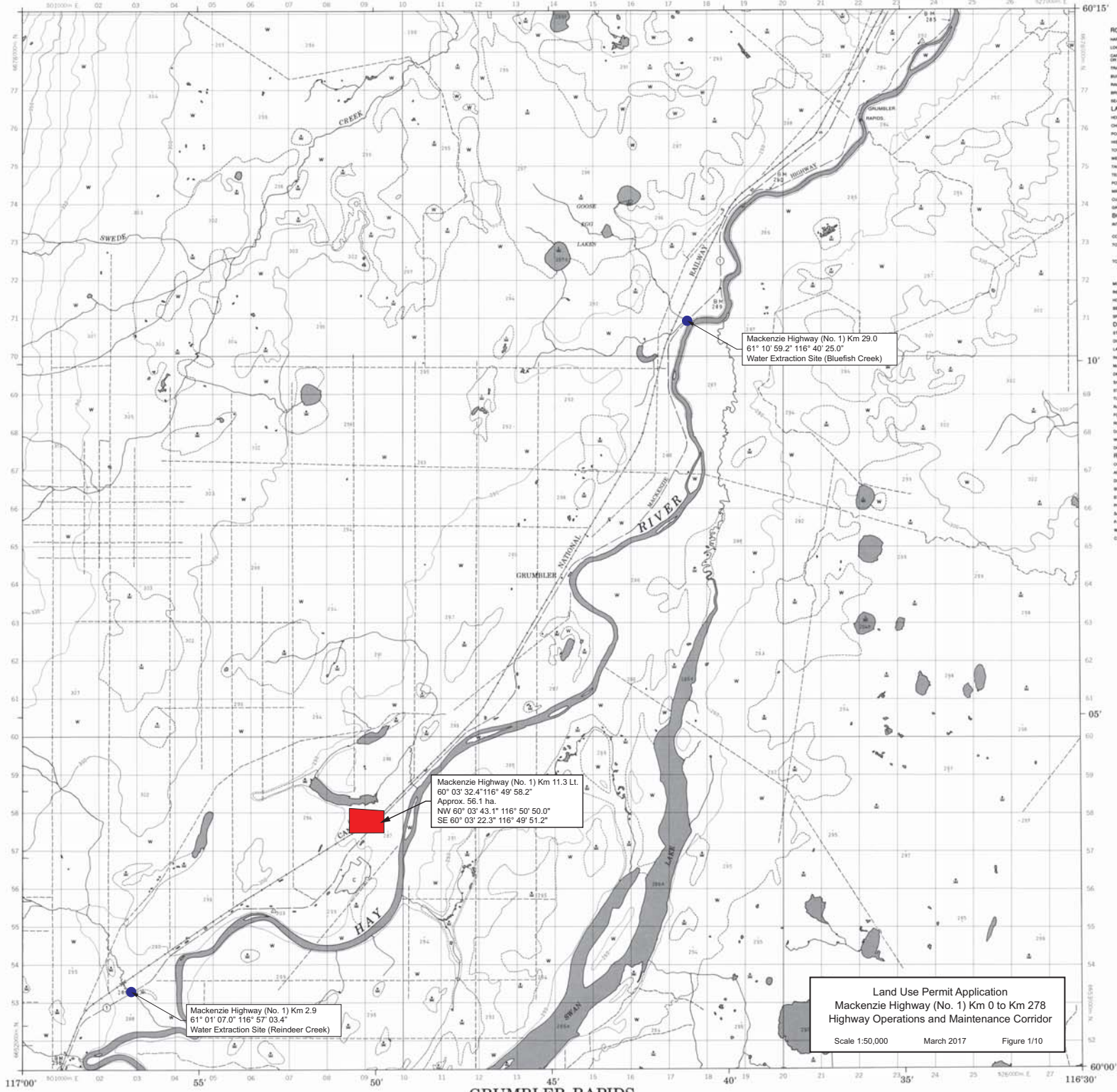
\$ _____
\$ _____ Total application

Please make all cheques payable to "Receiver General for Canada"



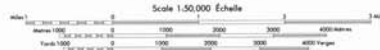
CANADA

EDITION 1 85 C/2



GRUMBLER RAPIDS SUBURB OF MACKENZIE NORTHWEST TERRITORIES

ELEVATIONS IN METRES ABOVE MEAN SEA LEVEL
CONTOUR INTERVAL 10 METRES
NORTH AMERICAN DATUM 1987
TRANSVERSE MERCATOR PROJECTION

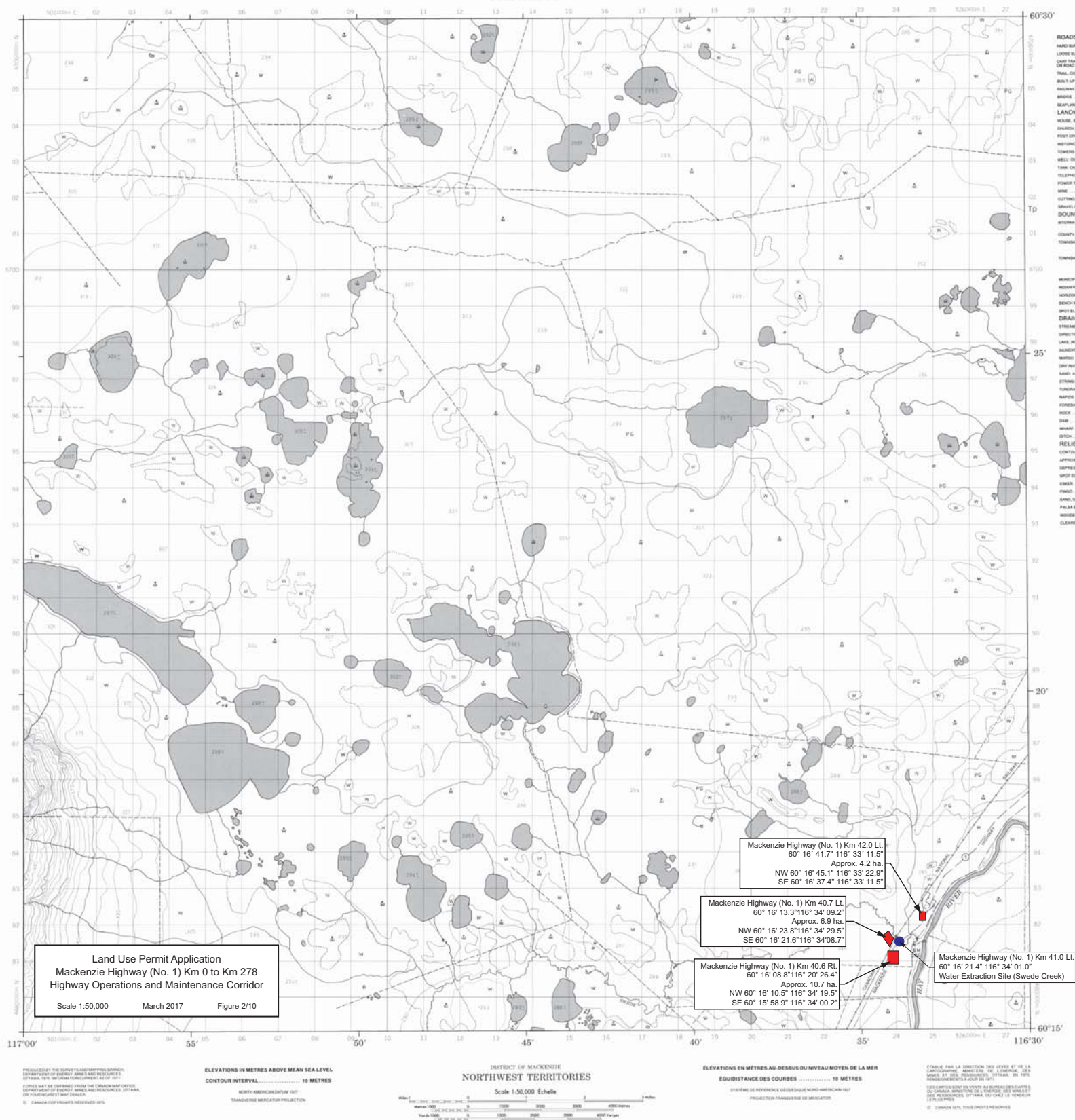


ELEVATIONS EN METRES AU-DESSUS DU NIVEAU MOYEN DE LA MER
ÉQUIDISTANCE DES COURBES 10 MÈTRES
SYSTÈME DE RÉFÉRENCE GÉO-CENTRIQUE NORD-AMÉRICAIN-1987
PROJECTION TRANSVERSE DE MERICATOR

ÉTABLI PAR LA DIRECTION DES LACS ET DE LA
PARTICIPATION AMÉRICAINE DE L'AMÉRIQUE DU
NORD, 25, RUE DE LA LOUVE, OTTAWA, ON K1P 6K6
LES CARTES SONT EN VENTE AU BUREAU DES CARTES
DU CANADA, OTTAWA, ON K1P 6K6
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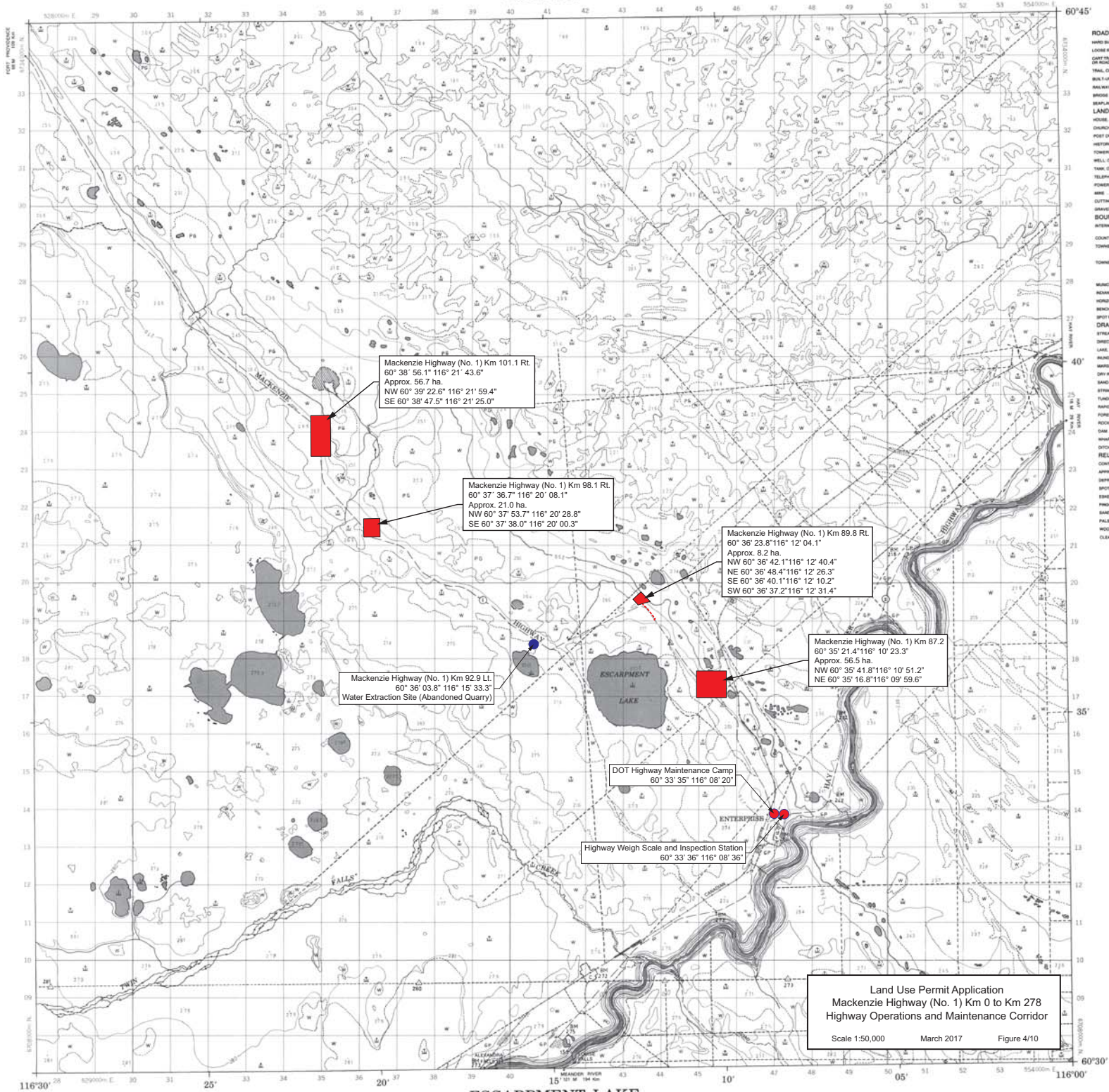
EDITION 1 85 C/8



STABLE PAR LA DIRECTION DES LÈVÉS ET DE LA
GÉOGRAPHIE, MINISTÈRE DE L'ÉNERGIE, DES
MINES ET DES RESSOURCES, OTTAWA, EN 1971.
RENSEIGNEMENTS À JOUR EN 1971.

DES CARTES SONT EN VENTE AU BUREAU DES CARTES
DU CANADA, MINISTÈRE DE L'ÉNERGIE, DES MINES ET
DES RESSOURCES, OTTAWA, OU CHEZ LE VENDOR
LE PLUS PRÈS.

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ESCARPMENT LAKE

DISTRICT OF MACKENZIE

NORTHWEST TERRITORIES

Scale 1:50,000 Échelle



ÉLEVATIONS EN MÈTRES AU-DESSUS DU NIVEAU MOYEN DE LA MER

ÉQUIDISTANCE DES COURBES 10 MÈTRES

SYSTÈME DE RÉFÉRENCE GÉODÉSIQUE NORD-AMÉRICAIN 1987

PROJECTION TRANSVERSE DE MERCATOR

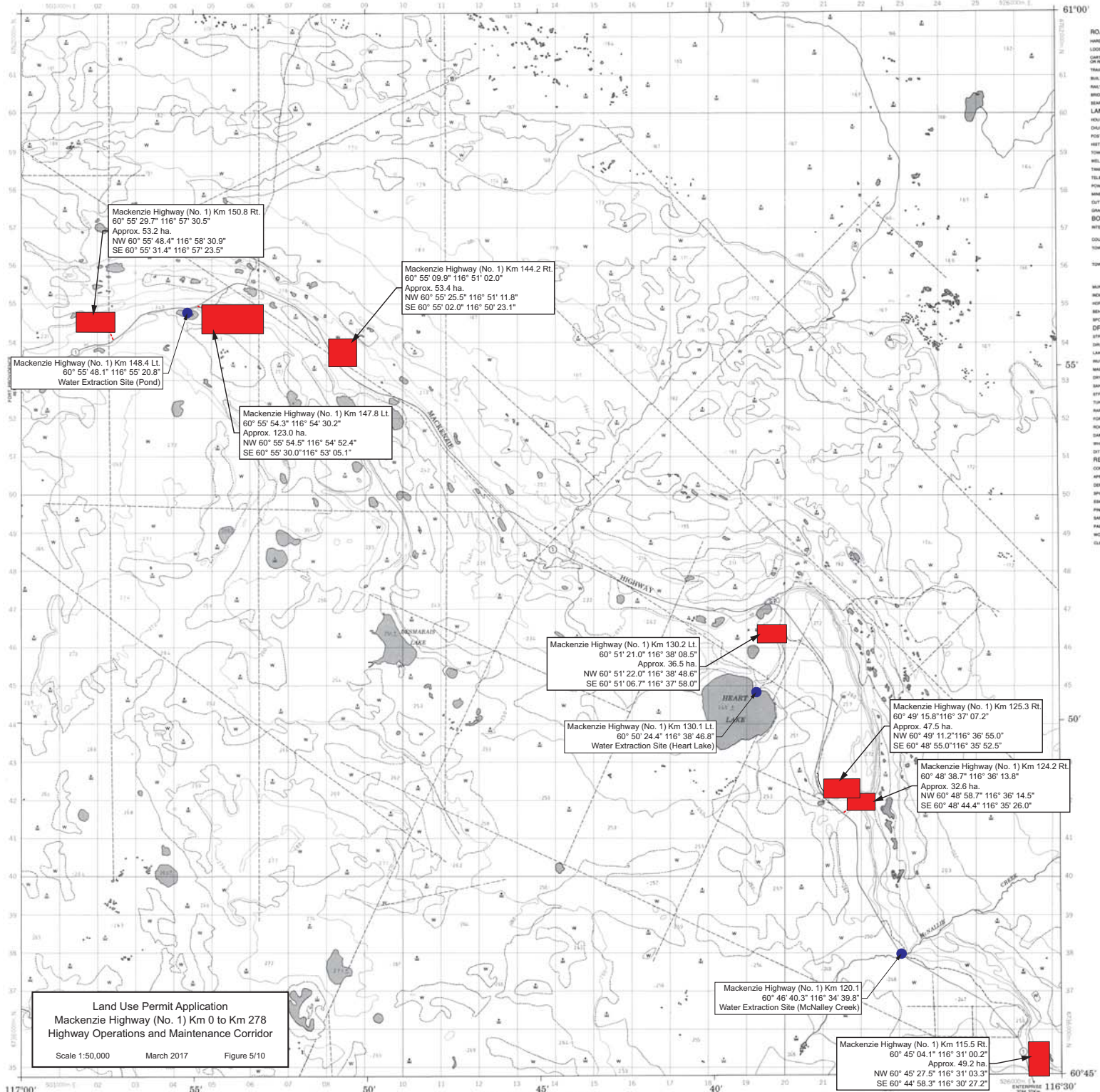
ÉTABLI PAR LA DIRECTION DES LÉVÉS ET DE LA CARTOGRAPHIE, MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES, OTTAWA, EN 1975. MODIFICATIONS À JOUR À JOUR.

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HEART LAKE DISTRICT OF MACKENZIE NORTHWEST TERRITORIES

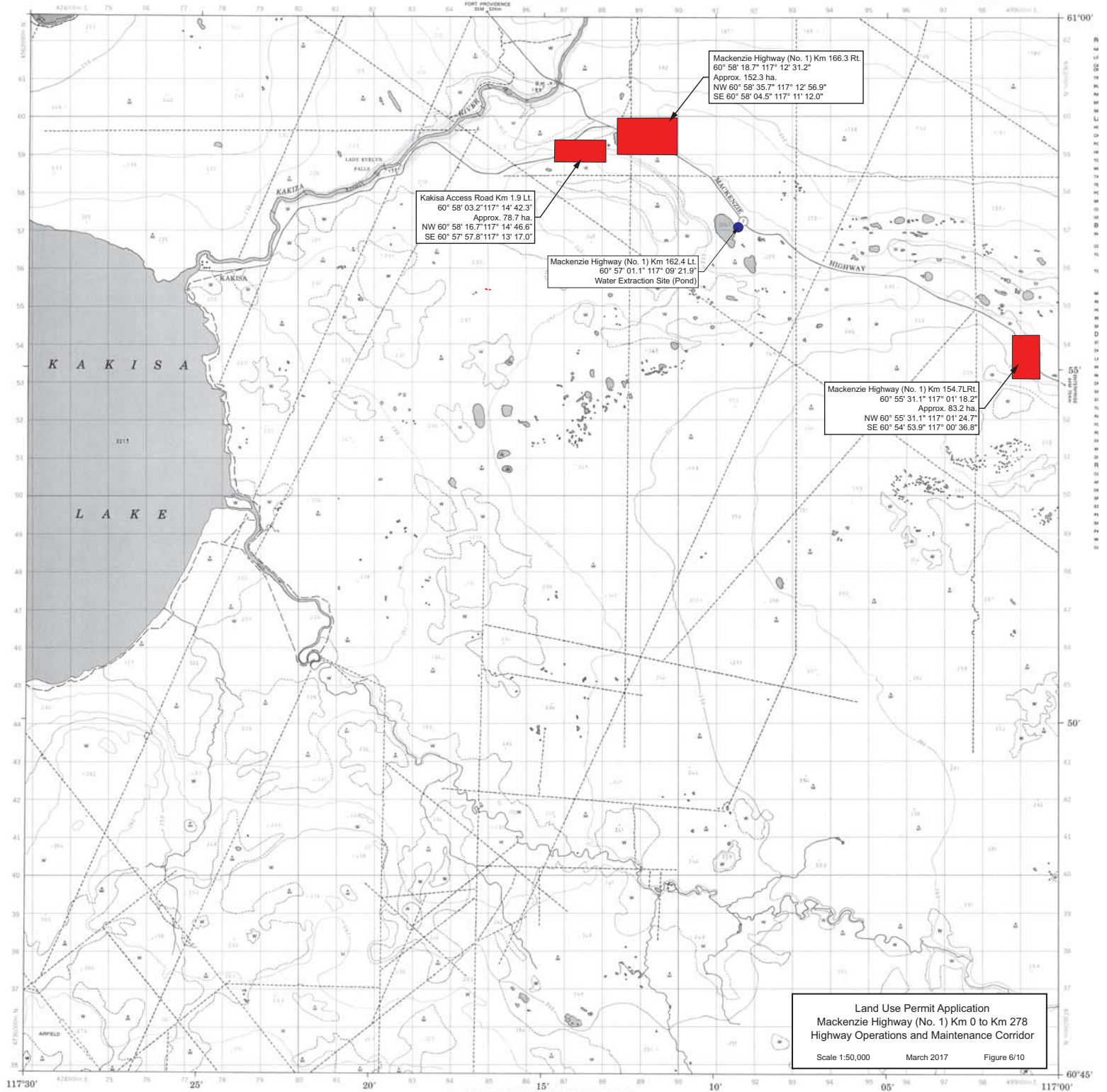
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ELEVATIONS EN MÈTRES AU-DESSUS DU NIVEAU MOYEN DE LA MER
 ÉQUIDISTANCE DES COURBES 10 MÈTRES

