2002 INSPECTIONS AND FUTURE CLEANUP PLAN FOR THE KIGGAVIK SISSONS PROJECT NUNAVUT

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Saskatoon, Saskatchewan

October, 2002

By

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1 INTRODUCTION

The Kiggavik Sissons Project is a uranium surface exploration project located approximately 80 km west of Baker Lake, in the Kivalliq Region of Nunavut. The project is made of two large groups of mining leases and mineral claims subdivided in two projects, Kiggavik to the North and Sissons, the largest one, to the South. The earliest lease expiry date is 2009. The Project includes a camp, office, core shack and drill core storage at the Kiggavik site as well as core shack and core storage at the Andrew Lake site about 17 km to the Southwest, in the Sissons Project. There is also a small core storage area at the former camp at Pointer Lake, near the Kiggavik site. Exploration drilling has not taken place at the project since the end of the 1997 field season.

COGEMA Resources Inc. (COGEMA) is the majority owner and operator of the property. This report describes the results of inspections carried out at the project during the summer of 2002, and the future cleanup plan by COGEMA.

2 PROJECT HISTORY AND STATUS

2.1 History

This uranium exploration project was started nearly 30 years ago by the previous operator, Urangesellschaft Canada Ltd. (UGC). Several orebodies were discovered during the 1970's and 1980's. The original requirement for a removal licence was thus triggered when the amount of uranium contained in the drill cores for a year exceeded the 10 kg amount specified in the Atomic Energy Control Board (AECB) Uranium and Thorium Mining Regulations. Some engineering and environmental studies were done by UGC, but these studies did not lead to a development decision. COGEMA became the project operator in 1993, when our parent company purchased a majority interest in Urangesellschaft's world-wide uranium interests, including UGC. The overall resources for the project are in the order of 40,000 tonnes of uranium (of the order of 100 million pounds of U_3O_8) but at an average grade of less than 0.5%.

2.2 Status

2.2.1 Technical Status

Exploration carried out by COGEMA between 1993 and 1997 focussed on:

- extending the borehole grids to check that they went far enough at the Andrew Lake and End Grid orebodies "closing the orebodies".
- checking additional targets on the Sissons project.

In total 100 boreholes were drilled but 1993 was the last year when 10 kg of uranium or more was recovered.

As usual the Kiggavik camp and Andrew Lake site were prepared for the winter conditions at the end of the 1997 field season. It was hoped to come back for the 1998 field season but this was not possible. A prefeasibility study finished in November 1997 showed the project is not economic at current uranium prices. Since 1998, COGEMA has no current plans to resume exploration activities at this time.

2.2.2 Regulatory Status

The AECB removal licence has no expiry date, and has been in a ceased activity (care and maintenance) status since the end of the 1997 field program. The Nuclear Safety and Control Act replaced the Atomic Energy Control Act in May 2000. Application to revoke the AECB removal licence was thus made by COGEMA, on the basis that activities currently being carried out on this project, and for the foreseeable future, are surface exploration activities which are exempt from the CNSC regulatory framework which is now applicable. The application was considered by the Commission at the public hearing on April 18, 2002. The decision was to revoke the licence effective September 20, 2002. The "Record of Proceeding, Including

Reasons for Decision" as well as the Commission Member Document (CMD 02-M65) are attached as Appendix 1.

2.3 Future Project Plans

COGEMA intend to carry out a number of cleanup activities (Section 8) in future. These will put the core storage facilities, and those camp facilities which remain following the cleanup, into a low maintenance condition for indefinite storage.

Future project plans are summarized as follows:

- No exploration is currently being done and none is currently planned at Kiggavik-Sissons
- Site will be maintained in a care and maintenance mode
- A CNSC licence is not required for this activity
- There are no current plans for further development.

Environmental assessment and licensing, including CNSC requirements, will be necessary if and when further development of this project occurs. Clearly, an extensive public consultation program would be a key advance activity to any future forward movement of this project.

COGEMA is not able at this time, to forecast when, or even if, further exploration or development will occur.

