

# 2 SUMMARY OF PLANNED ACTIVITIES FOR 2012

## 2.1 GENERAL

Planned activities for the 2012 field season are similar to those conducted during the 2007-2011 field seasons; and consist primarily of exploration drilling throughout the lease areas to identify potential for additional mineral deposits and further evaluate known deposits. It is expected that the drill and support crews will commence mobilization to site between May and June with drilling completed and camp prepared for the winter season by the end September. All operations will be conducted out of the Kiggavik camp and will be supported by helicopter services and the Baker Lake office. The maximum number of people at the camp is estimated to be 59 in 2012.

# 2.2 FUEL CACHE

Bulk fuel tank storage systems (50,000 L Envirotanks) for both diesel and jet fuel will continue to be used during the 2012 field season.

# 2.3 DRILLING, SAMPLING AND TESTING

Diamond drilling will be undertaken at the End and Bong Deposits, as well as at Granite and Sleek Lake Grids.

- The objectives of the drilling campaign will be to collect resource data
- Diamond drilling will include a total of 20 to 30 drill holes
- Total meterage is expected to be approximately 11,000m
- The drill hole size will be NQ, though HQ is being considered in some areas
- Core orientation will be conducted using the Ace core orientation system, or equivalent
- Holes will be inclined (between -90° and -45°)
- Hole length is expected to range between 300m and 500m
- Drilling is likely to take place at or around End Grid, Bong Grid, Granite Grid and Sleek Lake. Locations will be picked in the spring of 2012.

## 2.4 THERMISTOR INSTALLATION AND MONITORING

No additional thermistors are planned to be installed in 2012. Monitoring of the existing thermistor network within the Project area may be conducted.



# 2.5 ENVIRONMENT AND RADIATION PROTECTION MONITORING

The 2012 Environment and Radiation Protection (ERP) monitoring program will continue to be conducted by AREVA staff with support provided by contractors if necessary. Wildlife monitoring will involve Independent Wildlife Monitors from the Baker Lake community and Kiggavik personnel. The ERP staff will be responsible for the implementation of the following plans: Radiation Protection Plan, Spill Contingency Plan, Waste Management Plan, Noise Abatement Plan, Wildlife Mitigation and Monitoring Plan, and the Abandonment and Restoration Plan. These Plans were designed and implemented to ensure compliance with regulatory conditions and internal AREVA requirements.

## 2.6 ENVIRONMENTAL BASELINE WORK

Environmental baseline studies may be conducted in 2012 in order to support the Kiggavik environmental impact review. No studies are currently anticipated but will be contemplated and undertaken as identified throughout the DEIS review and comment period.

2012



# 3 OPERATIONAL PLANS

Prior to initiation of the 2011 field season, seven Environmental Management Plans, originally prepared in 2007, were updated and submitted to the regulatory agencies to aid in developing best management practices and procedures to mitigate any potential adverse environmental impacts. These Plans also ensure compliance with regulatory approval conditions and internal AREVA requirements. It is AREVA's intention to operate in accordance with commitments made in the Plans; however, such Plans are living documents and lessons learned during the field season and AREVA's commitment to continual improvement warrant some revision of these Plans from time to time. These Plans have been included with the submission of this Annual Report (refer to Appendix A).

The seven plans are as follows and are discussed below:

- Spill Contingency
- Radiation Protection
- Waste Management
- Wildlife Mitigation and Monitoring
- Abandonment and Restoration
- Noise Abatement
- Uranium Exploration Plan

## 3.1 SPILL CONTINGENCY PLAN

In accordance with existing legislation a Spill Contingency Plan exists for the Kiggavik Project. The objectives of the Plan are to:

- Identify the potential for and the appropriate response to spills at the Project
- Provide procedures for prevention or mitigate adverse environmental effects through effective and efficient response
- Identify personnel and their responsibilities
- Identify emergency contacts
- Describe reporting requirements

To implement the Plan effectively, all site staff and contractors are given orientation upon arrival at the Kiggavik site. This includes the location of Material Safety Data Sheets (MSDS), spill kit locations, and spill response supplies and tools. Site staff are trained to identify potential or existing leaks and spills, where they are most likely to occur, and how to effectively use spill response supplies and tools. Additional training such as mock spills is provided as necessary.



Spill prevention is implemented through use of secondary containment, providing spill kits at locations where hazards exist, conducting daily inspections at all storage locations, and providing MSDS sheets. Spill response is reviewed with all site personnel, and site supervisors or designate are aware of spill reporting procedures.

The Plan was implemented once in 2011 because of a release of Jet A fuel at the Kiggavik fuel cache. This incident and the associated response are discussed in Section 13.

## 3.2 RADIATION PROTECTION PLAN

The Radiation Protection Plan is designed to meet the requirements of the applicable Nunavut Occupational Health and Safety Regulations, Saskatchewan Mineral Exploration best practices, the Canadian Nuclear Safety Commission (CNSC) Regulations (although current activities are not regulated by the CNSC), and AREVA's Corporate Integrated Quality Management System (IQMS). The administrative and program elements are as follows:

#### **Administrative Elements**

- Program documentation
- Training
- Designation of Occupational Workers
- Dose limits and dose levels
- Obligations of Occupational Workers
- Pregnant workers

## **Program Elements**

- Exposure as Low as Reasonably Achievable (ALARA)
- Radiological monitoring
- Dosimetry monitoring
- Code of Practice
- Management of radioactive materials
- Shipping of radioactive materials
- Site abandonment and restoration
- Emergency response

All employees and contractors receive appropriate radiation protection training prior to beginning work at the Project site to ensure worker safety and protection of the environment. Personnel involved with the shipment of radioactive materials are required to receive training and certification in Transportation of Dangerous Goods (TDG) Class 7 Radioactive Materials.

The Plan is implemented by the development and implementation of a routine monitoring schedule carried out by the Environment and Radiation Protection (ERP) Group. This includes dosimetry monitoring to determine worker exposure, proper management of radioisotopes, proper shipping and receiving of radioactive material, the proper storage and collection of



radioactive materials and the development of a corporate and site specific emergency response plan.

A more detailed description and results of the radiation protection program are discussed in Section 4.

## 3.3 WASTE MANAGEMENT PLAN

In accordance with AREVA's Environmental Policy, a Waste Management Plan was developed and implemented to address any concerns regarding waste and to mitigate any potential adverse environmental impacts. AREVA is committed to ensuring waste generated at the Kiggavik Project site is collected, stored, transported and disposed of in a safe, efficient and compliant manner. The Waste Management Plan is frequently reviewed and revised upon the identification of new waste streams, new handling methods or requirements and improved logistics.

In the development of this Plan, potential waste streams were identified, followed by identification of a treatment strategy and disposal plan. All site staff and contractors review this Plan and are trained in the aspects required to effectively adhere to the Plan (i.e. proper identification of waste, proper storage methods, proper handling and transport methods).

Food, paper and non-treated wood waste are incinerated in an approved incinerator shown in Photograph 3-1. Waste oil will be shipped to BLCS in Baker Lake during the 2012 winter haul for use in used oil furnaces. Used oil filters, empty aerosol cans, oily rags, empty oil jugs and other plastics are properly sorted and stored onsite for future handling.

AREVA is committed to the removal of all non-incinerated waste off-site to approved facilities. Due to the limited number of approved facilities for recyclable or hazardous waste dangerous goods in the immediate area, AREVA ensures that all materials are properly sorted, packaged and stored on-site until approved facilities or handlers can be identified and contracted.

Materials transported during 2011 are shown in Table 3.3-1.

Table 3.3-1 Kiggavik Site Waste Manifest 2011

Date	Type of waste	Quantity Location of Disposal			
07-July-11	Ash	4 drums	Baker Lake Dump		
14-July-11	scrap metal in crates	1800 lbs	Stored at Blueberry Hill (to be shipped south 2012)		
14-July-11	scrap metal in crates	1800 lbs	Stored at Blueberry Hill (to be shipped south 2012)		
15-July-11	scrap metal in crates	1850 lbs	Stored at Blueberry Hill (to be shipped south 2012)		
16-July-11	scrap metal in crates	1050 lbs	Stored at Blueberry Hill (to be shipped south 2012)		
07-Aug-11	Ash	2 drums	Baker Lake Dump		
11-Aug-10	Ash	2 drums	Baker Lake Dump		

All drill cuttings with a uranium concentration greater than 0.05 percent are collected and stored in the radioactive storage area for future handling.



As required, an inventory of all waste and material remaining on site was recorded upon seasonal shutdown and is summarized in Table 3.3-2.