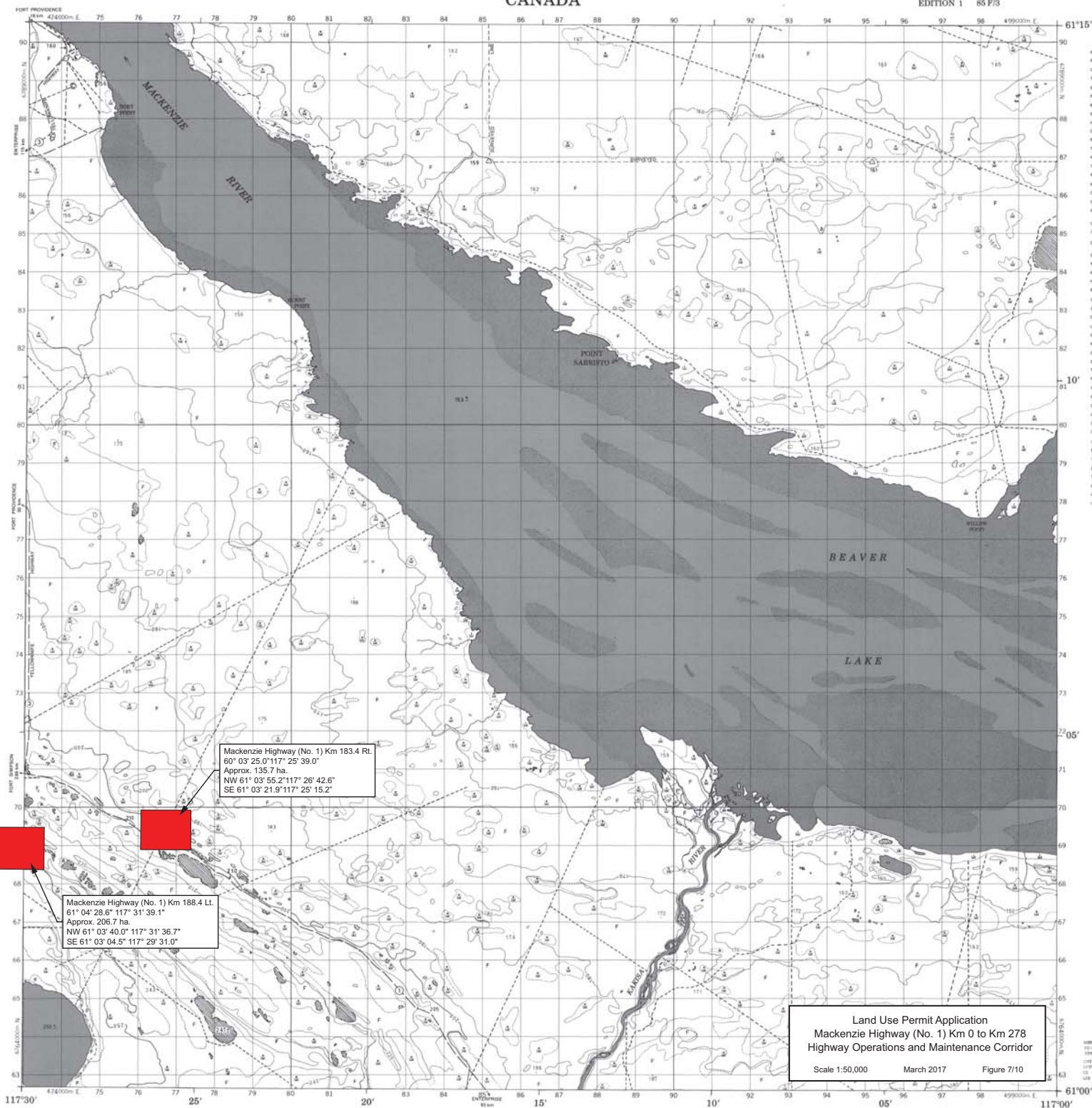
SYSTÈME DE RÉFÉRENCE GÉOGRAPHIQUE NORD AMÉRICAIN 1987
 PROJECTION TRANSVERSE DE MERCATOR

ÉTABLI PAR LA DIRECTION DES LÉVÉS ET DE LA CARTOGRAPHIE, MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES, OTTAWA, EN 1985.
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ELEVATIONS IN METRES ABOVE MEAN SEA LEVEL
 CONTOUR INTERVAL 10 METRES
 NORTH AMERICAN DATUM 1987
 TRANSVERSE MERCATOR PROJECTION

POINT SARRISTO DISTRICT OF MACKENZIE NORTHWEST TERRITORIES

Scale 1:50,000 Echelle



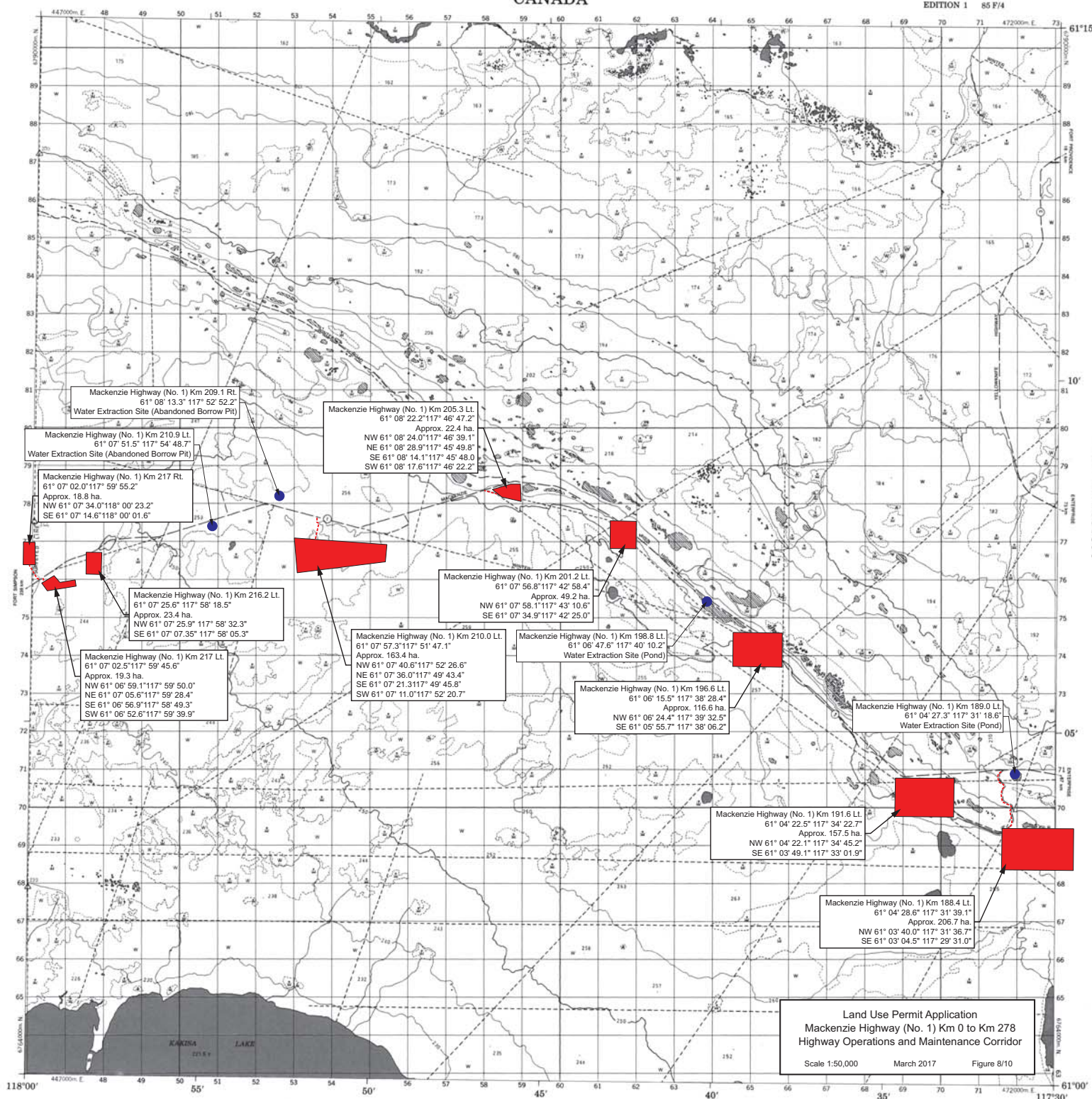
ELEVATIONS EN METRES AU-DESSUS DU NIVEAU MOYEN DE LA MER
 EQUIDISTANCE DES COURBES 10 METRES
 SYSTEME DE REFERENCE GEODESIQUE NORD AMERICAIN 1987
 PROJECTION TRANSVERSE DE MERICATOR

ETABLI PAR LA DIRECTION DES LEVÉS ET DE LA CARTOGRAPHIE, MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES OTTAWA, EN 1978 RENOUVELLEMENT À JOUR EN 1985
 LES CARTES SONT EN VENTE AU BUREAU DES CARTES DU CANADA, MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES OTTAWA, OU CHEZ LA MAISON LE PLOIS FRÈRES
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 MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES

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ELEVATIONS IN METRES ABOVE MEAN SEA LEVEL
CONTOUR INTERVAL 10 METRES
NORTH AMERICAN DATUM 1987
TRANSVERSE MERCATOR PROJECTION

DISTRICT OF MACKENZIE
NORTHWEST TERRITORIES

Scale 1:50,000 Échelle



ELEVATIONS EN MÈTRES AU-DESSUS DU NIVEAU MOYEN DE LA MER
ÉQUIDISTANCE DES COURBES 10 MÈTRES
SYSTÈME DE RÉFÉRENCE GÉO-CENTRIQUE NORD-AMÉRICAIN 1987
PROJECTION TRANSVERSE DE MÉRIDIEN

ÉTABLI PAR LA DIRECTION DES LÈVÉS ET DE LA
GÉOMATIQUE, MINISTÈRE DES PÉTROLES, DES
MINES ET DE LA TECHNOLOGIE, OTTAWA, EN 2017
TOUTES LES DROITS RÉSERVÉS
LE CARTOGRAPHE AVEU PAR LE MINISTRE DES PÉTROLES,
DES MINES ET DE LA TECHNOLOGIE, OTTAWA, EN 2017
TOUTES LES DROITS RÉSERVÉS
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ELEVATIONS IN METRES ABOVE MEAN SEA LEVEL
CONTOUR INTERVAL..... 10 METRES
NORTH AMERICAN DATUM 1985
TRANSVERSE MERCATOR PROJECTION

DISTRICT OF MACKENZIE
NORTHWEST TERRITORIES

ÉLEVATIONS EN MÈTRES AU-DESSUS DU NIVEAU MOYEN DE LA MER
ÉQUIDISTANCE DES COURBES 10 MÈTRES
SYSTÈME DE RÉFÉRENCE GÉODÉSIQUE NORD-AMÉRICAIN NAD 83
PROJECTION TRANSVERSALE DE MERCATOR

ETABLI PAR LA DIRECTION DES LEVES ET DE LA
LITHOGRAPHIE, MAISTRE DE L'ENERGIE, DES
MINES ET DES RESSOURCES, OTTAWA, EN 1974

DES CARTES SONT EN VENTE AU BUREAU DES CARTES
DU CANADA, MINISTRE DE L'ENERGIE, DES MINES ET
DES RESSOURCES, OTTAWA, OU CHEZ LE VENDEUR
LE PLUS PRES

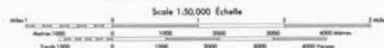
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ÉTABLI PAR LA DIRECTION DES LÈVES ET DE LA
CARTOGRAPHIE, MINISTÈRE DE L'ÉNERGIE, DES
MINES ET DES RESSOURCES, OTTAWA, EN 1975

EQUIDISTANCE DES COURSES 25 PIEDS



Active Quarry Permits HWY 1 KM 0 to KM 278											
	QUARRY LOCATION			QUARRY PERMIT INFORMATION				TOTAL PREVIOUSLY REPORTED			PERMITTED QUANTITY REMAINING
	HWY #	KM	L/R	QUARRY PERMIT OR RESERVE No.	PERMIT EXP. DATE	MATERIAL	PERMITTED QUANTITY M ³	QUARRIED QUANTITY M ³	PROCESSED QUANTITY M3	HAULED QUANTITY M ³	
1	1	89.8	R	RESERVE R16-01024	N/A	Limestone Bedrock - Blast Rock	120,000	4,700	4,165	535	115,300
2	1	147.8	L	2016QP0008	April 4, 2019	Pit Run Gravel and Sand	50,000	14,250	14,250	0	35,750
3	1	147.8	L	2016QP0008	April 4, 2019	Limestone Bedrock - Blast Rock	50,000	48,500	48,500	0	1,500
4	1	188.5/ 191.6	L	RESERVE 85F/4-15-2	N/A	Pit Run Gravel and Sand					

Operations and Maintenance of NWT Public Highways and Other transportation Infrastructure
SOUTH SLAVE - DEH CHO REGION

Quarries/Granular Material Sources, Stockpile Locations and Temporary Construction/Work Camps

Site Location			Map Co-ordinates			Site Usage					Comments	Access		
Kilometre	Offset	Size (ha)	Latitude	Longitude	Map Sheet	Pitrun Granular	Bedrock Quarry	Stockpile Site	Sand/Salt Storage Facility	Temporary/Seasonal Camp		Latitude	Longitude	Total Length (metres)
Mackenzie Highway (NWT No. 1)														
11.3	left	56.1	60° 03' 43.1"	116° 50' 50.0"	85 C/02			X		X	Reserve 85C/2-19-2	60° 03' 32.4"	116° 49' 58.2"	60
			60° 03' 22.3"	116° 49' 51.2"										
40.6	right	10.7	60° 16' 10.5"	116° 34' 19.5"	85 C/07	X		X		X		60° 16' 08.8"	116° 20' 26.4"	30
			60° 15' 58.9"	116° 34' 00.2"										
40.7	left	6.9	60° 16' 23.8"	116° 34' 29.5"	85C/07	X						60° 16' 13.3"	116° 34' 09.2"	100
			60° 16' 21.6"	116° 34' 08.7"										
42.0	left	4.2	60° 16' 45.1"	116° 33' 22.9"	85 C/07			X	X	X	Reserve 85C/7-4-4	60° 16' 41.7"	116° 33' 11.5"	20
			60° 16' 37.4"	116° 33' 11.5"										
65.2	left	141.5	60° 27' 10.2"	116° 21' 01.9"	85 C/08		X	X		X		60° 26' 40.5"	116° 20' 26.4"	50
			60° 26' 16.5"	116° 20' 06.4"										
66.8	left	48.3	60° 27' 49.9"	116° 20' 13.1"	85 C/08			X		X	Reserve Z1226	60° 27' 29.3"	116° 19' 44.9"	20
			60° 27' 23.3"	116° 19' 34.4"										
84	left	N/A	60° 33' 36"	116° 08' 36"	85 C/08						Weight Scale and Inspection Station	60° 33' 31.5"	116° 08' 31.6"	20
84	left	N/A	60° 33' 35"	116° 08' 20"	85 C/08			X	X	X	Highway Maintenance Camp Reserve 178T	60° 33' 31.0"	116° 08' 23.5"	80
87.2	left and right	56.5	60° 35' 41.8"	116° 10' 51.2"	85 C/08	X	X	X		X		60° 35' 21.4"	116° 10' 23.3"	20
			60° 35' 16.8"	116° 09' 59.6"										

Operations and Maintenance of NWT Public Highways and Other transportation Infrastructure
SOUTH SLAVE - DEH CHO REGION

Quarries/Granular Material Sources, Stockpile Locations and Temporary Construction/Work Camps

Site Location			Map Co-ordinates			Site Usage					Comments	Access		
Kilometre	Offset	Size (ha)	Latitude	Longitude	Map Sheet	Pitrun Granular	Bedrock Quarry	Stockpile Site	Sand/Salt Storage Facility	Temporary/Seasonal Camp		Latitude	Longitude	Total Length (metres)
89.8	right	8.2	60° 36' 42.1"	116° 12' 40.4"	85 C/08	X	X	X		X	Reserve R16-01024	60° 36' 23.8"	116° 12' 04.1"	500
			60° 36' 48.4"	116° 12' 26.3"										
			60° 36' 40.1"	116° 12' 10.2"										
			60° 36' 37.2"	116° 12' 31.4"										
98.1	right	21	60° 37' 53.7"	116° 20' 28.8"	85 C/09	X		X		X		60° 37' 36.7"	116° 20' 08.1"	30
			60° 37' 38.0"	116° 20' 00.3"										
101.1	right	56.7	60° 39' 22.6"	116° 21' 59.4"	85 C/09	X	X	X		X		60° 38' 56.1"	116° 21' 43.6"	30
			60° 38' 47.5"	116° 21' 25.0"										
115.5	right	49.2	60° 45' 27.5"	116° 31' 03.3"	85 C/10 85 C/15	X		X		X		60° 45' 04.1"	116° 31' 00.2"	400
			60° 44' 58.3"	116° 30' 27.2"										
124.2	right	32.6	60° 48' 58.7"	116° 36' 14.5"	85 C/15	X		X		X		60° 48' 38.7"	116° 36' 13.8"	350
			60° 48' 44.4"	116° 35' 26.0"										
125.3	right	47.5	60° 49' 11.2"	116° 36' 55.0"	85 C/15		X	X		X	NEW	60° 49' 15.8"	116° 37' 07.2"	500
			60° 48' 55.0"	116° 35' 52.5"										
130.2	left	36.5	60° 51' 22.0"	116° 38' 48.6"	85 C/15	X		X		X		60° 51' 21.0"	116° 38' 08.5"	50
			60° 51' 06.7"	116° 37' 58.0"										
144.2	right	53.4	60° 55' 25.5"	116° 51' 11.8"	85 C/15	X		X		X		60° 55' 09.9"	116° 51' 02.0"	250
			60° 55' 02.0"	116° 50' 23.1"										
147.8	left	123	60° 55' 54.5"	116° 54' 52.4"	85 C/15	X	X	X		X	Expanded Area	60° 55' 54.3"	116° 54' 30.2"	100
			60° 55' 30.0"	116° 53' 05.1"										
150.8	right	53.2	60° 55' 48.4"	116° 58' 30.9"	85 C/15	X		X		X		60° 55' 29.7"	116° 57' 30.5"	450
			60° 55' 31.4"	116° 57' 23.5"										

Operations and Maintenance of NWT Public Highways and Other transportation Infrastructure
SOUTH SLAVE - DEH CHO REGION

Quarries/Granular Material Sources, Stockpile Locations and Temporary Construction/Work Camps

Site Location			Map Co-ordinates			Site Usage					Comments	Access		
Kilometre	Offset	Size (ha)	Latitude	Longitude	Map Sheet	Pitrun Granular	Bedrock Quarry	Stockpile Site	Sand/Salt Storage Facility	Temporary/Seasonal Camp		Latitude	Longitude	Total Length (metres)
154.7	left	83.2	60° 55' 31.1"	117° 01' 24.7"	85 C/14	X		X		X		60° 55' 31.1"	117° 01' 18.2"	400
			60° 54' 53.9"	117° 00' 36.8"										
166.3	right	152.3	60° 58' 35.7"	117° 12' 56.9"	85 C/14	X	X	X	X	X	Includes Reserve 85C/14-33-2	60° 58' 18.7"	117° 12' 31.2"	20
			60° 58' 04.5"	117° 11' 12.0"										
183.4	right	135.7	61° 03' 55.2"	117° 26' 42.6"	85 F/03 85 F/04	X		X		X	Expanded Area	60° 03' 25.0"	117° 25' 39.0"	20
			61° 03' 21.9"	117° 25' 15.2"										
188.4	left	206.7	61° 03' 40.0"	117° 31' 36.7"	85 F/03 85 F/04	X		X		X	Includes Reserve 1647	61° 04' 28.6"	117° 31' 39.1"	2240
			61° 03' 04.5"	117° 29' 31.0"										
191.6	left	157.5	61° 04' 22.1"	117° 34' 45.2"	85 F/04	X		X		X		61° 04' 22.5"	117° 34' 22.7"	30
			61° 03' 49.1"	117° 33' 01.9"										
196.6	left	116.6	61° 06' 24.4"	117° 39' 32.5"	85 F/04	X		X		X		61° 06' 15.5"	117° 38' 28.4"	160
			61° 05' 55.7"	117° 38' 06.2"										
201.2	left	49.2	61° 07' 58.1"	117° 43' 10.6"	85 F/04	X		X		X		61° 07' 56.8"	117° 42' 58.4"	100
			61° 07' 34.9"	117° 42' 25.0"										
205.3	left	22.4	61° 08' 24.0"	117° 46' 39.1"	85 F/04	X		X		X	NEW	61° 08' 22.2"	117° 46' 47.2"	500
			61° 08' 28.9"	117° 45' 49.8"										
			61° 08' 14.1"	117° 45' 48.0"										
			61° 08' 17.6"	117° 46' 22.2"										
210.0	left	163.4	61° 07' 40.6"	117° 52' 26.6"	85 F/04	X		X		X	NEW	61° 07' 57.3"	117° 51' 47.1"	1000
			61° 07' 36.0"	117° 49' 43.4"										
			61° 07' 21.3"	117° 49' 45.8"										
			61° 07' 11.0"	117° 52' 20.7"										
216.2	left	23.4	61° 07' 25.9"	117° 58' 32.3"	85 F/04	X		X		X		61° 07' 25.6"	117° 58' 18.5"	50
			61° 07' 07.35"	117° 58' 05.3"										