3 2002 INSPECTIONS

3.1 Preliminary Site Visit

On July 9 and 10, 2002, a preliminary site inspection was conducted by COGEMA employees including:

- G. Acott, Director, Environmental Programs,
- J.C. Nadeau, Exploration Logistics Officer, and
- D. Spelay, Radiation Protection Specialist.

Appendix 2 provides a photographic record of the preliminary site visit along with pertinent observational notes.

The purpose of the inspection was to observe and assess the condition of the camp and facilities, conduct radiological surveys of the core rack areas and of some exploration areas (where drill cuttings remain on the surface), identify any immediate radiological or environmental concerns and plan the necessary remedial actions. The observations from the preliminary inspection would also assist in planning the subsequent site inspection by regulatory agencies and Baker Lake community representatives, and assist COGEMA in formulating a plan for site clean-up with a potential schedule for this work.

On July 9, the crew visited the Andrew Lake site. A radiological assessment was conducted of the core racks, the Andrew and End Grid drilling areas as discussed in Section 4.0. A photographic record was taken of the buildings, core racks, stored materials and supplies.

A potential clean-up strategy was developed. On July 10, a similar approach was taken to the Kiggavik camp site and drilling areas. Immediate environmental hazards were identified and a disposition plan developed for these materials as described in Section 5.0.

In addition, samples of lichens were taken for chemical and radiological analysis near the core racks at both the Andrew and Kiggavik sites, as well as from a reference site some 10 km southeast of the Kiggavik camp. A single water sample from a runoff puddle between the Andrew core racks was collected to assess radiological and heavy metal components. Cuttings samples were collected for analysis from the Andrew Grid site from some of the holes showing the highest radiological readings. The results are included within Appendix 3. Lichen and water sample results did not indicate any environmental concern with only natural concentrations of radioactivity observed. Radiological results of the drill cutting analyses were slightly elevated, commensurate with the gamma fields measured in the radiological assessment.

Some minor camp clean up was performed.

3.2 August 07 to 08, 2002 Inspection

The second field visit (07-08 August 2002) was organized as requested by the CNSC when rendering its decision (May 16, 2002) to revoke the existing Removal Licence for COGEMA's Kiggavik-Sissons project. The main objectives of the site visit were to conduct or develop a:

- Joint inspection by COGEMA-CNSC and Nunavut Agencies
- Public meeting at Baker Lake
- Remedial action plan for the site.

CNSC staff agreed to accompany the KIA and other Agencies on an inspection of the Kiggavik-Sissons sites, discuss the results of the inspection in the community and provide a demonstration of how to measure, assess and manage radiological risks.

Further details are given in the last paragraph of the Section 4.2.2 "Current Regulatory Burden" and in Section 4.2.3 "Commission Views and Expectations Regarding the Other Regulatory Regimes" etc. in "Record of Proceedings, Including Reasons for Decision, May 16, 2002." (Appendix 1).

Tuesday 06-08-2002

COGEMA staff (5) mobilized (charter flight) from Saskatoon to Baker Lake on the afternoon, arriving late at Baker Lake. CNSC personnel (2) shared the same charter flight.

COGEMA staff:

Robert Pollock (BP), Vice President , Environment Health & Safety
Jean-Claude Rippert (JCR), Vice President Exploration
Ken Wheatley (KW), Senior Geologist,
Daren Spelay (DS), Radiation Protection Specialist,
Jean-Charles Nadeau (JCN), Exploration Logistics Officer.

CNSC staff:

Catriona Maloney (CM), Director General, Ottawa
Cherry Gunning (CG), Project Officer, Saskatoon

At Baker Lake airport, the Exploration Logistic Officer was met by two hunters (Troy Akilak and Gary Niuqtuk, both from Baker Lake) and by Mr. Gary Bard (NWT Rocks Services); they were flown immediately by helicopter (Bell 206 Long Ranger) to the Kiggavik camp, for overnighting and doing some clean up work.