Table 3.3-2 Kiggavik Site End of Season Inventory 2011

Type of Waste/Product	Quantity	Storage Method
Waste oil and fuel	4 – 205 litre bung drums	Stored in secondary containment at site inside a sea container to be transported to Baker Lake over the winter road in 2012 to be used in waste oil furnaces
Incinerator Ashes	1 – 205 litre ring top drums	Stored as is with top secured beside incinerator
Diesel Fuel	3 – 205 litre drums 5 – 379 litre double walled slip tanks	Stored outside in secondary containment at site
Scrap metal	1 - Wooden crates 4x4x4 with lids	Located beside incinerator until can be shipped off site for handling
Engine filters Oil and Fuel	5 – 205 litre ring top drum	Stored inside wooden storage building. Upright in mini berm with top secured
Oil cans Empty	4 – 205 litre ring top drum	Stored inside wooden storage building. Upright in mini berm with top secured
Oil contaminated rags	4 – 205 litre ring top drum	Stored inside wooden storage building. Upright in mini berm with top secured
Empty/used paint cans	1 – 205 litre ring top drum	Stored inside wooden storage building. Upright in mini berm with top secured
Generator Oil	1 – 20 litre pails 3 – 1 litre jugs	In secondary containment in generator building
Diesel contaminated soil and rags from spill clean-up	1 – overpack drum 2 - plastic lined rock bags (3000lbs contaminated gravel)	In sea-can type storage container until can be shipped off site for handling
Jet Fuel	1000 litres	Stored in the Enviro-tanks at fuel cache for 2012 use.
Diesel Fuel	32,100 litres plus 15 - 379 litre slip tanks	Stored in the Enviro-tanks at fuel cache for 2012 use.
Gasoline	10 – 20 litre plastic jerry cans	Stored inside wooden storage building at site in mini berm
Propane	36 – 100 lb bottle	Upright in a locked fence compound
Aerosol cans – empty and punctured	1 – 205 litre ring top drum	Stored inside wooden storage building. Upright in mini berm with top secured
Empty Plastic 20 litre pails and various size other empty plastic bottles in bags		Inside sea container to be hauled into Baker Lake over the winter road 2012



Type of Waste/Product	Quantity	Storage Method
Boart Longyear Supplies	Left @ Camp Fall 2011  15 cases—15/40 Motor Oil  12 jugs—Antifreeze  1 case-Gas line Antifreeze  1 case-Methyl Hydrate  12 cans-Quick Start  4 cases-Two Cycle Oil  4 jugs-Chain Oil  2 cases-Diesel Conditioner  2 cases- Diesel Melt (Emergency Diesel Conditioner)  1 – 20 litre pail 80/90 Gear Oil  15 – 20 litre pails MV36 Hydraulic Oil	In sea-can storage container for use in 2012
Boart Longyear Supplies	Shipped up for 2012 2 cases – brake cleaner	In sea-can storage container in Baker Lake for use in 2012. To be transported to site during winter haul.
AREVA Supplies	Shipped up for 2012  10 – 20 litre pails 15/40 generator motor oil  1701 – 25 kg bags calcium chloride	In Sea container in Baker Lake for use in 2012. To be transported to site during winter haul.



Photograph 3-1 Kiggavik Camp Incinerator



#### 3.4 ABANDONMENT AND RESTORATION PLAN

An Abandonment and Restoration Plan has been developed to address conditions of permits, regulations and industry standards throughout the operational season, at seasonal shut-down and at final closure of the site. The 2011 implementation of the Plan is discussed in Section 8. This Plan is frequently reviewed and revised to reflect the expansion of infrastructure, cost estimates, changing field programs and the identification of improved reclamation practices.

The objectives of the Plan are to:

- Protect human health
- Reduce or eliminate environmental effects
- Re-establish conditions which permit the land to return to a similar pre-exploration land use
- Establish physical and chemical stability of disturbed areas

## 3.4.1 Seasonal Shutdown

As required by the Abandonment and Restoration Plan the following activities were conducted for the seasonal shutdown of the Kiggavik camp during the second week of August:

- All equipment stored in secure buildings or containers
- Plywood nailed over windows and doors have been secured to prevent inadvertent opening
- Pumps and hoses drained and dismantled
- Full inventory of chemicals, products and wastes remaining on site recorded
- Final inspection of all storage areas and secondary containment
- Removal of chemicals or storage in secure buildings
- A final inspection of drill sites, including gamma surveys and the removal of any fuel or contaminated soil
- Drill rigs dismantled and stored appropriately
- Generator shut down and winterized
- Waterlines drained, flushed and winterized with antifreeze

All personnel vacated the site by August 13, 2011. Photograph 3-2 shows the Kiggavik camp during seasonal shutdown.

#### 3.4.2 Restoration

AREVA intends to implement progressive restoration practices and incorporate new abandonment and/or reclamation methods and procedures, when applicable. The current Plan has been implemented at all drill sites operated during the field season to establish chemical stability. All drill sites from the current year's field program are inspected for fuel stained soil and undergo a gamma survey for radioactive contamination. Contaminated soil or cuttings are



collected in appropriate containers and stored in the radioactive storage compound for future handling, which may include transfer to an operating mine site.

Drill sites must be remediated to the extent that gamma dose at a height of 1 m from surface is less than 1  $\mu$ Sv/h above background, while efforts are made to reduce gamma doses to the greatest extent possible. Radioactive material is collected, appropriately packaged and stored in the radioactive storage compound. Gamma radiation 1 m from the boundary of the core storage area is reduced as much as practicable with a target less than 1  $\mu$ Sv/h and in no instances exceeding 2.5  $\mu$ Sv/h. If necessary, residual radioactive material will be eventually transported to the McClean Lake Operation for storage and disposal.

Challenges surrounding physical reclamation of disturbed surfaces include lack of local knowledge or available information. To minimize the affected footprint and therefore the amount of required physical reclamation there is a focused effort on proper planning of infrastructure placement and drill sites. It is AREVA's intention to reclaim disturbed sites in an acceptable manner, following availability of adequate information. Proper reclamation techniques are currently being investigated and will be implemented under the direction and approval of experienced consultants, community members and regulatory agencies. Restoration work will be completed prior to the expiry of the land use licence.



Photograph 3-2 Winterized Kiggavik Camp

## 3.5 NOISE ABATEMENT PLAN

A Noise Abatement Plan was developed to mitigate the effects from noise generated during camp set-up, camp operation, winter road use, and drilling activities. Noise controls and abatement serve a combination of environmental and occupational health and safety purposes. The focus of the Plan is the control of environmental noise for the protection of wildlife.



Implementation of the Plan ensures that drill rigs and vehicles are equipped with mufflers and/or silencers and is subject to commitments made in the Wildlife Mitigation and Monitoring Plan regarding minimum required flying altitudes and the take-off and landing of aircraft.

The Plan is reviewed by all site staff, contractors, and head office contract administrators to ensure all contractors operating drill rigs, vehicles or aircraft are aware of the Noise Abatement Plan requirements.

Frequent review allows for revision to occur with the expansion of infrastructure, changing field programs and the identification of improved practices.

## 3.6 WILDLIFE MITIGATION AND MONITORING PLAN

The WMMP) was developed to monitor and reduce disturbance to wildlife, particularly caribou. The Plan incorporated recommendations from the Government of Nunavut – Department of Environment (GN-DoE), Environment Canada (EC) and the Beverly and Qamanirjuaq Caribou Management Board (BQCMB); as well as permit and lease conditions from the NIRB, Kivalliq Iniut Association (KIA), AANDC and the NWB. The Plan is designed to protect wildlife from Project activities, increase the current understanding of wildlife interactions with human development and aid in determining the effectiveness of mitigation measures. Following the 2010 field season, the Plan underwent contractor, biologist, and ARC review to further detail caribou mitigating actions and the responsibilities of the Independent Wildlife Monitor.

Mitigation measures and wildlife observations were summarized in monthly reports, and distributed to the Baker Lake Hunter and Trapper's Organization (HTO), the Baker Lake Conservation Officer, and the GN-DoE Regional Biologist. Monitoring of wildlife occurrence during the 2011 field program occurred from May 30 to August 9, 2011. Twenty-four wildlife species were documented during the 2011 field program (Table 3.6-1).

# 3.6.1 Summary of 2011 Monitoring Activities and Results

## **Independent Ground Based Monitoring**

The AREVA staff and Independent Wildlife Monitors provided detailed wildlife information throughout the field program. A wildlife monitoring record was utilized to ensure daily communication between the Wildlife Monitor and the Environment and Radiation Protection (ERP) Supervisor. In addition to monitoring wildlife activity around camp, all operating drills were visited by the wildlife monitor. Wildlife Monitors accounted for 354 or 76% of the reported wildlife sightings.

## **AREVA Staff and Contractor Wildlife Sightings**

In addition to the Independent Wildlife Monitor observations, the ERP Technicians entered all observations from the following methods into a spreadsheet. Observation details depended on observer, survey protocols and recording method. They vary from detailed records taken by the Independent Wildlife Monitor to minimal information from incidental observations by contractors not involved in environmental baseline work.



