Qulliq Energy Corporation

Qulliq Energy Corporation Response to the Standing Committee on Oversight of Government Operations and Public Accounts.

Report on the Review of the 2012-2013 Annual Report and 2014-2018 Corporate Plan of the Qulliq Energy Corporation

February 9, 2015

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On September 23, 2014, Peter Ma, then President of Qulliq Energy Corporation, appeared before the Standing Committee on Oversight of Government Operations and Public Accounts to answer questions on the two reports. The Standing Committee raised many issues which are grouped under the following headings; governance; procurement; Inuit employment initiatives; alternative energy; Affordable Energy Fund; and contaminated sites. Following the appearance, the Standing Committee tabled their Report on the Review of the 2012-2013 Annual Report and 2014-2018 Corporate Plan of the Qulliq Energy Corporation on October 30, 2014. The Standing Committee report consists of six (6) recommendations to the Government of Nunavut (GN) and Qulliq Energy Corporation (QEC).

The QEC differs from the government's departments and other major Crown agencies and territorial corporations insofar as its annual operations and maintenance budget and annual capital budget are not appropriated from the Legislative Assembly through main estimates and capital estimates approval processes.

As per Rule 91(5) of the Rules of the Legislative Assembly, the Qulliq Energy Corporation has 120 days from the tabling of the Standing Committee Report to provide a comprehensive response.

The recommendations provided by the Standing Committee were welcomed by QEC and are consistent with current efforts to increase Nunavummiut confidence and pride in QEC.

This response addresses the specific recommendations made by the Standing Committee.

Standing Committee Recommendation #1:
The Standing Committee recommends that the *Qulliq Energy Corporation Act* be amended to require the establishment of an audit committee of the corporation's board of directors. These amendments should parallel, to the greatest practicable extent, the 2011 amendments to the *Nunavut Housing Corporation Act*.

Response #1

The QEC Board of Directors currently has a Finance and Audit Committee. A Legislative Proposal will be initiated as part of the GN legislative cycle to include this as a requirement under the *Act.*

The Standing Committee further recommends that all approved governance and operating policies of the Board of Directors of the Qulliq Energy Corporation be tabled in the Legislative Assembly as soon as practicable.

Response #1

The new Board of Directors and management are currently reviewing and revising its governance and operating policies and will table them upon completion.

The Standing Committee further recommends that the Government of Nunavut's response to this report clarify, in detail, the respective authorities of the Chairperson and members of the Board of Directors of the Qulliq Energy Corporation, the Minister responsible for the Qulliq Energy Corporation, the President of the Qulliq Energy Corporation, the Financial Management Board, the Executive Council and the Public Agencies Council with respect to the:

- Approval of the Qulliq Energy Corporation's multi-year corporate plans;
- Approval of the Qulliq Energy Corporation's strategic plans;
- Approval of the Qulliq Energy Corporation's annual reports;
- Approval of the annual Ministerial *Letter of Expectation* to the Chairperson of the Qulliq Energy Corporation's Board of Directors;
- Approval of the Qulliq Energy Corporation's annual operations and maintenance budget;
- Approval of the Qulliq Energy Corporation's annual and multi-year capital plans and budgets;
- Approval of tentative collective agreements with the Nunavut Employees Union;
- Appointment of the President of the Qulliq Energy Corporation; and
- Appointment of the Chairperson and members of the Qulliq Energy Corporation's Board of Directors.

Response #1

Please refer to Appendix “A” for list of authorities and governing legislation and policies.

Standing Committee Recommendation #2:
The Standing Committee recommends that the Qulliq Energy Corporation's annual contracting, procurement and leasing reports for the 2010-2011 and 2013-2014 fiscal years be tabled in the Legislative Assembly as soon as practicable.

Response #2

QEC is completing the 2013-2014 annual contracting, procurement and leasing report for review by the QEC Board of Directors Finance and Audit Committee and submission to the Minister for tabling in the Legislative Assembly. On October 31, 2011, QEC tabled the Contracting, Leasing and Procurement reports for the fiscal year 2010-2011.

The Standing Committee further recommends that the Government of Nunavut's response to this report provide a detailed update on the status of the Qulliq Energy Corporation's implementation of its *Action Plan in Response to the Auditor General of Canada's 2012 Report on Procurement of Goods and Services.*

Response #2

All recommendations from the *Action Plan in Response to the Auditor General of Canada's 2012 Report on Procurement of Goods and Services* have been implemented, except the following two which are ongoing:

1. Procurement and contracting rules and procedures, and staff training. This is on-going as staff and duties evolve.
2. Contract administration. A program for document handling is under development.

The Standing Committee further recommends that the Government of Nunavut's response to this report clarify the extent to which the NNI Policy applies to the Qulliq Energy Corporation's contracting, procurement and leasing activities.

Response #2

The NNI policy resides with EDT and they are currently reviewing changes to the policy.

Standing Committee Recommendation #3:
The Standing Committee recommends that the Government of Nunavut's response to this report provide a detailed timeline for the achievement of a fully representative workforce for each of the Qulliq Energy Corporation's six occupational categories.

