



June 7, 2001

Mr. Louie Azzolini
Environmental Assessment Officer
Mackenzie Valley Environmental Impact Review Board
PO Box 938, 200 Scotia Centre, 5102 – 50th Ave.
Yellowknife, NT
X1A 2N7

Dear Mr. Azzolini:

**Re: Environmental Assessment Report
Phase II Mineral Exploration Drilling Program - Prairie Creek Mine
(Land Use Application MV 2001C0022; MVEIRB File EA01-003)**

Please find enclosed our Environmental Assessment Report for the Phase II Mineral Exploration Drilling Program prepared by Canadian Zinc in response to the Terms of Reference issued by the Mackenzie Valley Environmental Impact Review Board dated May 31, 2001.

All information is presented in .pdf format accessible by Adobe Acrobat Reader. The submission consists of the following documents: Cover letter, EA report, Cumulative Impacts Assessment, Figure 1, Figure 2 & Figure 3.

For ease of reference we have also included the following drawings, also in .pdf format, which were included in the original application package submitted to the MVLWB on March 5, 2001: Location map, Claims map and Proposed Exploration map.

Headings used in the Terms of Reference have been adopted in this EA Report in **bold** print, while details of the information requested are shown in *italics*. Canadian Zinc's response to each of the specific information requests follows in plain type.

I trust that you will find that all of the information requests have been responded to adequately. Should you have any questions or require any additional information please feel free to contact me at your convenience.

Yours very truly,

CANADIAN ZINC CORPORATION

Original Signed By

J. Peter Campbell
VP Project Affairs

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June 07, 2001

ENVIRONMENTAL ASSESSMENT REPORT
PHASE II
MINERAL EXPLORATION DRILLING PROGRAM
PRAIRIE CREEK MINE

Land Use Permit Application MV2001C0022
MVEIRB FILE 01-003

SUBMITTED TO:

Mackenzie Valley Environmental Impact Review Board
200 Scotia Centre
P.O. Box 938
Yellowknife, NT
X1A 2N7

SUBMITTED BY:

Canadian Zinc Corporation
Suite 1202 – 700 West Pender Street
Vancouver, BC, V6C 1G8

June 07, 2001

Executive Summary

The Prairie Creek Mine is 100% owned and operated by Canadian Zinc Corporation of Vancouver, BC. The mine is located in the southern Mackenzie Mountains in southwestern Northwest Territories in the area claimed by the Nahanni Butte Dene Band of the Deh Cho First Nations as their traditional territory.

The Prairie Creek Mine has been the focus of exploration since mineralization was first discovered on the property in 1928. As a result of this activity the property is now known to contain a significant polymetallic Zinc-Lead-Silver-Copper mineral resource. In addition to this mineral resource, the site also contains approximately \$150 million of minesite infrastructure, in today's dollars, including a 1,000-ton per day mill, a 240 person camp, an administration and service complex and support facilities, all constructed in 1981. Although fully permitted for operation in 1982, the mine did not achieve commercial production due to a sudden collapse in world silver prices. The operating permits and licences then in force have since been allowed to lapse.

Prior to construction of the mine in 1981, a total of over 10,000 meters of exploration drilling (the majority from surface) and 3,800 meters of underground development had been completed. Approximately 120 diamond drill holes had been completed at the Prairie Creek Mine up to this point. At the time Canadian Zinc became involved in the property in 1991, the ore reserve estimate stood at 1.81 million tonnes grading 10.8% lead, 11.75% zinc, 0.4% copper and 182 g/tonne silver.

Since that time CZN has completed an additional 129 diamond drill holes, for a total of an additional 40,000 meters of surface diamond drilling, core from which is presently stored in racks at the minesite. To support these programs the Company purchased 2 Longyear Core Drilling Rigs in 1992, which were transported to the minesite by air and assembled in the on site shop facilities.