#### **Aerial Observation**

Wildlife seen during routine helicopter flights were noted by passengers in booklets located in each helicopter. This method resulted in 33 or 7% of sightings throughout the season. Helicopter sightings often occurred during routine flights to drill locations or Baker Lake.

#### **All Other Sightings**

Wildlife logs were placed in the camp kitchen and office. AREVA employees and contractors were informed of its location and were encouraged to report wildlife sightings. These sightings were then split up between those witnessed at or around camp (camp) and those witnessed in the field (incidental) Incidental sightings accounted for 49 sightings or 10% of total sightings. Camp observations accounted for 32 or 7% of wildlife sightings. Animals continuously around camp such as ptarmigan, sik sik and hare were often not recorded each day they were observed and are therefore under recorded by this method. A summary of the wildlife sightings is shown in Table 3.6-1.

Table 3.6-1 Summary of Wildlife Sightings, Kiggavik 2011

Species	# of	# of % of	% of Total	Total # of	Range of Individuals	First	First Last	Observation Method			
(common name)	Sightings	Sightings	Individuals	per Sighting	Sighting	Sighting	Incidental	Aerial	Monitor	Camp	
Mammals											
Arctic Fox	29	6.29	30	1	Jun-02	Jul-25	Х	Х	Х	х	
Arctic Hare	35	7.59	40	1 - 3	May-31	Aug-06	x		х	x	
Caribou	102	22.13	13598	1 - 7,000	May-31	Aug-01	Х	Х	Х	х	
Grizzly Bear	3*	0.43	2	1	Jul-03	Jul-04	x				
Muskox	70	15.18	801	1 - 50	Jun-08	Aug-09	Х	Х	Х	Х	
Sik Sik (Ground Squirrel)	38	8.24	60	1 - 5	May-30	Jul-18			х		
Weasel	1	0.22	1	1	Jun-11	Jun-11	х				
Wolf	21	4.56	25	1 - 4	Jun-03	Aug-05	Х	Х	Х	Х	
Birds											
Bald Eagle	4	0.87	4	1	Jun-26	Jul-23	х	х		х	
Canada Goose	3	0.65	23	1 - 19	Jun-25	Aug-08	х		х		
Duck (species unknown)	3	0.65	6	1 -3	Jun-09	Jul-20		x	х	x	
Golden Plover	19	4.12	51	1 - 8	May-31	Jul-17			х	х	
Goose (species unknown)	49	10.63	931	2 - 70	Jun-06	Jul-06	х		Х		
Longtailed Jaeger	2	0.43	2	1	Jun-11	Jun-21			х		
Owl	1	0.22	1	1	May-30	May-30	Х				
Ptarmigan	5	1.08	16	1 - 10	Jun-22	Aug-01			Х		
Raptor (species unknown)	5	1.08	5	1	Jun-13	Jul-28	x		х	х	



Species	# of	% of	Total # of	Range of Individuals	First	First Last	Last	Ob	servatio	n Method	
(common name)	Sightings	Sightings	Individuals	per Sighting	Sighting	Sighting	Incidental	Aerial	Monitor	Camp	
Red Knot	1	0.22	3	3	Jun-20	Jun-20				Х	
Rough Legged Hawk	2	0.43	2	1	Jun-24	Jun-25			Х	х	
Sandhill Crane	53	11.5	176	1 - 18	May-30	Aug-07	х		х	х	
Seagull	10	2.17	20	1 - 5	May-31	Jul-10			Х		
Short Eared Owl	1	0.22	1	1	Jun-01	Jun-01	х				
Snow Goose	3	0.65	7	1 - 4	Jun-20	Jun-20			х		
Sparrow	2	0.43	2	1	Jul-18	Jul-19			Х		

<sup>\*</sup>One sighting was of grizzly bear tracks.

# 3.6.2 Summary of 2011 Wildlife Mitigation

#### Caribou

As required by the Nunavut Impact Review Board (NIRB) 2007 screening decision and the WMMP, drill activity will be suspended when concentrations of 50 or more caribou are within 2 km during the months of June and July. As of July 19, caribou were migrating through the Kiggavik and Sissons areas. The start of migration was marked when approximately 2000 to 3000 caribou were observed near Sleek Lake by a helicopter pilot during morning shift change. The Wildlife Monitor observed the herd in relation to the drilling areas, and determined the herd was moving out of the lease area. The herd was 10 km from the nearest drilling rig. The Environment and Radiation Protection (ERP) Supervisor reminded the drillers of the 2 km radius while conducting routine rig inspections. On July 23 at 2:00 AM, 7000 caribou were 2 km south of drill rig END-11-05 necessitating suspension of drill activity. The wildlife monitor observed the herd until the caribou began to move greater than 2 km south and later informed when drilling and geophysics work could continue. At 9:08 AM the Cameco helicopter pilot and the Cameco's consulting biologist confirmed the caribou were no longer within the 2 km radius.

As per the Indian and Northern Affairs Canada (INAC) Land Use Permit and the WMMP, when caribou cows calve outside the designated caribou protection areas operations will be suspended if cows and/or calves are present within 10 km of operations between May 15 and July 15. At no time within the designated calving season were the cows and calves within 10 km of activity.

The WMMP specifies mitigation measures during ground geophysical surveys. As defined in the WMMP, ground geophysical surveys will not be conducted if cows and calves are within 10 km of the survey area during the calving season (May 15 to July 15). Cows and calves did not approach the survey wire within this time frame.

The WMMP also requires a determination for distance at which the geophysical wire is to be retrieved if a concentration of caribou approaches during the post calving period. This distance is dependant on the direction and speed in which the caribou are travelling. On July 20, the ERP Supervisor and consulting biologist determined a 10 km distance was sufficient to provide time to retrieve the wire in the event caribou herds approached the survey area. This was based on



the approximate time needed to roll up the wire and the July 19 observation which determined the caribou were travelling approximately 4 km/hr. On July 21 at 1:00 PM greater than 50 caribou were within the 10 km radius and the geophysics surveyors discontinued their survey and rolled up the wire. On July 23 greater than 50 caribou were within 10 km of the survey area at 7:00 AM, thus the surveyors did not begin the survey. At 9:08 AM caribou were outside the 10 km range and they began their survey. Because the geophysics crew did not work at night and therefore could not monitor caribou in the area, it was decided to retrieve the wire each night during the post calving migration. From the July 20 to July 31 the wire was rolled up each evening. On August 1 caribou did not approach the wire throughout the day, so it was deemed unnecessary to retrieve the wire in the evening.

Finally, to ensure that the ground geophysics survey did not disturb the caribou migration the WMMP states that daily reconnaissance flights are flown. On days in which large herds were observed on the lease, flights were flown at 610m (~2000ft) to monitor the lease area and avoid disturbance.

#### Muskox

From July 19 to August 9, 2011, approximately 25 muskox remained around the Kiggavik camp. This herd was observed almost daily during this time from either camp or the wildlife monitor height-of-land stations. The Independent Wildlife Monitors advised AREVA staff and contractors to avoid and maintain a safe distance from the herd. The muskox herd did not appear stressed or disturbed by the Kiggavik camp and its associated activities.

#### Wolves

On July 14, 2011 the drilling foremen witnessed two wolves hunt and kill a caribou approximately 500 m north of camp. The ERP consulted with the Baker Lake Conservation Officer and it was agreed that the caribou carcass could be moved 10 km southeast of camp to avoid attraction of carnivores and prevent any potential wildlife-human conflicts. This prompted the Conservation Officers to visit the site on July 21. During their visit they witnessed implementation of the WMMP, and they issued wildlife deterrent training to the Facility Supervisor, ERP Supervisor, and the Wildlife Monitors present and were satisfied with the methods AREVA is currently taking to ensure the safety of employees and wildlife. Following recommendations provided by the CO, improvements were made to the camp incinerator and camp grey water to avoid any wildlife attractants.

## 3.6.3 Disturbances

Two wildlife disturbances were deemed necessary by the wildlife monitor in July. On July 3, 2011 an arctic fox was inside the fence of the radiation compound; the wildlife monitor opened the gate to let the fox out. The other disturbance was a grizzly bear approximately 1.5 km west of the geophysics camp on July 4, 2011. To prevent a wildlife-human conflict, a helicopter was dispatched to retrieve the geophysics crew; however, when the helicopter landed to pick up the geophysics crew, the grizzly bear moved away from the area travelling in the opposite direction.

#### 3.7 URANIUM EXPLORATION PLAN

The Uranium Exploration Plan is designed to meet the requirements of the Water Licence issued by the Nunavut Water Board (2BE-KIG0812) the Saskatchewan Environment Mineral



Exploration Guidelines and Best Management Practices and the Canadian Nuclear Safety Commission (CNSC) Regulations, although CNSC does not regulate exploration activities.