Response #3

QEC currently only sets targets towards a fully representative workforce on a company wide basis. The current targets that are set out in the 2014-2018 Corporate Plan are as follows:

- 2014-2015 target is 59%
- 2015-2016 target is 61%
- 2016-2017 target is 63%
- 2017-2018 target is 65%

QEC's Inuit Employment Plan (IEP) is detailed in section 2.9 of the QEC Corporate Plan.

The Standing Committee further recommends that the Government of Nunavut's response to this report provide a detailed timeline for the relocation of the Qulliq Energy Corporation's executive and senior management positions to its headquarters in Baker Lake.

Response #3

QEC has no plans and has received no direction from the GN to relocate its executive and senior management positions to its headquarters in Baker Lake.

Standing Committee Recommendation #4:
The Standing Committee recommends that the Qulliq Energy Corporation's 40-Year Capital Planning Document that is referenced in its 2014-2018 corporate plan be tabled in the Legislative Assembly no later than March 31, 2015.

Response #4

Work is still on-going to complete the development of a 40-year Capital Planning document. The completion of a 40-year Capital Planning Document is one of QEC's priorities for 2015-2016.

The Standing Committee further recommends that the Government of Nunavut's response to this report provide a detailed update concerning what specific actions have been taken by the Qulliq Energy Corporation to address the capital planning deficiencies that were noted by the Utility Rates Review Council in reference to the Iqaluit main power plant expansion and distribution system upgrade projects.

Response #4

A full engineering, operations and finance review was undertaken of all cost estimates and project scopes of work prior to inclusion in the 2015/16 Capital Budget submission. Standardized tendering and contract templates are being developed by QEC Procurement and Legal. In house legal review is occurring of all major procurement documents prior to initiation. The development of a rigorous project management framework/process has been initiated. Under the direction of QEC Board Finance and Audit Committee, who review the capital plan prior to full Board review, a 10% contingency has been added to most project budgets. Higher contingencies have been included where appropriate. A planning budget was included in the 2015/15 Capital Budget for engineering/design pre-work to develop project budget estimates for consideration for inclusion into the capital plan. Project management processes are being reviewed for opportunities for improvement.

The Standing Committee further recommends that the Government of Nunavut's response to this report provide a detailed update concerning what specific actions have been taken by the Qulliq Energy Corporation to address the fuel storage capacity issues that were noted by the Utility Rates Review Council in its April 28, 2014, report concerning the Qulliq Energy Corporation's recent General Rate Application.

Response #4
QEC has included in its 2015/16 Capital Plan a budget for engineering design of additional fuel storage capacity in Iqaluit. Opportunities to increase QEC's fuel storage

capacity in other communities will be considered to ensure best value for QEC's customers.

The Standing Committee further recommends that the Government of Nunavut's response to this report provide a detailed update concerning what current or planned initiatives are, or will be, undertaken by the Qulliq Energy Corporation and the Petroleum Products Division of the Department of Community and Government Services with respect to fuel pricing, fuel purchases and other areas in which the entities have contractual or working relationships.

Response #4
The President/CEO of QEC met with CGS Deputy Minister and discussed concerns related to the fuel supply and pricing which are under CGS responsibility. Opportunities for collaboration between QEC and CGS will continue to be pursued.

The Standing Committee further recommends that the Government of Nunavut's response to this report provide a detailed update concerning the Qulliq Energy Corporation's ongoing and planned initiatives with respect to the use of Public-Private Partnerships (P3s) for the purpose of power plant construction and/or alternative energy development.

Response #4
Presentations were made to the QEC Board in December 2014 concerning private sector opportunities to fund and develop alternate energy sources (hydro and tidal). Preliminary discussions have also taken place on private sector financing of diesel generation. Proponents must be able to demonstrate ability to provide energy at or lower than QEC's cost of service to its customers within the bounds of the GN's debt cap limitations. QEC will be developing Independent Power Producer (IPP) guidelines to facilitate the pursuit of such opportunities.

The Standing Committee further recommends that the Government of Nunavut's response to this report provide a detailed update concerning work being undertaken under the auspices of the Hudson Bay Neighbours Regional Roundtable with respect to hydroelectric power transmission from Manitoba to the Kivalliq.

Response #4
QEC attended one of the two HBRRT meetings and sits on the working group established to examine if there is a valid business case for extending a transmission line from Manitoba into the Kivalliq. The GN Energy Secretariat within EDT is the GN's lead on this initiative. CGS is co-chair of the HBRRT. On January 14, 2014, an evaluation analysis was conducted and recommendation put forth by Agnico Eagle Mining and Kivalliq Inuit Association on the three bids received for the Scoping Study of Energy Development Opportunities between Manitoba and Nunavut. The budget is $150,000

with the cost to be split 50/50 between Manitoba and Nunavut. QEC has been requested by the GN to contribute 1/3 of Nunavut's share.

The Standing Committee further recommends that the Government of Nunavut's response to this report provide a detailed update concerning the status of hydroelectric development in the vicinity of Iqaluit.

Response #4
The QEC Board received a presentation by a proponent on possible advancement of this project through outside funding. Further discussions with the proponent are forthcoming. QEC continues to lobby and develop partnerships to fund large capital investment needed to advance this project. The hydro project as was developed by QEC currently needs additional funding to proceed to a feasibility study which is the next step before seeking construction funding. Funding options within debt limitations are being explored to advance this project.

