



APPENDIX A

PROJECT PHOTOS

(Pages A-1 to A-4)



Photo 1 - Jaynes Inlet Upper Lake.



Photo 2 - Intake (Upper Lake) facing intake at saddle.



Photo 3 - Dam (Upper Lake).



Photo 4 - Surface Penstock leading away from intake.

QULLIQ ENERGY CORPORATION		
IQALUIT HYDROELECTRIC PROJECT		
JAYNES INLET SITE PHOTO LOG (1 OF 2)		
<i>Knight Piésold</i> CONSULTING	P/A NO. NB103-137/8	REF. NO. 1
	FIGURE A.1	
		REV 0

0	12FEB'13	ISSUED WITH REPORT	RDW	RAC	RAM
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D



Photo 5 - Powerhouse location to left of lower falls.



Photo 6 - Tailrace and Discharge (Lower Lake).



Photo 7 - Jaynes Inlet with lower lake in the background.

QULLIQ ENERGY CORPORATION		
IQALUIT HYDROELECTRIC PROJECT		
JAYNES INLET SITE PHOTO LOG (2 OF 2)		
<i>Knight Piésold</i> CONSULTING	P/A NO. NB103-137/8	REF. NO. 1
	FIGURE A.2	
		REV 0

0	12FEB'13	ISSUED WITH REPORT	RDW	RAC	RAM
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D



Photo 1 - Armshow South Lake.



Photo 2 - Dam axis.



Photo 3 - Penstock routing (facing upstream with lake in the background).



Photo 4 - Armshow South Upper Penstock.

0	12FEB'13	ISSUED WITH REPORT	RDW	RAC	RAM
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

QULLIQ ENERGY CORPORATION		
IQALUIT HYDROELECTRIC PROJECT		
ARMSHOW SOUTH SITE PHOTO LOG (1 OF 2)		
<i>Knight Piésold</i> CONSULTING	P/A NO. NB103-137/8	REF. NO. 1
	FIGURE A.3	
		REV 0



Photo 5 - Middle Penstock.



Photo 6 - Lower Penstock routing.



Photo 7 - Powerhouse location along Armshow River mainstream.



Photo 8 - Barge Landing and construction camp area.

0	12FEB'13	ISSUED WITH REPORT	RDW	RAC	RAM
REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D

QULLIQ ENERGY CORPORATION		
IQALUIT HYDROELECTRIC PROJECT		
ARMSHOW SOUTH SITE PHOTO LOG (2 OF 2)		
<i>Knight Piésold</i> CONSULTING	P/A NO. NB103-137/8	REF. NO. 1
	FIGURE A.4	
		REV 0



APPENDIX B

APPLICATION FOR ACCESS TO INUIT OWNED LAND

(Pages B-1 to B-8)

QIKIQTANI INUIT ASSOCIATION

APPLICATION FOR ACCESS TO INUIT OWNED LAND

Office use only

Category	Application No:	Accepted By:	Date Accepted:
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To be completed by all applicants

1. Applicant's name and mailing address (Full name, no initials or abbreviations) Stephen Kerr Qulliq Energy Corporation P.O. Box 580 Iqaluit, Nunavut X0A 0H0	Telephone no. 867-979-7540 Fax no 867-979-7548
2. Head Office address Qulliq Energy Corporation P.O. Box 580 Iqaluit, Nunavut X0A 0H0	Telephone no. 867-979-7540 Fax no. 867-979-7566
3. Field supervisor and address if different from above Richard Cook, Knight Piésold Ltd.	Telephone no. 705-476-2165
4. Other personnel list (Subcontractors or contractors to be used) Helicopter services - to be determined Camp expediter - to be determined Construction contractor - to be determined	

Total no. of personnel:

No. of person days:

5. Location of activities by map coordinates. Attach **ORIGINAL** maps and sketches.

MAX Latitude	63.224621 (Jaynes Inlet)	MAX Longitude	-68.428266 (Jaynes Inlet)
MIN Latitude	63.564688 (Armshow)	MIN Longitude	-68.939845 (Armshow)
Map Sheet No:	25-N	Inuit Land Parcel No:	IQ-27/26N

Coordinate of camp (if applicable) Lat. 63°36'28.41" Long. 68°51'10.42"

NOTE: Please specify projection, datum, and digital format. Please provide the data as an Arc Info cover, ArcView Shape file or an .E00 file.

6. Periods of operation; including periods of seasonal shut down and periods for restoration.

2013 to 2015: Supplemental baseline studies, geotechnical drilling, complete feasibility study, submit draft EIS, receive project certificate, complete licensing, sign IIBA

2016 to 2018: Construct Jaynes Inlet site

Late 2018 or early 2019 to 2093: Commissioning and operation of Jaynes Inlet site

2030 to 2032: Construct Armshow South site

2033 to 2107: Commissioning and operation of Armshow South site

7. Period of access required (up to one or two years for licenses, depending on license level, up to five years for residential/recreational leases and level I and II commercial leases, and up to forty years for level III commercial leases)

Start date:

2013

Completion Date:

2107 (based on 75-year operating life)

8. Other rights, licenses, permits or leases related to this application. Provide proof of rights or indicate if in the process of applying for rights.