Wednesday 07-08-2002

Mr. M. van Rooy "MvR" (Inspector of Mines Nunavut Operations: Workers' Compensation Board NWT & NU) joined us at the hotel. The charter plane was also sent to Rankin Inlet to pick up Mr. Henry Kablalik, Resource Management Officer (INAC), and Mr. Luis Manzo, (Land

Management Officer, KIA, Rankin Inlet). Mr. Philip Putumiraqtuq (Director, KIA Baker Lake) also contacted us at the hotel to inquire about the planning changes with respect to the weather forecast.

The initial plan was to fly by helicopter to the Kiggavik camp early in the morning. However, the weather conditions were so poor in Baker Lake that the helicopter could not take off prior to 3:00 p.m. Equipment and food and only 2 COGEMA persons (KW & DS) were flown to the camp to prevent Agencies and other personnel to be obliged to overnight in the camp if weather conditions turned adverse. Mr. Bard was flown back to Baker Lake that afternoon; the night before, he had properly disposed of the few old blasting caps and bear bangers stored at one of the equipment shack in the Kiggavik camp as further described in Section 5.2.

In the morning, a one and a half hour meeting was held between B. Pollock and J.C. Rippert, C. Maloney and H. Kablalik at the Igloo Hotel: main topic discussed was the "Conditions annexed to and forming part of Land use permit number N2000J0040" related to Kiggavik. Mr. Kablalik could not make the trip to the Kiggavik camp but had inspected it on July 6, 2001.

C. Gunning of the CNSC and COGEMA Darren Spelay also briefed Luis Manzo and Philippe Putumiraqtuq about the principles and the use of an Automess (Gamma Radiation Detector) that were going to be used during the field inspection.

During that day, at Kiggavik, COGEMA staff was performing some clean up of the site and some radiological mapping of the Kiggavik orebodies area.

Thursday 08-08-2002

That morning, the weather conditions were bad at the Kiggavik camp and not so bad at Baker Lake. The first flight with (JCR, CM, CG and LM) took longer than usual as the helicopter was dodging throughout fog in between Baker Lake and the camp. Later on that morning two ferries brought the rest of the Agencies personnel (Philip Putumiraqtuq, Thomas Kudloo, chair of the Nunavut Water Board and M. van Rooy) and later the Baker Lake Mayor Mr. Joe Niego, the deputy mayor Simeon Mikkungwak and the Elder Norman Attungala, together with B. Pollock.

Some of the visitors were given an Automess after receiving further explanations from CNSC, so that they could take their own reading during the visit.

The two shallow trenches, located about one kilometre east of the Kiggavik camp, were visited, and their environment "explained" (located in an area of naturally high radioactivity which enabled the discovery of Kiggavik mineralization by an airborne survey). Much time was spent on the trenches and the area of the westernmost drilling programs was visually checked. On the way back to the camp, the Kiggavik core storage was inspected, using the "Gamma Radiation" maps established by the COGEMA radiation specialist in July 2002 and pointing out where the cores boxes with a reading >1 µSv/hr are located.

Cabins (office, accommodation, core logging shacks, etc) were inspected as well as the immediate camp surroundings.

After lunch, the party was flown first to the Andrew Lake site (some 17km south south-west of Kiggavik camp) for inspection. Again the sections of the core racks containing readings >1 µSv/hr were visited and the party also walked around the entire site. Then everybody was flown and landed over the Andrew Lake orebody; there, they walked around the collar of diamond drilling hole 39 one of the first hole drilled on this orebody. Participants could see, around the collar, the reddish cuttings and measure their activity. B. Pollock compared to collars seen at Kiggavik and commented about the way to reduce the activity for such collar site. Then the party was repatriated to Kiggavik camp and from there to Baker Lake. J.C. Nadeau and the two hunters overnighted again at the camp to allow completion of some remaining tasks.

COGEMA and CNSC staff were available for comments and explanations throughout the day.

All the small quantities off hazardous chemicals have been properly disposed of as described in Section 5.

Mr. Martin van Rooy, Mines Inspector for the Nunavut Operations, filed a written report on his visit which is included as Appendix 4.

Friday 09-08-2002

The morning was spent (BP, CM and JCR) in preparing the public meeting presentation.