The Standing Committee further recommends that the Government of Nunavut's response to this report provide a detailed update concerning the status of the Qulliq Energy Corporation's Arctic Wind Test facility in Arviat.

Response #4
The Arviat Wind Test Facility was a concept that was discussed in November 2009 at a meeting of Remote Community Wind-Hydrogen Roundtable in PEI. The intent was to investigate the interest in creating a cold weather testing area for wind turbines in Arviat. The idea was not pursued beyond the initial discussions

The Standing Committee further recommends that the Government of Nunavut's response to this report provide a detailed update concerning the status of the Qulliq Energy Corporation's wind energy test project in Cape Dorset.

Response #4
A preliminary wind resource assessment has been completed by the Wind Energy Institute of Canada (WEICAN). QEC has collected wind data for Cape Dorset from July 22, 2012 to November 29, 2013. QEC sent the data to WEICAN who utilized the data to complete a wind resource assessment. Based on the wind resource assessment, WEICAN suggests that an in-depth feasibility study be completed. This would be the next phase in developing a wind turbine or wind-diesel project.

The Standing Committee further recommends that the Government of Nunavut's response to this report provide a detailed update concerning the status of the Qulliq Energy Corporation's discussions with Agnico-Eagle Mines concerning power generation issues in the Kivalliq.

Response #4

Meetings and discussions were held between Agnico-Eagle Mining and QEC for the period April 2010 to mid-2012 concerning the generation of power for the Meliadine mine site. No agreement was reached between the two parties and it is expected that Agnico-Eagle Mining will be constructing a power plant at the mine site.

Standing Committee Recommendation #5:
The Standing Committee recommends that the Government of Nunavut's response to this report clarify which department, Crown agency or Territorial Corporation is responsible for administering the Affordable Energy Fund under section 39.1 of the *Qulliq Energy Corporation Act.*

Response #5

In November 2006, Cabinet directed the Energy Secretariat, which currently resides in Economic Development and Transportation to work with other departments (including Finance) to develop options relating to affordable energy.

In March 2007, Cabinet approved the principles of the Ikummatiit Energy Strategy. Cabinet approved the final strategy in September 2007, and directed the Energy Secretariat to work with departments to prepare a fully costed implementation plan.

The Strategy indicates the Energy Secretariat, Finance and other departments and Crown Agencies would develop an affordable energy fund. There were no details about what this fund was intended to achieve.

The *QEC Act*, proclaimed by Cabinet in late 2007, refers to the creation of an "*Affordable Energy Fund*"

Cabinet assigned "administrative responsibility" over the Fund to Finance, but directed Finance and the Energy Secretariat to "develop a process for people and businesses to access AEF energy efficiency / conservation funding"

There have been a few conversations between Finance and the Energy Secretariat over the years, but there have been no specific recommendations or policy direction from the Energy Secretariat.

On November 1, 2007, Cabinet Meeting # 02-07-243, Extract # 02-07-243 (3362), a Decision of the Executive Council was issued that assigned administrative/management responsibility for the Affordable Energy Fund to the Department of Finance.

The Standing Committee further recommends that the Government of Nunavut's response to this report clarify, in detail, the specific factors that have accounted for no funds having been appropriated to date for the purpose of administering the provisions of section 39.1 of the *Qulliq Energy Corporation Act*.

Response #5

The inception of the Affordable Energy Fund has been complicated by the lack of clarity of roles and responsibilities:

- Reference to the fund exists in the QEC's Act;
- Expertise and mandate related to energy policy falls within the Energy Secretariat in the department of Economic Development and Transportation; and
- Finance was given "administrative responsibility" over the Fund.

The Standing Committee further recommends that the Government of Nunavut's response to this report clarify, in detail, its short-, medium- and long-term plans with respect to the administration of the Affordable Energy Fund.

Response #5

Going forward, the Comptroller General has questioned whether such a Fund is allowed under the *Financial Administration Act*, and is looking into it. Finance plans to work with QEC in the coming months to remove this reference from their *Act*.

Finance has taken other steps to help make energy more affordable for Nunavummiut:

- Finance administers the Nunavut Electrical Subsidy Program, which is expected to reduce energy costs for Nunavummiut by $10.5 million this year.
- Finance administers the *Homeowners Fuel Rebate*, which is expected to provide about $1.1 million to homeowners to help offset the high price of fuel in 2014.

Standing Committee Recommendation #6:

The Standing Committee recommends that the Government of Nunavut's response to this report provide a detailed inventory of contaminated sites that were inherited from the federal Northern Canada Power Commission, and that this inventory include a detailed description of the nature and extent of the contamination at each site.

Response #6

See attached report on contamination sites and levels.

The Standing Committee further recommends that the Government of Nunavut's response to this report provide a detailed chronology of formal communications that have taken place since April 1, 1999, between the Qulliq Energy Corporation and the Government of Canada concerning the issue of remediation of contaminated sites that were inherited from the federal Northern Canada Power Commission.