<input type="checkbox"/> NTI Subsurface Right	<input checked="" type="checkbox"/> NRI Research License	<input type="checkbox"/> CWS Permit
<input type="checkbox"/> DIAND Subsurface Right	<input type="checkbox"/> RWED Tourism License	<input checked="" type="checkbox"/> Other
<input checked="" type="checkbox"/> NWB Water License	<input type="checkbox"/> Explosives Permit	Specify: Federal Land Use Permit
#		

9. TYPE OF LAND USE ACTIVITY

Check off the appropriate land use activities.

Mining/Oil & Gas

Construction:

Tourism:

<input type="checkbox"/> Staking and Prospecting	<input checked="" type="checkbox"/> Camp	<input type="checkbox"/> Tourism facility
<input type="checkbox"/> Exploration (geophys-grd/air)	<input checked="" type="checkbox"/> Building	<input type="checkbox"/> Outfitting
<input checked="" type="checkbox"/> Drilling (diamond/ice, etc)	<input type="checkbox"/> Winter road	<input type="checkbox"/> Other
<input type="checkbox"/> Mine (open pit, underground)	<input checked="" type="checkbox"/> All Season road	
<input type="checkbox"/> Bulk fuel storage	<input type="checkbox"/> Quarrying	
<input checked="" type="checkbox"/> Other: Power generation	<input checked="" type="checkbox"/> Other: Reservoirs	

Municipality:

Research:

Other:

<input type="checkbox"/> Bulk Storage	<input checked="" type="checkbox"/> Wildlife/fish/birds/marine	<input type="checkbox"/> Commercial harvest
<input type="checkbox"/> Residential Building	<input type="checkbox"/> Survey (grd/aerial/collars)	<input type="checkbox"/> Recreational Camp
<input type="checkbox"/> Commercial Building	<input type="checkbox"/> Collection of species	<input type="checkbox"/> Other
<input type="checkbox"/> Other:	<input type="checkbox"/> Research Station	
	<input type="checkbox"/> Other :	

10. TYPE OF WATER USE

Select the kind of project for which you will use the water, and the type of water use

Undertaking

Water Use:

<input type="checkbox"/> Advanced Exploration	<input checked="" type="checkbox"/> To Obtain Water
<input checked="" type="checkbox"/> Exploration Drilling	<input type="checkbox"/> To Modify the bed or bank of water course
<input type="checkbox"/> Industrial	<input type="checkbox"/> To Alter the flow of, or store water
<input type="checkbox"/> Mine Development	<input type="checkbox"/> To Cross the Watercourse
<input checked="" type="checkbox"/> Power	<input type="checkbox"/> To Divert the Watercourse
<input type="checkbox"/> Remote/Tourism	<input type="checkbox"/> Flood Control
<input checked="" type="checkbox"/> Other: Camp	<input type="checkbox"/> Other:

11. QUANTITY OF WATER INVOLVED

Please include the quantity of water to be used during the Land Use activity

Construction - 100 m³ of water per day for construction camp and drilling
Operations - 4.1 and 4.75 m³/s passing through the powerhouse turbines

Quantity of water to be used:

C - 36.5 / O - 106M m³/year

Quantity to be returned:

C - 36.5 / O - 106M m³/year

12. WASTE

Describe the type of waste produced by the activity

<input checked="" type="checkbox"/> Bulky Items/Scrap metals	Describe: Bulky wastes may be generated during construction phases but will be transported off site for appropriate disposal. Sewage will be either collected and disposed of in a sewage treatment plant or incinerating toilets during construction, and in a septic bed or incinerating toilets during operation. Greywater will be disposed of in an excavated sump. Solid waste will be incinerated in a camp incinerator. Any hazardous or non-combustible waste will be transported off site for appropriate disposal.
<input checked="" type="checkbox"/> Grey water	
<input type="checkbox"/> Hazardous	
<input checked="" type="checkbox"/> Sewage	
<input type="checkbox"/> Sludge	
<input checked="" type="checkbox"/> Solid waste	
<input checked="" type="checkbox"/> Waste Oil	
<input type="checkbox"/> Other:	

13. LAND USE PERMIT

Select Land Use Permit You have been Issued

<input checked="" type="checkbox"/> DIAND	date expected	01/15/13
<input checked="" type="checkbox"/> Qikiqtani Inuit Association	date expected	01/15/13
<input checked="" type="checkbox"/> Commissioner	date expected	01/15/13
<input type="checkbox"/> Department of Environment	date expected	

14. IMPACT

Predicted environmental impacts of undertaking and proposed mitigation measures (direct, cumulative impacts)

Describe:
See project description

NPC conformity check
NIRB Screening

****PLEASE NOTE QIA TO FORWARD APPLICATION
TO NPC & NIRB**

Proposed Time Schedule

☒ Same as the Land Use

15.

☐ Check for **Annual Work**, specify the days of operation [Leave unchecked for multi year work]

Start day

Completion date

16. On a separate **page**, provide a **NON-TECHNICAL project summary**. This should include a non-technical description of the project proposal, no more than 300 words, in **English and Inuktitut**. The project description should outline the project activities and their necessity, method of transportation, any structures that will be erected, expected duration of activity and alternatives considered. If the proposed activity fits into any long-term developments, please describe the projected outcome of the development for the area and its timeline.