The Plan discusses activities related to uranium exploration including:

- Training requirements
- Drilling practices
- Core storage and logging
- Radioisotopes
- Spills
- Shipping radioactive material
- Site abandonment and restoration

On August 11 a shipment of core samples (low specific activity) was sent via air from Kiggavik to Thompson, Manitoba and by truck from Thompson to Saskatoon where they were shipped to SRC in Saskatoon. Shipper's Declaration for Dangerous Goods were completed and filed by appropriately trained AREVA staff.

The Uranium Exploration Plan is reviewed on an annual basis and revised if necessary; the current version has been accepted by the Nunavut Water Board via Part F(1) of the licence 2BE-KIG0812 issued May 12, 2008.



# 4 EFFECTS OF THE PROJECT ON HUMAN HEALTH

AREVA is committed to taking every reasonable precaution toward ensuring the protection and conservation of the natural environment and the safety and health of all employees and contractors from any potential harmful effects of uranium exploration activities. This commitment is reflected in AREVA's Health, Safety and Environmental Policies and is supported through a comprehensive Environment, Health and Safety Program for the Kiggavik Project.

Occupational health, safety and radiation protection programs were implemented to ensure work activities were performed in a safe and responsible manner and that workers were not adversely exposed to radiation from uranium exploration activities.

The results of the 2011 monitoring program indicate that the field activities, conducted as part of the Kiggavik Project, did not pose a significant health risk to people working with the Project or living in nearby communities.

## 4.1 OCCUPATIONAL HEALTH AND SAFETY PROGRAM

The health and safety program at the Kiggavik Project was conducted in accordance with the Nunavut Mine Health and Safety Regulations, exploration best practices and AREVA safety requirements. The Facility Supervisor oversaw the program with the assistance of the Safety Co-ordinator managing routine safety activities. The Kiggavik Project's health and safety management system was audited by an external third party SGS in a Occupational Heath and Safety Assessment Series OHSAS 18001:2007 certification audit during the 2011 field season. The OHSAS 18001 standard provides the minimum requirements for a comprehensive health and safety management system which allows an organization to proactively minimize occupational health and safety risks and to continually improve its health and safety performance.

All employees and contractors working at the Kiggavik site received orientation and appropriate safety training prior to commencing work to ensure worker safety and protection of the environment. Prior to starting work each day, workers completed a 5-Point Safety Cards to assess any hazards that they may encounter during their work activities.. Supervisors reviewed each card and addressed any safety issues as they appeared. Issues that could not be resolved immediately were documented and followed up by the Safety Coordinator until corrective actions were completed.. Employees and contractors were also required to participate in weekly safety meetings (Safety Huddles) to discuss and reinforce safety issues.

The Occupational Health Committee (OHC) consisted of twenty members with equal employer and employee representatives. They held monthly meetings chaired by the Safety Coordinator. The OHC inspected all work areas for deficiencies, and safety concerns were brought forth during the monthly meetings. The meeting minutes and list of members were forwarded to the Mines Inspector, NU.

A summary of work related injuries that occurred during the 2011 program is given in Table 4.1-1.



Table 4.1-1 Kiggavik Project Safety Statistics for 2011

Group	First Aids	Medical Aids	Lost Time Accidents
AREVA	1	0	0
Contractors	4	2	1

The medical aids consist of injuries requiring a visit to the Baker Lake clinic. In 2011 these injuries include an injured foot and a cut thumb.

One lost time accident was sustained by a Patterson Geophysics employee on July 22, 2011. The incident occurred during a routine task of laying the wire for a ground geophysical survey. The worker tripped on uneven ground and fell onto a rock cutting his knee. The worker was unable to return to work for 9 days. The environment consisted of uneven terrain due to frost heaved boulders; as such the worker tripped and cut his knee on uneven terrain. Furthermore, workers were required to roll and unroll wire everyday as part of the wildlife protection plan because of large herds of caribou in the area; the worker may have been fatigued. The footwear was also not adequate as he was wearing loose rubber boots. All employees were reminded to demonstrate caution when walking on uneven tundra and to wear hiker style boots.

## 4.2 RADIATION PROTECTION

The Radiation Protection Plan for the Kiggavik Project is designed to meet the requirements of the applicable Nunavut Occupational Health and Safety Regulations, Mineral Exploration best practices, the Canadian Nuclear Safety Commission (CNSC) Regulations (although current activities are not regulated by CNSC) and AREVA requirements.

## 4.2.1 Administrative Elements

#### **Program Documentation**

The Radiation Protection Program for the Kiggavik Project is supported through a comprehensive series of work instructions for worker dosimetry, radiological monitoring, contamination control and the safe handling of radioactive materials.

#### **Training**

All AREVA employees and contractors working at the Kiggavik site received orientation and appropriate radiation protection training prior to beginning work to ensure worker safety and protection of the environment.

Personnel involved with the shipment of radioactive materials received the required training in Transportation of Dangerous Goods (TDG) Class 7 Radioactive Material.

# 4.2.2 Program Elements

## **Dosimetry Monitoring Program**

Dosimetry monitoring is conducted to determine and document worker exposures to radiological components which include gamma radiation, radon progeny (RnP) and long-lived radioactive



dusts (LLRD). A Code of Practice (COP) sets Action and Administrative Levels for each of these components.

No COP dosimetry action levels were exceeded during the 2011 program. The worker radiation doses observed during the 2011 program were well below regulatory dose limits for members of the public (1 mSv/a) or occupational workers (20 mSv/a).

#### **Gamma Exposures**

The largest component of radiation exposure during uranium exploration activities is expected to come from gamma radiation emitted from mineralized core, rock and drill cuttings.

Worker exposures to external gamma radiation were measured using optically stimulated luminescent dosimeters (OLDs) provided by the licensed dosimetry provider, Landauer Inc. For exposure control, workers handling and logging radioactive drill core and rock samples were also issued direct reading dosimeters (DRDs).

During the 2011 program, worker gamma radiation exposures ranged from 0.00 mSv to 0.05 mSv with an average exposure of 0.01 mSv. The highest gamma radiation exposure was received by a driller. A frequency distribution of worker gamma radiation exposures is presented in Table 4.2-1.

Gamma Radiation Exposure Frequency Percentage (mSv) 26 0.01 30 36 0.02 16 19 0.03 8 10 0.04 6 7 0.05 2 2

Table 4.2-1: Worker Gamma Dose Frequency Distribution

## Radon Progeny and Long-Lived Radioactive Dust Exposures

Worker exposures to radon progeny (RnP) and long-lived radioactive dust (LLRD) are estimated from industry-accepted area monitoring techniques and occupancy time information.

Worker exposures from RnP and LLRD during the 2011 program were conservatively estimated from workplace monitoring to be less than 0.01 mSv and 0.09 mSv respectively.

#### **Total Effective Exposure**

Total effective exposure was calculated for each individual based on OLD results, RnP and LLRD area monitoring results and time occupancy information. The maximum dose received by an individual working at Kiggavik in 2011 was 0.138 mSv. The average dose was 0.040 mSv. The maximum dose permitted for an occupational worker is 50 mSv in a given year or an average of 20 mSv/a over 5 years. The maximum annual dose for a member of the public is 1 mSv/a. The estimated individual exposure of all personnel working at the Kiggavik site was therefore below the regulatory limit for members of the public (Figure 4.2.2-1). The total effective dose for the site (all personnel collectively) was 3.327 mSv.



# 4.2.3 Radiological Monitoring Program

# Workplace monitoring

As part of the Radiation Protection Program, routine radiological monitoring is performed for gamma radiation, radon gas (Rn), radon progeny (RnP), and long-lived radioactive dust (LLRD) in order to detect potentially abnormal radiological conditions, estimate worker doses, and document radiological conditions.

Radiological monitoring was conducted during the program at and around the drilling sites, in the camp, core shacks and the driller dry shacks. A summary of the radiological monitoring results is given in Table 4.2-2.

**Table 4.2-2 Radiological Monitoring Results** 

Radiation Type	Average	Maximum
Gamma (μSv/h)	0.093	0.730
Radon Gas (Bq/m³) Seasonal	24.3	48.1
Radon Gas (Bq/m³) Annual (2010-2011)	8.9	107.3
Radon Progeny (Grab Sampling) (WL)	0.0006	0.007
Long-Lived Radioactive Dust (Grab Sampling) (Bq/m³)	0.013	0.063
Long-Lived Radioactive Dust (Grab Sampling) (DAC)	0.010	0.054

Gamma dose rate measurements ranged from  $0.010-0.730~\mu Sv/h$  with an average dose rate of  $0.093~\mu Sv/h$ . The highest gamma reading recorded during the program was in a core shack but did not exceed the COP gamma administrative level.