Response #6

To date QEC has only been able to locate correspondence with the Government of Canada as far back as June 7, 2007 when then President Anne Crawford wrote to Indian & Northern Affairs Canada (INAC) about the contamination in Baker Lake. On July 3, 2007, a fax was received from INAC acknowledging receipt of the letter and informing QEC that INAC and Transport Canada would review the information and provide a reply. On September 24, 2007 and October 1, 2007 letters were received from INAC and Transport Canada respectively addressed to the ADM – Community Support Services, Government of Nunavut (GN). The letters invited the GN to meet with the federal departments to work with the respective regional offices to identify sites. QEC has no knowledge of any resulting meetings. In 2007 a working group was formed consisting of GN and QEC staff to identify and compile a consolidated list of contaminated sites to bring forward to the Government of Canada. This group has continued meeting and is currently being led by the GN Department of Environment (DOE).

On May 16, 2011, QEC met with the GN Department of Community and Government Services (CGS), the Department of Justice and John Donihee (Barrister & Solicitor) to determine how to move forward on the file. It was decided that CGS would take the lead and request a meeting with senior officials at INAC. As previously noted, the lead department for this initiative is now the DOE.

Appendix "A" List of authorities, governing legislation and policies

	QEC Board Chair	QEC Board members	Minister	President	FMB	Executive Council	PAC	Reference
Approval of QEC corporate plan	submits to Minister for Approval	approves submission to Minister	Approves	submits to QEC board				FAA Part IX Sec 91
						Approves tabling		
approval of QEC strategic plan (not mentioned in FAA and QEC Act)								FAA Part IX Sec 91 (3)(c) states that the corporate plan must include a statement of the strategy intended to be employed to achieve its objectives.
Approval of QEC annual reports	submits to Minister	Approves		submits to QEC board				FAA Part IX Sec 96
		Submits to the Minister (35.6)	Tables following receipt(36)	submits to QEC board (OAG reports audit results directly to Minister and to QEC board (35.4))				QEC Act
						Approves tabling		
Approval of Ministerial Letter of Expectation to the Chair			issue or establish directions and policy guidelines			issue or establish directions and policy guidelines		QEC Act Sec 8.(4)
						Approves tabling		
Approval of annual O&M budget	submits to Minister	approves submission to Minister (in practice after review by board Finance and Audit Committee)	Submits to FMB	submits to QEC board	Approves			FAA Part IX Sec 92
Approval of QEC annual and multi-year capital plans and budgets	submits to Minister	approves submission to Minister (in practice after review by board Finance and Audit Committee)	Submits to FMB	submits to QEC board	Approves (FAA 93.1 and 93.3(a) only requires approval of items for following fiscal year and multi-year items, not items starting in out years)			FAA Part IX Sec 93
approval of tentative collective agreements with NEU			The Minister resp for Public Service Act, on recommendation of FMB, may enter into a collective agreement.					Public Service Act Sec55(11)
Appointment of President of QEC		Recommends to Minister	Appoints on recommendation of the board.					QEC Act Sec 12.1
						Approves appointment (Cabinet Designated Appointment) (SPS is noted as Responsible Agency)		Cabinet Appointments Policy
						The Commissioner in Executive Council, on the recommendation of the Premier, may appoint a person to the position of Deputy Minister.		Public Service Act Sec 8(2)
Appointment of Chair and members of QEC's board.			Designates Chair from among the directors (8.2); Appoints directors (9.1).					QEC Act Sec 82 and 9.1
						Approves appointment (Cabinet Designated Appointment)		Cabinet Appointments Policy

Per GN Finance website, PAC's mandate is:

To advise Cabinet and the Financial Management Board (FMB) through their respective Chairs regarding matters of governance for territorial corporations;
To provide recommendations to the Ministers responsible, Cabinet and the FMB, regarding matters including statutory requirements, budget impacts, financial management, human resource policies and legislative initiatives; and
To support and enhance the governance capacity of Board Members of Public Agencies in Nunavut to carry out GN mandates and policies, and to make access to expert advice and support available and affordable for public agencies.

QEC Report on the Inventory of Contaminated Sites Inherited from Northern Canada Power Commission

Director of Health Safety and Environment – Rick Hunt

Environmental Specialist – Maurice Guimond

January 15, 2015

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Preamble

QEC became a Corporation of the Government of Nunavut (GN) in 2001 two years after the newly formed territory. Previously the GNWT had run the energy producing sector for their communities after the federally run Northern Canada Power Commission (NCPC) transferred operations and assets in April 1989.

Along with real estate, easement agreements, titles and infrastructure, QEC had also inherited potentially contaminated sites resulting from decades of poor hazardous material handling practices. It is well known that most QEC power plant properties are contaminated and that a good portion was deposited by NCPC.

Through the use of methodical investigation techniques and various documentation tools, QEC has been able to record an accurate account of its current inventory of contaminated sites and its associated history. Phase I, and II environmental site assessments (ESA's) have been conducted at all QEC facilities and the latest studies since 2010 incorporated remedial action plans (RAP's) to address clean-up options and costs.

This report will list by community the quantity and type of contamination present, the inferred cause and party responsible. It should be noted that QEC is identified as a party of the GN Contaminated Sites Strategy.

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502 Gjoa Haven

Background

This pre-fabricated steel clad plant was built in 1977. Fuel is delivered via truck to a single 102,508 L horizontal tank within a steel berm. The site also contains the transient trailer and the entire site is fenced.

The yard has always been used as storage for generated waste products. Liquids were stored in drums and solids like oily rags and filters were stored in lined crates while waiting for sealift to send them south for disposal. QEC has since changed the requirement for stored solid waste and now use U.N. approved lined collapsible boxes for rags and filters.