17. **Attach a detailed project description as outlined in APPENDIX A.**

17. Land Use Application Fees:

Land Use License I	
<input type="checkbox"/>	Inuit \$0
<input type="checkbox"/>	Non-Inuit \$250.00
<input type="checkbox"/>	Land Use License II \$500.00
<input type="checkbox"/>	Land Use License III \$1000.00
Residential/Recreational Lease	
<input type="checkbox"/>	Inuit \$0
<input type="checkbox"/>	Non-Inuit \$250.00
<input type="checkbox"/>	Exemption Certificate \$0
<input type="checkbox"/>	Commercial Lease I \$500.00
<input type="checkbox"/>	Commercial Lease II \$2500.00
<input checked="" type="checkbox"/>	Commercial Lease III \$5000.00
<input type="checkbox"/>	Right of Way Agreement \$500

Land use fees: # of hectares used @ \$50.00/hectare = \$ 12,525.00

Note: The land use fee is for the amount of land used on an annual basis.

18. Water Application Fees:

Water License Application type:

- ☐ For Land Use license Class I
the corresponding *Water Application fee* is **\$50.00** per year plus **\$ 1** for
Water use charge, *Volumetric fee*, **Total \$51** every year

- ☐ For Land Use License Class II the
corresponding *Water Application fee* is
\$250.00 every year plus **\$ 1** for Water use charge, *Volumetric fee*,
Total \$251.00 every year

- ☐ For Land Use License III
The corresponding *Water Application fee* is **\$500.00** every 2 years and
\$26.35/1000m³ for Water Use charge *Volumetric fee*. **Total \$276.35**
every year

- ☐ For Commercial Lease I
The corresponding *Water Application fee* is **\$50.00** and **\$ 26.35 /1000m³**
for Water use charge, *Volumetric fee*. **Total \$76.35** every year

- ☐ For Commercial Lease II
The corresponding *Water Application fee* is **\$500.00** and **\$ 26.35 /1000m³**
for Water use charge, *Volumetric fee*. **Total \$526.35** every year

- ☒ For Commercial Lease III,
The corresponding *Water Application fee* is **\$5000.00** and **\$ 26.35**
/1000m³ for Water use charge, *Volumetric fee*. **Total \$5026.35** every year

Water Use Fee [Volumetric fee]: # volume water use (m³) * \$26.35/1000m³ = \$ 959.80

Note: The water application type is related to the Land use application type. A water Protection fee will be charged according to the type and stage of the development project.

19. a) The Applicant request a Certificate of Exemption ☐

or

b) The Applicant agrees to be bound by terms and conditions to be attached to the Inuit Land User License or Lease ☒

Sign name in full:

Stephen Ken
Signature

Jan 28/2013
Date

APPENDIX A

All applicants must provide a detailed project description that includes ALL of the following:

1. Outline project activities, their necessity, their expected duration and alternatives considered. If the proposed activity fits into any long-term developments, describe the projected outcome of the development for the area and its timeline.
2. Schedule of activities including both operations and shutdowns.
3. Provide a preliminary plan showing the location of the lands proposed to be used and an estimate of their area in hectares. The preliminary plan should show the approximate location of all:
 - i) existing or new lines, trails, rights-of-way and cleared areas proposed to be used in the exercise of the Right;
 - ii) buildings, campsites, air landing strips, air navigation aids, fuel and supply storage sites, waste disposal sites, excavations, ponds, reservoirs and other works and places proposed to be constructed or used during the exercise of the Right;
 - iii) manmade structures and works, including bridges, dams, ditches, highways, roads, transmission lines, pipelines, survey lines and monuments, air landing strips; all topographical and natural features, including eskers, rivers, streams, lakes, inland seas and ponds; and all areas of biological interest, including wildlife and fish habitat, specifically, calving, denning, spawning or nesting areas, identified in consultation with the NWMB, RWO, or HTO, as appropriate, that may be affected by the exercise of the Right; and
 - iv) the accurate location of all carving stone, archaeological sites, and archaeological specimens.
4. Provide a list of structures that will be erected.
5. Equipment to be used, indicating type and number, size and ground pressure and proposed use. Include all drills, pumps, vehicles etc.
6. Fuels to be used, capacity of containers and number of litres. Include diesel, gasoline, aviation fuel, propane and other fuel types. Describe method of fuel transfer.
7. Provide a copy of fuel spill contingency plan.
8. Describe the methods of transportation.
9. Indicate the components of the environment that are near the project area, as applicable. Include the type of species, the important habitat area (calving, staging, denning, migratory pathways, spawning, nesting etc.), and the critical time periods (calving, post-calving, spawning, nesting, breeding etc.). Also, include information on eskers, communities, and historical/archaeological sites.
10. Summary of potential environmental, wildlife and resource impacts and mitigation measures to be used. Describe the effects of the proposed program on lands, water, flora and fauna.
11. Reclamation cost analysis for advanced exploration activities.

12. Proposed reclamation plan, that includes, but is not limited to the proposed methods and procedures for the progressive:

- i) removal of all structures, equipment, and other manmade debris;
- ii) rehabilitation of the area to its previous standard of human utilization and natural productivity;
- iii) replacement of overburden and soil;
- iv) grading of the area back to its natural contours; and
- v) re-establishment, to the extent possible, of flora.

Include information about on going site remediation throughout the duration of the project.

13. Indicate the number of Inuit to be employed, the Inuit firms to be contracted, and the socio-economic benefits to the area.