The public meeting had been organized by Luis Manzo (KIA). Despite information about the venue advertised by the local media, the meeting was poorly attended. Programmed at 2:00 PM, it started at 2:15 PM. Attendees were the same who participated in the trip (except T. Kudloo) plus two new persons: the official translator and Mr. Ovid Kinnowater, who used to work at Kiggavik/Sissons for COGEMA.

The meeting terminated at 3:00 PM and both the Mayor of Baker Lake and Mr. Norman Attungala, expressed their satisfaction for this visit, and thanked COGEMA for the organization and for the information.

COGEMA and CNSC staff flew back to Saskatoon on the charter plane late in the afternoon.

A photographic record of the August site inspection is included as Appendix 5. Appendix 6 contains the PowerPoint presentation from the public meeting.

4 RADIOLOGICAL ASSESSMENT

4.1 Introduction

A radiological survey was conducted of the camp site, core racks, and borehole grids associated with the Kiggavik Sissons Project. The areas assessed include the Kiggavik, Andrew Lake, End Grid and Pointer Lake areas. Measurements of the ambient gamma dose rate were conducted to identify areas of natural elevated radioactivity and locations where future cleanup activities will be necessary. Elevated radioactivity due to activities associated with the Kiggavik Sissons Exploration will be remediated to surface dose rates of <1.0 µSv/h at 1 m from the ground over all impacted areas.

Uranium is a natural element which is as common in the earth's crust as tin. It is present in most rocks and seawater in concentrations of 2-4 parts per million. Geological structures can result in a build up of uranium to the point where it may be economically viable to consider commercial mineral extraction.

A Ludlum 2221 digital scalar counter with a NaI Scintillation probe was used to measure surface radiation levels. A field calibration was conducted to compare the COGEMA's instrumentation to that of the CNSC, the Bicron survey meter with tissue-equivalent plastic scintillator. A conversion factor of 1000 cpm (Ludlum 2221) to 1 µSv/h (Bicron). This conversion will be used until comparisons can be made in a source-controlled environment. Under laboratory conditions, a corrected conversion factor is expected to vary less than +/- 5% from the current value.

A Trimble Pathfinder Asset Surveyor was used to collect GPS positions of the radiation measurements. This unit acted as both the GPS receiver and data logging device. Measurement points were extracted and differentially corrected using the Pathfinder Office software package. Arcview served as the geographical information system (GIS) and was used to produce the graphical plots included.

4.2 Naturally Elevated Area

At the center (i.e., origin) of the Kiggavik Grid, natural outcrops of uranium rich rocks raise the background radiation level over a considerable area as shown in Figure 4.2-1. The main uranium ore body outcrops near the ground surface in this area, and localized geomorphological formations called "frost boils" are present containing elevated concentrations of uranium.

Background radiation in this area ranges from less than 1 µSv/h to 9 µSv/h at ground level and as high as 20 µSv/h on contact with a frost boil.

Contaminant levels in this area are indistinguishable from natural background radiation. Impacted areas due to exploration drilling activity will not be determined by radiation measurements in this area but limited to the removal of garbage and exposed drill casings.