ESA/RAP Results

The hydrocarbon contaminated soils in the F2 (Diesel) range based on QEC interpretation of delineation reports total 1276m^3 in one onsite plume. There is another large impacted area partially on and off the plant site. This plume is due to activities unrelated to QEC and the contamination is due to the past presence of a tank farm. This

* Based on QEC interpretation of delineation reports and best available information

large plume extends across the road north from the site onto hamlet property formerly occupied by a tank farm shared by federal government agencies then later transferred to GNWT. The former tank farm housed tanks of all types including bolted vertical, welded seam vertical and horizontal tanks. Some tanks were owned by NCPC then transferred to NWTPC. No particular spills were identified to either party which impacted this off site plume.

Various spills were identified on site in the 2013 assessment between 1988 and 2007 however only two were attributable to NCPC and NWTPC. Based on the product the year and volume of spills recorded it's estimated that 84.91%* of impacted soils were the result of NCPC activities. Therefore this percentage was used to split the liability between NCPC and NWTPC. There were no spills caused by QEC since the facility had been transferred from NWTPC. The contamination consists mainly of weathered diesel.

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504 Kugaaruk

This QEC Facility, with information provided by all official 3rd party reports, contains contamination that is 100% attributable to Federal activities.

Background

The current power plant in Kugaaruk sits on a single lot in the core of the hamlet. In 2012 the Hamlet leased a portion of their property to the north of the plant which our bulk fuel tank occupies. The fuel is delivered via truck transfer to this fuel tank. The power house and a separate office building were built in 1974. The transient trailer also sits on the property and all structures are within a fenced area.

Like the majority of QEC sites the yard is used as a storage area for generated waste as well as new products like lube oil and glycol. Solid wastes are stored in U.N. approved lined collapsible boxes.

ESA/RAP Results

The hydrocarbon contaminated soils in the F2 range (Diesel) based on QEC interpretation of delineation reports total 1480m^3 in one area which lies on the west side of the site and extends a short distance off site. This plume is attributed to a diesel spill of an unknown amount from 1979. Contamination from other sources is very limited and not substantiated. The contamination consists mainly of weathered diesel.

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* Based on QEC interpretation of delineation reports and best available information

505 Kugluktuk

Background

The current power plant in Kugluktuk sits on a single lot on the east of the community. The lot houses a power plant, built in 1968, the community domestic water plant, a storage shed and two vertical tanks within a steel berm.

Fuel is delivered to the tanks via marine transfer during the annual community fuel tanker run. The plant yard is used for storage of new and used products such as lube oils, fuel and glycols in drums as well as solid waste packaged in U.N approved collapsible boxes.

ESA/RAP Results

The hydrocarbon contaminated soils in the F2 range (Diesel) based on QEC interpretation of delineation reports total 3295m^3 in three plumes located in proximity to the power plant. The contamination is consistent with various recorded spills attributed to NCPC, NWTPC and QEC. Based on the quantity of product spilled by each party a percentage of the liability was applied for the cost of the recommended method of bioremediation. According to spill database records, of the 14,145 L of product spilled, 13,545 L was released during NCPC control prior to 1989. That represents 95.76% of spills recorded. The contamination consists mainly of weathered diesel.

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601 Rankin Inlet

This QEC Facility, according to all official 3rd party reports contains contamination that is 100% attributable to Federal activities.

Background

The current power plant in Rankin Inlet sits on three lots in the core of the hamlet. One lot contains two vertical tanks in a fenced steel berm, another which houses the power plant and a storage building and finally the east lot which contains a self-contained emergency generation unit. The site sits on the former nickel mine processing site and directly to the north are the tailings pond deposits.

Diesel fuel is delivered to the tanks via marine transfer during the annual community fuel tanker run. The yard is used for drummed product storage such as lube oil, glycol and waste liquid products as well as packaged solid waste.

* Based on QEC interpretation of delineation reports and best available information

ESA/RAP Results

The hydrocarbon contaminated soils in the F2 range (Diesel) based on QEC interpretation of delineation reports accessible for remediation total 3425m^3 in two plumes located in proximity to the power plant. The contamination is consistent with various recorded spills attributed to NCPC since spills during the NCPC tenure were released to the environment while NWTPC and QEC spills were contained within bermed areas and were promptly disposed. It is suspected however that a previous report may be more accurate as to the volume of impacted soils covering a much larger area. That previous estimate sited areas on and off site and including areas not immediately accessible. The contamination consists mainly of weathered diesel.

602 Baker Lake (Old Plant and MOT area)

This community, according to all official 3rd party reports contains contamination that is 100% attributable to Federal activities.

Background

The current power plant in Baker Lake sits on a single lot to the North of the hamlet. This area contains no contamination however the main concern is with the old power plant center of town where MOT and NCPC conducted significant activities. Federal authorities relinquished the land to NWTPC and the hamlet in 1989 then later 2 parcels of land to QEC in 2003.

The MOT complex and NCPC plant consisted of a 64,000 M^2 area and contained a power plant, several garages, a tank farm, housing units and a network of buried and aboveground pipelines connecting all the infrastructure to the fuel supply tank farm. Many leaks and spills were recorded since the spill line was created in 1971 however it is likely that there were previous spills based on the activities and fuel systems present prior to that.