In addition to the above requirements, COMMERCIAL LEASE APPLICANTS must provide the following information:

- If the land is surveyed, state the lot and block number. If unsurveyed, state the size of the parcel and general area. Provide a detailed description and detailed sketch of the area applied for.
- Describe the type of commercial use.

In addition to the above requirements, RESIDENTIAL/RECREATIONAL LEASE APPLICANTS must provide the following information:

- If the land is surveyed, state the lot and block number. If unsurveyed, state the size of the parcel and general area. Provide a detailed description and detailed sketch of the area applied for.
- For what purposes will the land be used? Describe any buildings or improvements on this land. What is the value of the improvements on the land and who is the owner of the improvements.
- Provide a list of improvements planned for construction, the value of these improvements and within how many months of the effective date of the lease these improvements be finished.

In addition to the above requirements, QUARRY LICENSE or QUARRY CONCESSION AGREEMENT applicants must provide the following information:

- A description by meters and bounds of the land applied for;
- The name of the specified substances that the applicant desires to remove from the area; and
- A sketch showing clearly the position of the parcel in relation to a survey monument, prominent topographical feature or other known point and shown in its margin, copies of the markings on the posts or cairns.
- If for commercial use, the description shall contain an affidavit sworn by the applicant setting forth:
 - i) that the land contains material of the kind applied for in merchantable quantities;
 - ii) that the volume of specified substances are required for a project that has been approved by the appropriate level of government; and
 - iii) that the applicant has obtained a contract for the delivery of those Specified Substances.

Please prepare this project description on a separate sheet of paper and attach it to your application form marked as APPENDIX A. Return the original, signed and dated application form, with attached APPENDICES A and all ORIGINAL maps of the area to QIA Lands Office at Box 1340, Iqaluit, NU, X0A 0H0.



APPENDIX C

NUNAVUT TERRITORIAL PARK USE PERMIT APPLICATION

(Page C-1)

NUNAVUT TERRITORIAL PARKS USE PERMIT

APPLICANT INFORMATION

Permit Number

Contact Name: Stephen Kerr, Director of Engineering, Qulliq Energy Corporation
Mailing Address: PO Box 250, Iqaluit, NU X0A 0H0
Email Address: skerr@npc.nu.ca
Phone #: 867-979-7540

Alternate Phone/Cell #

PROJECT/ACTIVITY INFORMATION

Project Name: Iqaluit Hydroelectric Project
Brief Project Description: Construct and operate a hydroelectric facility at the Armshow River in Katannilik Territorial Park. Construction of a transmission line from the Jaynes Inlet facility (not in the park) to Iqaluit will occur 2016-2018. Construction of the Armshow South hydroelectric facility will occur in around 2033.

On-Site Contact: Richard Cook, Project Manager, Knight Piésold Ltd. Ph 705-476-2165

LOCATIONS

Armshow River South - dam location at 503,613 E, 7,046,990 N and surrounding area.

DATES VALID: FROM

January 1, 2016

TO:

Beyond 2107 (75 year operating life)

SUPPORTING DOCUMENTATION

If necessary, attach proof of comprehensive liability insurance for a minimum of \$2 million

Attach proof of community Support - HTO/Hamlet/CLARC

The project is expected to undergo an environmental assessment. Consultation undertaken in 2006 to 2008 and in 2012, and is ongoing.


Signature - Applicant


Date

Signature - Superintendent, Nunavut Parks

Date



APPENDIX D

APPLICATION FOR LAND USE PERMIT FOR CROWN LAND

(Pages D-1 to D-4)



APPLICATION FOR LAND USE PERMIT

Privacy Act Statement

The information you provide in this document is collected under the authority of the *Territorial Land Use Regulations* for the purpose of responding to your application for land use permit. Information on individuals is used by Aboriginal Affairs and Northern Development Canada Land Administration employees who need to know the information in order to respond to your request and/or the program requirements. We share the information you give us with First Nations, Aboriginal groups and Inuit, Territorial and Federal Government Expert Agencies and Public Government Institutions. The personal information will be retained 6 years after the last administrative use and then destroyed. Individuals have the right to the protection of and access to their personal information under the *Privacy Act* <http://lois.justice.gc.ca/en/P-21/index.html>.

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Application Fee	Land Use Fee	General Receipt No.	Date (YYYYMMDD)	Class	Permit Number
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To be completed by all applicants ► ☒ New Application ☐ Amendment

1. Applicant's Name and Mailing Address (Full name, no initials) Stephen Kerr - Director of Engineering, Qulliq Energy Corporation P.O. Box 250, Iqaluit, Nunavut X0A 0H0			Facsimile Number 867 979-7548		
			Telephone Number 867 979-7540		
2. Head Office Address Qulliq Energy Corporation P.O. Box 580, Iqaluit, Nunavut X0A 0H0			Facsimile Number 867 979-7566		
			Telephone Number 867 979-7540		
Field Supervisor Richard Cook	Radio Telephone	E-Mail Address rcook@knightpicsold.com		Telephone Number 705 476-2165	

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

To be determined.

Total ► 75

4. Qualifications Refer to Section 21 of the <i>Territorial Land Use Regulations</i>		Number(s) exploration permit mineral claims (If applicable)	
a(i) <input type="checkbox"/>	a(ii) <input type="checkbox"/>	a(iii) <input type="checkbox"/>	b <input checked="" type="checkbox"/> c <input type="checkbox"/>

5. a) Summary of Operation (Describe purpose, nature and location of all activities.)