The Company's drilling focus to date has been primarily in the immediate area of the mine site and underground workings (Zone 3), where 80% of the total exploratory work has been carried out. As a result of these efforts the mineral resource now stands at 11.8 million tonnes grading 10.1% lead, 12.5% zinc, 0.4% copper and 161 g/tonne silver

As part of the ongoing process of establishing, confirming and enhancing the known mineral resource at the Prairie Creek property, Canadian Zinc is proposing to conduct a further exploration program to drill an additional 50-60 exploration holes, each up to approximately 500m in length, in this same general area adjacent to the existing underground workings.

It is this program which is the subject of this EA Report.

Description of the development

The main objective of the proposed Phase II drilling exploration program is to further delineate the area of known mineralization at Prairie Creek in order to provide sufficient geologic information to upgrade the mineral resources to mineral reserve status. In order to accomplish this objective, the drill program has been designed to provide information primarily from areas between where previous drilling has already been conducted, a process known as "in-fill" drilling. The resultant closer spacing of drill holes will provide the additional definition necessary to quantify the mineral reserve using geostatistical techniques.

This information, in combination with additional work planned for 2001, including an underground decline and exploration program, and operation of an on-site pilot plant, will form the basis for a bankable feasibility study scheduled for completion in the last quarter of 2001. The feasibility study will form the basis for making a production decision and attracting the financing necessary to re-activate mining operations at Prairie Creek, which could occur as early as 2003, subject to receipt of the necessary operating permits and licences.

The proposed mineral exploration drilling program has been designed to focus primarily on further delineation of the Zone 3 vein mineralization. With provision for deeper holes, the surface exploration drilling program will also be able to target the deeper Stratabound mineralization underlying the vein mineralization. However, a separate application has also been prepared and submitted to support the development of an exploration decline from which an underground exploration program will be able to access the Stratabound mineralization with shorter holes providing a greater degree of accuracy, as well as reduced drilling costs. The Stratabound deposits are currently very underexplored and due to their thickness, up to 28m, have the potential to significantly increase the known mineral resource which is currently composed of about 80% vein mineralization.

The up to 60 hole exploration drilling program will be carried out from surface along strike in a southwesterly to northeasterly direction over a distance of about 1000 m and parallel to the existing underground workings from about the 875 to 1125m elevation. The proposed area of investigation surrounds and, in fact, includes the area of the 7 hole Phase I program which was the subject of a previous application and environmental assessment.

The entire drill program is proposed to take place within 1000m of the existing minesite facilities, within the area of traditional mining activity at Prairie Creek and within the boundaries of Mining Lease 2932 and Surface Lease 95F10/10-5-3. The general area for the proposed locations of the 50 – 60 drill holes is shown on the accompanying 1:5000 scale map. In all cases, potential drill hole locations are in close proximity to the existing network of exploration roads. As a result, if any, only minor extensions or spurs off of

existing roads, typically in the order of a few to 10 or 20 metres, will be required to access drill pad sites.

It should be noted that the very nature of the mineral exploration in question means that precise number and locations of drill holes cannot reasonably be identified beforehand. The exploration process is dynamic, and the decisions as to where to drill the next hole are based on information retrieved from core currently being drilled. As a result, the locations of individual drill holes are generalized and will be precisely located in the field at the time of drilling.

Advanced exploration drill programs are typically designed based on delineation of a target zone of mineralization over at an expected depth. The number of holes proposed takes into account existing drill hole locations and the information requirements of geostatistical modeling necessary to quantify the mineral resource. Budgets are set according to the estimated number and depth of holes based on the cost of drilling in dollars per metre.

In the process of drilling, a hole may be abandoned prematurely based on an observed lack of mineralization in the core recovered during drilling or, similarly, a hole may be extended beyond the depth originally contemplated if mineralization continues to be encountered. The former may result in a field determination of an alternate location for an additional hole to be drilled, while the latter may result in a reduction in the number of holes to be drilled as budget dollars have been used up in deeper drilling.

The program, as set out in the application, would employ 2 – 11 hour shifts of drilling, on each of 2 drill rigs. The drill rigs were purchased by CZN in 1992 and are currently on-site. The drill rigs are a skid mounted Longyear Super 38 diamond drill run by a 350 GMC diesel engine capable of recovering either NQ or BQ sized drill core.