ESA/RAP Results

The hydrocarbon contaminated soils in the F2, F3 range (Diesel, weathered diesel, oil) based on QEC interpretation of delineation reports that can potentially be attributable to power plant and MOT operations is estimated to be approximately 32,500 M^3. Many leaks and spills have been recorded at this site since 1971 and many state unknown quantities. However; one recorded spill in 1984 of over 100,000 L (estimated 21,000 Gal on report) has never been cleaned-up. There is significant potential risk to Baker Lake and a possible fisheries act violation however, much of the more mobile hydrocarbon fractions have biodegraded.

* Based on QEC interpretation of delineation reports and best available information

QEC has since constructed a Waterloo Emitter system to alleviate the highest risk area near the shore of Baker Lake down-gradient from the plant and MOT complex. The system has been in place since 2007 and maintenance and monitoring continues. More ground and surface water monitoring would be needed to evaluate the full benefit and cost of remediation. Four remedial options could be considered for this site: chemical oxidation with remediation complete in one season, land-farming with a timeframe for remediation of five years, in-situ bioremediation by deep tilling with a time frame for remediation of five+ years, and monitored natural attenuation with an estimated time frame for remediation of 20+ years. The contamination consists mainly of weathered diesel.

603 Arviat

Background

The current power plant in Arviat sits on three lots in the core of the hamlet. The majority of the site is fenced and contains the power plant a large stand-alone generator, a line shed and a steel berm with two 90,000 L tanks.

The yard is used for truck storage as well as various liquid products contained in drums. Line materials are also stored on site within the fenced area.

Fuel is delivered via direct pipeline from two QEC tanks housed in the PPD tank farm offsite and far to the south. One of the tanks that are in the PPD tank farm was on the power plant site but was removed and re-installed in 1994.

ESA/RAP Results

The hydrocarbon contaminated soils in the F2 range (Diesel) based on QEC interpretation of delineation reports in the 1997 delineation assessment identify two areas with significant contamination however the volume of impacted soil and ground water was not stated. After estimating the areas of impact and multiplying by the average depth to perma-frost QEC was able to estimate the volume of contaminated soil.

Approximately 2400 M^3 of soil is contaminated at the Arviat plant site within the fenced area. Some of that contamination appears to be off site but minimally. There were 7 recorded spills under the federal NCPC totaling 92.84% of spilled product. The contamination consists mainly of weathered diesel.

* Based on QEC interpretation of delineation reports and best available information

605 Chesterfield Inlet

Hydrocarbon impacts at this site are 100% attributable to Federal authorities including MOT and NCPC and stem from activities and infrastructure prior to 1988.

Background

The current power plant in Chesterfield Inlet sits on a single lot southwest of the hamlet. Since 1960 the site housed a power plant, various tanks in earthen berms, the MOT garage complex aboveground and underground fuel pipelines. Upgrades were made throughout the life of the area including building a new power plant in 1973, removal of the MOT garage and underground fuel pipelines and upgrading the berm to a lined berm in 1994.

ESA/RAP Results

The hydrocarbon contaminated soils in the F2 range (Diesel) based on QEC interpretation of delineation reports total 3925 M^3 in 6 areas on and around the plant. There were no reported spills or leaks associated with either NWTPC or QEC and the impacts had all been caused prior to 1988 during MOT and NCPC control. Efforts to remediate old berm material during the upgrade in 1994 were taken by NWTPC. A bio-pile was constructed to remediate impacted material however contaminated areas adjacent to the bio-pile were not taken into consideration. The contamination consists mainly of weathered diesel.

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606 Whale Cove (Old plant site)

This community, according to all official 3rd party reports contains contamination that is 100% attributable to Federal activities.

Background

The current power plant in Whale Cove sits on a single lot southwest of the hamlet. There is no recorded contamination on the current location however the concern is with the old NCPC plant site at the center of the hamlet. The site contained a power plant and tank and was surrounded by the garages and warehouses of various parties. The contamination in this area extends off site in all directions. There was a fuel pipeline that ran above and underground to a tank farm far to the west of the site which was operated by NCPC in the 60's and 70's.

ESA/RAP Results

The hydrocarbon contaminated soils in the F2 range (Diesel) based on QEC interpretation of delineation reports total 2400 M^3 in 1 area at the old plant site. Neither

* Based on QEC interpretation of delineation reports and best available information

NWTPC nor QEC were in control of this site so all spills or leaks were associated with NCPC. The areas surrounding the plant site contain additional contaminated soil totaling 18,650 M^3 for a total of 21,050 M^3 in the core area of Whale Cove.

Evidence suggests that although some impacts may have been caused by Hamlet activities the majority was a result of NCPC activities and infrastructure in the area. The contamination consists mainly of weathered diesel

701 Iqaluit (2 Plants)

Background

There are two plants in Iqaluit; one perched on a hill down gradient from the water supply lake to the north of the city and one on the Federal Road to the northwest. Both plant sites have contamination attributed to NCPC.