Refer to Section 22(2)(b) of the *Territorial Land Use Regulations* (Use last page of form if necessary.)

Operate and construct a hydroelectric facility at Jaynes Inlet, and sections of a transmission line to Iqaluit (84 km) that are situated on Crown Land (most of the transmission line will be located on Inuit Owned Land). Construction is scheduled for 2016 to 2018; construction of the Armshow South site is scheduled to begin in 2030; and operation is expected to continue for beyond the facility's design life of 50 years.

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

Yes - see Project Description

6. Summary of potential environmental and resource impacts

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

Ground disturbances will occur from construction activities. There will be airborne noise from helicopter and heavy equipment during construction. Flow changes will result in changes to the aquatic environment. See Project Description.

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

Construction facilities will be removed at the end of construction. Facilities will remain as long as operational. See Project Description.

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

- Federal reserve 24N/2-1-1
- Type A Water Licence
- Inuit Land Use Licence
- Park Permit
- Commissioner's Land Use Permit; and various research permits

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

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

- | | |
|-------------------------------------------------|-----------------------------------------------------------------------------|
| a) Garbage
Incineration / off-site transport | b) Sewage (Sanitary and Grey Water)
Incinerating toilets; greywater sump |
| c) Brush and Trees
Not applicable | d) Overburden (Organic soils, waste material, etc.)
Not applicable |

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

Type and Number	Size	Proposed Use
Helicopter		Transportation
Snowmobiles and ATVs		Move personnel
Rotary diamond drill rig		Geotechnical investigations
Dump trucks, excavators, loaders, dozers, graders, compactors, etc.		Construction, operations and maintenance

11. Fuels	Number of Containers	Capacity of Containers
<input checked="" type="checkbox"/> Diesel	20	20,000 L
<input checked="" type="checkbox"/> Gasoline		
<input checked="" type="checkbox"/> Aviation Fuel	5	20,000 L
<input checked="" type="checkbox"/> Propane	40	100 lbs.
<input type="checkbox"/> Other: _____		

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

Fuel spills of any volume will be reported to the Nunavut Spill Line and QEC's Spill Contingency Plan will be implemented immediately. A preliminary spill contingency plan will accompany a future Environmental Impact Statement.

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

Temporary fueling areas will be established during construction. See Project Description.

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

2013 to 2015 - Supplemental baseline studies, geotechnical drilling investigations, feasibility study, submit draft EIS to NIRB, receive Project Certificate from NIRB, complete licensing, sign IIBA

2016 to 2018 - Construction of Jaynes Inlet site

Late 2018 or early 2019 to 2093 - Commissioning and operation of Jaynes Inlet site

2030 to 2032 - Construction of Armshow South site

2033 to 2107 - Commissioning and operation of Armshow South site

15. Period of Permit (Up to two years, with maximum of one year extension.) 2 years (renewal will be sought to complete 3-year construction; long term lease to be sought)	Start Date (2016-07-01)	Completion Date (2018-06-30)
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16. Location of activities by map co-ordinates (Attach maps and sketches.)

Minimum Latitude	Degrees	Minutes	Seconds	Minimum Longitude	Degrees	Minutes	Seconds
	63	33	52.8762		-68	56	23.422
Maximum Latitude	Degrees	Minutes	Seconds	Maximum Longitude	Degrees	Minutes	Seconds
	63	13	28.635		-68	25	41.757

Map Sheet Number

25-N Armshow River

17. Applicant (Print Full Name) <u>Stephen Kerr</u>	Signature <u>[Signature]</u>	Date <u>2013/01/28</u>
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18. Fees

<input checked="" type="radio"/> Class A - \$150.00 <input type="radio"/> Class B - \$150.00	\$150.00
Land Use Fees: Less than or equal to 2 hectares	\$ 50.00
For each additional hectare over 2 hectares or portion of a hectare	X \$50.00 = \$ 15,195.00
Total application and land use fees	\$ 15,395.00

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

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

20. Application Checklist

- | | |
|----------------------------------------------------------|---------------------------------------------------------------|
| <input type="checkbox"/> a) Application Signed and Dated | <input type="checkbox"/> e) Screening Report |
| <input type="checkbox"/> b) Fees Attached | <input type="checkbox"/> f) Timber Permit Applied for - Yukon |
| <input type="checkbox"/> c) Map Included | <input type="checkbox"/> g) Fees Attached |
| <input type="checkbox"/> d) Address and Telephone Number | <input type="checkbox"/> h) Lease Applied for |

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

Accepted by

Date

(YYYYMMDD)

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

Iqaluit Hydroelectric Project

Qulliq Energy Corporation (QEC) is initiating a feasibility study and the environmental review process for its Iqaluit Hydroelectric Project.

The Project consists of two potential hydroelectric sites: Armshow River South and Jaynes Inlet. See attached Figure 1 showing the Project location, fact sheet and non-technical summary.

See the Project Description for a full description of the project proposal.