Each drill rig is approximately 22 feet in length and 12 feet in width and has a 25 foot tower that is fully adjustable to accommodate vertical or inclined holes. The drill is mounted on steel skid unit and is fully contained within a wooden frame shack. Drill pads are prepared and vary in size depending on the terrain but must be large enough to maneuver the drill into the proper position. The rig is moved by D-8 Cat along local tote roads. Drill rods and other equipment are contained in a separate sloop on skids.

The process involves driving a fast rotating annular bit through the ground to collect a solid core sample of rock. The drill bits used are generally diamond impregnated (as the name implies), or other cutting materials may be used such as tungsten. Water is generally used as a circulating fluid. The cuttings are washed up the hole between the rods and hole wall and the core sample is collected at the bottom of the hole in a core barrel.

A water supply pump is set up at a local source, in this case likely Harrison Creek, and 1.5 inch flexible hose line is laid to the rig to a high capacity Bean pump which delivers water to the drill bit for cooling and lubrication. Additives to the cutting fluid are kept at



a minimum and used only if required. Standard additives such as drilling mud (550X Polymer, Linseed soap) may be mixed with water in a contained tank at the drill rig before pumping down hole, standard rod grease (Big Bear anti-friction) is used and if poor down hole conditions exist G-Stop and/or a quick set cement may be used to restore circulation. A sump is always established to retain any return waters in order to settle out any drill cuttings. This results in a small amount of "drill cuttings" or finely ground up rock, being deposited in the basin of rockfill sump. Water contained in the sump generally disappears through a combination of exfiltration and evaporation. The sump is of sufficient capacity that cuttings have ample time to settle and any discharge is just clear water. The sump is subsequently backfilled upon completion of all drilling at that location.

A 300 gallon diesel supply tank is located on the drill rig and supplied by hand pumps from 130 gallon tidy tanks located on the pick-up trucks. Bulk diesel fuel is stored on site in the existing fully bermed fuel farm storage area. Fuel spill kits will be available both at the drill rig and in the main camp.

A registered first aider is at the drill rig at all times of operation. The rig will have radio communications with camp and first aid kits at the rig site. Upon completion of the hole the rig will be moved off site and the pad will be fully stabilized, and cleaned up. Access between the drill rig and camp will be by pick-up truck.

The drill core, once retrieved will be logged and stored in core boxes on core racks at the minesite. The mineralized sections of core will be split and representative samples forwarded to an independent qualified geochemical laboratory for assay. The data so generated will then be used in geostatistical modeling to provide mineral resource and reserve estimates.

The process of diamond drilling represents standard industry practice in the exploration of base metal mineral deposits. While various other geophysical, geochemical and biogeochemical techniques exist for locating mineralized zones on a broader scale and for further enhancing our understanding of geologic processes, none are considered practical alternatives to in-situ diamond drilling and the subsequent assay of recovered drill core.

Security Exchange Commission rules and regulations, which apply to all public mining companies, set rigorous standards for release of information pertaining to mineral resource and reserve estimates. These typically require strict adherence to quality assurance standards in the recovery and assaying of drill core, and the subsequent interpretation of data by a qualified individual.

It is estimated that a total of 14 persons will be employed in carrying out the exploration program. The employees will stay in camp at the Prairie Creek Mine site where full accommodations are available. Existing minesite facilities, as have been used to support similar levels of on-site activity over the last number of years, include:

- Fully serviced bunkhouse, kitchen, office and washroom facilities



- Electricity supplied from an on-site diesel powered generator
- Potable water supplied from a well & pumphouse, located approximately 35m N of the main office and service building; the well draws water from a depth of about 50 feet in the Prairie Creek floodplain; potable well water is untreated
- Sewage disposal is by discharge to and exfiltration from an excavated and covered septic sump constructed in floodplain sands and gravels adjacent to and SW of the main office and service building; sewage disposal is hydraulically down gradient from the water well at a distance of approximately 45m
- Camp refuse is burned in an oil fired incinerator

A qualified person carrying a valid required First Aid Certificate will be based in camp at all times. Communications are via satellite phone/fax and access is presently by air onto a privately owned 1000 metre airstrip from either Ft. Nelson or Ft. Simpson. It is anticipated that the entire program of drilling 60 holes each approximately 500 metres in length will take in the order of 6 months to complete.