Operations and Maintenance of NWT Public Highways and Other transportation Infrastructure
SOUTH SLAVE - DEH CHO REGION

Quarries/Granular Material Sources, Stockpile Locations and Temporary Construction/Work Camps

Site Location			Map Co-ordinates			Site Usage					Comments	Access		
Kilometre	Offset	Size (ha)	Latitude	Longitude	Map Sheet	Pitrun Granular	Bedrock Quarry	Stockpile Site	Sand/Salt Storage Facility	Temporary/Seasonal Camp		Latitude	Longitude	Total Length (metres)
217	left	19.3	61° 06' 59.1"	117° 59' 50.0"	85 F/04	X		X		X	NEW	61° 07' 02.5"	117° 59' 45.6"	100
			61° 07' 05.6"	117° 59' 28.4"										
			61° 06' 56.9"	117° 58' 49.3"										
			61° 06' 52.6"	117° 59' 39.9"										
217	right	18.8	61° 07' 34.0"	118° 00' 23.2"	85 F/04	X		X		X	NEW	61° 07' 02.0"	117° 59' 55.2"	500
			61° 07' 14.6"	118° 00' 01.6"										
218	right	19.8	61° 07' 02.4"	118° 01' 27.0"	85 E/01	X		X		X	NEW	61° 06' 48.9"	118° 00' 57.9"	30
			61° 07' 09.0"	118° 01' 04.6"										
			61° 06' 52.9"	118° 00' 42.0"										
			61° 06' 52.0"	118° 01' 14.0"										
239.5	left	10.8	61° 02' 55.6"	118° 21' 02.5"	85 E/01	X		X		X	NEW	61° 02' 57.5"	118° 21' 16.4"	250
			61° 02' 47.1"	118° 20' 16.6"										
			61° 02' 42.9"	118° 20' 19.9"										
			61° 02' 50.6"	118° 21' 05.1"										
241.1	left	48.2	61° 03' 14.9"	118° 23' 18.6"	85 E/01	X	X	X		X		61° 03' 15.6"	118° 22' 39.2"	300
			61° 02' 51.0"	118° 22' 35.2"										
242.5	left	70.8	61° 03' 26.3"	118° 25' 26.3"	85 E/01		X	X		X	NEW	61° 03' 25.1"	118° 24' 07.2"	300
			61° 02' 59.8"	118° 23' 57.6"								61° 03' 32.8"	118° 25' 33.2"	
260.2	right	579.0	61° 06' 04.4"	118° 43' 06.9"	85 E/02	X	X	X		X	Expanded Area	61° 05' 29.1"	118° 42' 33.5"	30
			61° 05' 27.0"	118° 37' 35.2"										
Kakisa Access Road														
1.9	left	78.7	60° 58' 16.7"	117° 14' 46.6"	85 C/14	X	X	X		X	Expanded Area	60° 58' 03.2"	117° 14' 42.3"	30
			60° 57' 57.8"	117° 13' 17.0"										

LAND USE PERMIT APPLICATION

Operations and Maintenance of NWT Public Highways and Other Transportation Infrastructure
SOUTH SLAVE - DEH CHO REGION

MACKENZIE HIGHWAY (NWT No.1) CORRIDOR, km 0 to km 278 - THE WATERFALL ROUTE

WATER EXTRACTION SOURCES and ESTIMATED CONSTRUCTION/WORK CAMP WATER REQUIREMENTS

Site Location		Map Co-Ordinates			Source Information		Comments
km	Offset	Latitude (N)	Longitude (W)	NTS Map Sheet	Description	Approximate Annual Volume (cu. Metres)	
Yellowknife Highway (NWT No.3)							
2.9		60° 01´ 07.0"	116° 57' 03.4"	85 C/02	Reindeer Creek	680	
29.0		60° 10´ 59.2"	116° 40' 25.0"	85 C/02	(Bluefish) Creek	340	
41.0	left	60° 16´ 21.4"	116° 34' 01.0"	85 C/07	Swede Creek	680	
66.9	left	60° 27´ 30.6"	116° 19' 55.5"	85 C/08	Abandoned Quarry Pit	1190	
92.9	left	60° 36´ 03.8"	116° 15' 33.3"	85 C/09	Abandoned Borrow Pit	850	
120.1		60° 46´ 40.3"	116° 34' 39.8"	85 C/15	McNalley Creek	680	
130.1	left	60° 50´ 24.4"	116° 38' 46.8"	85 C/15	Hart Lake	850	
148.4	left	60° 55´ 48.1"	116° 55' 20.8"	85 C/15	Pond	340	
162.4	left	60° 57´ 01.1"	117° 09' 21.9"	85 C/14	Pond	340	
189.0	left	61° 04´ 27.3"	117° 31' 18.6"	85 F/04	Pond	1000	
198.8	left	61° 06´ 47.6"	117° 40' 10.2"	85 F/04	Pond	1190	
209.1	right	61° 08´ 13.3"	117° 52' 52.2"	85 F/04	Abandoned Borrow Pit	340	
210.9	left	61° 07´ 51.5"	117° 54' 48.7"	85 F/04	Abandoned Borrow Pit	200	
232.9	left	61° 05´ 08.0"	118° 17' 49.9"	85 E/01	Abandoned Borrow Pit	200	
237.3	left	61° 03´ 17.7"	118° 19' 58.3"	85 E/01	Abandoned Borrow Pit	200	
241.1	left	61° 03´ 08.6"	118° 22' 53.2"	85 E/01	Abandoned Borrow Pit	200	
249.5	left	61° 03´ 36.3"	118° 32' 08.6"	85 E/02	Creek	200	
251.2	left	61° 03´ 57.8"	118° 34' 02.4"	85 E/02	Abandoned Borrow Pit	340	

LAND USE PERMIT APPLICATION

Operations and Maintenance of NWT Public Highways and Other Transportation Infrastructure
SOUTH SLAVE - DEH CHO REGION

MACKENZIE HIGHWAY (NWT No.1) CORRIDOR, km 0 to km 278 - THE WATERFALL ROUTE

WATER EXTRACTION SOURCES and ESTIMATED CONSTRUCTION/WORK CAMP WATER REQUIREMENTS

Site Location		Map Co-Ordinates			Source Information		Comments
km	Offset	Latitude (N)	Longitude (W)	NTS Map Sheet	Description	Approximate Annual Volume (cu. Metres)	
260.7		61° 05´ 29.0"	118° 43' 10.2"	85 E/02	Axe Handle Creek	850	
264.1	left	61° 05´ 42.3"	118° 47' 01.1"	85 E/02	Abandoned Borrow Pit	340	
265.5	right	61° 05´ 52.8"	118° 48' 31.6"	85 E/02	Abandoned Borrow Pit	200	
267.8	left	61° 06´ 15.6"	118° 51' 17.2"	85 E/02	Abandoned Borrow Pit	200	
270.1	right	61° 06´ 48.5"	118° 57' 11.7"	85 E/02	Abandoned Borrow Pit	200	
273.1	left	61° 07´ 18.8"	118° 57' 13.0"	85 E/02	Pond	200	
			TOTAL ESTIMATED WITHDRAWAL/EXTRACTION :			11810	
NOTE:							
All Potable Water requirements for temporary construction/work camps will be purchased from the communities of Yellowknife or Behchoko. It is estimated that the average construction/work camp will require approximately 200 litres of water per man or approximately 10 m³ per day for a maximum of 100 days per year, or an estimated Annual Requirement of 1,000 m³							

Government of the Northwest Territories

Department of Transportation

NWT Highway #1 (Km 0-278)

Spill Contingency Plan

March 2017

Environmental Affairs
Department of Transportation
Government of the Northwest Territories

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APPENDIX BNorthwest Territories Spill Report Form

1.0 INTRODUCTION

This Spill Contingency Plan (SCP) has been developed by the Government of the Northwest Territories (GNWT) Department of Transportation (DOT) for use during operations and maintenance (O&M) activities on NWT Highway #1 (Km 0-278). This spill contingency plan will be implemented for all activities undertaken for the life of the renewed land use permit.

The purpose of the SCP is to provide a guide to all on-site DOT personnel in the event of an accidental release of fuel or other waste during the O&M activities. All persons involved with the licenced activities should read and be familiar with the SCP. To be effective, it is important that all personnel are familiar with their responsibilities and steps to take in the event of a spill. **Personnel should not read the SCP for the first time during an emergency.**

This SCP has been developed for land use permit and regulatory approvals in accordance with the Guidelines for Spill Contingency Planning prepared by Indian and Northern Affairs Canada (INAC) (2007). The Contractor is required to submit a Spill Contingency Plan which will meet or exceed the features of this SCP and can be provided to the appropriate regulatory authorities once complete.

2.0 PROJECT DESCRIPTION

The 'operation' will consist of the following:

- The 'Operation' will consist of the following: - The continuous and ongoing operation and maintenance of the existing NWT Public Highway system within the permit corridor along the Mackenzie Highway (NWT #1) Corridor between kilometer 0 (AB/NWT Border) and kilometer 278 (Bouvier Creek) and includes:
 - Mackenzie Highway (NWT #1) Km 0-278;
 - The Kakisa and Hart Lake Access Roads;
 - Pullouts and rest areas; and,
 - Other minor roads and accesses along Mackenzie Highway Corridor – Waterfall Route and as listed under the Public Highways Act for the Government of the NWT, and includes all highways, roadways and other transportation infrastructure.
- All operations and maintenance activities will be undertaken following the standards for highway maintenance as outlined in the Highway Maintenance Standards Manual, normal construction practices and in accordance with the various regulatory agencies, as applicable. Work activities will also include roadway and right-of-way maintenance, rehabilitation and reconstruction; bridge structures maintenance and replacement; culvert maintenance and replacement; establishment

and maintenance of drainage channels; excavation of granular materials; production of aggregates and roadway surfacing.

- The Permit area will be two (2) kilometers in width, one (1) kilometer on each side of the existing public highway/roadway centerline through the entire length of the permit corridor including access and minor roads as listed in the Public Highways Act;
- To access existing or future quarry areas within and outside the two (2) kilometer corridor;
- To develop new or further develop existing borrow areas to obtain granular borrow materials, common materials, blast rock (including use of explosives), rip-rap, clay, sand and gravel, from areas outside the existing 60 meter wide Public Highway corridors through applications to the GNWT-Department of Lands for Quarrying Permits;
- To carry out geotechnical investigations in the search for gravels and rock and for gathering preliminary engineering information for the design of foundations for roadways, bridges and other structures (as required);
- To place and maintain granular stockpiles at existing or approved quarry sites for the purpose of ongoing operations and maintenance of the public highway system within the permit corridor;
- To place temporary construction/work camps at existing quarry or previously developed sites within the permit corridor for the purpose of carrying out operations and maintenance of the public highway system and other roadways within the permit corridor;
- To temporarily store construction, operations and maintenance equipment at the various existing quarry or other previously developed sites within the permit corridor while carrying out these activities in the area;
- To access water sources for the ongoing operations and maintenance for the public highway system within the permit corridor;
- To have right of access to one kilometer (1000 meters) on each side (left and right) to the public highway/roadway center line for the purpose of carrying out granular and geotechnical investigations, quarry pit development, drainage channel construction, stockpiling granular and other construction materials and placement of temporary construction/work camps;
- To construct and maintain sand and sand/salt storage facilities at strategic locations along the designated highway corridor; and,
- To construct, operate and maintain pullouts/rest areas at strategic locations along the designated highway corridor.

2.1 POTENTIAL CONTAMINANTS

Over the course of the Project, several contaminants may be used by equipment and crews working within or near the project footprint. These potential contaminants are listed below and may be involved in a spill:

- Gasoline
- Diesel
- Hydraulic oil
- Motor oil
- Lubricating oils and grease
- Antifreeze and other coolants
- Contaminated soil, snow/ice and/or water

Spills may result from any of the following occurrences:

- Leaks or ruptures of fuel storage drums or tanks;
- Vehicular accidents;
- Valve or line failure in systems, vehicles or heavy equipment;
- Spill during transfer of contaminant(s);
- Heat expansion due to overfilling or improper storage;
- Vandalism;
- Improper storage of contaminants.

3.0 RESPONSE ORGANIZATION

Whenever a spill is identified, the Contractor and the DOT representative will be contacted as soon as possible. The Contractor is responsible for initiating the SCP. The Contractor will be identified through a public tender process to be initiated after permits are obtained. Contact information for the DOT is provided in Table 3-1 below; the table will be updated following selection of the Contractor.

Table 3-1: Spill Contingency Contacts for Operations and Maintenance of Highway #7

DOT Contact Information	Contractor Contact Information
-------------------------	--------------------------------

Binay Yadav Head, Technical Services Highways Department of Transportation – GNWT Yellowknife, NT X1A 2L9 Phone: (867)767-9086 ext. 31146 Fax: (867)873-0288	To be added.
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4.0 INITIAL RESPONSE UNDER ANY SPILL CIRCUMSTANCES

The following actions should be taken by the first person(s) who identifies a spill:

1. Be alert and considerate of your safety and of those around you. If possible, identify the spilled contaminant. Notify your supervisor immediately.
2. Assess the hazard to persons in the area of the spill, including yourself.
3. Assess whether the spill can be readily stopped or brought under control.
4. If safe to do so, and if possible, stop the spillage of contaminant and/or provide containment.
5. Gather information about the status of the situation and the direction of flow.
6. Consult the workplace Spill Contingency Plan and implement measures provided.
7. Report the spill immediately to the **24-Hour Emergency Spill Report Line (867)920-8130**.

NOTE: If the spill was the result of contractor or user actions, they should enact their own spill response procedures according to their Spill Contingency Plan. See Section 6.1 for more information on spill response procedures.

5.0 REPORTING PROCEDURE

All spills or potential spills of contaminants must be reported to the 24-hour Northwest Territories - Nunavut Emergency Spill Report Line to ensure that an investigation may be undertaken by the appropriate government authority. Reporting of any spills associated with the Project will be completed by the Contractor or the DOT site representative.

To report a spill:

1. Fill out the Northwest Territories Spill Report Form (found in Appendix B of this SCP) as completely as possible before calling in the spill report.

2. Contact the Government of the Northwest Territories 24-hour Emergency Spill Report Line

24-HOUR EMERGENCY SPILL REPORT LINE 867-920-8130

3. Where fax is available, **fax** the completed Northwest Territories Spill Report Form to **867-873-6924**. Alternatively, if email is available, email the completed Northwest Territories Spill Report Form to spills@gov.nt.ca

Any person reporting a spill is required to give as much information as possible, however reporting of a spill should not be delayed if all of the necessary information is not known. Additional information can be provided later.

From the *Consolidation of Spill Contingency Planning and Reporting Regulations* (1998), **as much of the following information should be reported** during the initial spill report:

- Date and time of spill
- Location of spill
- Direction spill is moving
- Name and phone number of a contact person close to the location of the spill
- Type of contaminant spilled and quantity
- Cause of spill
- Whether spill is continuing or has stopped
- Description of existing contaminant
- Action taken to contain, recover, clean up, and dispose of spilled contaminant
- Name, address and phone number of person reporting the spill
- Name of owner or person in charge, management or control of contaminants at the time of the spill

6.0 ACTION PLANS

6.1 SPILL PREVENTION

The most likely spill possibilities during the Project would be leakage or line failure from heavy equipment or other vehicles, spilling during fuel transfer, or vehicular accident. No contaminants will be stored onsite and all equipment will be stored at least 100 metres from the water, within the right-of-

way. Fuel will be transferred via a fuel truck, and will not occur within 30 metres of the water's edge; drip trays will be used during fuel transfer.

The likelihood of a major spill as a result of O&M activities is negligible as large quantities of contaminants will not be stored within the Project area. Where drips or spills occur they will be cleaned up immediately. Further, spill response kits will be kept in all vehicles.

The risk of spills will be further reduced through regular inspection and maintenance of all heavy equipment and vehicles associated with the permitted activities. These activities may include, but not be limited to:

- Routine checks of fuel transfer hoses and equipment;
- Inspection of fuel and oil lines on all equipment;
- Completing on-site fuel transfer over spill pads/trays and a minimum of 100 m from the high water mark;
- Monitoring of tank volume during fuel transfer;
- Cleaning up drips and minor spills immediately; and,
- Ensuring the quick repair of any identified deficiencies on heavy equipment or other vehicles.

6.2 SPILL RESPONSE

The following steps outline the general spill response procedures for initial actions to be taken to contain and clean up a contaminant spill, as well as disposing of contaminated materials. Two procedures have been developed for handling contaminant spills, depending on where the spill has occurred (i.e., on snow/ice, or on land).

6.2.1 SPILLS ON SNOW/ICE

1. Once a spill is identified, all sources of ignition should be turned off (e.g., no smoking, shut off engines).
2. The spilled material (e.g., gasoline, diesel, antifreeze, etc.) should be identified, if possible.
3. The affected area should be secured, ensuring the area is safe for entry and does not represent a threat to human health and safety of the spill responders. Public access of the area should be restricted.
4. If possible, identify where the spill is coming from (the source). Determine if the spill is still occurring (i.e., still leaking) or if the spillage has stopped. If the spill has not stopped, determine if it is safe to stop or control the spill (e.g., plug hole, close valve, upright container).

5. If the spill is too large to be controlled with the spill materials at hand, contact the Contractor or the DOT site representative and report the spill immediately and request assistance (see Section 3 for contact information). Use materials on hand to attempt to control the spill.
6. If the spill is small enough to be controlled with the spill response materials at hand, prevent spilled contaminants from spreading or entering waterways by using sorbent materials or a snow/soil dyke down slope from the spill. This is especially the case with liquid contaminants (e.g. gasoline, diesel).
7. Once the spill has been controlled and further spreading prevented, contact the Contractor or the DOT site representative and report the spill (see Section 3 above for contact information). The Contractor or the DOT representative is responsible to report the spill to the 24-Hour Emergency Spill Report Line.
8. If possible with the spill response materials at hand, clean up the remaining spilled contaminant and store contaminated materials in a secure container for disposal. Impacted snow should be stored in drums for proper disposal.

6.2.2 SPILLS ON LAND

1. Once a spill is identified, all sources of ignition should be turned off (e.g., no smoking, shut off engines).
2. The spilled material (e.g., gasoline, diesel, antifreeze, etc.) should be identified, if possible.
3. The affected area should be secured, ensuring the area is safe for entry and does not represent a threat to human health and safety of the spill responders. Public access of the area should be restricted.
4. If possible, identify where the spill is coming from (the source). Determine if the spill is still occurring (i.e., still leaking) or if the spillage has stopped. If the spill has not stopped, determine if it is safe to stop or control the spill (e.g., plug hole, close valve, upright container), or contain the spill (e.g., place a container or tarp with built up edges under the spill source to contain the spill).
5. If the spill is too large to be controlled with the spill materials at hand, contact the Contractor or the DOT site representative and report the spill immediately and request assistance (see Section 3 for contact information). Use materials on hand to attempt to control the spill.
6. If the spill is small enough to be controlled with the spill response materials at hand, prevent spilled contaminants from spreading or entering waterways by using sorbent (oil-absorbing) materials or a soil dyke down slope from the spill. This is especially the case with liquid contaminants (e.g. gasoline, diesel).

7. Once the spill has been controlled and further spreading prevented, contact the Contractor or the DOT site representative and report the spill (see Section 3 for contact information). The Contractor or the DOT site representative is responsible to report the spill to the 24-Hour Emergency Spill Report Line.

8. If possible with spill response materials at hand, clean up the remaining spilled contaminant and store contaminated materials in a secure container for proper disposal. Do not flush the affected area with water.

9. If possible, remove any contained liquid by pumping into secure drums.

6.3 COMMUNICATIONS PLAN

In the unlikely event of a large spill which could reasonably be expected to enter the surrounding water bodies, it may be necessary to alert the neighbouring community of Fort Resolution. In these circumstances the DOT contacts listed in section 3 will have primary responsibility for ensuring communication following the Department's policy.