The main site on the hill was originally built in 1965 and houses a large power plant, a substation with external pad-mount transformers, a series of sea-can storage units and a large lined gravel berm containing a 5.6 M Liter vertical fuel storage tank. This plant site had a major upgrade in 2012 which increased the powerhouse footprint by 50%. The required excavation of impacted soil yielded contaminated groundwater (15,000 L) which was immediately remediated by a local environmental contractor. The resultant fill with reduced hydrocarbons was used as onsite fill for a portion of the civil work.

The plant on the Federal Road was built shortly before the main plant. This was the energy source for the Federal Complex constructed before the decommissioning of the Upper Base Pinetree Line Complex in 1965. This fenced compound contains a power plant, a warehouse building, a series of sea-can storage units and a steel berm with 3 horizontal fuel storage tanks.

ESA/RAP Results

The hydrocarbon contaminated soils in the F2 to F4 range (Diesel, weathered diesel, oil, heavy oil) based on QEC interpretation of delineation reports at the main plant site total 5000 M^3 in several areas and 3800 M^3 at the Fed plant site. NCPC, NWTPC and QEC all contributed to the main plant contamination 44.86% to NCPC, 42.04% to NWTPC and 13.29% to QEC for the most recent spills. The contamination consists mainly of weathered diesel, and other heavy oils.

* Based on QEC interpretation of delineation reports and best available information

702 Pangnirtung

Background

The current power plant in Pangnirtung sits on a single lot close to the Airport in the core of the hamlet south of the runway. The site houses a power plant, a separate office building, a transient trailer, a Quonset building for line truck parking and a separate pair of shacks to store line materials. The plant site also has a single 90K horizontal tank in a steel berm which is fenced in a large yard.

Hazardous waste materials are stored on site in the yard and fuel is delivered to the bulk fuel tank by truck. This community also provides residual heat to two schools on adjacent properties. The pump house is located within the fenced area. Two assessments were carried out at this site, 1 in 1997 and one in 2011.

ESA/RAP Results

The hydrocarbon contaminated soils in the F2 range (Diesel) based on QEC interpretation of delineation reports total 2,220 M^3 in 5 sectors on and off site. Sector 1 is in the area of the former power plant during NCPC and seems to be the only area which would be attributable to Federal activities prior to 1989. The area contains 250 M^3 of the contaminated soil representing 11.26%. The contamination consists mainly of weathered diesel with some soils containing glycol.

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703 Cape Dorset

Background

The power plant in Cape Dorset sits on a single lot close to the Hamlet center. It was built from a modified warehouse in the 60's and through the years had a storage annex built on to the power house. Fuel has always been delivered to a bulk tank located in a steel berm outside on site via truck and is piped into the generators through 2" ID steel pipe.

The yard has always been used as storage for generated waste products. Liquids were stored in drums and solids like oily rags and filters were stored in lined crates while waiting for sealift to send them south for disposal. QEC has since changed the requirement for stored solid waste and now use U.N. approved lined collapsible boxes for rags and filters.

ESA/RAP Results

The hydrocarbon contaminated soils in the F2 range (Diesel) based on QEC interpretation of delineation reports total 350m^3 in 5 distinct areas on and around the

* Based on QEC interpretation of delineation reports and best available information

plant site. The contamination is primarily diesel, weathered diesel and oil in the F2 to F4 range. Spill reports for this community are incomplete as only three spills were recorded on site in the database since 2007. One spill was 100L of transformer oil, one was ethylene glycol and one was diesel fuel from an off-site source. The 5 areas of contamination suggest that other unrecorded spills occurred either on the plant site or off-site then migrated on to QEC property. Furthermore the transformer and ethylene glycol spill were cleaned thoroughly as documented and communicated to the GN DoE at the time.

There were 4 spills just off QEC property and likely migrated onto QEC property; two were prior to 1989 (During NCPC control) and two were in 1994 and 1996 (During NWTPC control). Since there were no spills recorded which impacted soils during QEC control then the liability was split 66% to NCPC and 34% NWTPC based on the volume of spills, the product spilled and inferred impact to soil. The contamination consists mainly of weathered diesel.

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704 Resolute

This community, according to all official 3rd party reports contains contamination that is 100% attributable to Federal activities

Background

The current power plant in Resolute sits on a single leased lot belonging to airport land in the north camp of the hamlet. The lot encompasses the power house, a storage warehouse, a garage, a line shop/storage and the transient house.

Fuel is stored in a single 60,000 L tank in a concrete berm and delivered via truck. This tank is slated for replacement in 2015 to a double wall tank.

ESA/RAP Results

The hydrocarbon contaminated soils in the F2 range (Diesel) based on QEC interpretation of delineation reports total 11,500 m^3 from on and offsite sources. The contamination also extends beyond the land lease area blending with surrounding contaminated soils. A good part of the contamination has come from offsite sources but the contamination originating from the power plant has all come from pre 1989 sources.

The contamination consists of three products Gasoline, weathered diesel and a heavier fuel likely crude oil or bunker C which was used throughout the 70’s and 80’s.

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* Based on QEC interpretation of delineation reports and best available information

705 Pond Inlet Old Plant

This community, according to all official 3rd party reports contains contamination that is 100% attributable to Federal activities.

Background

The current power plant in Pond Inlet sits on a single lot in the northeast of the hamlet there is no contamination associated with that site. However, the old plant was operated farther west downhill from the current site and operated until 1984.