APPENDIX E
GENERAL WATER LICENCE APPLICATION
(Pages E-1 to E-10)



General Water Licence Application
(Application for a new Water Licence)

Document Date: May 2011

Application Submission Date: 02/15/2012
Month/Day/Year

P.O. BOX 119
GJOA HAVEN, NUNAVUT
XOB 1J0
TEL: (867)360-6338
FAX: (867)360-6369

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NUNAVUT IMALIRIYIN KATIMAYIT
NUNAVUT WATER BOARD
OFFICE DES EAUX DU NUNAVUT

DOCUMENT MANAGEMENT

Original Document Date: April 2010

DOCUMENT AMENDMENTS

	Description	Date
(1)	Updated for public distribution as separate document from NWB Guide 4	June 2010
(2)	Updated NWB logos and reformatted table to allow rows to break across page	May 2011
(3)		
(4)		
(5)		
(6)		
(7)		
(8)		
(9)		
(10)		



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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYIT
OFFICE DES EAUX DU NUNAVUT

GENERAL WATER LICENCE APPLICATION (APPLICATION FOR NEW WATER LICENCE)

The applicant is referred to the NWB's Guide 4: Guide to Completing and Submitting a Water Licence Application for a New Licence for more information about this application form.

LICENCE NO: (for NWB use only)	
1. APPLICANT (PROPOSED LICENSEE) CONTACT INFORMATION (name, address) Stephen Kerr Qulliq Energy Corporation P.O. Box 580 Iqaluit, Nunavut, X0A 0H0 Phone: <u>867-979-7540</u> Fax: <u>867-979-7548</u> e-mail: <u>skerr@npc.nu.ca</u>	2. APPLICANT REPRESENTATIVE CONTACT INFORMATION if different from Block 1 (name, address) Richard Cook Knight Piesold Ltd. North Bay, Ontario, P1B 8G5 Phone: <u>705-476-2165</u> Fax: <u>705-747-8095</u> e-mail: <u>rcook@knightpiesold.com</u> (Attach authorization letter.)
3. NAME OF PROJECT (including the name of the project location) Iqaluit Hydroelectric Project	
4. LOCATION OF UNDERTAKING Project Extents NW: Latitude: (63° 13' 28.635" N) Longitude: (-68° 25' 41.757" W) NE: Latitude: (° ' " N) Longitude: (° ' " W) SE: Latitude: (63° 33' 52.9762" N) Longitude: (-68° 56' 23.422" W) SW: Latitude: (° ' " N) Longitude: (° ' " W) Camp Location(s) Armshow River Camp Latitude: (63° 36' 28.409" N) Longitude: (68° 51' 10.123" W) Jaynes Inlet Construction Camp Latitude: (63° 36' 28.409" N) Longitude: (68° 51' 10.123" W)	
5. MAP - Attach a topographical map, indicating the main components of the undertaking. NTS Map Sheet No.: <u>N-25</u> Map Name: <u>Armshow River</u> Map Scale: <u>1 : 250,000</u>	

6. NATURE OF INTEREST IN THE LAND - Check any of the following that are applicable to the proposed undertaking (at least one box under the 'Surface' header must be checked).

Sub-surface

☐ Mineral Lease from Nunavut Tunngavik Incorporated (NTI)
Date (expected date) of issuance: _____ Date of expiry: _____

☐ Mineral Lease from Indian and Northern Affairs Canada (INAC)
Date (expected date) of issuance: _____ Date of expiry: _____

Surface

☒ Crown Land Use Authorization from Indian and Northern Affairs Canada (INAC)
Date (expected date) of issuance: December 2015 Date of expiry: _____

☐ Inuit Owned Land (IOL) Authorization from Kitikmeot Inuit Association (KIA)
Date (expected date) of issuance: _____ Date of expiry: _____

☐ IOL Authorization from Kivalliq Inuit Association (KivIA)
Date (expected date) of issuance: _____ Date of expiry: _____

☒ IOL Authorization from Qikiqtani Inuit Association (QIA)
Date (expected date) of issuance: December 2015 Date of expiry: _____

☒ Commissioner's Land Use Authorization
Date (expected date) of issuance: December 2015 Date of expiry: _____

☒ Other: Park Permit _____
Date (expected date) of issuance: December 2015 Date of expiry: _____

Name of entity(s) holding authorizations:

Qulliq Energy Corporation

7. NUNAVUT PLANNING COMMISSION (NPC) DETERMINATION

Indicate the land use planning area in which the project is located.

- | | |
|--------------------------------------------------|-----------------------------------------|
| <input type="checkbox"/> North Baffin | <input type="checkbox"/> Keewatin |
| <input checked="" type="checkbox"/> South Baffin | <input type="checkbox"/> Sanikiluaq |
| <input type="checkbox"/> Akunnig | <input type="checkbox"/> West Kitikmeot |

Is a land use plan conformity determination required?

☐ Yes ☒ No

If Yes, indicate date issued and attach copy _____

If No, provide written confirmation from NPC confirming that a land use plan conformity review is not required.

8. NUNAVUT IMPACT REVIEW BOARD (NIRB) DETERMINATION

Is an Article 12 Part 4 screening determination required?

☒ Yes

☐ No

If Yes, indicate date issued and attach copy _____

If No, provide written confirmation from NIRB confirming that a screening determination is not required.

9. DESCRIPTION OF UNDERTAKING – List and attach plans and drawings or project proposal.

See Project Description and attached Figure 1.1

10. OPTIONS – Provide a brief explanation of the alternative methods or locations that were considered to carry out the project.

See Project Description for a discussion of alternatives

11. CLASSIFICATION OF PRIMARY UNDERTAKING - Indicate the primary classification of undertaking by checking one of the following boxes.