Key contact information:

Hamlet of Enterprise	(867) 394-3491
Enterprise RCMP	(867) 984-1111
Enterprise Fire Response	(867) 984-2222
Hay River RCMP	(867) 874-1111
Hay River Fire Response	(867) 874-2222
Mackenzie Valley Land and Water Board	(867) 669-0506
Environmental Protection Division, Department of Environment and Natural Resources, GNWT	(867) 873-7654
GNWT Lands (Inspector)	(867) 874-6995 extn. 24
Fisheries and Oceans Canada (Yellowknife)	(867) 669-4900
Medivac (Yellowknife)	(867) 669-4115
Environment and Natural Resources (ENR)	(867) 873-7654
Emergency Measures Organization (EMO)	(867) 873-7554
GNWT Environmental Health Office	(867) 669-8979
ECCC Environmental Enforcement	(867) 669-4730
ECCC National Environmental Emergencies Centre	1-866-283-2333

7.0 RESOURCE INVENTORY

7.1 ON-SITE RESOURCES

7.1.1 PERSONNEL

All personnel hired to work on the Project will be familiar with on-site in spill prevention, response and clean-up measures (see Section 6).

7.1.2 EQUIPMENT

The following is a list of equipment that is typically used for the ongoing operation and maintenance of highways. Equipment and attachments listed may vary slightly as a result of make and model, and no specific numbers for equipment are listed as numbers are depended on the level of service being provided. Equipment from the following list will be available to respond to potential spills:

Equipment	Size	Purpose
Tracked Dozers	D3 through D9	Clearing right-of-way, drainage channels and granular borrow site, clearing granular investigation cutlines, pushing roadway construction material on the roadway and in borrow area, pushing borrow materials and leveling stockpiles, etc.
Hydraulic Excavators (Wheeled and Tracked)	E70 through 245B	Excavating drainage channels, excavating at culvert removal and installation sites, excavating at bridge sites, excavating borrow sites and loading haul vehicles, making repairs to roadway embankment, clearing right-of-way, granular investigations (test pitting), etc.
Loaders (Wheeled and Tracked)	Various	For loading haul trucks, moving granular materials at work areas, stockpiling granular materials, feeding crusher and asphalt plants, etc.
Motor Graders	Various	For roadway maintenance and road repairs, grading granular surfacing, right-of-way maintenance, snow ploughing,

		borrow source maintenance, etc.
Compaction Equipment	Various	To compact roadway surface and surfacing, compact roadway embankment, compact around culvert installations, etc.
Asphaltic Pavers	Various	To place asphaltic surfacing.
Rotary Drills	Various	To carry out granular and geotechnical investigations, prepare for piling installations at bridge or ferry sites, to prepare for blasting at quarry sites, etc.
Gravel Crushing Plants (Cone and Jaw)	Various	To produce specified granular materials
Single Axle, Tandem Axle and Tridem Axle Haul Trucks	Various – water tankers, sewage tanks, rock, gravel, sanding trucks and plow trucks	For snow ploughing and road maintenance, watering on the road, hauling granular and rock materials to work site, stockpiling granular materials, gravel surfacing, sanding on the road, hauling construction materials, hauling water for work camps, sewage and waste removal.
Tractor Trailers	Various	To move equipment to, from and within work site and borrow areas (low/high boys), etc.
Rock Trucks	Various	To move rock between quarry areas, to haul construction materials within work area, etc.
Tractor Mowing Machines	Various	To clear right-of-ways.
Fuel Tankers	Various to 40,000 litres	To resupply fuel storage tank, to refuel equipment, etc.
Pile Drivers	Various	For installing piles at bridge sites and ferry facilities, etc.
Draglines	Various	For recovering granular materials dredging at bridge sites and ferry crossings, etc.
Cranes	Various	For hoisting and placing bridge components, removing and installing culverts, setting up asphalt and crushing plants, loading and unloading equipment, loading, unloading and placing temporary camp facilities, etc.

Service Vehicles	Various – pickup trucks, utility service trucks, flat decks, etc.	To support and maintain all equipment required for the ongoing operation and maintenance of the public highway system, roadways, access roads and airports/airstrips, etc.
Temporary Construction/Work Camp Facilities	2 to 40 man camps	To support delivery of the ongoing operation and maintenance of the public highway system, roadways, access roads and airports/airstrips, short term construction activities, temporary ice/winter road construction and maintenance camps along potential winter road portions of the permit area, etc.
Tree Harvesters/Mulchers	Various	For right-of-way clearing, borrow site clearing, etc.
Generators	Various	For temporary camps, lighting units, crusher plants, asphalt plants, to power small tools and equipment, etc.
Various small equipment – rock pickers, soil cultivators, roadway sweepers, post hole drills, post drivers, water pumps, rig mats, patching units, tar pots, tampers, compressors, jack hammers, etc.	Various	To support the delivery of the ongoing operation and maintenance of the public highway system, access roads, airports/airstrips, temporary construction camps, temporary ice/winter road construction and maintenance camps, etc.

7.1.3 SPILL KITS

7.1.3.1 SPILL KIT LOCATIONS

Spill kits are required onsite. The contractor will be responsible for ensuring that there are spill kits are accessible and located within the worksite.

7.1.3.2 SPILL KIT CONTENTS

The following outlines the recommended minimum requirements for contents of spill kits to be used during the Project; the Contractor is responsible to supply the spill kits. Each spill kit will be regularly inspected to ensure it always contains the following, at a minimum (in part from INAC 2007):

- 1 – 205 L open top steel drum with lid, bolting ring and gasket (spill kit container)
- 10 disposable large 5 mil polyethylene bags (dimensions 65 cm x 100 cm) with ties
- 4 – 12.5 cm x 3 m (5 in. X 10 ft.) sorbent booms
- 10 kg bag of sorbent particulate
- 100 sheets (1 bail) of 50 cm x 50 cm sorbent sheets
- 2 large (5 m x 5 m) plastic tarps
- 1 roll duct tape
- 1 utility knife
- 1 field notebook and pencil
- 1 rake
- 1 pick-axe
- 3 spark-proof shovels
- 4 Tyvex® splash suits
- 4 pairs chemical resistant gloves
- 4 pairs of splash protective goggles
- Instruction binder, including Spill Contingency Plan.

The entire spill kit contents, with the exception of the spark-proof shovels, can be stored within the 205 L steel drum. The drum will be sealed securely to protect the spill kit contents, though should always be accessible without the use of tools (i.e., finger tight bolt ring). The drum's bolt ring should be inspected regularly during inspections to ensure it turns freely and is lubricated.

Extra spill response materials should also be available for use, in addition to the spill kit contents.

8.0 TRAINING AND EXERCISES

8.1 OUTLINE

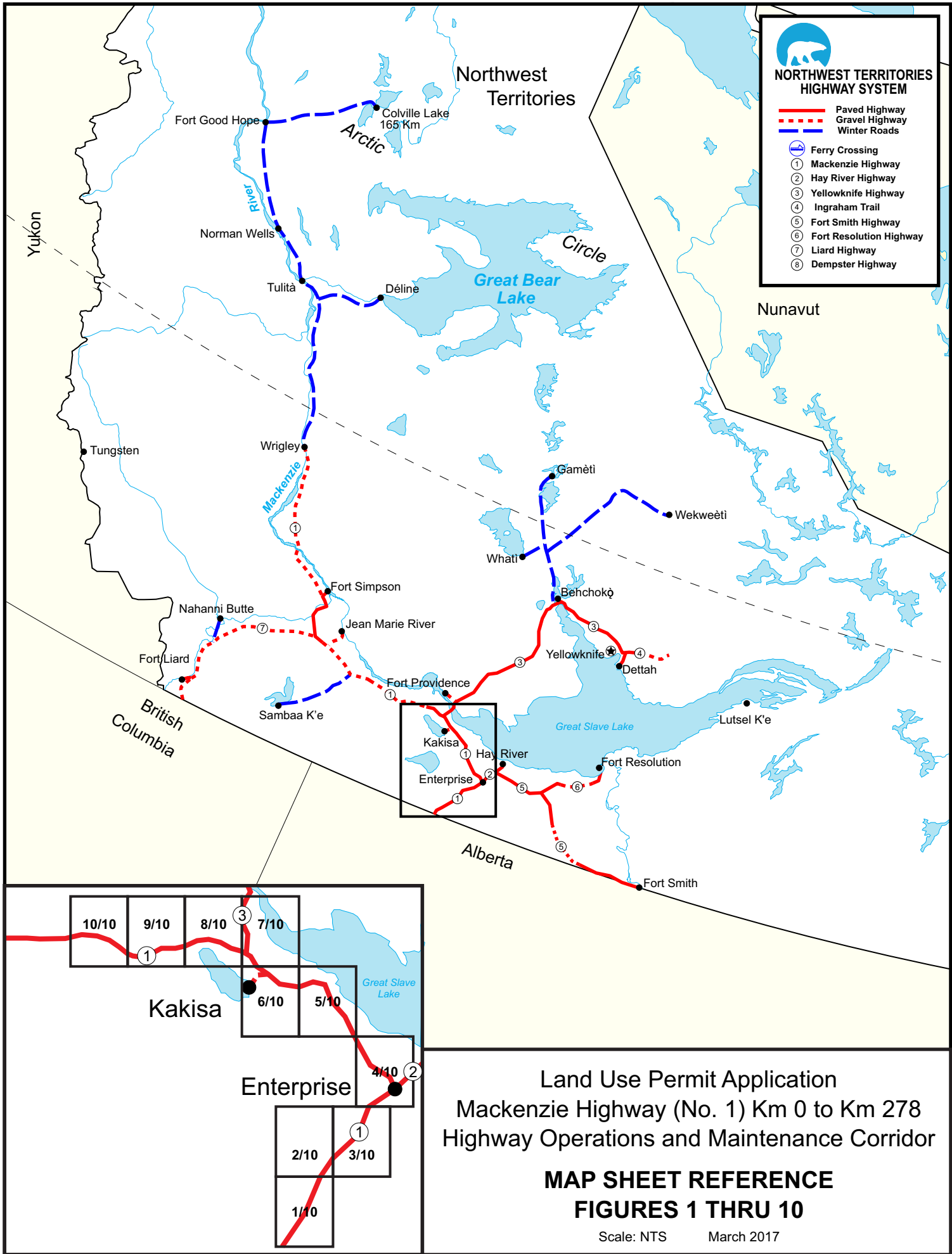
The Contractor will be responsible for providing a qualified supervisor and training site workers in spill response. All individuals hired to work on the Project should be familiar with spill response, basic first aid and WHMIS (Workplace Hazardous Materials and Information System) training before working on site.

9.0 REFERENCES

Indian and Northern Affairs Canada (INAC). 2007. Guidelines for Spill Contingency Planning. Water Resources Division, INAC, Yellowknife, NT Available online: <http://www.aadncaandc.gc.ca/eng/1100100024236/1100100024253> (18 September 2014).

APPENDIX A

Project Area



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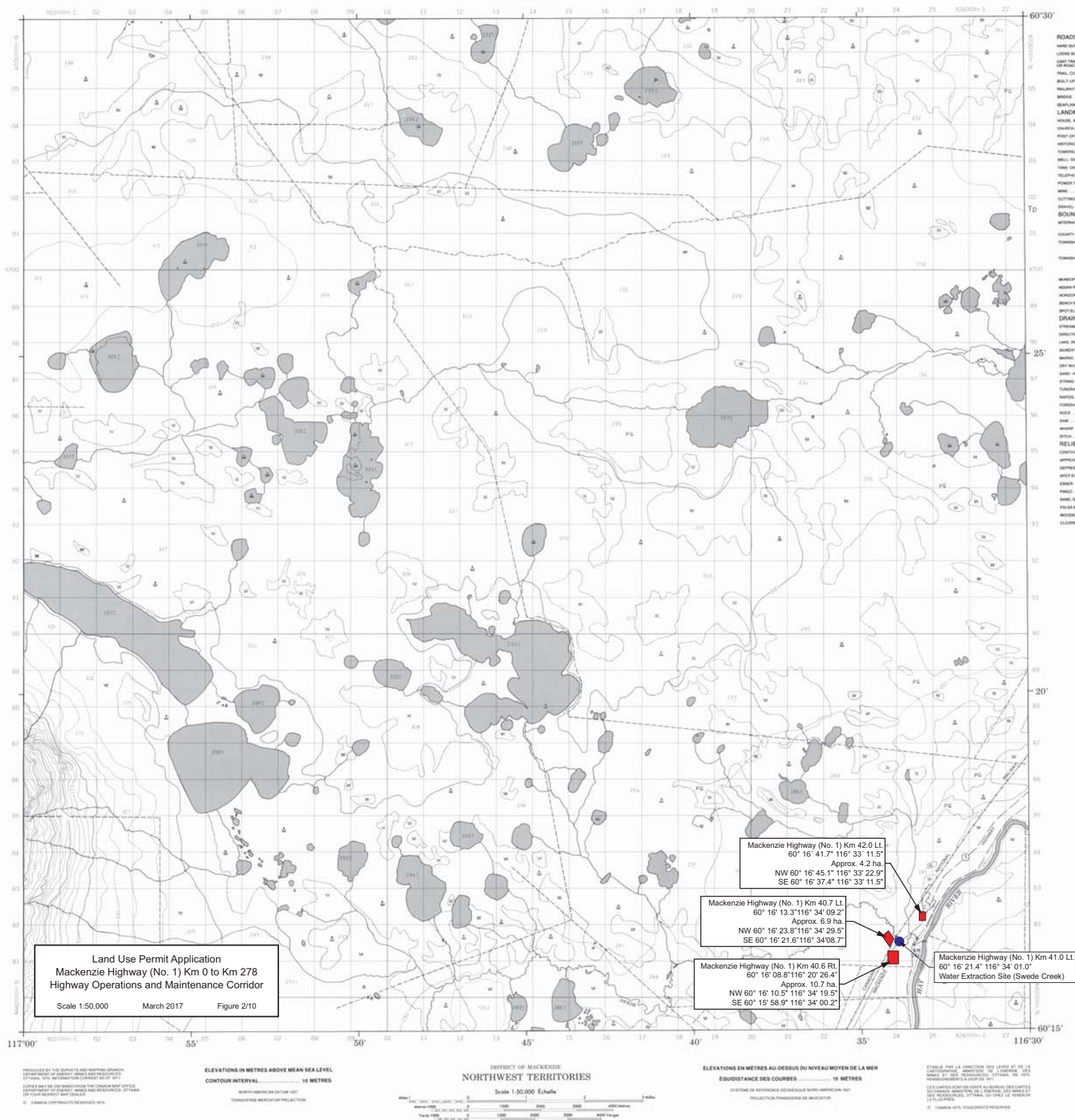


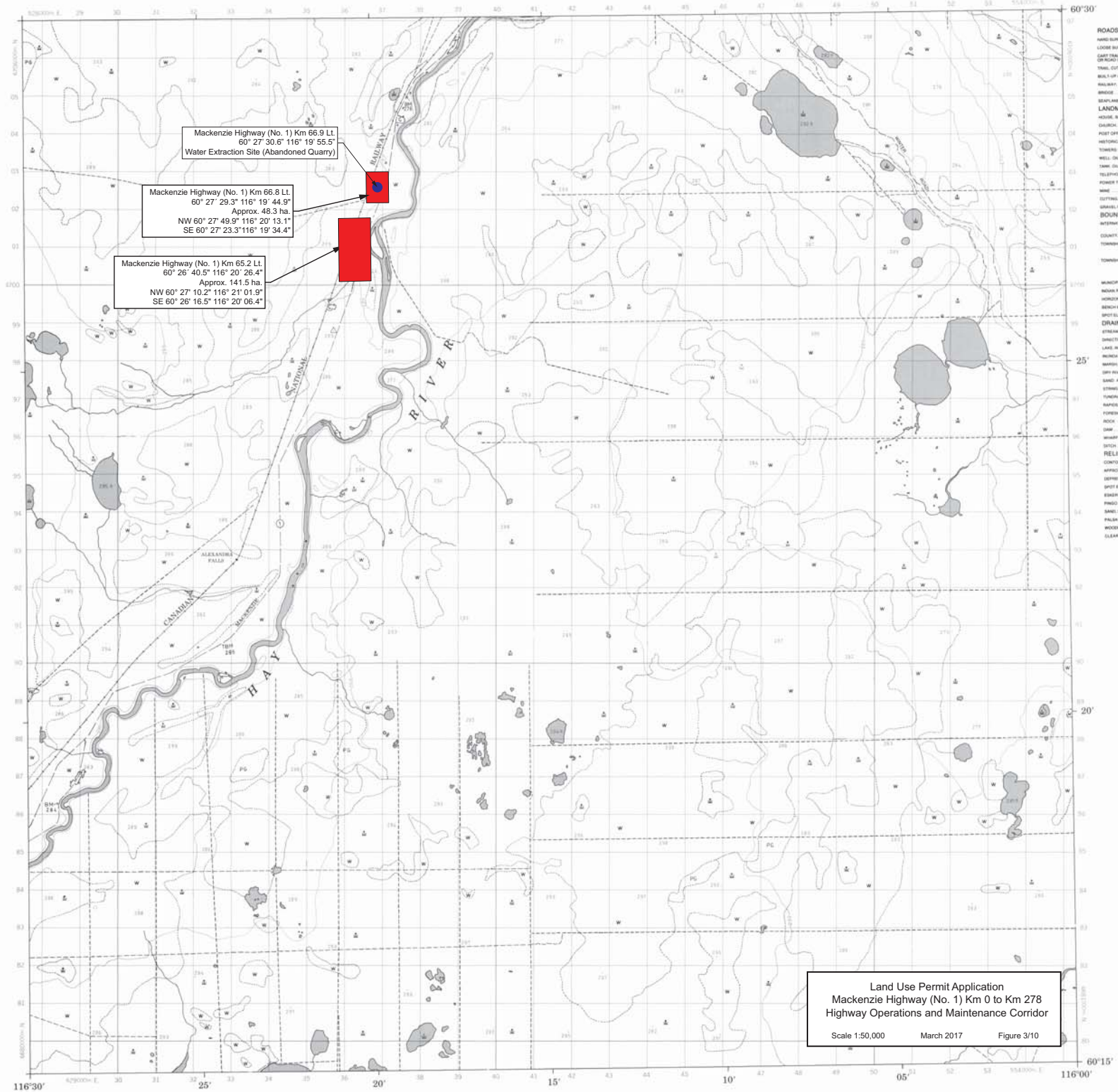
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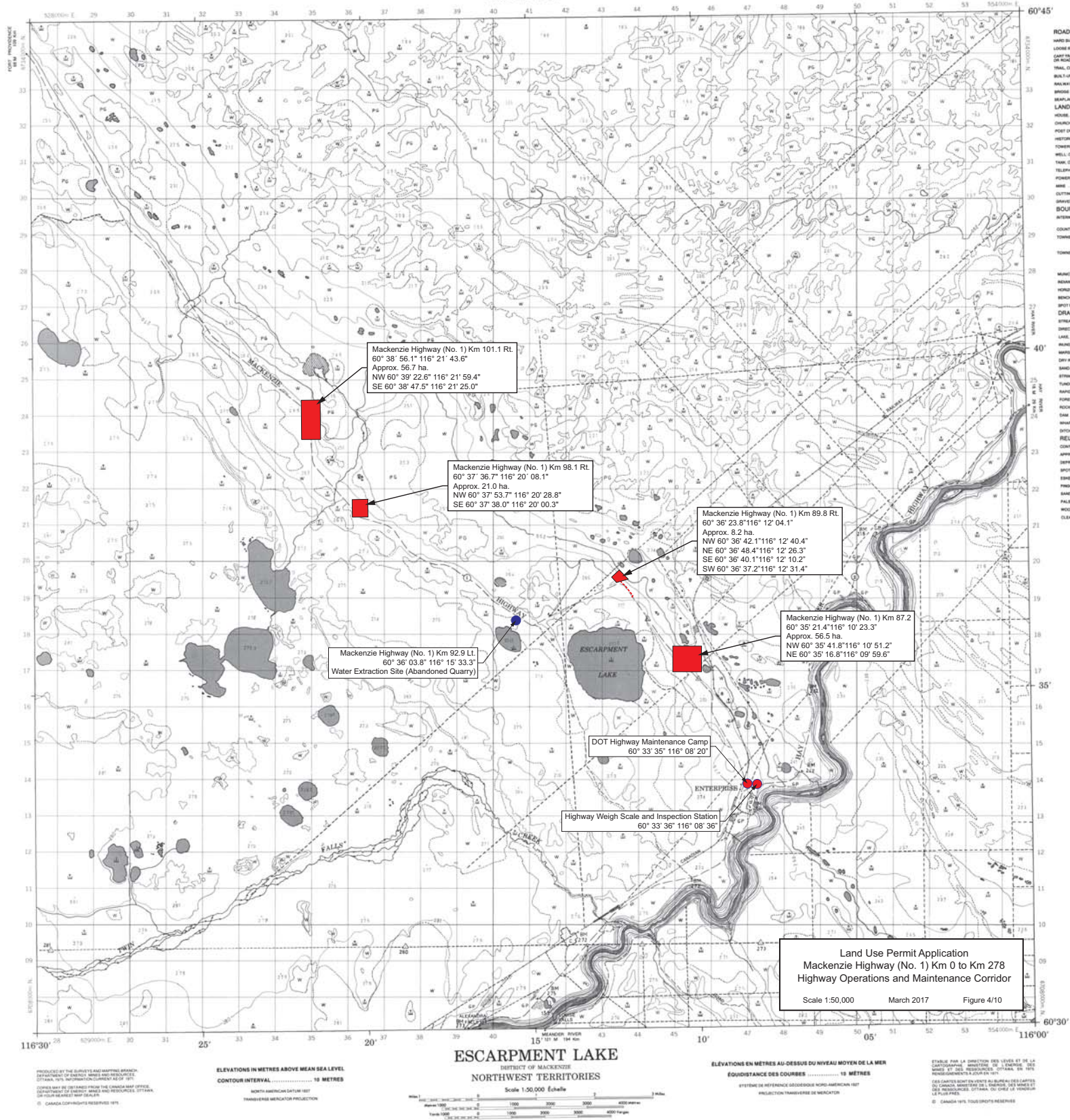
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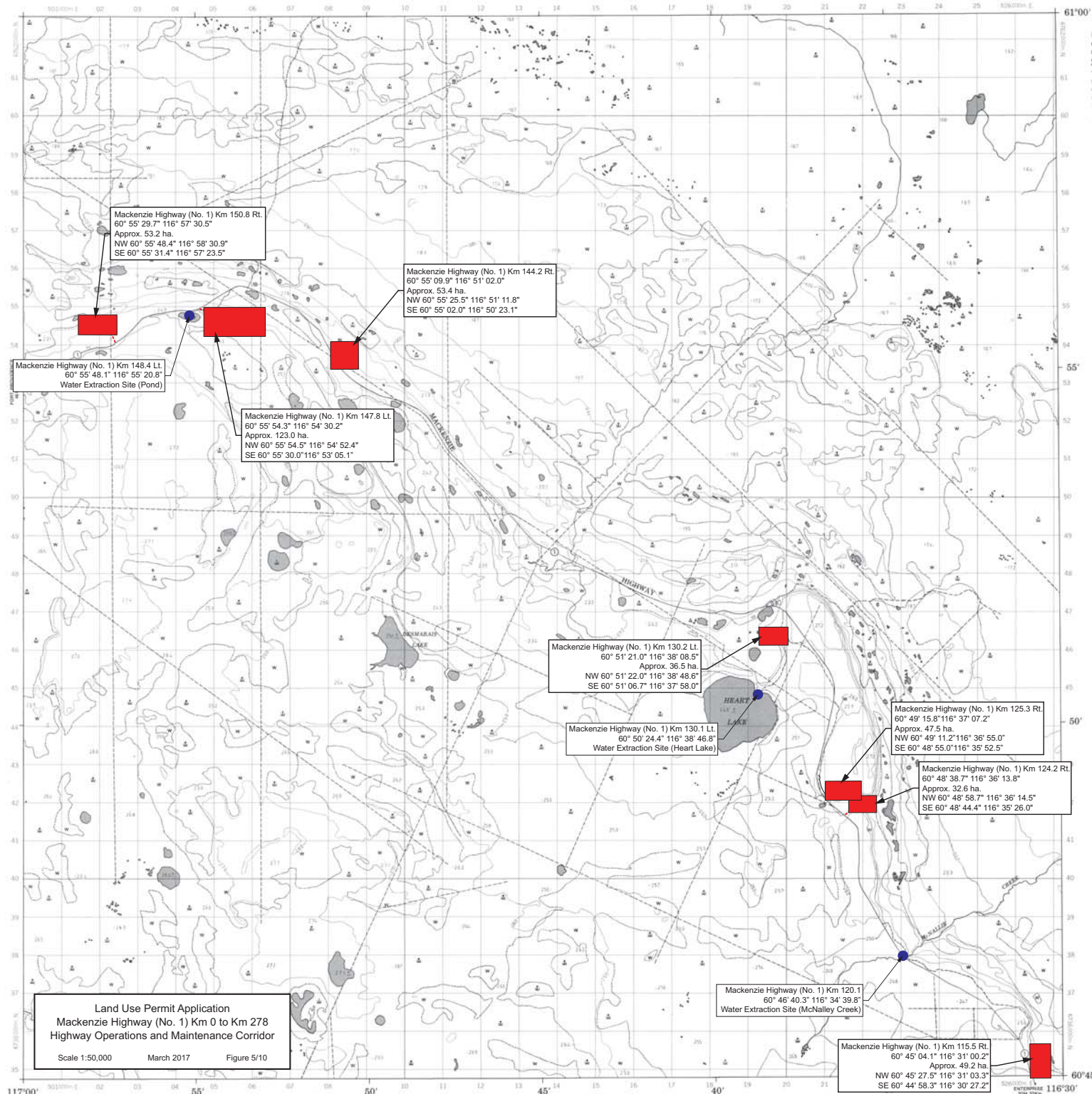