The site consists of two former power house buildings a trailer warehouse and a transient trailer. The hamlet uses the lot which held the former tank farm and also uses the last former power house building. A fuel supply line ran from the coast to the tank farm and was used to fill the tanks via marine transfer.

ESA/RAP Results

The hydrocarbon contaminated soils in the F2 range (Diesel) based on QEC interpretation of delineation reports total 12,000m^3 from on and offsite sources. The entire area was contaminated as a result of NCPC and other Federal agencies prior to 1984. The onsite contamination consists mainly of weathered diesel with some glycol. Offsite contamination to the north along the old pipeline consists of weathered diesel.

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706 Igloolik

Background

The current power plant in Igloolik sits on a single lot in the core of the hamlet. The lot consists of a power house, a shed for line material storage, a garage with an attached office, a transient trailer, a Quonset hut for storage of the line truck and a tank with secondary containment. Fuel is delivered to this tank via truck.

The yard is used for storage of various liquid wastes and new lube products in drums.

The former tank farm with 2 tanks south of the site was decommissioned in 2007. The tanks were removed and the lot was relinquished to the hamlet shortly after.

ESA/RAP Results

The hydrocarbon contaminated soils in the F2 range (Diesel) based on QEC interpretation of delineation reports total 5,150 m^3 in one plume extending partially

* Based on QEC interpretation of delineation reports and best available information

offsite according to the 2012 Phase I and II report. NCPC was responsible for 42.52% of the volume of spills released all from prior to 1989. The contamination consists mainly of weathered diesel.

707 Hall Beach

This community, according to all official 3rd party reports contains contamination that is 100% attributable to Federal activities.

Background

The current power plant in Hall Beach sits on a single lot in the core of the hamlet. The lot consists of the power house, two sea-cans the local internet infrastructure and a single 90,000 L tank in a steel berm all within a fenced area.

There was a tank farm to the south which was decommissioned in early 80's and a pipeline which ran from the plant. Since then all fuel is delivered via truck.

ESA/RAP Results

The hydrocarbon contaminated soils in the F2 range (Diesel) based on QEC interpretation of delineation reports total 625 m^3 according to the 2012 Phase I and II ESA. There has been considerable attenuation since the last study and given the coarse soil conditions is likely to continue. The contamination consists entirely of weathered diesel all deposited prior to 1988.

708 Qikiqtarjuaq

This community, according to all official 3rd party reports contains contamination that is 100% attributable to Federal activities.

Background

The current power plant in Qikiqtarjuaq sits on a single lot in the core of the hamlet. The lot consists of the power house built in 1963, a warehouse for storage, a shed for lines storage and tank with secondary containment. The yard is unfenced and serves as storage for various liquid waste and new products stored in drums as well as solid waste and materials.

The hamlet owns a warehouse in very close proximity to the plant site. The hamlet and other building surround the site and pose potential contamination risks. Fuel is delivered to the site via truck.

* Based on QEC interpretation of delineation reports and best available information

ESA/RAP Results

The hydrocarbon contaminated soils in the F2 range (Diesel) based on QEC interpretation of delineation reports total 2370 m^3 according to the 2011 Phase I and II ESA. Due to spills occurring on site prior to 1989 with no effort to clean-up as well as general hazardous storage practices it is believed 100% of this contamination existed during federal control. The contamination consists of diesel, weathered diesel, gasoline and some heavy oils.

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710 Arctic Bay

This community, according to all official 3rd party reports contains contamination that is 100% attributable to Federal activities.

Background

The current power plant in Arctic Bay sits on a single lot in the core of the hamlet. It consists of the power house, a sea-can office, two storage containers, a shed for line material storage and a single 90,000 L tank in a steel berm. The site is fenced in and the yard is used for drum storage containing various liquid and solid wastes and new lube products.

Outside the fence is a transient trailer, a storage building used by the hamlet and an emergency generation unit. Fuel is delivered via truck.

ESA/RAP Results

The hydrocarbon contaminated soils in the F2 range (Diesel) based on QEC interpretation of delineation reports (mainly offsite) total 6460 m^3 from onsite sources all of which was deposited prior to 1989. The storage building onsite is a former bolted tank which was used on site during NCPC control. This tank was reported to have spilled annually in the late 70's and early 80's during marine fuel transfers. The majority of the contaminant consists of weathered diesel and has migrated and spread slowly south down-gradient since the last ESA was conducted in 2003.

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711 Clyde River

This community, according to all official 3rd party reports contains contamination that is 100% attributable to Federal activities.

* Based on QEC interpretation of delineation reports and best available information

Background

The current power plant in Clyde River sits on a single lot on the west end of the hamlet adjacent to the PPD tank farm. The lot consists of the power house, a warehouse for storage a shed for lines storage and tank with secondary containment. A pipeline runs above ground and underground between our onsite fuel tank and a QEC fuel tank within the PPD tank farm on adjacent land. QEC receives fuel via marine transfer as well as direct pipeline throughout the year.

ESA/RAP Results

The hydrocarbon contaminated soils in the F2 range (Diesel) based on QEC interpretation of delineation reports total 9400 m^3 according to the 1999 Phase I and II ESA. This ESA identified contamination extending throughout the property, beneath the building as well as off site. The contamination consists entirely of weathered diesel all deposited prior to 1988.

* Based on QEC interpretation of delineation reports and best available information