Radon progeny measurements are given in units of Working Level (WL), a measure of the airborne potential alpha energy concentration. Indoor radon progeny levels ranged from 0 – 0.006 WL with an average radon progeny measurement of 0.0006 WL.

Long-lived radioactive dust concentrations ranged from 0-0.063 Bq/m³ (0 - 0.054 DAC) with an average concentration of 0.013 Bq/m³ (0.010 DAC). 97% of readings were below the COP first administration level of 0.03 DAC, 3% were between 0.03 and 0.08 DAC while 0 were above the second administration level of 0.08 DAC. All elevated readings were taken in the geology shacks while mineralized core was being split. During this time LLRD monitoring was done on a daily basis and appropriate personal protective equipment and ventilation methods were used.

Three site alpha dosimeters were installed in 2011; one in Baker Lake, one at Kiggavik and one at Sissons. These instruments include an air sampler, an electronic flow meter for the continuous measurement of the sampling volume of air and a head for the integrated measurement of alpha emissions of short lived progeny products of radon 222 and 220 and long life products of uranium and thorium. In 2011 the site alpha dosimeter at Kiggavik malfunctioned and did not sample long enough to provide accurate results. The alpha dosimeter results are shown in Table 4.2-3.



Table 4.2-3 Site Alpha Dosimeter Results for 2009-2011

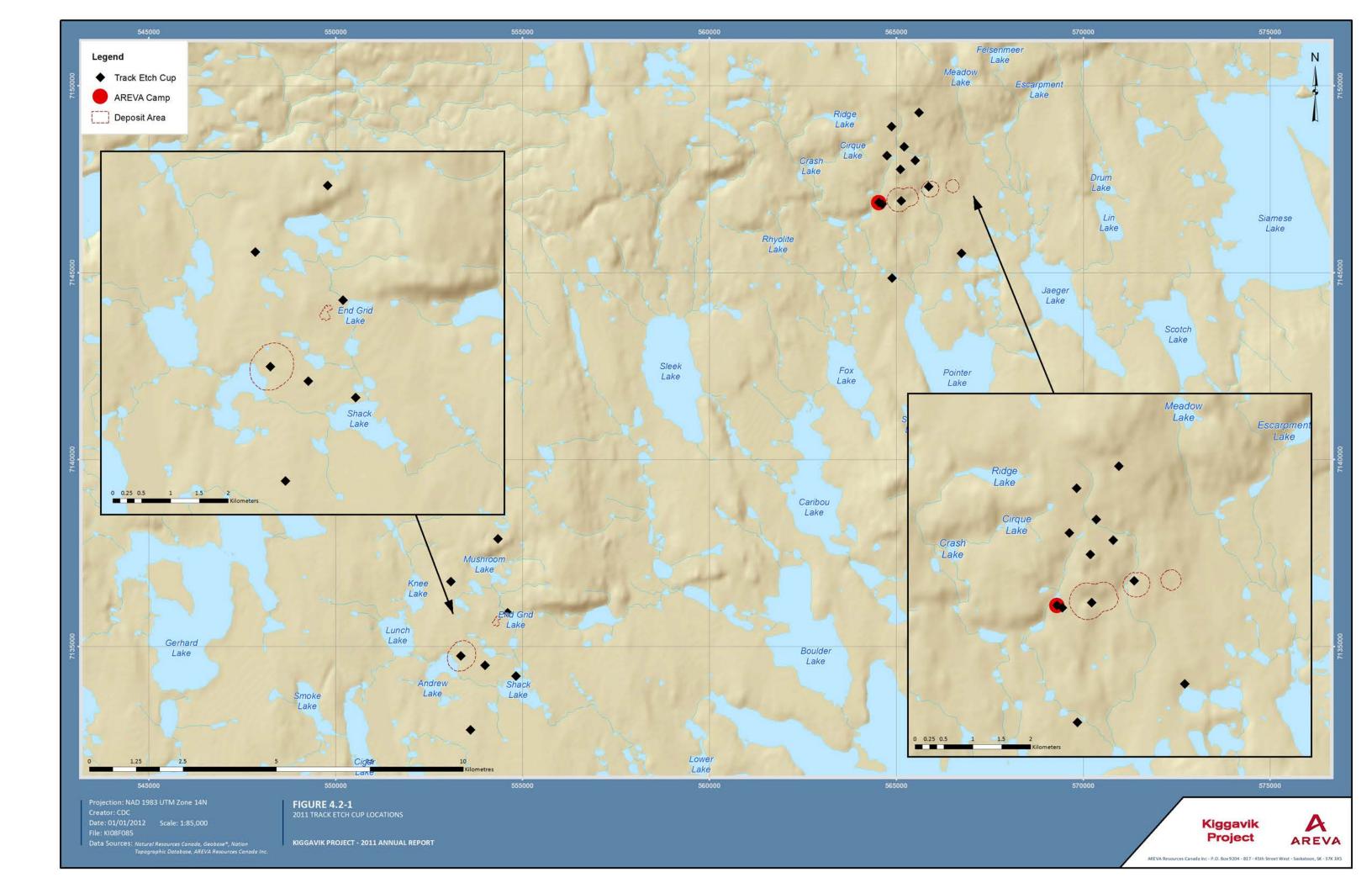
	June 2009 (mBq/m³)	July 2009 (mBq/m³)	August 2009 (mBq/m³)	July 2010 (mBq/m³)	August 2010 (mBq/m³)	June 2011 (mBq/m³)	July 2011 (mBq/m³)
Baker Lake	≤ 0.2	≤ 0.2	≤ 0.4	0	NA	≤ 0.2	≤ 0.2
Kiggavik	≤ 0.2	≤ 0.3	≤ 0.4	≤ 0.2	≤ 0.4	NA	NA
Scissons	≤ 0.2	≤ 0.3	≤ 0.4	≤ 0.5	≤ 0.4	≤ 0.2	≤ 0.2

Track etch cups for environmental radon gas measurements were also installed in twenty six locations in the Kiggavik and Sissons areas. At the beginning of the 2011 field season two track etch cups were placed at each location. One was considered to be seasonal and sent to the Landauer laboratory for analysis at the end of the 2011 field season while the remaining was left in place until the beginning of the 2012 field season. At one location four track etch cups were placed, two seasonal and two annual, for QA/QC purposes. The annual track etch cups placed in July of 2010 were also collected at the beginning of the 2011 field program.

The results for the seasonal track etch cups range between 22.2 Bq/m³ and 48.1 Bq/m³ with an average of 24.3 Bq/m³. The results for the annual track etch cups (July 2010 to June 2011) range between 3.7 Bq/m³ and 107.3 Bq/m³ with an average of 8.9 Bq/m³. The track etch cup locations are shown in Figure 4.2-1.

## **Contamination Monitoring**

Contamination control measures are implemented to minimize the spread of radioactive materials into unintended locations. Routine contamination monitoring using a pancake probe and swipes was performed throughout the site including at the drill site, core shacks and camp facilities. If removable contamination levels exceed 5.0 Bq/cm² for beta/gamma over 300 cm² the affected surface or equipment must be cleaned. Contamination levels did not exceed 5.0 Bq/cm² during the 2011 field season.





# 5 SUMMARY OF LOCAL HIRES AND INITIATIVES

An important aspect of the Kiggavik Project is that it brings employment and business opportunities to local residents. In 2011, local people were hired for work carried out at the Kiggavik camp and in Baker Lake. Local companies were successful in winning contracts. In addition to providing direct employment and business contracts, AREVA sponsored several events in the Kivalliq region in 2011.

## 5.1 LOCAL EMPLOYMENT

The Kiggavik Project provided employment to local people through direct hiring as well as by hiring local companies to supply labour services to the Project. During 2011, the project hired three local people directly – a Community Liaison Officer who worked afternoons throughout the year, a Community Relations Assistant who worked during the summer, and a Logistics Assistant who also worked during the summer.

The Project contracted Inuit workers from a Baker Lake company for camp operations and maintenance, wildlife monitoring, logistics, and environmental studies. In addition, consultants contracted local Inuit workers from Baker Lake for environment studies. Table 5.1-1 summarizes the employment provided to local Inuit workers since the field program resumed in 2007.

2007 2008 2009 2010 2011 Inuit Inuit Inuit Inuit Inuit Hours Hours Hours Hours Hours Workers Workers Workers Workers Workers Local 3 1731 2 2.214 3 2993 3 3076 2\* 2044 AREVA **Employees** Contracted 28 6730 29 10.958 31 10.205 27 6495 17 4980 Workers 31 8461 31 34 30 9571 19 7024 Total 13,172 13,198

**Table 5.1-1 Local Employment** 

The reduction in Inuit workers in 2011 compared with previous years is due to a shorter season and less baseline field work than in the previously years. In addition to the local employment listed here, the contracted work described in the next section also provided employment to residents of Baker Lake and other Kivalliq communities.