Permitting and Environmental Assessment Process Summary

Canadian Zinc submitted an Application to the MVLWB for a Land Use Permit to support an initial 7 hole Phase I mineral exploration program on July 28, 2000.

The Application was subsequently referred to the MVEIRB for further assessment on October 4, 2000. The MVEIRB completed its review and issued its Report of Assessment, recommending Approval of the proposed development, on May 5, 2001. The MVLWB is currently scheduled to consider the Permit for issuance on June 14, 2001.

At the time the Application was submitted, it was planned to complete the Phase I drilling program during the months of September and October in the fall of 2000. However, given the time necessary to acquire approval to undertake the work, this program has had to be deferred to the summer of 2001. The Phase I program will be undertaken immediately upon receipt of the Permit.

The proposed 60 hole Phase II mineral exploration drilling program, which is the subject of this EA Report, was considered the second phase of the mineral exploration program planned to be undertaken at Prairie Creek over the period from May through October, 2001.

The Application for a Land Use Permit to support this activity was submitted to the MVLWB on March 5, 2001. Prior to completion of preliminary screening by the MVLWB, the application (MV2001C0022) was unilaterally referred to the Mackenzie Valley Environmental Impact Review Board (the Review Board) on April 16, 2001 for further assessment by the Nahanni National Park Reserve citing "the potential to impact the ecological integrity of the park reserve".



Consequently, the Review Board undertook to develop a Draft Work Plan and Terms of Reference for the program. Following a review and comment period, the Work Plan and Terms of Reference were issued in their final form on May 31, 2001. The Work Plan sets out sets out milestone dates for completion of various stages of the EA process, with a decision by the Review Board scheduled for July 27, 2001.

Following through on this schedule, the permit for the Phase II drilling will likely not be received until sometime in August at the earliest. This program will also be initiated immediately upon receipt of the permit, however, as a result of the delay, the Phase II program will likely have to be extended over two seasons, finishing off in the summer of 2002.

Canadian Zinc has prepared this EA Report in response to the Terms of Reference established for the Phase II Mineral Exploration Drilling Program dated May 31, 2001. In setting the Terms of Reference, the Review Board recognized the substantive nature of existing documentation supplied in support of the previous Phase I Drilling Program. In accepting this information, the Review Board also identified outstanding information requirements in respect of this EA, and as a result restricted the Scope of this Assessment to the preparation of a Cumulative Impacts Assessment and an Environmental Management Plan. This information is addressed below.

For ease of reference, headings used in the Terms of Reference have been adopted in this EA Report in **bold** print, while details of the information requested are shown in *italics*. CZN's response to each of the specific information requests follows in plain type.

Cumulative Impacts

CZN should describe their cumulative impacts assessment. This should include, but not be limited to:

- *Methods used for the cumulative impacts assessment;*
- *Time and spatial boundaries and supporting rationale;*
- *Location and timing of all projects included in the assessment;*
- *Discussing and attempting to quantify the potential cumulative impacts, including a determination of significance;*
- *Discussing uncertainties in the assessment; and*
- *Identifying mitigation measures that will be applied.*

CZN is reminded that socio-economic impacts as well as environmental impacts are to be included in the cumulative impacts assessment.

Cumulative Impacts Assessment completed by EBA Engineering Consultants attached.