☐ Industrial

☐ Agricultural

☐ Mining and Milling (includes exploration/drilling/exploration camps)

☐ Conservation

☐ Municipal (includes camps/lodges)

☐ Recreational

☒ Power

☐ Miscellaneous (describe below):

See Schedule II of *Northwest Territories Waters Regulations* for Description of Undertakings.

Information in accordance with applicable Supplemental Information Guidelines (SIG) must be submitted with a New Water Licence Application. Indicate which SIG(s) are applicable to your application.

☐ Hydrostatic Testing

☐ Tannery

☐ Tourist / Remote Camp

☐ Landfarm & On-Site Storage of Hydrocarbon Contaminated Soil

☐ Onshore Oil and Gas Exploration Drilling

☐ Mineral Exploration / Remote Camp

☐ Advanced Exploration

☐ Mine Development

☐ Municipal

☐ General Water Works

☒ Power

12. WATER USE - Check the appropriate box(s) to indicate the type(s) of water use(s) being applied for.

☐ To obtain water for camp/ municipal purposes

☐ To obtain water for industrial purposes

☐ To divert a watercourse

☐ To cross a watercourse

☐ To modify the bed or bank of a watercourse

☐ To alter the flow of, or store water

☐ Flood control

☒ Other: Power Generation

- 13. QUANTITY AND QUALITY OF WATER INVOLVED** - For each type of water use indicated in Block 12, provide the source of water, the quality of the water source and available capacity, the estimated quantity to be used in cubic meters per day, method of extraction, as well as the quantities and qualities of water to be returned to source.

Name of water source(s) (show location(s) on map):

Armshow mainstream near camp, Armshow river (draining Armshow South Lake), Armshow South Lake, and Jaynes upper lake, main river, or lower lake – see Project Description.

Describe the quality of the water source(s) and the available capacity:

Previous water quality sampling indicates the water is good quality and not impaired. Available capacity well exceeds the volume required.

Provide the overall estimated quantity of water to be used: C – 100; operation 765,000 (both sites together) ³/day

Provide the estimated quantity(s) of water to be used from each source:

Armshow – 4.75 m³/s; Jaynes – 4.1 m³/s.

Indicate the estimated quantities to be used for each purpose (camp, drilling, etc.)

100 cu.m./day for camp and drilling during construction

4.1 to 4.75 cu.m./second will pass through the operating turbines and Jaynes Inlet and Armshow River hydroelectric facilities during operation, respectively.

Describe the method of extraction(s): Water lines equipped with a mesh to prevent entrapment of fish during construction. Intake structures with gate/mesh during operation.

Estimated quantity(s) of water returned to source(s) C – 100; O – 765,000 m³/day

Describe the quality of water(s) returned to source(s): During construction, water returned to watercourses will be effluents (drilling effluents, treated sewage effluent, etc. During operation, the water quality discharged from the powerhouse will not be impaired.

- 14. WASTE** – Check the appropriate box(s) to indicate the types of waste(s) generated and deposited.

☒ Sewage

☒ Solid Waste

☐ Hazardous

☐ Bulky Items/Scrap Metal

☐ Animal Waste

☐ Other (describe): _____

☐ Waste oil

☒ Greywater

☐ Sludges

☐ Contaminated soil and/or water

- 15. QUANTITY AND QUALITY OF WASTE INVOLVED** – For each type of waste indicated in Block 14, describe its composition, quantity in cubic meters/day, method of treatment and method of disposal.

Type of Waste	Composition	Quantity Generated	Treatment Method	Disposal Method
Sewage	Human	15 m ³ /day during constr.	Sewage plant, incinerating toilet, or pit latrine	Pit latrine or incinerating toilet

Greywater	Unknown	4 m ³ /day during constr.	Sewage plant or sumps	Buried sump
Solid Waste	Unknown	Unknown	None	Incineration/Off-site disposal in the Iqaluit landfill

16. OTHER AUTHORIZATIONS – In addition to the sub-surface and surface land use authorizations provided in Block 6, indicate any other authorizations required in relation to the proposed undertaking. For each provide the following:

Authorization: Land use license / Land use permit.

Administering Agency: QIA, AANDC and Government of Nunavut.

Project Activity: Construction, operation and maintenance of hydroelectric facility.

Date (expected date) of issuance: December 2015 Date of expiry: renewals sought at expiry

17. PREDICTED ENVIRONMENTAL IMPACTS OF UNDERTAKING AND PROPOSED MITIGATION MEASURES - Describe direct, indirect, and cumulative impacts related to water and waste.

See Project Description

18. WATER RIGHTS OF EXISTING AND OTHER USERS OF WATER

Provide the names, addresses and nature of use for any known persons or properties that may be adversely affected by the proposed undertaking, including those that hold licences for water use in precedent to the application, domestic users, in-stream users, authorized waste depositors, owners of property, occupiers of property, and/or holders of outfitting concessions, registered trapline holders, and holders of other rights of a similar nature.

Advise the Board if compensation has been paid and/or agreement(s) for compensation have been reached with any existing or other users.

There are no other users that have been identified.

19. INUIT WATER RIGHTS

Advise the Board of any substantial affect of the quality, quantity or flow of waters flowing through Inuit Owned Land (IOL), and advise the Board if negotiations have commenced or an agreement to pay compensation for any loss or damage has been reached with one or more Designated Inuit Organization (DIO).