<sup>\*</sup> A third non Inuit local Community Relations Assistant also worked for AREVA in Baker Lake during the summer



# 5.2 LOCALLY CONTRACTED WORK

Many goods and services obtained for the Kiggavik Project in 2011 were contracted to local suppliers. The total value of the local contracts in 2011 was \$3.7 Million. Much of this work went to companies with offices in Baker Lake and Rankin Inlet. There was also accommodation and meals in other Kivalliq communities.

Table 5.2-1 summarizes the value of contracts awarded to northern businesses since 2007. The work contracted to local companies in 2011 consists of:

- Diesel and jet fuel
- Expediting and transportation
- Environmental studies
- Helicopter services
- Groceries
- Meals and accommodations
- Translation services
- Cleaning services
- Labour
- Office utilities
- · Snow clearing at site

**Table 5.2-1 Kiggavik Project Northern Contracts** 

	2007	2008	2009	2010	2011
Inuit Owned companies*	\$1.3M	\$2.0M	\$1.8M	\$2.2M	\$3.4M
Other Northern companies**	\$1.1M	\$1.5M	\$1.0M	\$0.6M	\$0.3
Total	\$2.4M	\$3.5M	\$2.8M	\$2.8M	\$3.7

<sup>\*</sup>Companies on the NNI list of Inuit owned companies

## 5.3 SPONSORSHIPS AND DONATIONS

The Kiggavik Project has sponsored community events in Baker Lake and other communities in the Kivalliq since 2006. Sponsorships were given to educational, community, cultural and sports events and celebrations. The list of events sponsored and donations given in 2011 is shown in Table 5.3-1.

Table 5.3-1 Sponsorships and Donations for 2011

Category	Organization	Activity	Date
Community	Baker Lake	Hamlet Days feast	May
	Baker Lake	Fashion Show	July
	Baker Lake	Entertainment for Nov 14-18 Celebration	Nov
	Baker Lake	Fire Prevention Week	Oct

<sup>\*\*</sup>Companies not on the NNI list but with offices in Nunavut and a significant number of Inuit employees



Category	Organization	Activity	Date
	Baker Lake RCMP	Christmas Hampers	Dec
	Repulse Bay Food Bank	Food Bank at Christmas	Dec
	Rankin Soccer Association	Tournament	Mar
	Rainbow Dog Trotters	Hamlet Day races	May
	Baker Lake Snowmobile Club	Philip Tagoona memorial race	May
	Whale Cove Fishing Derby	Fishing Derby	May
Sports and Recreation	Chesterfield Inlet Fishing Derby	Fishing Derby	May
	Tanuak Basketball	Tournament	June
	Bike Rodeo	Kivalliq Communities	June
	Sports afternoon with kids	Baker Lake	July
	Kivalliq Science Camp	Kivalliq Communities	Dec
	Whale Cove Exchange Students	Exchange trip	Mar
	Canada World Youth Program	Baker Lake	June
Education	grade school awards	Graduation	June
	Geocache	Baker Lake	July
	High School awards	6 communities graduation	August
	Nunavut Quest Dog Races	Repulse Bay	April
	Rainbow Dog Trotters	Baker Lake race	May
Culture	Back River visit	Visit to traditional homeland	June
	Fashion Show	Baker Lake Nunavut Day	July
	Bowhead Whale Hunt	Coral Harbour	August
Environment	Spring cleanup	Baker Lake	June
Health & Safety	ASIST	Suicide Prevention Sessions in Baker Lake and Rankin Inlet	August



## 6 COMMUNITY ENGAGEMENT

AREVA recognizes that for the Kiggavik Project to be successful, it will need the support of the people in the region. Information sharing and community engagement are requirements of environmental assessment review and one of AREVA's corporate commitments.

## 6.1 INFORMATION SHARING

## 6.1.1 Information Office

AREVA has operated an information office in Baker Lake since August of 2006. The office continued to be open to the public throughout 2011 on a daily basis. A bilingual Community Liaison Officer was present each afternoon to speak with visitors. Between June and August, a full time Community Relations Assistant was also working in the Information office.

# 6.1.2 Kiggavik Project Liaison Committees

## **Baker Lake Community Liaison Committee**

The Kiggavik Project established a Community Liaison Committee (CLC) in December 2006 as a means of maintaining community involvement in Baker Lake. Committee members are appointed by their respective organizations and a community member is elected as Chair of the Committee.

The organizations represented on the CLC are:

- Hamlet Council
- Elders Society (male and female representatives)
- Youth Group (male and female representatives)
- District Education Authority
- Hunter and Trappers Organization
- Health Committee
- Justice Committee
- Business Community
- Aberdeen Lake People

During 2011, the Baker Lake CLC met on 5 occasions. The dates are shown in Table 6.1-2. Meetings were held at the AREVA Information Office in Baker Lake and were open to the public. Meeting announcements were made on the local radio with the date, time and location. Following the meetings, radio announcements were made to provide Baker Lake residents with a meeting summary. Translation was provided and minutes were kept of each meeting. Meeting minutes are available at the information office in Baker Lake.



The Baker Lake CLC provided community advice to the Kiggavik Project throughout the year. Following is a summary of topics discussed with the CLC:

- updates of Project activities including the field program, the overland haul, environmental baseline work and permits;
- updates on the environmental assessment process;
- IQ meetings;
- Public Forums on Uranium;
- information and updates on local employment opportunities and sponsorships.

## The CLC provided advice to AREVA on:

- environmental baseline work
- youth engagement
- potential dock sites
- suicide prevention sessions
- communication methods

#### **Regional Liaison Committee**

A Regional Liaison Committee (RLC) was formed in 2007. This committee consists of one representative, appointed by the Hamlet Council, from each Kivalliq community. This committee is a means of ensuring ongoing communication between the Kiggavik Project and Kivalliq communities. Minutes are kept of the meetings.

The RLC met on November 2011. The focus of the meeting was held to discuss the Draft Environment Impact Statement and project communications.

# 6.1.3 Kiggavik Blog

On June 29, 2010 a new communication initiative, the Kiggavik Blog <a href="www.kiggavik,ca">www.kiggavik,ca</a> went live. This website contains project information, a schedule of events and allows for the public to ask questions. Answers are usually posted within one or two days and the questions and answers remain for other visiting the blog to see. Statistics for the blog are shown in Table 6.1-1. Blog activity reduced from January to April and then was fairly consistent for the remainder of the year. There were 5649 site visits in 2011.

Table 6.1-1 Statistics for Kiggavik Blog

Month	Site Visits	Page views	Unique visitors	Average Pages viewed per visit
December	246	657	199	2.67
November	313	981	232	3.13
October	252	575	205	2.28
September	207	541	161	2.61
August	261	696	207	2.67
July	286	745	243	2.6
June	324	847	246	2.61



Month	Site Visits	Page views	Unique visitors	Average Pages viewed per visit
May	283	744	214	2.63
April	310	913	250	2.95
March	542	1300	434	2.4
February	1053	2039	950	1.94
January	1572	2948	1316	1.88
Total for Year	5649	12986	4657	

# 6.1.4 Youth Specific Engagement

Input from community engagement has suggested youth should be engaged more. This summer, summer student Olivia Ullyot from Baker Lake organized community initiatives specifically for youth.

#### **Youth Forum**

On August 10, youth from Baker Lake participated in a Youth Forum, designed specifically to engage youth from Baker Lake about the Kiggavik project. The event was held at the Baker Lake Recreation Centre from 3-5 PM and from 7-9:30 PM. AREVA was represented by six employees from the Kiggavik project 30 years old and younger. Project displays were set up and the youth spoke one on one with AREVA staff about the project, as shown in Photograph 6-1 There was a question and answer session and participants were requested to complete a survey. Thirty nine youth participated. Twenty four questions were asked and 22 survey forms were completed. A summary of the main interest responses regarding mining in Nunavut is shown in Figure 6.1-1. One participant from the Youth Forum received a tour of Kiggavik on August 11.

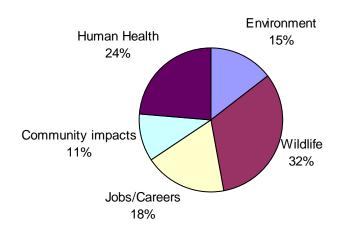


Figure 6.1-1 Percentage of Participant Responses by Youth

#### **Ask a Question Contest**

For the second year, people of Baker Lake have been encouraged to ask a question about the Kiggavik project on the blog or in person. A group of three people who asked questions were given a tour of the Kiggavik site on August 11.