Environmental Management Plan

CZN should describe their environmental management plan, including monitoring undertaken during the development as well as follow-up monitoring. This submission should include, but not be limited to:

- *Objectives*
- *Schedule*
- *Aspects to be monitored;*
- *Frequency, duration and geographic extent of monitoring;*
- *Approaches and methods for analysis; and*
- *Reporting and response mechanisms for adjusting the project design or implementing mitigation/remedial measures, if necessary, based on monitoring results.*

Introduction:

The proposed method of mineral exploration diamond drilling is typical of the technology used at mineral exploration properties throughout the world. The technique represents standard industry practice and has minimal environmental impacts associated with it when conducted employing standard mitigative measures. Typically in the NWT and elsewhere, these measures form the basis for standard terms and conditions incorporated into mineral exploration permits.

In its EA Report on the Phase I Mineral Exploration Drilling Program (January 26, 2001), CZN described the potential for impacts on the environment as a result of the proposed development and concluded in each case that such impacts would be negligible based on the implementation of standard mitigation measures.

In its Report of Assessment of the Phase I drilling program (May 5, 2001), the Review Board concluded that the proposed drilling was not likely to have any significant adverse impact on the environment based on the commitments and undertakings to mitigate environmental impacts made by Canadian Zinc in its submissions.

Accordingly, the emphasis of environmental management in relation to exploration drilling at Prairie Creek will be on operational monitoring to ensure the implementation and effectiveness of these mitigation measures, rather than monitoring of environmental effects associated with diamond drilling, which have been demonstrated both at Prairie Creek and elsewhere, to be minimal where effective mitigation is practiced. For this reason, environmental effects monitoring is not judged to be warranted in support of an exploration drilling program, except in the instance of an identified failure of a mitigation measure, such as in the case of a spill, in which case incident specific monitoring would be initiated as appropriate. This approach is typical of mineral exploration programs elsewhere in the NWT and Canada.

Objectives:

The objectives of the Environmental Management Plan are therefore to guide the operational procedures and management practices during and after drilling activity to ensure the effective implementation environmental mitigation measures

Operating procedures will be planned and scheduled in advance to minimize environmental impacts as well as to comply with all government regulations and permits.

Environmental performance will be measured based on the degree of adherence to applicable permit conditions and regulations, as well as on use and performance of mitigation measures and general operating practice, including the functioning of equipment and drainage management control structures such as sumps, water bars, ditching, etc.

Schedule:

Environmental management considerations will be built in to the operational planning for the drill program and carried through to the completion of the program, including seasonal clean-up or final reclamation of drill sites and other areas used for the operation.

Based on the current schedule it is planned to commence Phase II drilling in August, completing as much of the program as possible prior to shutting down and winterizing the camp by the end of October. The drilling program would re-commence and be finished off the following summer.

The environmental management plan will be implement in conjunction with and carried on throughout all stages of active drilling.

Aspects to be monitored:

All aspects of the drilling operation which have the capacity to result in a significant adverse impact on the environment and for which mitigation measures have been proposed, will be monitored, including, but not necessarily limited to:

- Drill rig operation
- Water pumps and distribution systems
- Drill Sumps
- Drill pad terrain stability
- Exploration Roads
- Drainage management structures
- Fuel transfer operations

Frequency, duration and geographic extent of monitoring:

Monitoring will be conducted at active drill sites and supporting operational areas throughout the duration of active drilling.

Operational planning sessions will be held at the beginning of each day to review operating practices and procedures.

Operating crews will monitor performance of equipment and control structures on a continual basis during operations. As well, each operating drill site will be inspected daily by the project manager.

Approaches and Methods for analysis:

The proposed development will be conducted under the direct supervision of Mr. Alan Taylor, VP, Exploration or, in his absence, his appointed designate. The results of daily inspections and ongoing operational monitoring will be reviewed at daily planning sessions. The condition of mitigation measures will be reviewed daily to determine effectiveness of performance.

Reporting and response mechanisms for adjusting the project design or implementing mitigation/remedial measures, if necessary, based on monitoring results:

Daily reports will be completed detailing the results of each day's activities. Such reports will note deficiencies in performance of equipment and mitigation measures.

These reports, as well as the results of the daily inspections by the Project Manager, will be reviewed at the daily operational meetings. Decisions on the need for changes to operational plans, repairs to existing mitigation measures or implementation of new mitigation measures will be made at these meetings.