QEC plans to discuss this matter with the DIO – the Qikiqtani Inuit Association

20. CONSULTATION – Provide a summary of any consultation meetings including when the meetings were held, where and with whom. Include a list of concerns expressed and measures to address concerns.

See Project Description

21. SECURITY INFORMATION

Provide an estimate of the total financial security for final reclamation equal to the total outstanding reclamation liability for land and water combined sufficient to cover the highest liability over the life of the undertaking. Estimates of reclamation costs must be based on the cost of having the necessary

reclamation work done by a third party contractor if the operator defaults. The estimate must also include contingency factors appropriate to the particular work to be undertaken.

Where applicable, the financial security assessment should be prepared in a manner consistent with the principals respecting mine site reclamation and implementation found in the *Mine Site Reclamation Policy for Nunavut*, Indian and Northern Affairs Canada, 2002.

- To be calculated with the development of a preliminary abandonment and reclamation plan in the future

22. FINANCIAL INFORMATION

Provide a statement of financial responsibility.

- QEC is a Crown Corporation of the Government of Nunavut; annual reports are posted on nunavutpower.com (see Figures C to G in the 2011/12 Annual Report)

If the applicant is a business entity, provide a list of the officers of the company.

- Peter Mackey – President/CEO
- Richard McQuarrie – Chief Financial Officer
- Cal Clark – Legal Counsel
- David Clark – Director of Operations
- Stephen Kerr – Director of Engineering
- Catherine Cronin – Director of Human Resources
- Ryan Ramaglia – Director of Information Technology
- Edward Rideout – Director of Corporate Affairs

If the applicant is a business entity attach a copy of the Certificate of Incorporation or evidence of registration of the company name.

- QEC was created by legislation.

23. STUDIES UNDERTAKEN TO DATE - List and attach copies of studies, reports, research, etc.

- Environmental baseline studies were undertaken in 2006 through 2009.
- Desktop engineering studies completed in 2006.
- All reports are available on nunavutpower.com, under 'Hydro'

24. PROPOSED TIME SCHEDULE – Indicate the proposed start and completion dates for each applicable phase of development (construction, operation, closure, and post closure).

Construction

Proposed Start Date: 01/2016 Proposed Completion Date: 09/2018
(month/year) (month/year)

Operation

Proposed Start Date: 07/2018 Proposed Completion Date: 12/2093
(month/year) (month/year)

Closure

Proposed Start Date: _____ Proposed Completion Date: _____
(month/year) (month/year)

Post - Closure

Proposed Start Date: _____ Proposed Completion Date: _____
(month/year) (month/year)

For each applicable phase of development indicate which season(s) activities occur.

Construction

☐ Winter ☐ Spring ☐ Summer ☐ Fall ☒ All season

Operation

☐ Winter ☐ Spring ☐ Summer ☐ Fall ☒ All season

Closure

☐ Winter ☐ Spring ☐ Summer ☐ Fall ☐ All season

Post - Closure

☐ Winter ☐ Spring ☐ Summer ☐ Fall ☐ All season

25. PROPOSED TERM OF LICENCE

Number of years (maximum of 25 years): 25 years

Requested Date of Issuance: March 2016 Requested Expiry Date: March 2041
(month/year) (month/year)

(The requested date of issuance must be at least three (3) months from the date of application for a type B water licence and at least one (1) year from the date of application for a type A water licence, to allow for processing of the water licence application. These timeframes are approximate and do not account for the time to complete any pre-licensing land use planning or development impact requirements, time for the applicant to prepare and submit a water licence application in accordance with any project specific guidelines issued by the NWB, or the time for the applicant to respond to requests for additional information. See the NWB's *Guide 5: Processing Water Licence Applications* for more information)

26. ANNUAL REPORTING – If not using the NWB's *Standardized Form for Annual Reporting*, provide details regarding the content of annual reports and a proposed outline or template of the annual report.

- QEC will utilize NWB's annual report format.

27. CHECKLIST – The following must be included with the application for the water licensing process to begin.

Written confirmation from the NPC confirming that NPC's requirements regarding land use plan conformity have been addressed.

☐ Yes

☒ No

If no, date expected There is no South Baffin Regional Land Use Plan

Written confirmation from the NIRB confirming that NIRB's requirements regarding development impact assessment have been addressed.

☐ Yes

☒ No

If no, date expected December 2015.

Completed General Water Licence Application form.

☒ Yes

☐ No

If no, date expected _____

Information addressing Supplemental Information Guideline (SIG) , where applicable (see Block 11)

☒ Yes

☐ No

If no, date expected _____

English Summary of Application.

☒ Yes

☐ No

If no, date expected _____

Inuktitut and/or Inuinnaqtun Summary of Application.

☒ Yes

☐ No

If no, date expected _____

Application Fee of \$30.00 CDN (Payee Receiver General for Canada).

☒ Yes

☐ No

If no, date expected _____

Water Use Fee Deposit of \$30.00 CDN (Payee Receiver General for Canada). The actual water use fee will be calculated by the NWB based upon the amount of water authorized for use in accordance with the Regulations at the time of issuance of the licence.

☒ Yes

☐ No

If no, date expected _____

28. SIGNATURE

Stephen Kerr
Name (Print)

Director, Engineering
Title (Print)

S.K.
Signature

Jan 28/2013
Date