# 6.1.5 Summary of Meetings and Events

AREVA has engaged in a series of initiatives to inform, consult with and involve the community in the Kiggavik Project since 2005. The initiatives and events carried out in 2011 are detailed in this section and are listed in Table 6.1-2. Included are events that were organized by AREVA as well as events organized by governments and Institutions of Public Government regarding uranium mining or the Kiggavik project. The various activities are discussed in the remainder of the section.

Table 6.1-2 Community Information, Involvement and Consultation Activities - 2011

Community	Group	Date	Purpose/ Topic
Baker Lake	Community Liaison	Jan 20,	Kivalliq school tours discussed
	Committee	May 27	Project update
		Jun 21	Operation at camp discussion, discussion about wildlife with consultant.
		Aug 9	Closure of exploration camp for the season and summary of youth engagement for 2011
		Nov 4	Overland Haul and environmental assessment
	Hamlet	Jan 25	Meeting with the Mayor and staff members in Vancouver during conference
		Apr 5	Meeting with Mayor in Iqaluit during Mining Symposium
		May 30	Meeting with Mayor in Baker Lake
	Hunters and Trappers	Feb 16	IQ validation meeting
	Organization	Nov 2	Special Meeting on Road Options and Access Management
	High school	May 12	Presentation to one Grade 9 minerals class
		May 16	Presentation to second Grade 9 minerals class
		June 21	Visit to Kiggavik by three grade 9 students from minerals class
		Aug 4/5	ASIST Suicide Prevention session
	Community	Mar 22- 24	NIRB Guidelines Workshop in Baker Lake
		Mar 30/31	Government of Nunavut Public Forum
		Aug 10	Youth Forum – AREVA young people in discussion with youth in Baker Lake
	Community residents	Jun 21	Grade 9 students from Jonah Amitna'aq School in Baker Lake visit Kiggavik
		Aug 11	Ask a Question contest winners/Youth Forum door prize winner visit Kiggavik
Arviat	Hunters and Trappers Organization	Feb 18	IQ validation meeting
Chesterfield Inlet	Hunters and Trappers Organization	June 3	IQ validation and marine studies presentation
		Nov 17	NIRB Uranium Information Session
Rankin Inlet	Hunters and Trappers	Feb 14	IQ validation meeting



Community	Group	Date	Purpose/ Topic
	Organization		
	High School	Aug 8/9	ASIST Suicide Prevention session
	Community	Nov 15	NIRB Uranium Information Session, Rankin Inlet
Whale Cove	Kivalliq Science Fair	Mar 18	Science Fair
	Hunters and Trappers Organization	Mar 21	IQ Validation Meeting
Coral Harbour	Hamlet	Feb 18	Meeting with Mayor
	Hunters and Trappers Organization	Feb 17	IQ Validation Meeting
	Community	Nov 26	NIRB Uranium Information Session
Repulse Bay	Hunters and Trappers Organization	Feb 10	IQ Validation meeting
Regional Organizations, Inuit,	Kiggavik Regional Liaison Committee	Nov 3	Workshop on Draft EIS
Government	KIA	Feb 17	Update meeting with KIA staff in Rankin Inlet
and IPG meetings		Feb 22	IIBA Terms of Reference meeting with KIA in Winnipeg
Ü		Oct 27	Project update presentation at annual general meeting
	NTI	Jan 26	Project update with NTI staff in Vancouver
		Mar 8	Presentation to NTI luncheon in Toronto
		April 5	Meeting with the President of NTI in Iqaluit
	NIRB	Apr 13	Meeting with staff in Cambridge Bay
	Nunavut Roundtable	Jan 25	Nunavut IPGs and Regulators in Vancouver
	Kivalliq Wildlife Board	June 2	Project wildlife update at annual general meeting in Rankin Inlet
	BQCMB	Nov 3	Project Wildlife Update in Winnipeg, MB
	Kivalliq Chamber of Commerce	Mar 22	Project Update at Annual General Meeting in Rankin Inlet
	Kivalliq Socioeconomic Monitoring Committee	Oct 26	Meeting in Baker Lake
	Minister of Economic Development and transportation	Apr 5	Update meeting in Iqaluit with Minister and EA
	Federal Senator for	Jan 24	Project Update meeting in Vancouver
	Nunavut	Mar 7	Project Update meeting in Vancouver



Community	Group	Date	Purpose/ Topic
	AANDC	Jan 23	INAC Regulatory Update Vancouver
		Apr 4	Meeting with RDG and staff in Iqaluit
Iqaluit	Community	Mar 16/17	Government of Nunavut Public Forum on Uranium
Cambridge Bay	Community	April 12/13	Government of Nunavut Public Forum on Uranium

#### **Hamlet Representatives**

Kiggavik team members met with the Mayor of Baker or with the Mayor and community leaders on three occasions and with the Mayor of Coral Harbour on one occasion.

#### **Hunters and Trappers Organizations**

Meetings were held with the HTO's of the seven Kivalliq communities to validate IQ data that was gathered during previous workshops. Maps prepared following the workshops were shown to the HTO members, sometimes with other community members present and additional questions regarding the marine environment were asked. This information was reported in the Draft Environmental Impact Statement for the Proposed Kiggavik project submitted in December of 2011.

AREVA met with the Kivalliq Wildlife Management Board on June 2 for a project update meeting during their Annual General Meeting.

#### **Beverly and Qaminirjuaq Caribou Management Board**

AREVA observed the November 2011 BQCMB meeting in Winnipeg, MB and presented a project update.

#### Other Events

In additional to AREVA-led initiatives, the Nunavut Impact Review Board presented uranium information to all seven Kivalliq communities in 2011 and the Government of Nunavut hosted uranium information sessions in each of the three Nunavut regions.





Photograph 6-1 Youth Forum in Baker Lake, August 2011

# 6.2 KIVALLIQ COMMUNITY INVOLVEMENT

Community involvement for the Kiggavik project began in 2006. Community involvement activities are described in the following sections

# 6.2.1 High School Visits and Awards

The Kiggavik Project has been speaking with high school students in the Kivalliq region since 2006. The Award of Excellence is presented to the graduating high school student showing proficiency in math, science and Inuktitut. It has been awarded to a Baker Lake high school student each year since 2006. Since 2009, it has been awarded to a high school student in each of the seven Kivalliq communities. In 2011, a student at each high school with the exception of Whale Cove was presented with of an Award of Excellence. The graduation for Whale Cove has been postponed to early 2012.

# 6.2.2 Baker Lake Summer Community Involvement

The 2011 summer events are summarized below.

#### **Fashion Show**

AREVA sponsored a traditional fashion show in Baker Lake on June 11. Inuit of all ages dressed in traditional Inuit clothing and were judged in various categories with prizes awarded.



Twenty eight people participated and about 75 people came out to watch. This is the second year AREVA sponsored a fashion show in Baker Lake. There were comments that this event should be annual. Photograph 6-2 shows Olivia Ullyot speaking at the traditional fashion show.

#### **Bike Rodeo**

AREVA was a sponsor to an RCMP Bike rodeo held in Baker Lake on July 7. RCMP taught bicycle safety to Baker Lake youth. AREVA's participation consisted of providing new helmets for each of the youth, providing safety coloring books and refreshments. Helmets and coloring books were sent to the other Kivalliq communities for their bike rodeos. A total of 230 helmets were provided to Kivalliq youth. Olivia Ullyot is shown with the Baker Lake youths who participated in the bike rodeo in Photograph 6-3.

#### **Sports afternoons**

Every afternoon the RCMP summer student in Baker Lake puts on a sports afternoon at the baseball diamond. On Fridays the AREVA summer student provided apples and bananas and also 2 AREVA caps (one for most sportsmanlike and another for MVP). There is about 15-20 kids who participate and are generally between the ages of 8 - 13.

#### **Geo Cache**

On July 19, Olivia Ullyot held a geo cache day with youth in Baker Lake. Prizes were placed at locations around Baker Lake. Teams of youth were taught how to read GPS devices and were given the coordinates of the prizes and sent to find them. All prizes were found by all teams.

#### Kid's Fun Day

Areva and the Baker Lake RCMP and Social Services worked together to host a Kid's Fun Day on Wednesday August 17<sup>th</sup> in the afternoon. The event was hosted at the indoor playground in the Community Center. Kids ages 4-12 were encouraged to come out. There was face painting, three-legged race, dice knockout game, pin the antler on the caribou and also a fish pond with prizes. The event was a huge success with a turn out of roughly 80 kids. An Areva contribution was prizes for the fish pond. Olivia Ullyot is shown with the Baker Lake youths who participated in the kid's fun day in Photograph 6-4.

#### 6.2.3 Homeland Visits

An initiative for people with close ties to the area where the Kiggavik Project is located began in 2006 and continues. Participants visit both the Project site and their traditional homeland. Since the start, 75 people have participated in 17 homeland visits. Each visit consists of one or more lnuk, who was born on the land, along with family members traveling by helicopter and visiting a location where they lived on the land. The AREVA Community Liaison Officer normally accompanies the group on the visit. A summary of the homeland visits to date is provided in Table 6.2-1.