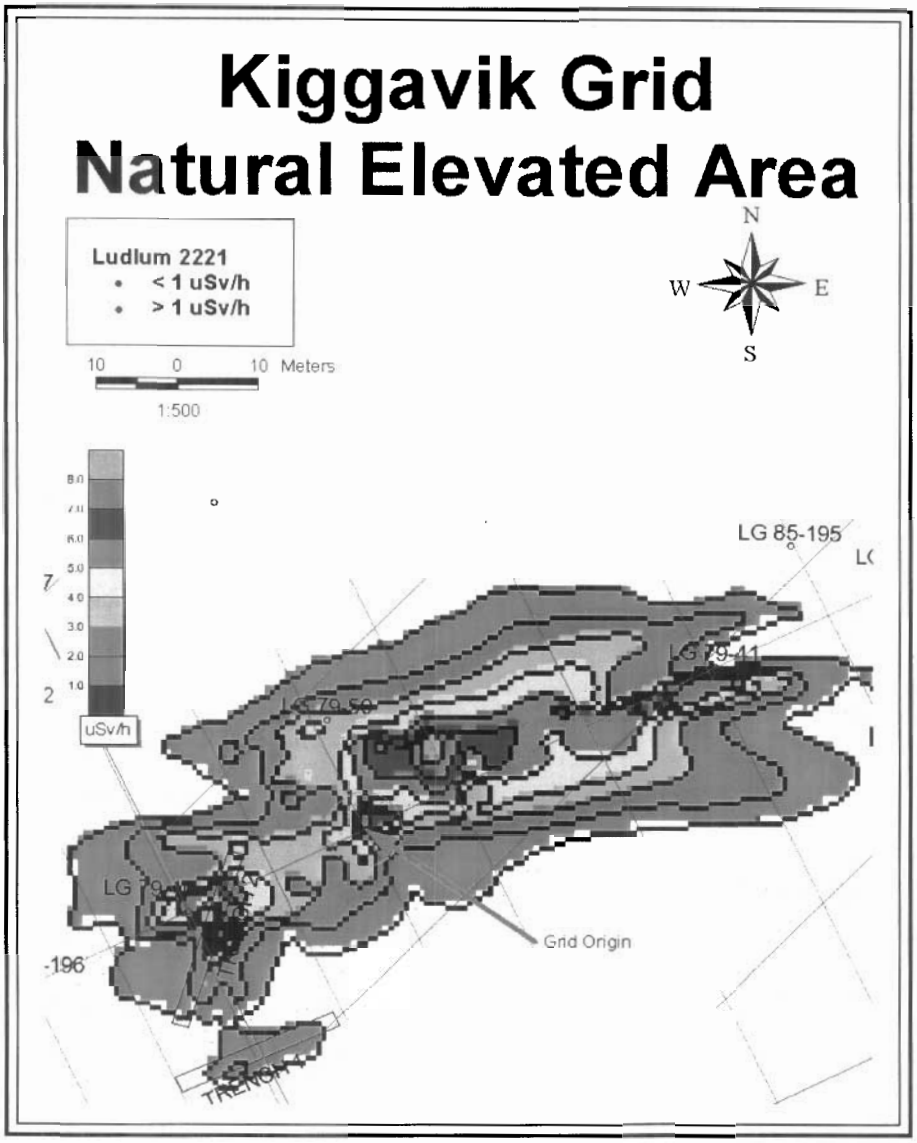

Figure 4.2-1 Naturally Elevated Area of the Kiggavik Grid

4.3 Kiggavik Camp and Site Buildings

Measurements of the residual uranium contamination in camp buildings show no values exceeding the variability of natural background radiation. All buildings have less than 1 µSv/h radiation fields at 1 m from any exposed surface.

The investigations primarily focussed on the two buildings where radioactive core was handled, the core splitting and core examination shacks. In order to properly characterize uranium content, background radiation needs to remain low. Routine contamination control efforts during the course of the exploration work, such as gathering sweepings for on-site storage in barrels, not only ensured accurate and fast assessment of the drill core handling areas during this 2002

survey but also eliminated the need for decontamination of these buildings when the camp is decommissioned.

4.4 Core Storage Areas

Obtaining uranium bearing drill core is the primary objective of any surface uranium exploration program. These cores provide geologists with a window to underlying rock type, structure and geotechnical parameters. In Saskatchewan, it is required to permanently store exploration drill core onsite as an enduring geological record for the benefit of future explorers and the community as a whole.

Currently, all drill core gathered throughout the duration of the Kiggavik Sissons Project is stored at three locations: the Kiggavik Camp, Pointer Lake and Andrew Lake site. Each of these areas have had detailed radiation surveys to identify the location and amount of radioactive core present.

4.4.1 Radiation Survey

The Kiggavik site core racks contains 10 areas where gamma fields exceed 1 µSv/h due to the presence of radioactive core at 1m from above the ground (Figure 4.4-1).

At Andrew Lake, the core shack contains 6 areas where the gamma fields exceed 1 µSv/h due to the presence of radioactive core at 1 m from above the ground (Figure 4.4-2).