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HEART LAKE NORTHWEST TERRITORIES

Scale 1:50,000 Échelle

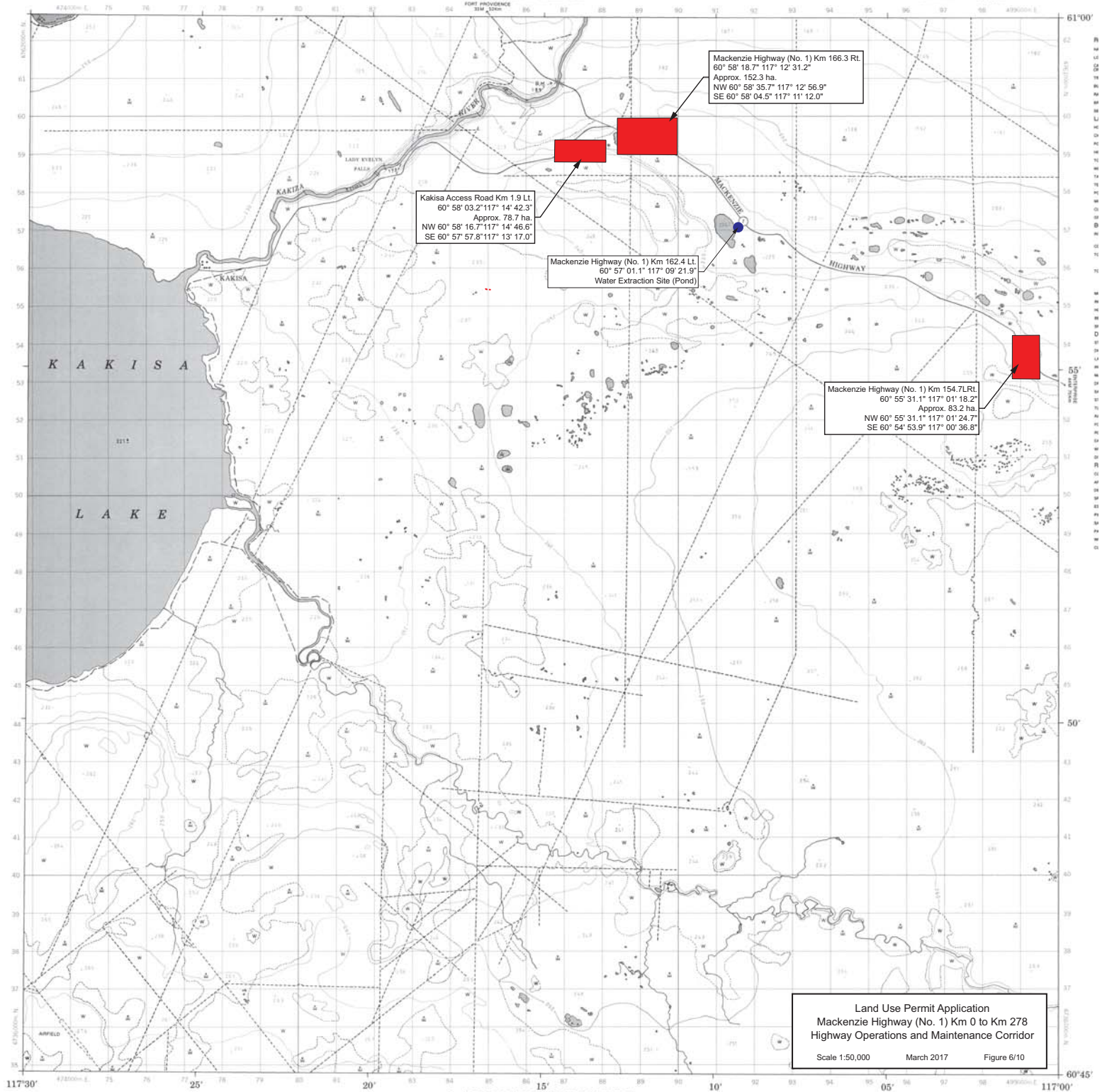


ELEVATIONS EN MÈTRES AU-DESSUS DU NIVEAU MOYEN DE LA MER
EQUIDISTANCE DES COURBES 10 MÈTRES

SYSTÈME DE RÉFÉRENCE GÉODÉSIQUE NORD AMÉRICAIN 1983
PROJECTION TRANSVERSE DE MERCATOR

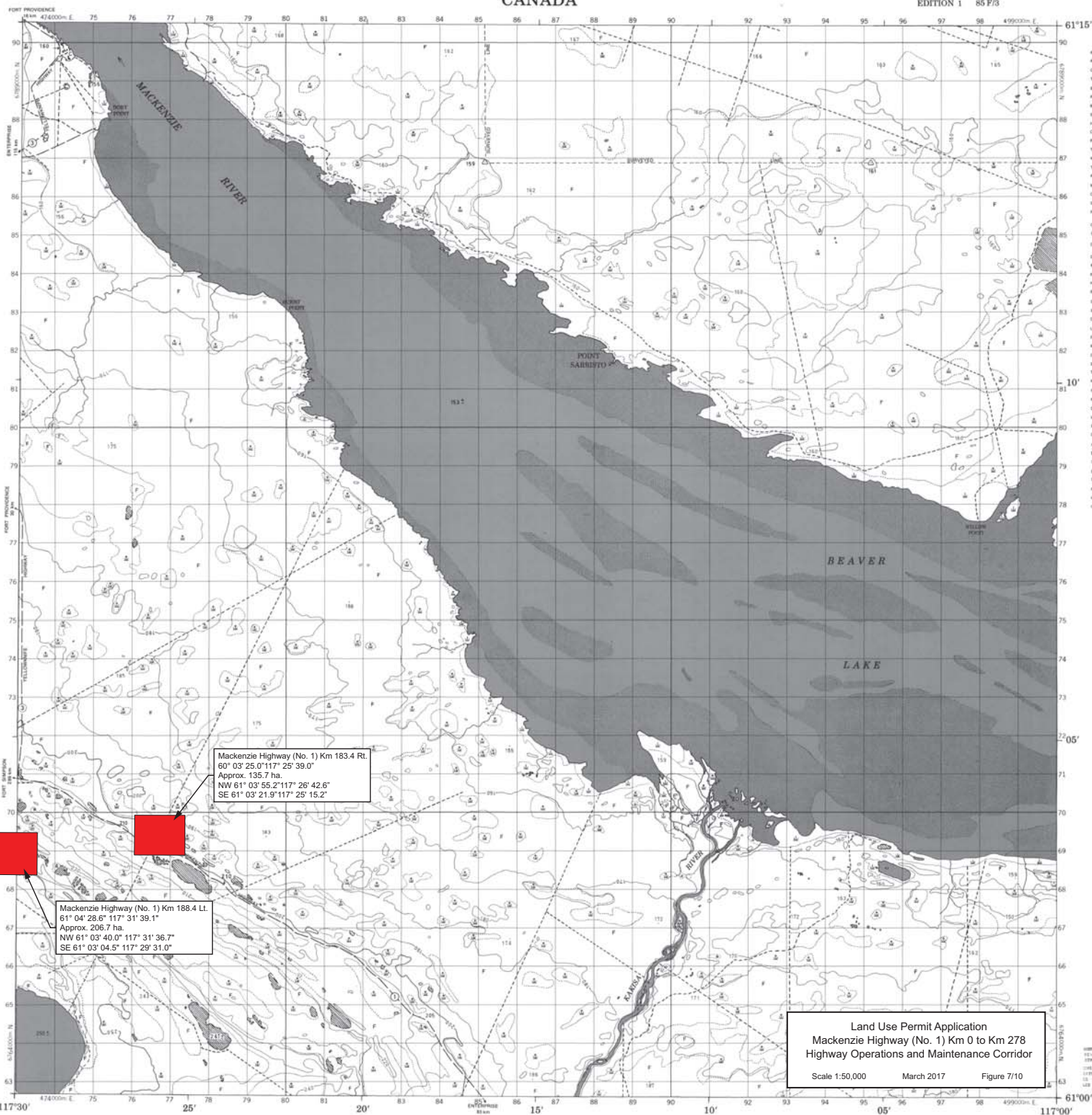
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ELEVATIONS IN METRES ABOVE MEAN SEA LEVEL
 CONTOUR INTERVAL 10 METRES
 NORTH AMERICAN DATUM 1987
 TRANSVERSE MERCATOR PROJECTION

POINT SARRISTO DISTRICT OF MACKENZIE NORTHWEST TERRITORIES

Scale 1:50,000 Echelle



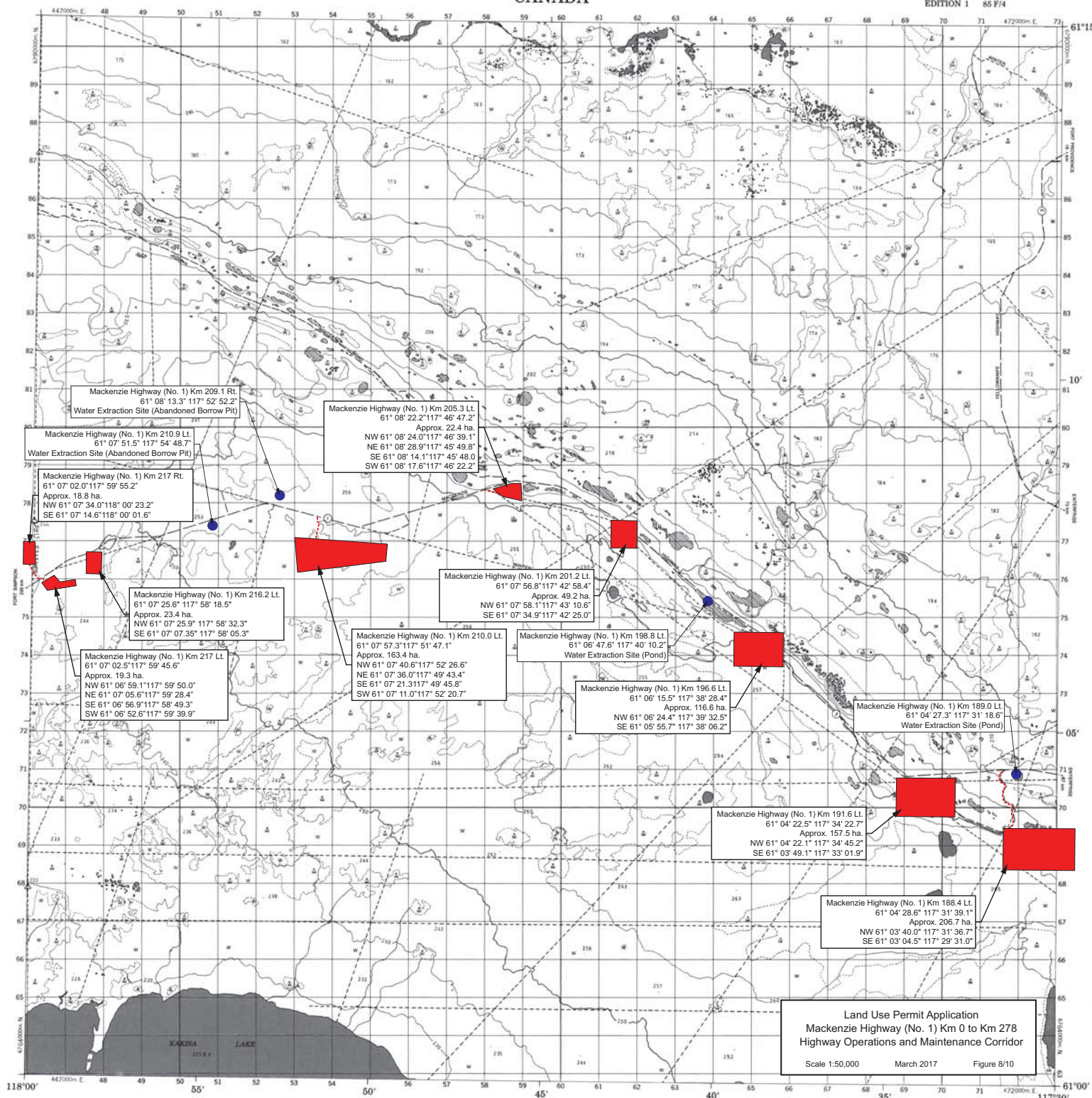
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CONTOUR INTERVAL 10 METRES
NORTH AMERICAN DATUM 1987
TRANSVERSE MERCATOR PROJECTION

DISTRICT OF MACKENZIE
NORTHWEST TERRITORIES

Scale 1:50,000 Echelle



ELEVATIONS EN MÈTRES AU-DESSUS DU NIVEAU MOYEN DE LA MER
EQUIDISTANCE DES COURBES 10 MÈTRES
SYSTÈME DE RÉFÉRENCE GÉO-CENTRIQUE NORD-AMÉRICAIN 1987
PROJECTION TRANSVERSE DE MÉRIDIEN

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ELEVATIONS IN METRES ABOVE MEAN SEA LEVEL
CONTOUR INTERVAL..... 10 METRES
NORTH AMERICAN DATUM 1985
TRANSVERSE MERCATOR PROJECTION

DISTRICT OF MACKENZIE
NORTHWEST TERRITORIES

ÉLEVATIONS EN MÈTRES AU-DESSUS DU NIVEAU MOYEN DE LA MER
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PROJECTION TRANSVERSALE DE MERCATOR

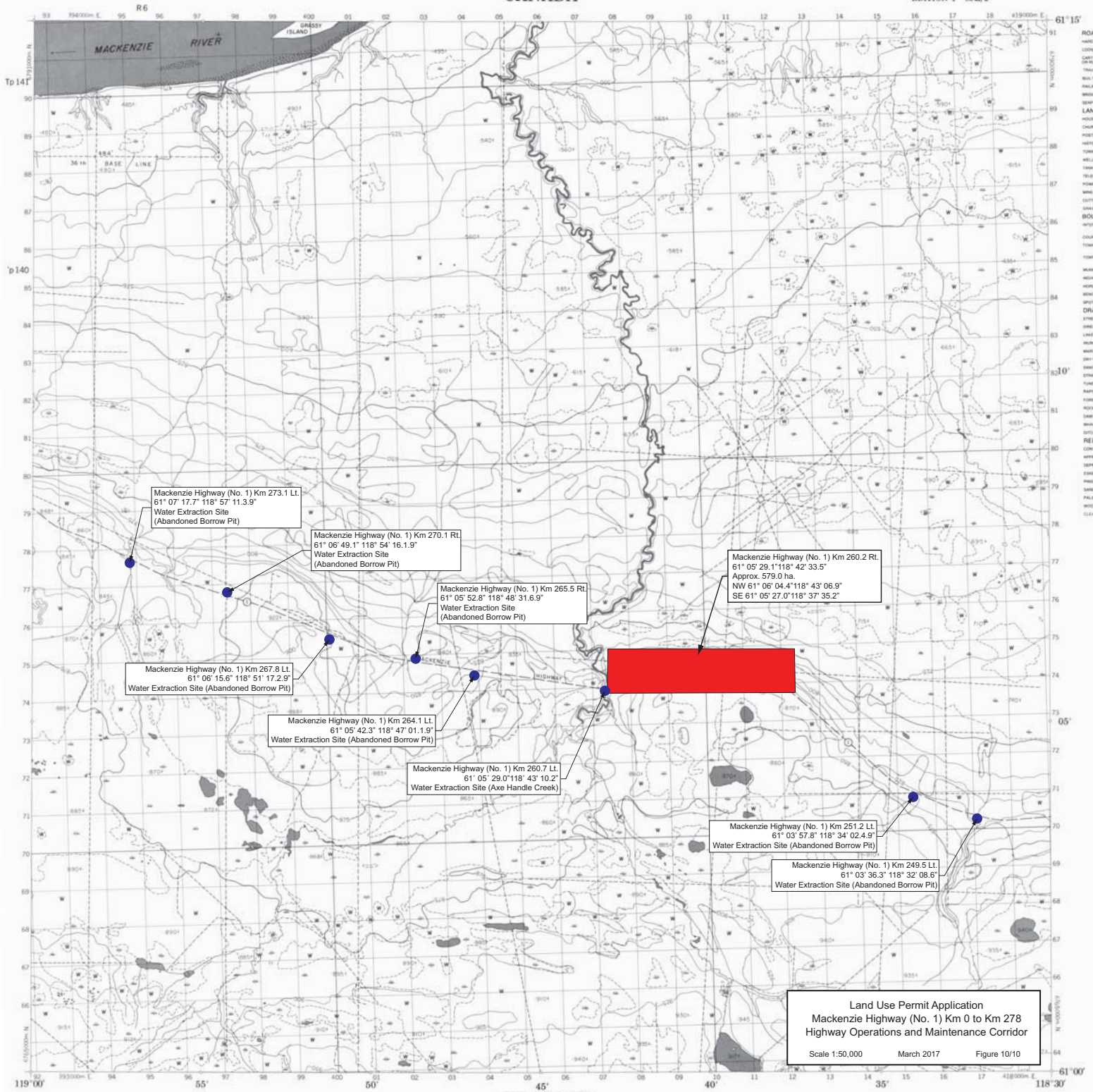
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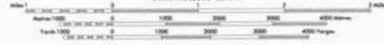
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AXE CREEK