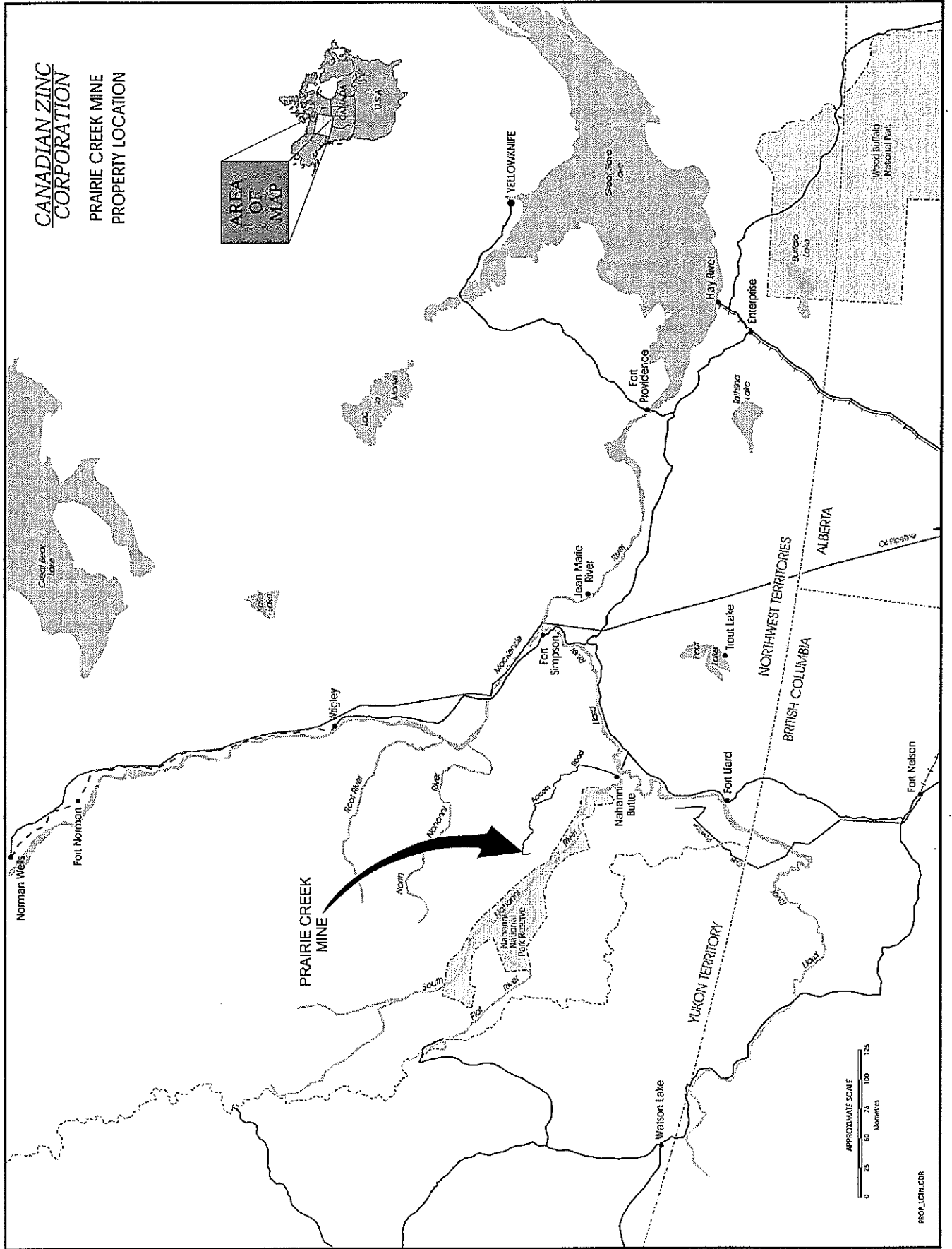
An Emergency Response Plan and Spill Contingency Plan have been prepared to address emergency situations. The types of potential emergencies and the response to them are defined in the Emergency Response and Spill Contingency Plans.