At the Pointer Lake, all measured radiation levels were less than 1 µSv/h at 1 m from above the ground (Figure 4.4-3).

4.4.2 Remediation

A very small percentage (<1%) of the total drill core contribute to readings exceeding the 1 µSv/h level.

The intention is to consolidate these cores from each site and store them in a fenced-off area at the Kiggavik camp site. The fenced area will be adequately posted to indicate that radiation are slightly above natural background. This will significantly prevent any radiological impact and potential exposure to humans or wildlife in the area.

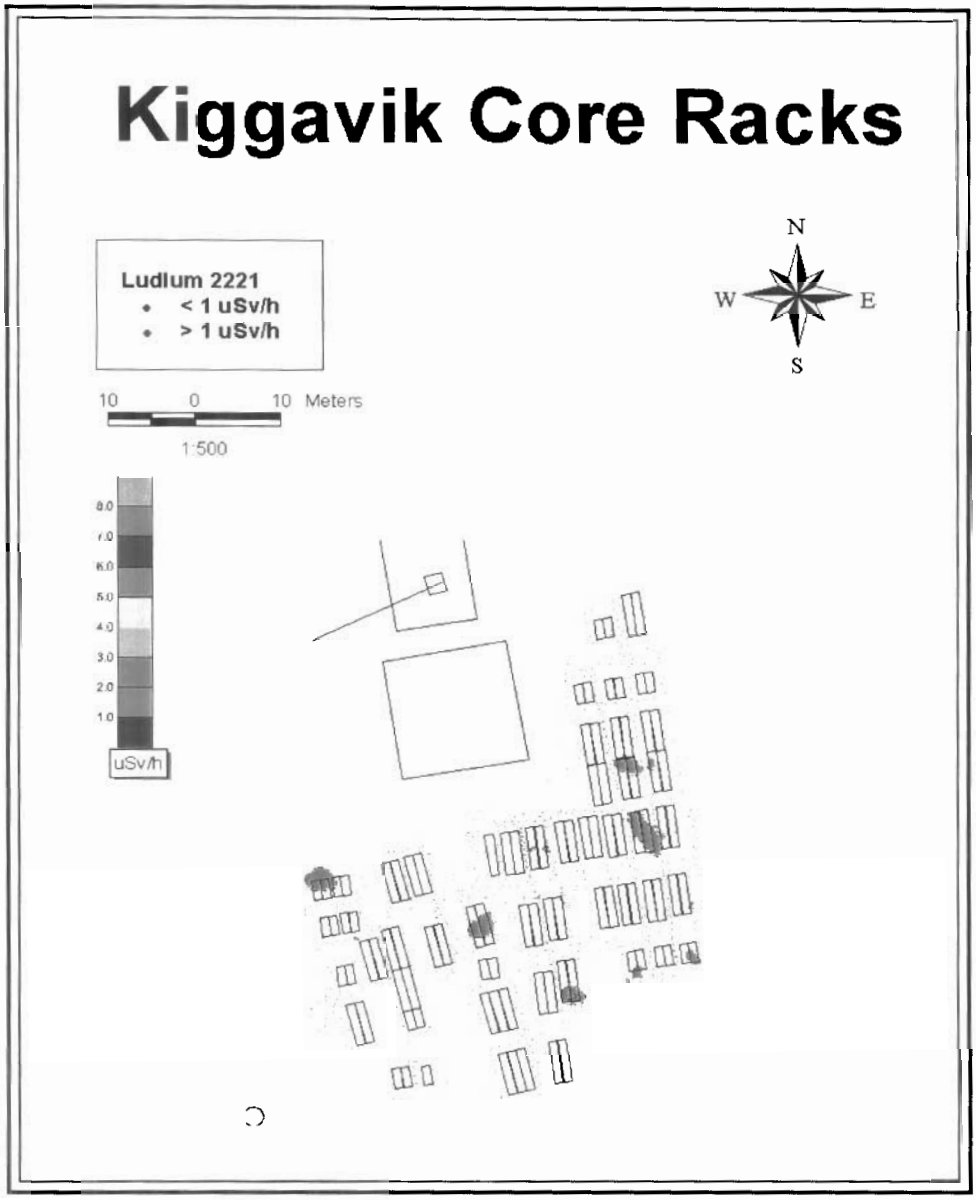

Figure 4.4-1 Kiggavik Site Core Racks

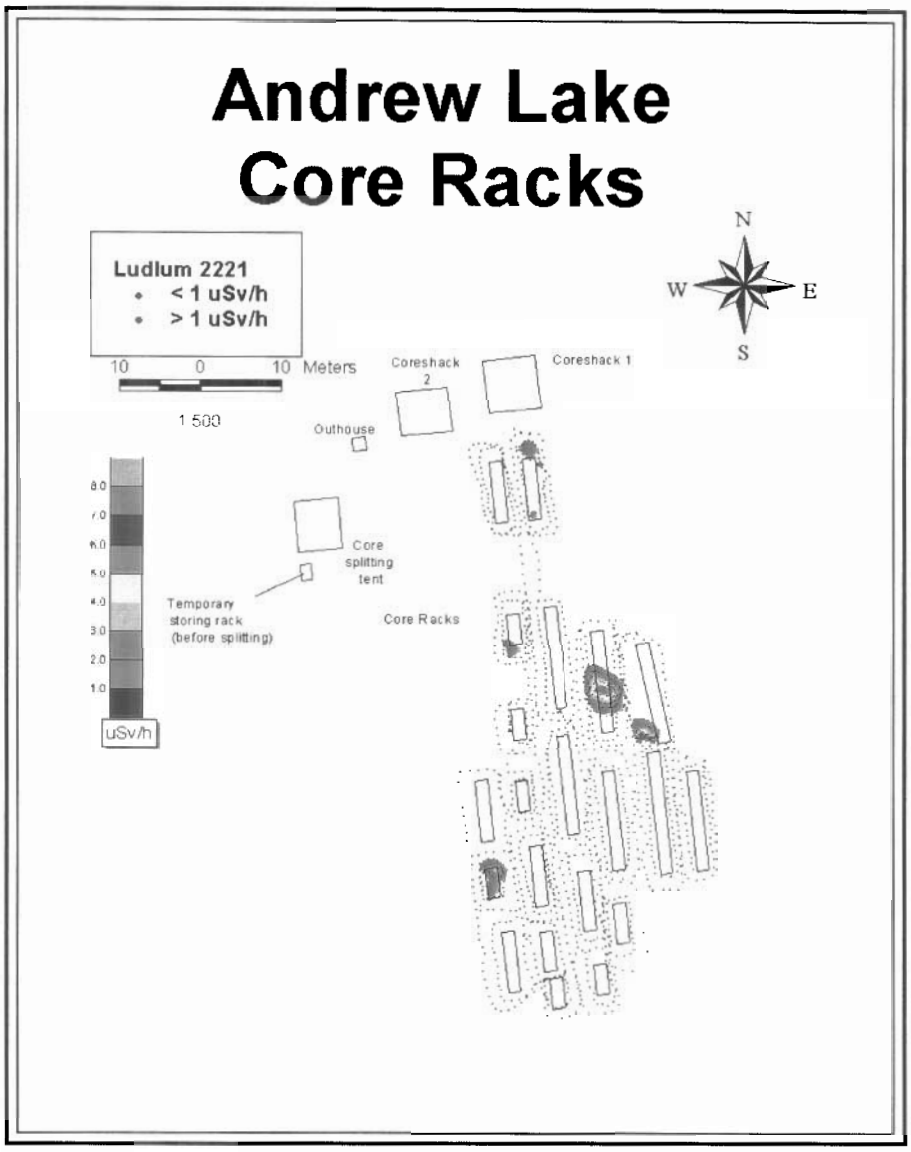

Figure 4.4-2 Andrew Lake Core Racks

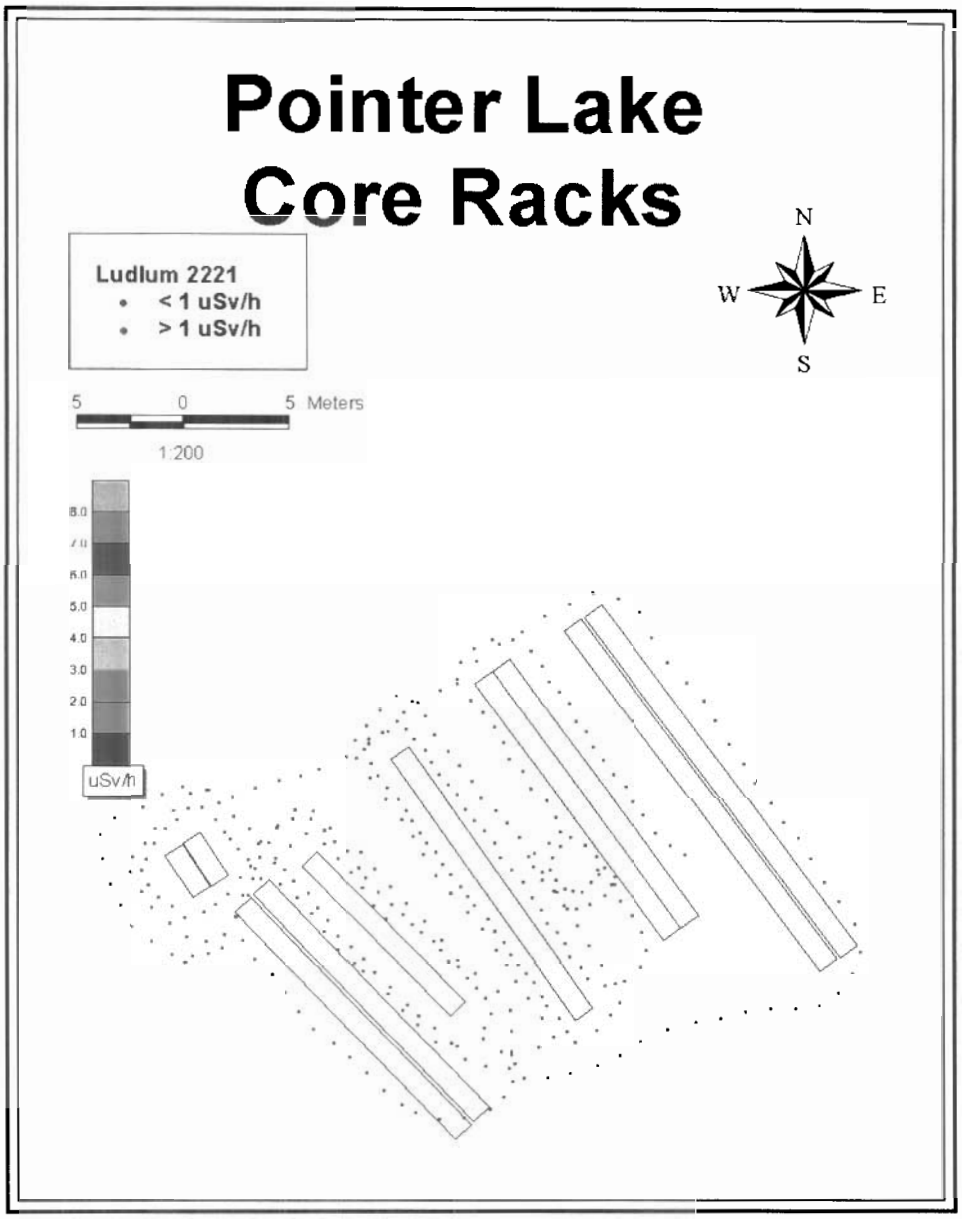

Figure 4.4-3 Pointer Lake Core Racks

4.5 Borehole Grids

Underground material reaches the surface during exploration drilling either directly as drill cuttings or suspended in drill water. Contamination levels at drill holes are roughly proportional to the amount of uranium drilled through or grade thickness. Grade thickness (GT) is a product of the per thousand concentration and length of uranium bearing core quoted in meters per thousand (°/oo).