(DISTRICT OF MACKENZIE)
NORTHWEST TERRITORIES

Scale 1:50,000 Echelle



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ÉQUIVALENCES DES COULEURS IMPRIMERIE

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APPENDIX B
Spill Report Form



Canada

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE

TEL: (867) 920-8130

FAX: (867) 873-6924

EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR		REPORT TIME		<input type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER _____
	OCCURRENCE DATE: MONTH – DAY – YEAR		OCCURRENCE TIME			
B	LAND USE PERMIT NUMBER (IF APPLICABLE)		WATER LICENCE NUMBER (IF APPLICABLE)			
C	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION				REGION <input type="checkbox"/> NWT <input type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN	
D	LATITUDE DEGREES MINUTES SECONDS		LONGITUDE DEGREES MINUTES SECONDS			
E	RESPONSIBLE PARTY OR VESSEL NAME		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION			
F	ANY CONTRACTOR INVOLVED		CONTRACTOR ADDRESS OR OFFICE LOCATION			
G	PRODUCT SPILLED		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES		U.N. NUMBER	
H	SECOND PRODUCT SPILLED (IF APPLICABLE)		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES		U.N. NUMBER	
I	SPILL SOURCE		SPILL CAUSE		AREA OF CONTAMINATION IN SQUARE METRES	
J	FACTORS AFFECTING SPILL OR RECOVERY		DESCRIBE ANY ASSISTANCE REQUIRED		HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT	
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS					
L	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM	TELEPHONE	
M	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION	ALTERNATE TELEPHONE	
REPORT LINE USE ONLY						
N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130	
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED	
AGENCY		CONTACT NAME		CONTACT TIME		REMARKS
LEAD AGENCY						
FIRST SUPPORT AGENCY						
SECOND SUPPORT AGENCY						
THIRD SUPPORT AGENCY						

APPENDIX C
Reportable Quantities for NT-NU Spills

Schedule 1 – Reportable Quantities for NT-NU Spills

Substance	Reportable Quantity	TDG Class
Explosives	Any amount	1.0
Compressed gas (toxic/corrosive)		2.3/2.4
Infectious substances		6.2
Sewage and wastewater (unless otherwise authorized)		6.2
Radioactive materials		7.0
Unknown substance		None
Compressed gas (Flammable)	Any amount of gas from containers with a capacity greater than 100 L	2.1
Compressed gas (Non-corrosive, non-flammable)		2.2
Flammable liquid	≥ 100 L	3.1/3.2/3.3
Flammable solid	≥ 25 kg	4.1
Substances liable to spontaneous combustion		4.2
Water reactant substances		4.3
Oxidizing substances	≥ 50 L or 50 kg	5.1
Organic peroxides	≥ 1 L or 1 kg	5.2
Environmentally hazardous substances intended for disposal		9.0
Toxic substances	≥ 5 L or 5 kg	6.1
Corrosive substances		8.0
Miscellaneous products, substances or organisms		9.0
PCB mixtures of 5 or more parts per million	≥ 0.5 L or 0.5 kg	9.0
Other contaminants, e.g. crude oil, drilling fluid, produced water, waste or spent chemicals, used or waste oil, vehicle fluids, wastewater, etc.	≥ 100 L or 100 kg	None
Sour natural gas (i.e., contains H ₂ S)	Uncontrolled release or sustained flow of 10 minutes or more	None
Sweet natural gas		
Flammable liquid	≥ 20 L	3.1/3.2/3.3
Vehicle fluids	When released on a frozen water body that is being used as a working surface	None
Reported releases or potential releases of any size that: 1. Are near or in an open water body; 2. Are near or in a designated sensitive environment or habitat; 3. Pose an imminent threat to human health or safety; or 4. Pose an imminent threat to a listed species at risk or its critical habitat	Any amount	None

Note: L = litre; kg = kilogram; PCB = Polychlorinated Biphenyls; ppm = parts per million

Government of the Northwest Territories

Department of Transportation

NWT Highway #1 (Km 0-278)

Waste Management Plan

March 2017

Environmental Affairs
Department of Transportation
Government of the Northwest Territories

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1.0 INTRODUCTION

This Waste Management Plan (WMP) has been developed by the Government of the Northwest Territories (GNWT) Department of Transportation (DOT) and its Contractor during operations and maintenance activities on NWT Highway #1. This waste management plan will be implemented for all activities undertaken for the life of the renewed land use permit.

The purpose of the WMP is to provide a guide to all site personnel on the waste management goals, objectives and procedures to be used during permitted operations and maintenance activities. The WMP has been developed in accordance with the Guidelines for Developing a Waste Management Plan prepared by the Mackenzie Valley Land and Water Board (2011).

The Department of Transportation is cognizant of the need to ensure components of the environment, including the air, water, land, vegetation, wildlife and fish, are not negatively affected by permitted activities; ensure aesthetic and land use values of the permitted alignment remain intact following expiry of the permit; and, ensure the Department and its Contractors will comply with all applicable acts and regulations, as well as conditions outlined in the DOT's land use permit and water license. With these in mind, the Department has developed the following WMP.

1.1 PROJECT / SITE DESCRIPTION

The 'operation' will consist of the following:

- The 'Operation' will consist of the following:
- The continuous and ongoing operation and maintenance of the existing NWT Public Highway system within the permit corridor along the Mackenzie Highway (NWT #1) Corridor between kilometer 0 (AB/NWT Border) and kilometer 278 (Bouvier Creek) and includes:
- Mackenzie Highway (NWT #1) Km 0-278;
- The Kakisa and Hart Lake Access Roads;
- Pullouts and rest areas; and,
- Other minor roads and accesses along Mackenzie Highway Corridor – Waterfall Route and as listed under the Public Highways Act for the Government of the NWT, and includes all highways, roadways and other transportation infrastructure.
- All operations and maintenance activities will be undertaken following the standards for highway maintenance as outlined in the Highway Maintenance Standards Manual, normal construction practices and in accordance with the various regulatory agencies, as applicable. Work activities will also include roadway and right-of-way maintenance, rehabilitation and reconstruction; bridge structures maintenance and replacement; culvert maintenance and replacement; establishment

and maintenance of drainage channels; excavation of granular materials; production of aggregates and roadway surfacing.

- The Permit area will be two (2) kilometers in width, one (1) kilometer on each side of the existing public highway/roadway centerline through the entire length of the permit corridor including access and minor roads as listed in the Public Highways Act;
- To access existing or future quarry areas within and outside the two (2) kilometer corridor;
- To develop new or further develop existing borrow areas to obtain granular borrow materials, common materials, blast rock (including use of explosives), rip-rap, clay, sand and gravel, from areas outside the existing 60 meter wide Public Highway corridors through applications to the GNWT-Department of Lands for Quarrying Permits;
- To carry out geotechnical investigations in the search for gravels and rock and for gathering preliminary engineering information for the design of foundations for roadways, bridges and other structures (as required);
- To place and maintain granular stockpiles at existing or approved quarry sites for the purpose of ongoing operations and maintenance of the public highway system within the permit corridor;
- To place temporary construction/work camps at existing quarry or previously developed sites within the permit corridor for the purpose of carrying out operations and maintenance of the public highway system and other roadways within the permit corridor;
- To temporarily store construction, operations and maintenance equipment at the various existing quarry or other previously developed sites within the permit corridor while carrying out these activities in the area;
- To access water sources for the ongoing operations and maintenance for the public highway system within the permit corridor;
- To have right of access to one kilometer (1000 meters) on each side (left and right) to the public highway/roadway center line for the purpose of carrying out granular and geotechnical investigations, quarry pit development, drainage channel construction, stockpiling granular and other construction materials and placement of temporary construction/work camps;
- To construct and maintain sand and sand/salt storage facilities at strategic locations along the designated highway corridor; and,
- To construct, operate and maintain pullouts/rest areas at strategic locations along the designated highway corridor.

2.0 IDENTIFICATION OF WASTE TYPES

Over the course of the Project, several types of waste will likely be generated by equipment and crews working within the Project area. The primary type of waste will include non-mineral wastes; however, some hazardous wastes may be generated. All potential waste types are listed below and further descriptions are provided in Sections 2.1 to 2.3:

Non-hazardous non-mineral wastes:

- Domestic wastes;
- Cleared vegetation;

Hazardous wastes:

- Used oil, fuel, lubricants, greases, oil, filters, and solvents
- Contaminated soil, snow/ice and/or water

2.1 NON-HAZARDOUS NON-MINERAL WASTES

Non-hazardous, non-mineral wastes generated during the Project will primarily include domestic wastes, sanitary wastes, and construction materials. Domestic wastes will be brought to the site with Project personnel in their lunches, crew vehicles, etc., while sanitary wastes will be generated on-site.

Minimal vegetation clearing is expected as all maintenance and operations will occur within the already established highway alignment.

The potential environmental effects arising from unmanaged non-hazardous, non-mineral wastes include increased wildlife attractants, potential for sanitary spills or leaks, a change in the aesthetics of the Project area, and degradation of water quality, and wildlife and fish habitat quality.

2.2 HAZARDOUS WASTES

Potential hazardous wastes generated on-site include waste oil, fuel, lubricants, oil filters, solvents, etc., from use and maintenance of heavy equipment. Other potential hazardous wastes may include contaminated soil, snow or water should a spill occur during Project activities.

The potential environmental effects arising from unmanaged hazardous wastes include degradation of soil quality, degradation of water quality, and wildlife and fish habitat quality, and harm to on-site personnel.

3.0 MANAGEMENT OF WASTE TYPES

3.1 NON-HAZARDOUS NON-MINERAL WASTES

Within the alignment of the Highway, the non-hazardous, non-mineral wastes will be temporarily stored within the indicated areas outlined in the drawings in Appendix A. The following management and mitigation techniques may be implemented to reduce the potential for environmental effects associated with non-hazardous, non-mineral wastes:

Domestic wastes:

- On-site, domestic wastes will be stored in clearly marked containers with tight-fitting lids (i.e., garbage cans). Domestic wastes will be transported daily with site personnel and disposed of at a Solid Waste Facility, once approvals are in place.

Cleared vegetation (from INAC 2010b):

Minimal vegetation is anticipated to be wasted however in the event that some clearing is required the following practices will be employed:

- Trees will be felled away from water sources to minimize the amount of vegetation material that could enter the aquatic environment.
- If clearing trees or packing snow with a dozer blade, mushroom or smear blades will be used and the uprooting of the trees will be avoided. Small trees and shrubs will be cleared by hand, or with the dozer blade to “walk down” the vegetation, with the blade set at a fixed height. The blade will push small trees and shrubs down and the weight of the machine will compress felled vegetation. The ground cover and surface organic layer will be left in place.
- Burning of brush may be required. If determined necessary, brush piles will be burned away from other vegetation to minimize the risk of fire spreading.

Construction materials:

- On-site, waste construction materials will be stored in clearly marked containers with lids. These waste materials will be transported back to a community, if/when necessary, and disposed of at an approved Solid Waste Facility. These containers will be inspected daily to ensure no domestic waste is disposed of here.

3.2 HAZARDOUS WASTES

Hazardous wastes generated during the permitted operations and maintenance activities will be stored at the designated fuelling and contaminant storage area within the Project area. This area is outlined in the drawings in Appendix A and is greater than 100 m from a water source; this will prevent potential spills or leaks from entering the creek.

Any hazardous wastes will be stored in clearly marked containers with lids (i.e., drums). Any hazardous wastes will be removed from the designated storage area a minimum of bi-weekly, if necessary. As the

contaminated soil/snow wastes will be transported to an approved waste facility for treatment. If other contaminated materials require disposal (i.e., spill pads), these will be disposed of through a licensed facility. For this transport and disposal, the Contractor or DOT will complete the appropriate waste manifest form.

4.0 INFRASTRUCTURE REQUIRED FOR WASTE MANAGEMENT

The following types of infrastructure will be required for proper waste management of the Project:

- Cleared vegetation storage area – this area for windrowing or burning will be selected within an appropriate location along the highway alignment by the Contractor and DOT site representative;
- Waste storage or disposal facility – Approved Solid Waste Facility;
- Sewage disposal facility – Approved Sewage Facility;
- Appropriate hazardous waste disposal facility – Approved hazardous waste disposal facility.

5.0 REFERENCES

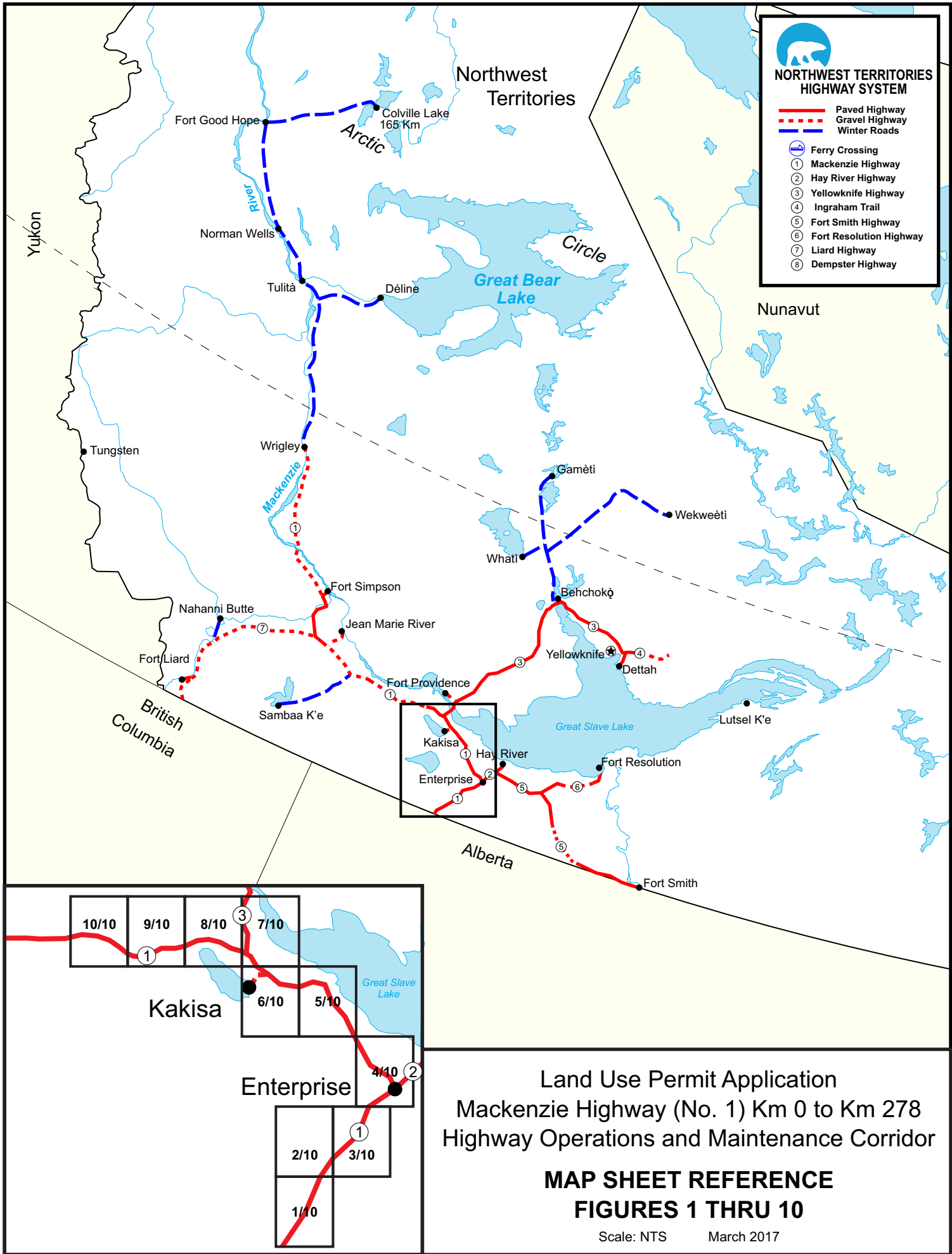
Indian and Northern Affairs Canada (INAC). 2010a. Northern Land Use Guidelines Volume 7 – Pits and Quarries. Natural Resources and Environment Branch, INAC, Ottawa, ON. Available online: <http://www.aadnc-aandc.gc.ca/eng/1100100023585/1100100023587> (13 November 2012).

Indian and Northern Affairs Canada (INAC). 2010b. Northern Land Use Guidelines Volume 5 – Access: Roads and Trails. Natural Resources and Environment Branch, INAC, Ottawa, ON. Available online: <http://www.aadnc-aandc.gc.ca/eng/1100100023568/1100100023583> (13 November 2012).

Mackenzie Valley Land and Water Board (MVLWB). 2011. Guidelines for Developing a Waste Management Plan. MVLWB, Yellowknife, NT. Available online: <http://mvlwb.com/resources/policy-and-guidelines> (19 November 2012).

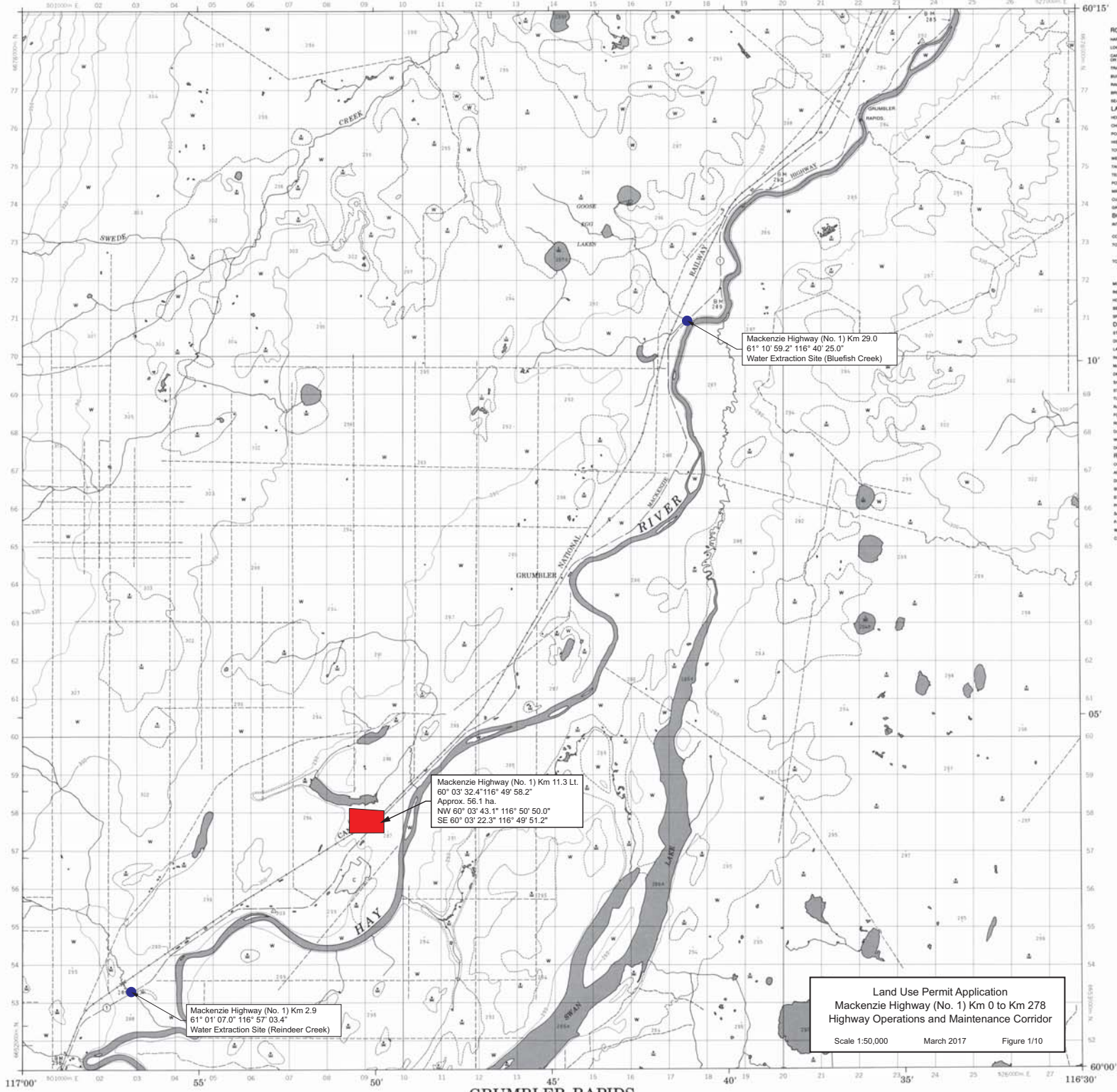
APPENDIX A

Project Area



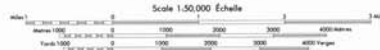
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GRUMBLERS RAPIDS SUBURB OF MACKENZIE NORTHWEST TERRITORIES