One visit of four people took place in 2011. On June 21, a group visited Kazan Lake.



## **Table 6.2-1 Homeland Visits**

Date		Location	<b>Community Participants</b>	
	Jul-27	Aberdeen Lake and Beverly Lake	12	
2006	Jul-28	Aberdeen Lake and Beverly Lake	3	
	Aug-24	Aberdeen Lake	3	
2007	Aug-17	Schultz Lake and Aberdeen Lake	4	
	Aug-21	Schultz Lake	4	
	Aug-21	Judge Sissons Lake	5	
2008	Sep-05	Mallory Lake	4	
	Sep-06	Schultz Lake	4	
	Sep-07	Herman River	4	
	Aug-11	Garry Lake	4	
	Aug-12	Aberdeen Lake and Beverly Lake	4	
2009	Aug-13	Aberdeen Lake	4	
	Sep-09	Shultz Lake and Aberdeen Lake	4	
	Sep-10	Sand Lake	4	
2010	Aug-28	Ferguson Lake	4	
2010	Aug-29	Aberdeen Lake	4	
2011	Jun-21	Kazan River	4	
Total		17 Homeland visits	75 Participants	



Photograph 6-2 Olivia Ullyot Speaking at the Traditional Fashion Show





Photograph 6-3 Olivia Ullyot with Baker Lake Youth at the Bike Rodeo



Photograph 6-4 Kids Fun Day August 17, 2011



# 6.3 SITE TOURS

Since 2005, community and other stakeholder groups have taken tours of uranium mines in Saskatchewan and the Kiggavik site.

# 6.3.1 Saskatchewan Minesite Tours

No Saskatchewan Mine tours were carried out in 2011. Since 2005, AREVA has hosted nine tours of Saskatchewan mine sites with 126 participants. A list of tours carried out since 2005 is provided in Table 6.3-1. Mine site tours will continue.

**Table 6.3-1 Tours of Saskatchewan Mines** 

Date			Group	Tour and meetings	
			Governments and co- management boards	Toured McArthur River and McClean Lake and held meetings in Saskatoon with	
Sep 13-15	14	32 from NTI, the three RIA's and the mayor of Baker Lake.	Saskatchewan Environment, CNSC and Environmental Quality Committee members		
2005	Sep 19-21	32	NTI, the three RIA's and the mayor of Baker Lake.	Toured McArthur River and McClean Lake and met with Saskatchewan northerners who have worked with uranium mines.	
	Oct	11	Councilors, elders, students, hunter/trappers and business people from Baker Lake	Toured McArthur River and McClean Lake	
2007	Sep 11-13	12	NPC Commissioners and Staff	Toured McArthur River, McClean Lake and Cluff Lake and met with EQC reps in LaRonge	
	May 04 00	8	Regional Committee members	Toured McClean Lake and Cluff Lake and	
	May 21-22	1	Arctic College representative	met with the McClean Lake Elder	
	Jun 21-22	7	Staff members from Government of Nunavut Departments	Toured McClean Lake and Cluff Lake	
2008	Jul 15-17	12	KIA Board Members and Staff	Toured McClean Lake and Cluff Lake and met with AREVA and CAMECO representatives in Saskatoon	
		11	Kivalliq Wildlife Management Board		
	Oct 6-7	9	CLC	Toured McClean Lake and Cluff Lake and	
		Oct 6-7	5	Minerals Class from JA High School	met with McClean Lake elder and AREVA staff from the northern affairs office in LaRonge.
		2	Regional Committee		
2009	Jul-14	2	INAC representatives	Toured McClean Lake	
Total	9 tours	126	Visitors		



# 6.3.2 Kiggavik Site Tours and Visits

Community people have been visiting the Kiggavik site since 2005. In 2011, 7 community people visited Kiggavik on two occasions. On June 21, three grade 10 students from the grade 10 Minerals and Energy course were taken on a tour of Kiggavik with Barry McCallum and Olivia Ullyot, shown in Photograph 6-5. The group spoke with the Safety Officer, had discussions and demonstration from the Environment and Radiation Protection Supervisor and the Geologist and spoke with the Wildlife Monitor. On August, one participant from the youth forum toured the Kiggavik site with three winners of the Ask a Question contest.

A list of the stakeholder and community visits to Kiggavik since 2005 is provided in Table 6.3-2.

**Table 6.3-2 Site Visits to Kiggavik** 

			Table 6.3-2 Site visits		
Date		Group		Visit	
2005	Aug-23	4	Baker Lake elders	Visit after 2003 and 2004 cleanup	
	Jul-27	12	Homeland visitors	Visit Kiggavik site during homeland visit	
2006	Jul-28	3	Homeland visitors	Visit Kiggavik site during homeland visit	
Aug-24 3		Homeland visitors	Visit Kiggavik site during homeland visit		
2007	Aug-12	10	CLC & community members	Tour of camp, core area and drilling	
	Aug-17	4	Homeland visitors	Visit Kiggavik site during homeland visit	
	Jun-12	7	Premier, Mayor and group	Tour of camp, core area and drilling	
	Aug-21	8	CLC	Tour of camp, core area and drilling	
2008	Aug-27	5	Regional Liaison Committee	Tour of camp, core area and drilling	
	Sep-05	4	Homeland visitors	Visit Kiggavik site during homeland visit	
	Sep-06	4	Homeland visitors	Visit Kiggavik site during homeland visit	
	Aug-11	4	Homeland visitors	Visit Kiggavik site during homeland visit	
	Aug-12	4	Homeland visitors	Visit Kiggavik site during homeland visit	
2009	Aug-13	4	Homeland visitors	Visit Kiggavik site during homeland visit	
2009	Aug-19	12	CLC and DEA reps	Tour of camp and core area	
	Sep-09	4	Homeland visitors	Visit Kiggavik site during homeland visit	
	Sep-10	4	Homeland visitors	Visit Kiggavik site during homeland visit	
	Jul-20	3	Blog Question Contest Group	Tour of camp and core area	
	Jul-25	3	Shultz lake group	Visited Kiggavik following a visit to Schultz Lake	
	Aug-07	3	Community members	Tour camp and core area	
	Aug-22	8	CLC	Tour of camp and core area	
2010	Aug-24	3	ОТН	Tour of camp and core area	
	Aug-25	7	Elders	Tour of camp and core area	
	Aug-25	3	Blog question Contest Group	Tour of camp and core area	
	Aug-25	2	Mayor and one other	Tour of camp and core area	
	Aug-29	4	Homeland Visitors	Visit Kiggavik site during homeland visit	
2011	Jun-21	3	Mineral and Energy Class from JA High School	Tour of camp and core area	
	Aug-11	4	Bloq Question and Youth Forum Group	Tour of camp and core area	
To	otals	139	Visitors		





Photograph 6-5 Grade 10 Students at the Kiggavik Camp



# 7 INSPECTIONS

Land Use Inspectors visited the Kiggavik Project site twice in 2011, on July 17 (AANDC/NWB) and September 19 (KIA). The Mines Inspector (WSCC) also conducted an inspection on July 5<sup>th</sup>.

An inspection, focusing on water use, was conducted by AANDC on August 7, 2011. As the drilling program had been completed the inspector visited the Kiggavik camp and had a look at the Kiggavik fuel cache. An Inspection report has not been received by AREVA at the time of submission of this Annual Report.

A second inspection was conducted by the Kivalliq Inuit Association (KIA) on September 30, 2011. At the time of this inspection, drilling activities had been completed and the campsite was shut down for the season. An Inspection report has not been received by AREVA at the time of submission of this Annual Report.

The Mines Inspector for Workers' Safety & Compensation Commission (WSCC) conducted an inspection on July 5<sup>th</sup>. The finding of the inspection is as follows:

RECOMMENDATIONS/CONCERNS	ACTION TAKEN
The helicopter's longline hoisting assemblies were new when they were brought to site and the complete assembly is checked by the flight crew prior to a diamond drill move; however there are no records on site to confirm the age of the components and of their pre-operating inspection prior to a drill move.  - Please ensure the pre-operating inspection of the helicopter's longline hoisting assembly is recorded before its use.	Upon receipt of the inspection report a request was made by the acting Safety Coordinator to the helicopter contractor, for a copy of the slinging logbook. This was provided by the helicopter mechanic, which had two entries dated July 5, 2011 and July 12, 2011. The Safety Coordinator preformed a second follow-up upon his return to camp on July 18, 2011 to ensure that the log books continued to be filled out.  As part of the ongoing inspection process the Safety Coordinator requested to see the logbook filled out on a weekly basis. As well, a copy of the logbooks was requested at the end of each month.