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CONTOUR INTERVAL 10 METRES
NORTH AMERICAN DATUM 1987
TRANSVERSE MERCATOR PROJECTION

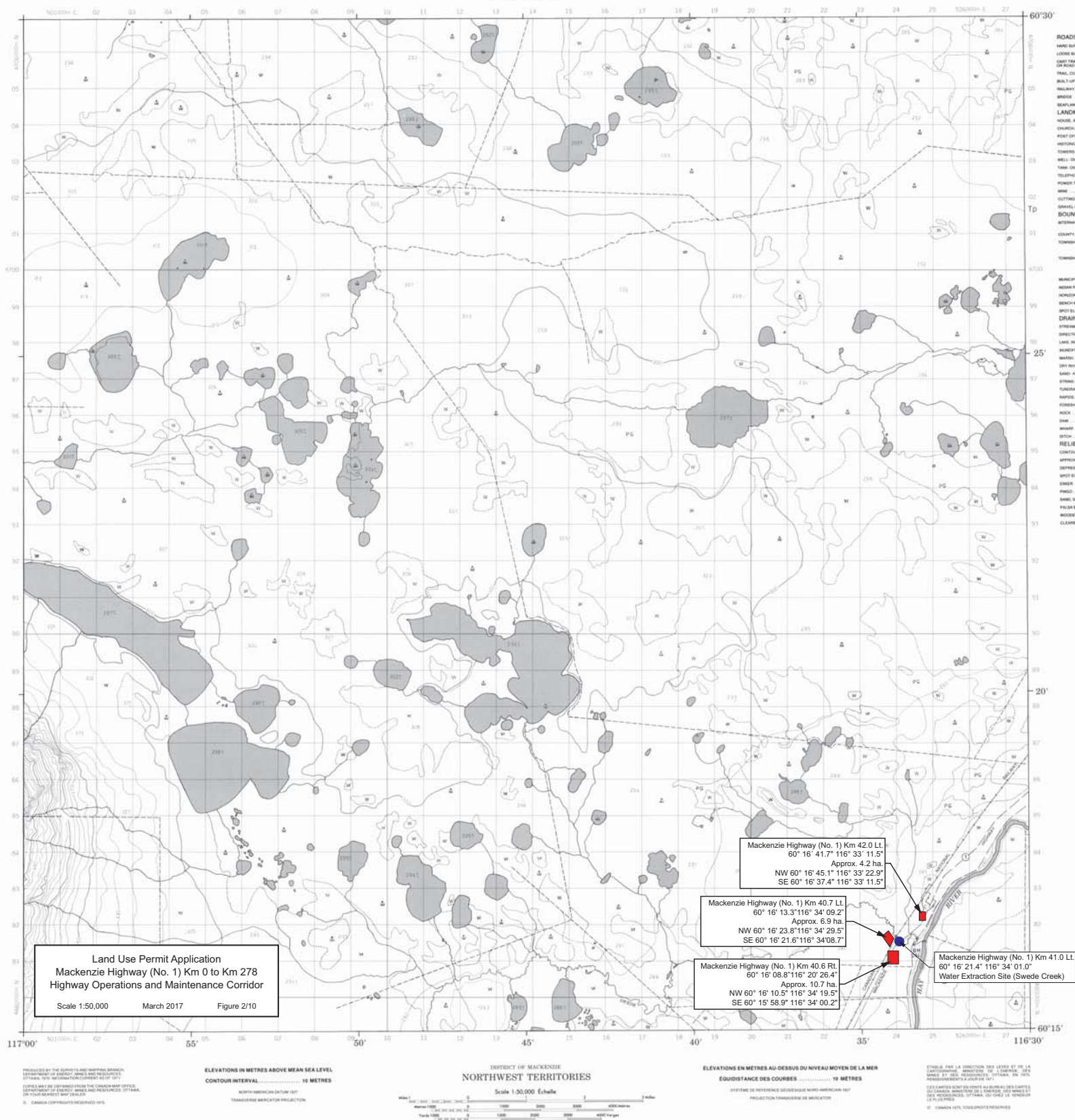


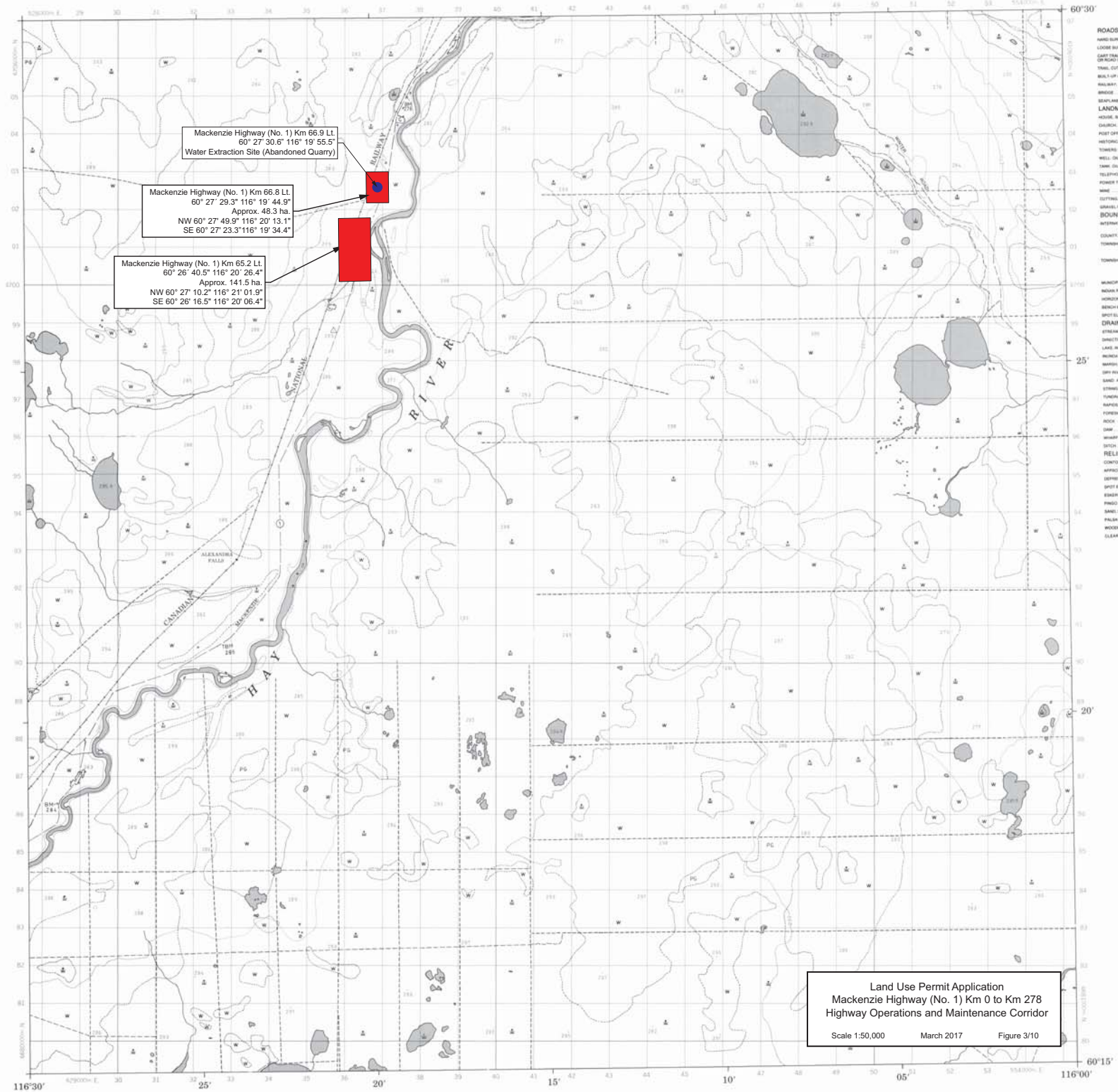
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PROJECTION TRANSVERSE DE MERICATOR

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MARS 1985

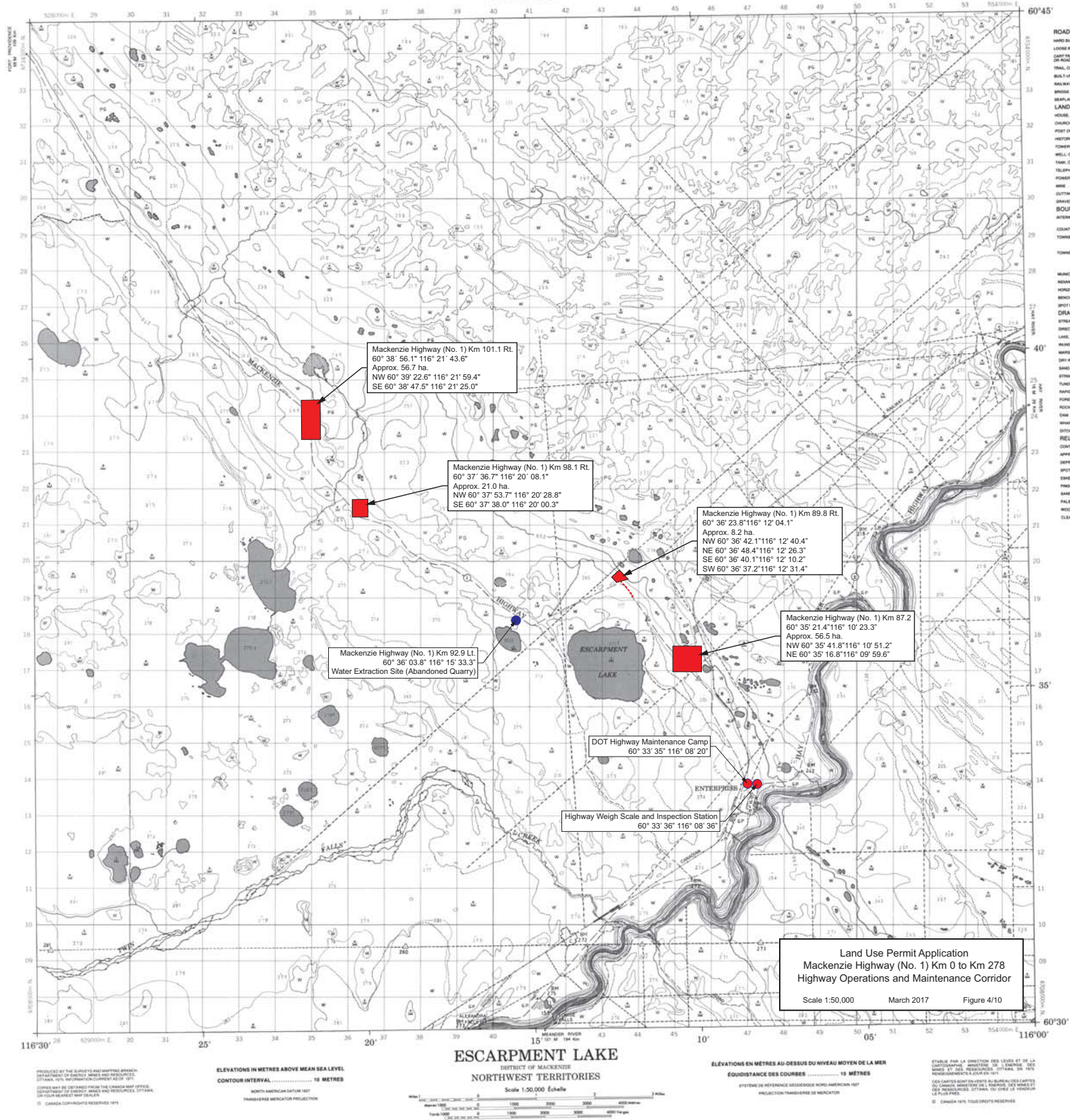
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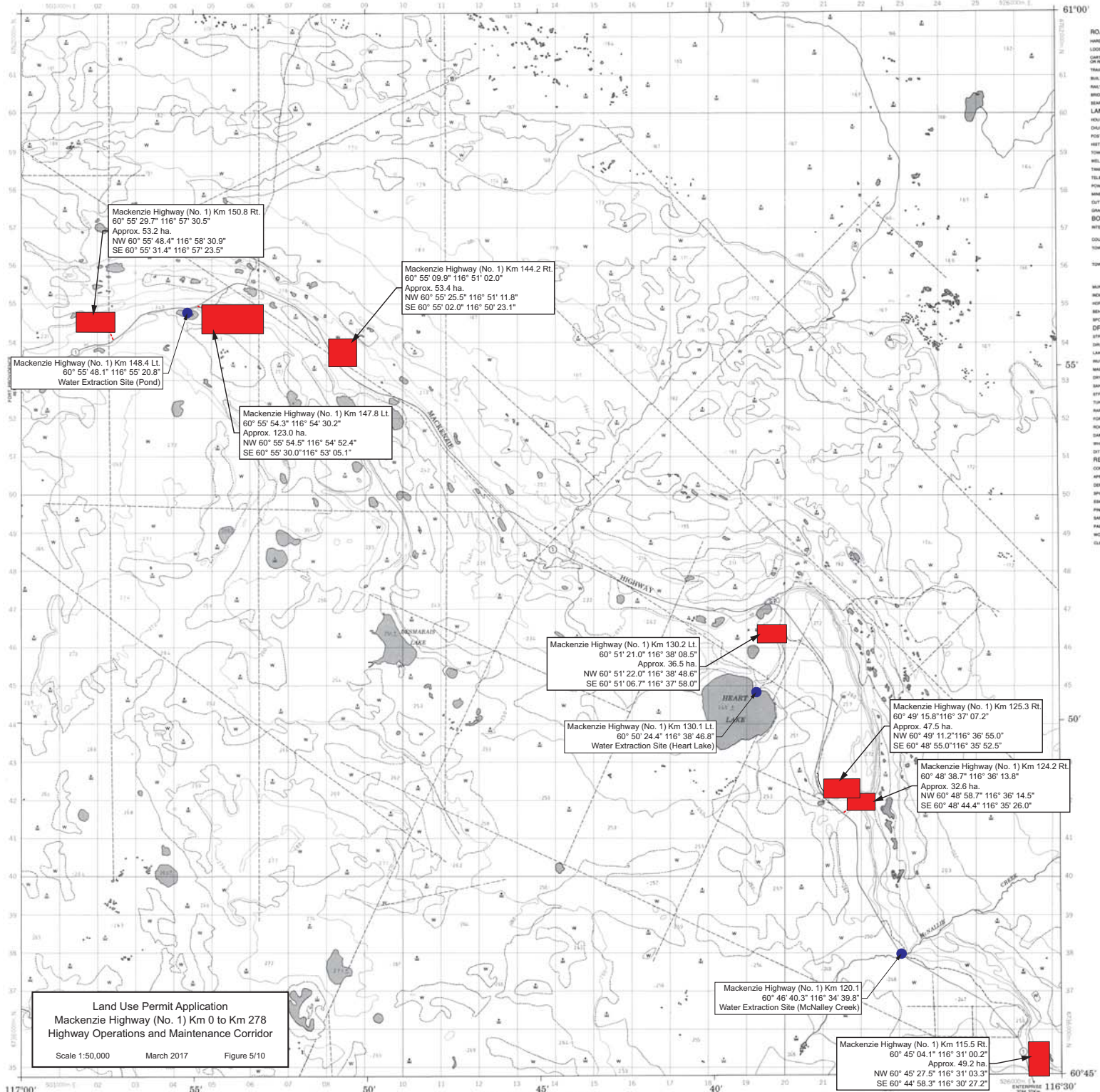


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HEART LAKE NORTHWEST TERRITORIES

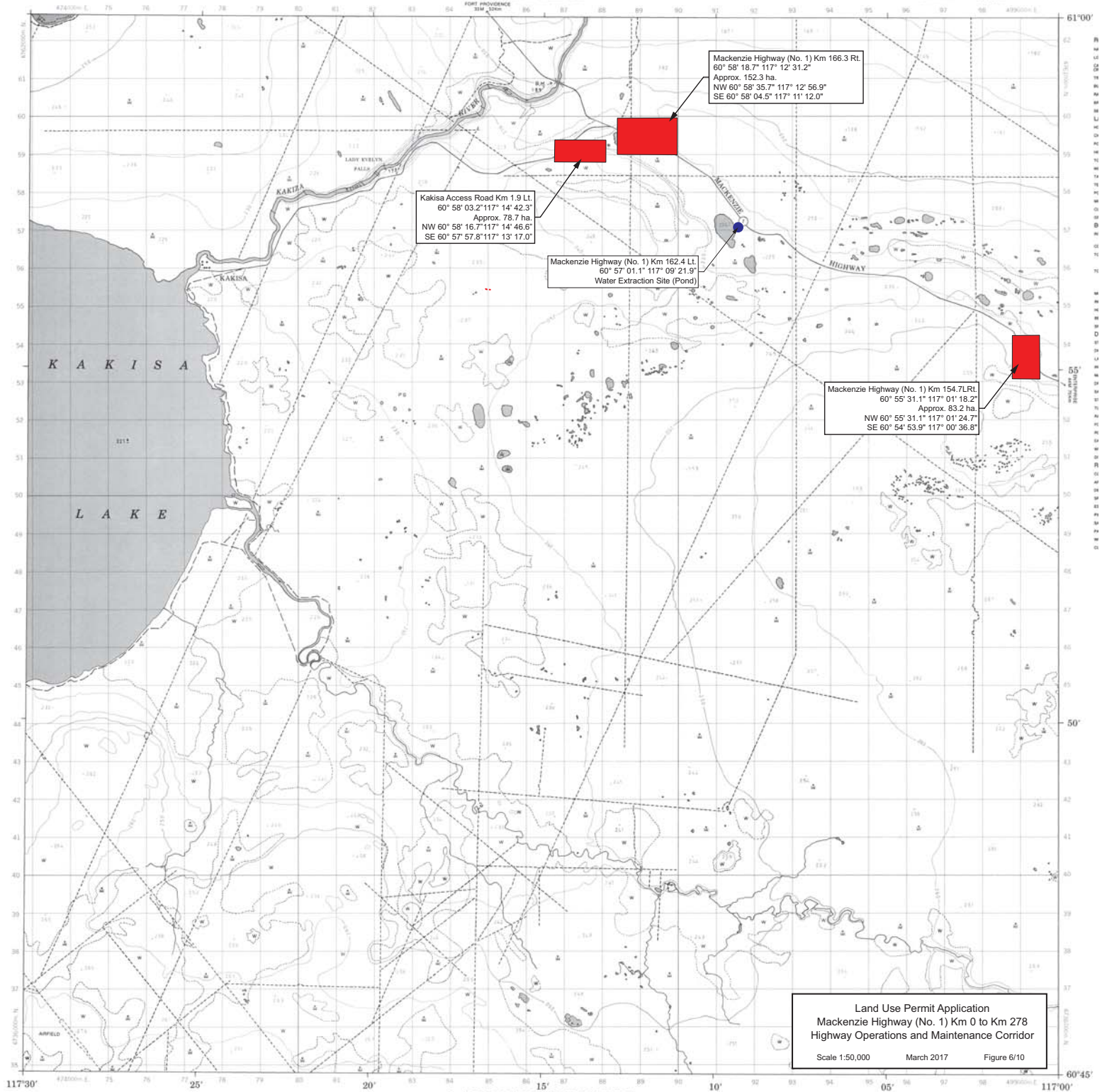
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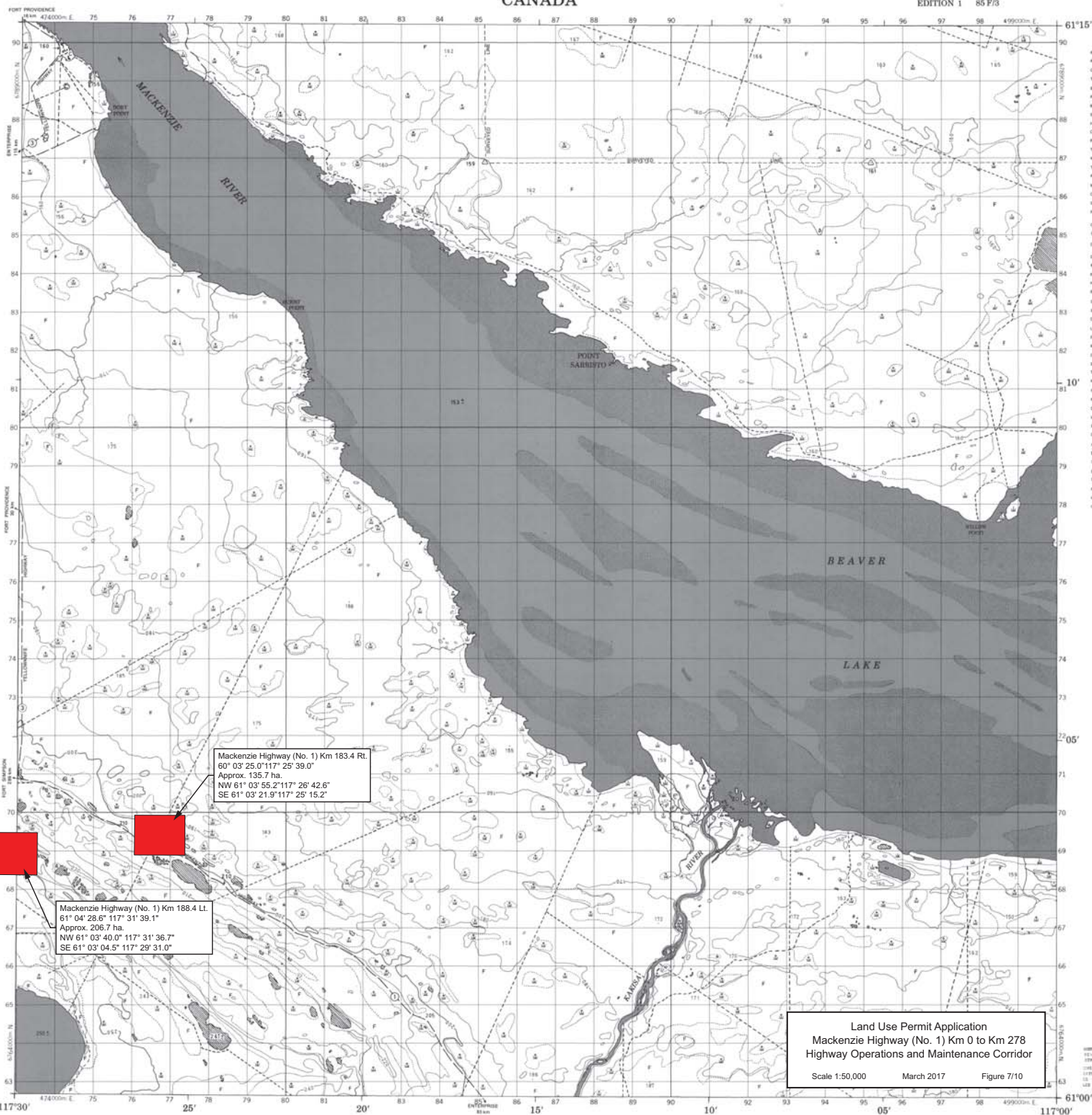
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ELEVATIONS IN METRES ABOVE MEAN SEA LEVEL
 CONTOUR INTERVAL 10 METRES
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 TRANSVERSE MERCATOR PROJECTION

POINT SARRISTO DISTRICT OF MACKENZIE NORTHWEST TERRITORIES

Scale 1:50,000 Echelle



ELEVATIONS EN METRES AU-DESSUS DU NIVEAU MOYEN DE LA MER
 EQUIDISTANCE DES COURBES 10 METRES
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 PROJECTION TRANSVERSE DE MERICATOR

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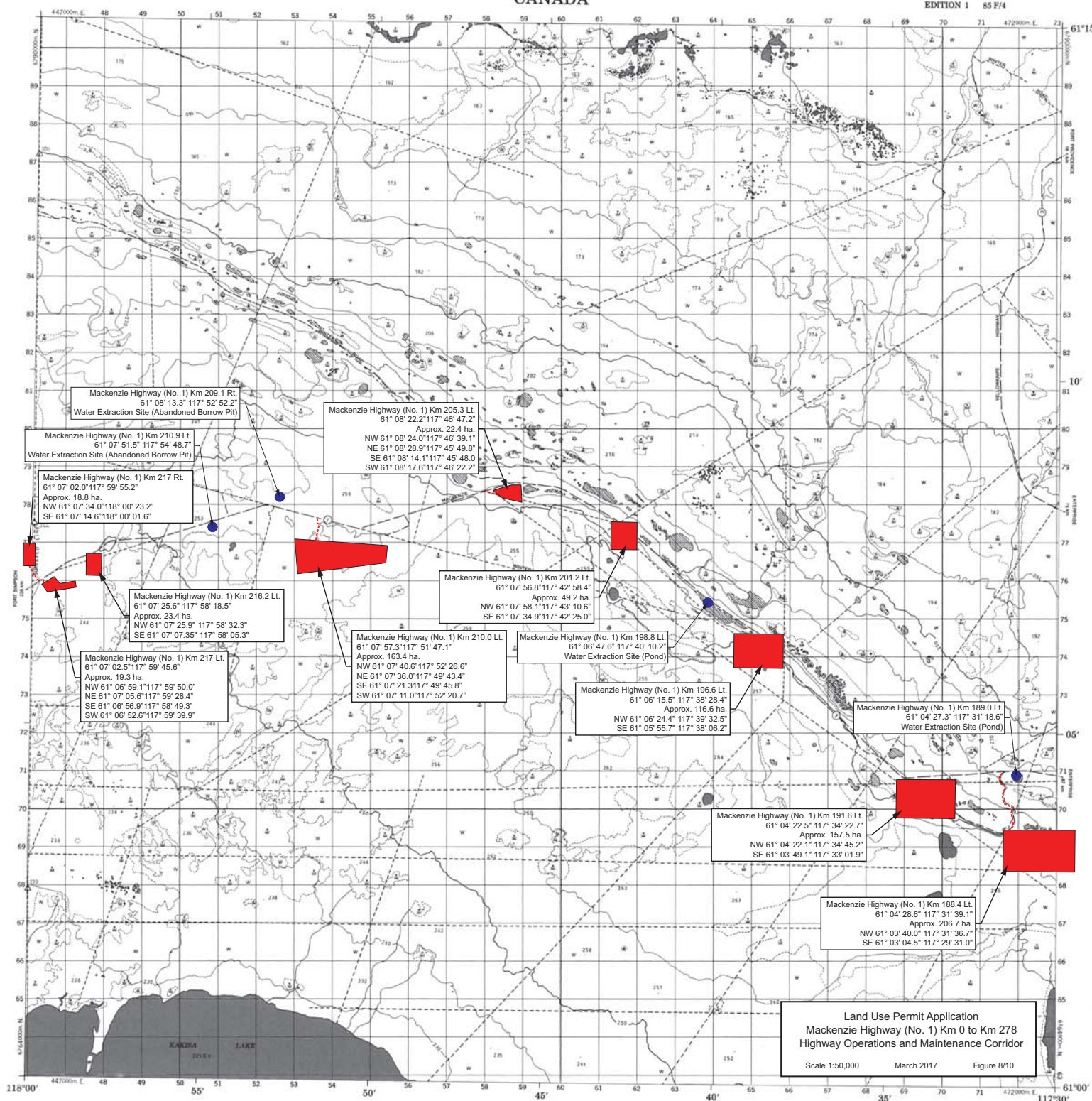
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 ET LA COUTURE DES CARTES DE L'ÉNERGIE, DES MINES
 EN OBTENANT AUX LIEUX GEODESIQUES DIRECTION DES
 LEVÉS ET DE LA CARTOGRAPHIE, OTTAWA

SUBSECTION
 117° 30' 00" W
 117° 25' 00" N
 117° 20' 00" N
 117° 15' 00" N
 117° 10' 00" N
 117° 05' 00" N
 117° 00' 00" N

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DISTRICT OF MACKENZIE
NORTHWEST TERRITORIES

Scale 1:50,000 Echelle

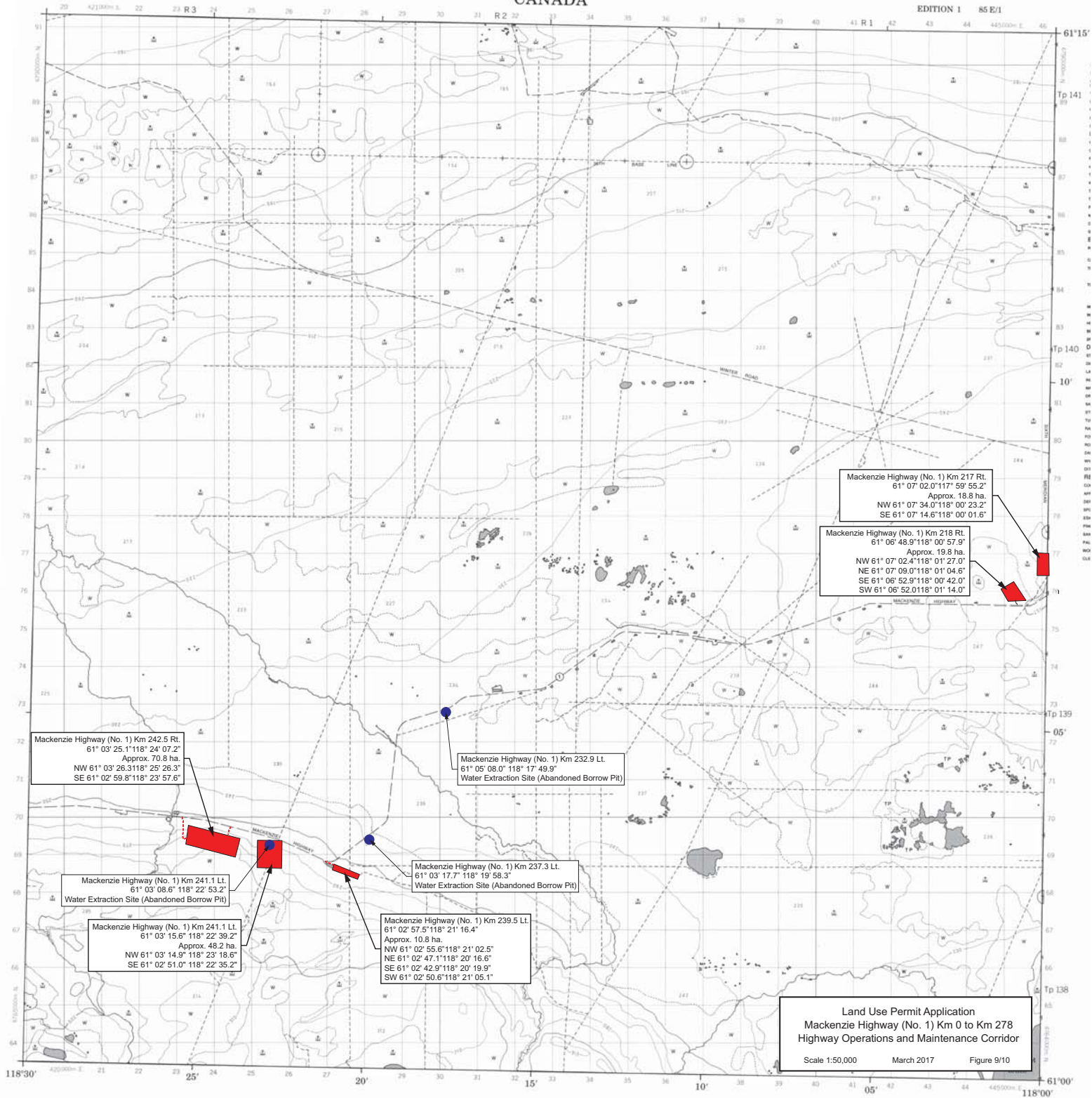


ELEVATIONS EN MÈTRES AU-DESSUS DU NIVEAU MOYEN DE LA MER
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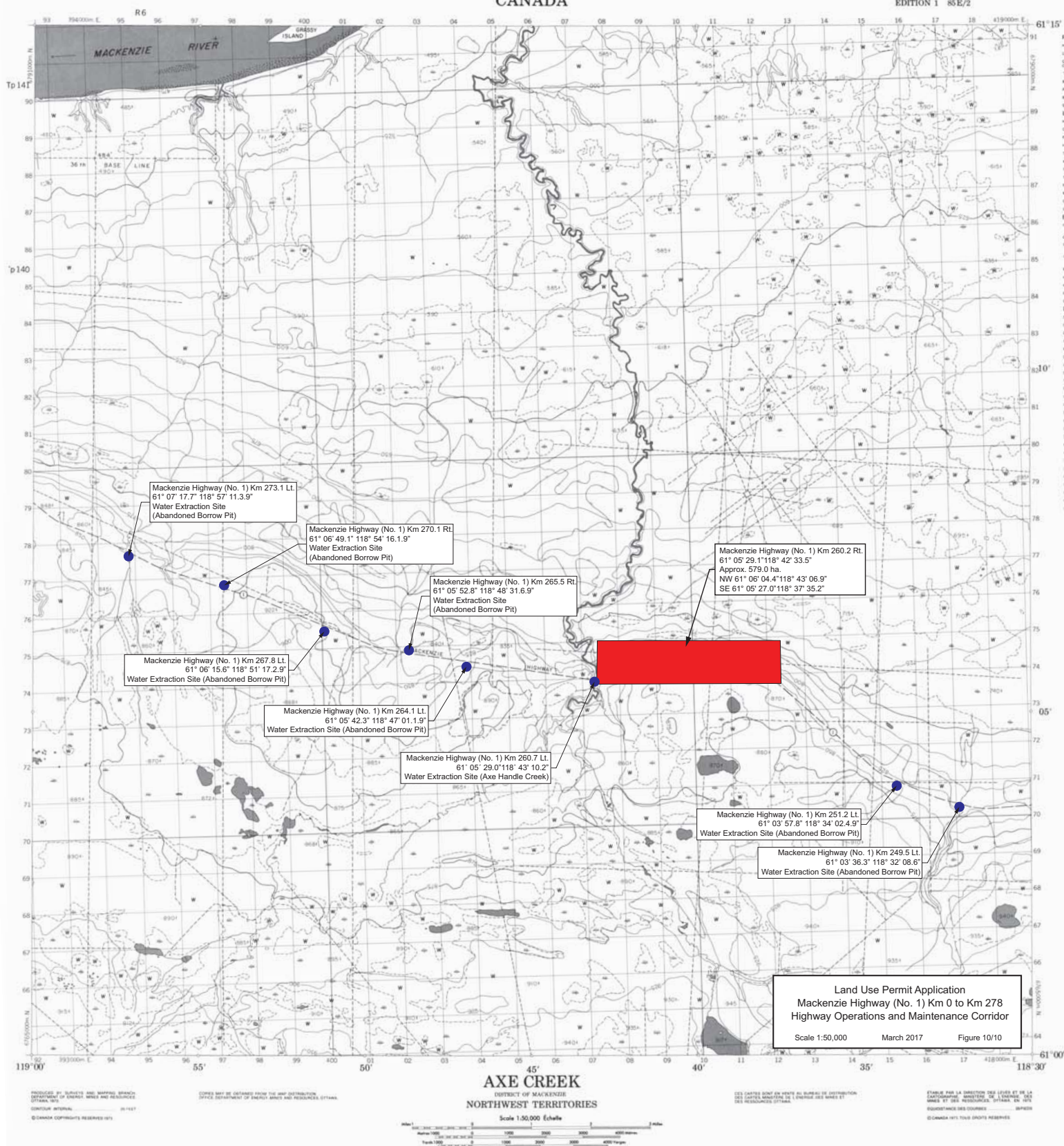
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 NORTHWEST TERRITORIES

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 DES CARTES SONT ÉLABORÉES PAR DIVERS AGENTS
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MAR 21 2017

Via Email

Distribution List:

Land Use Permit Renewal Application Pre-submission Review: Operations and Maintenance, Highway #1; MV2010X0013.

We wish to advise you that the Department of Transportation will be submitting an application to the Mackenzie Valley Land and Water Board (MVLWB) for the renewal of land use permit MV2010X0013, for operations and maintenance activities along the Mackenzie Highway (NWT #1) Km 0-278.

Activities in the permit application will include accessing granular material as well as regular operations and maintenance activities and public safety improvements at infrastructure locations. These locations are utilized for critical annual re-supply for the communities of Hay River, Enterprise, and Kakisa, throughout the year. Also included are operations associated with airports, marine services, winter roads, and all other access roads as described in the Public Highways Act, including the Hay River, Kakisa, and Hart Lake access roads.

The renewal application will be sent to the MVLWB on March 28th, 2017, at which time you will have a chance to review the information and provide comments through the Board's Online Review System (ORS).

Any comments and feedback you may have at this time, regarding the forthcoming amendment may be forwarded to DOT at Binay.Yadav@gov.nt.ca or to Jon.Posynick@gov.nt.ca.

Sincerely,

Binay Yadav
Head, Technical Services
Department of Transportation

- c. Tyree Mullaney, Regulatory Officer, MVLWB
Jon Posynick, Environmental Analyst, DOT

Appendix E - Pre-Submission Engagement Record (Summary and Log) Template ¹³

1. Pre-Submission Engagement Summary

Name of Proponent: _____ GNWT - DOT _____

Name of Affected Party: Hamlet of Enterprise, Katlodeeche First Nation, Hay River Metis Council, Town of Hay River, Ka'a'gee Tu First Nation, West Point First Nation

Name(s) of representative(s) from affected party who participated in engagement	Dates of Engagement (e.g. list dates or range of dates)	Reason(s) for Engagement (e.g., application for timber harvesting)	Overview of Issue(s) Resolved	Overview of Issue(s) Unresolved
Hamlet of Enterprise – Mayor Craig McMaster	3/21/2017 – 3/28/2017	Land Use Permit Renewal for O&M operations along the Highway #1 corridor. Current LUP MV2010X0013 is about to expire.	N/A	N/A
Katlodeeche First Nation – Chief Roy Fabian	3/21/2017 – 3/28/2017	Land Use Permit Renewal for O&M operations along the Highway #1 corridor. Current LUP MV2010X0013 is about to expire.	N/A	N/A

Hay River Metis Council – Trevor Beck	3/21/2017 – 3/28/2017	Land Use Permit Renewal for O&M operations along the Highway #1 corridor. Current LUP MV2010X0013 is about to expire.	N/A	N/A
Town of Hay River – Mayor Bradley Mapes	3/21/2017 – 3/28/2017	Land Use Permit Renewal for O&M operations along the Highway #1 corridor. Current LUP MV2010X0013 is about to expire.	N/A	N/A
Ka'a'gee Tu First Nation – Lloyd Chicot	3/21/2017 – 3/28/2017	Land Use Permit Renewal for O&M operations along the Highway #1 corridor. Current LUP MV2010X0013 is about to expire.	N/A	N/A
West Point First Nation – Courtney Cayen	3/21/2017 – 3/28/2017	Land Use Permit Renewal for O&M operations along the Highway #1 corridor. Current LUP MV2010X0013 is about to expire.	N/A	N/A

Signature of Proponent (representative): _____

Signature of Affected Party (representative): ¹⁴ _____

¹³ A summary sheet for each affected party should accompany the log (which may be a chronological list of all engagement with all parties).

¹⁴ These signatures represent agreement on the contents of the log and record, but do not necessarily imply that the parties agree on the topics that were discussed

Government of the Northwest Territories

Department of Transportation

NWT Highway #1 (Km 0-124)

Engagement Plan

March 2017

Environmental Affairs
Department of Transportation
Government of the Northwest Territories

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Introduction

The Government of the Northwest Territories, Department of Transportation (DOT) has held a Permit to operate and maintain the Mackenzie Highway (NWT Highway #1) for over 16 years. Comprehensive community engagement regarding the highway has been undertaken on a continual basis since 2010. As Public Servants, staff of the GNWT are accountable and open to the public for discussion of all matters. As such, the Department and staff are well acquainted with the communities and community members along the highway, and engagement practices and community relationships are well established.

Affected Parties

Affected parties for the Project were first identified in 2010, and have grown to include a number of aboriginal groups and other affected parties. The groups identified in the 2017 Land Use Permit Renewal include:

- Katlodeeche First Nation;
- Hay River Metis Council;
- Town of Hay River;
- Hamlet of Enterprise;
- Ka'a'gee Tu First Nation; and,
- West Point First Nation.

The Department of Transportation may engage with other Parties on a case by case basis as appropriate.

Past Engagement Activities

Since the Department of Transportation has operated and maintained the Highway, multiple opportunities to engage stakeholders have occurred and as a result the Department has kept community members and the public involved in an ongoing basis.

Engagement Approach

The Department of Transportation believes that meaningful community engagement is crucial in building and maintaining good relationships with communities and community members. Regional Offices are open for residents to provide comments and concerns, or to ask questions regarding the Department's activities. As a result of the Department's open lines of communication, well-established relationships have been built with the people and communities of the Northwest Territories.

Engagement Activities for the Project

During the life of the Highway, DOT will build on the engagement approach and there will be various opportunities for affected parties to learn about and provide input on the highway operations. This engagement plan will ensure that the people of the communities affected by the operation and

maintenance of Highway are fully aware of the schedule of construction, conditions, and operations of the highway.

Engagement for on-going operations includes activities such as:

- Land Use Permit Renewals, Amendments or Extensions;
- Road closures and conditions; and
- Road maintenance that could affect the public.

If a community meeting is to take place, it will be open to all members of the community, including:

- Youth;
- Elders; and
- Women and Men.

Summary

A summary of engagement triggers and methods is provided below in Table 1.

Table 1: Summary of Engagement Triggers and Methods

Engagement Trigger	Primary Purpose	Primary Methods	Primary Participants
Land Use Permit Renewals, Amendments, or Extensions	To advise stakeholders of the Departments plans regarding the Land Use Permit.	Written notification.	Katlodeeche First Nation; Hay River Metis Council; Town of Hay River; Hamlet of Enterprise; Ka'a'gee Tu First Nation; and, West Point First Nation.
Highway closures and conditions	To advise the public of any highway closures and/or conditions of the highway.	Social Media (DOT Website, Twitter).	All members of the public.
Highway Maintenance	To advise the public of any maintenance activities that could affect the public.	Social Media (DOT Website, Twitter)	All members of the public