Staff will be trained to handle emergency situations with appropriate procedures as set out in the Emergency Response Plan. Responsibilities are clearly defined under procedures outlined above.

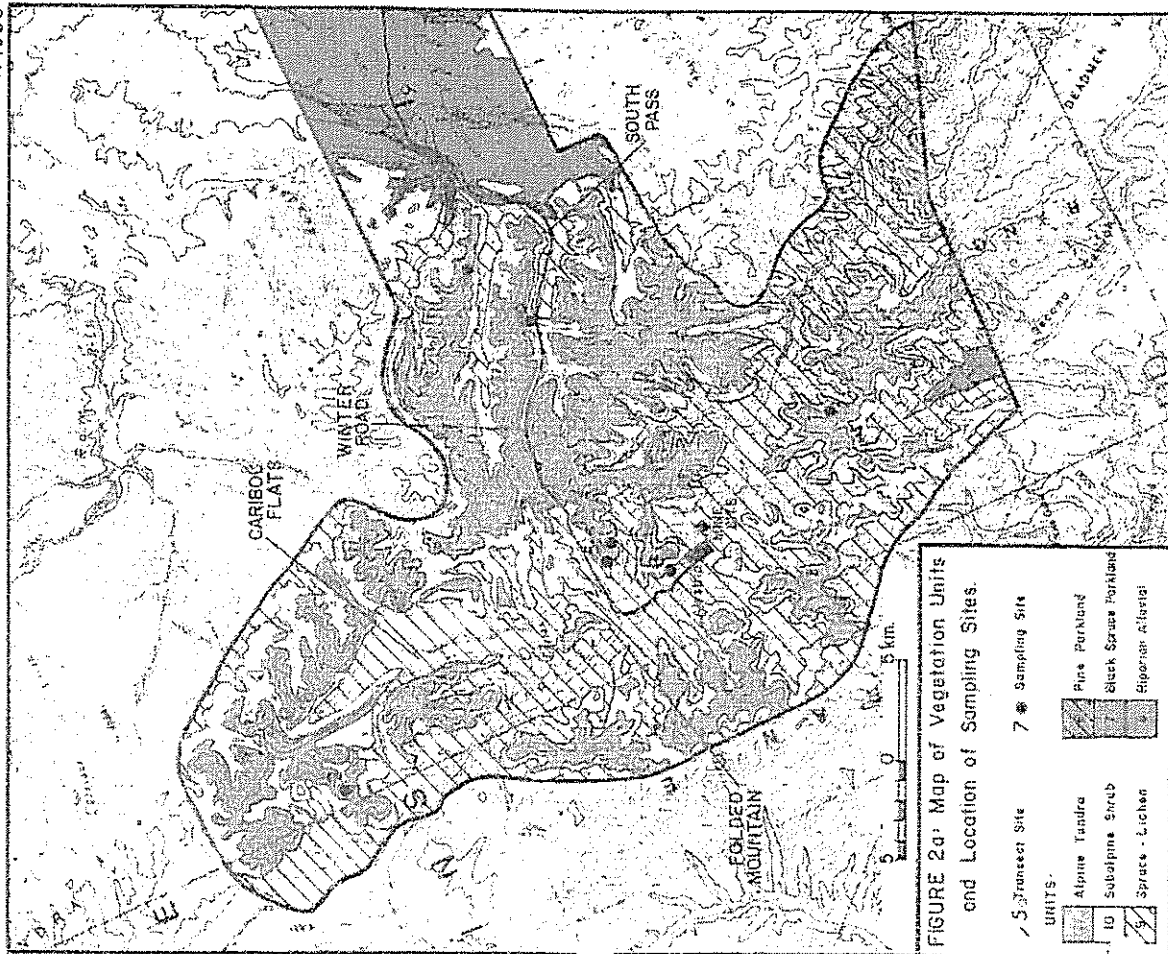
Follow-up Monitoring

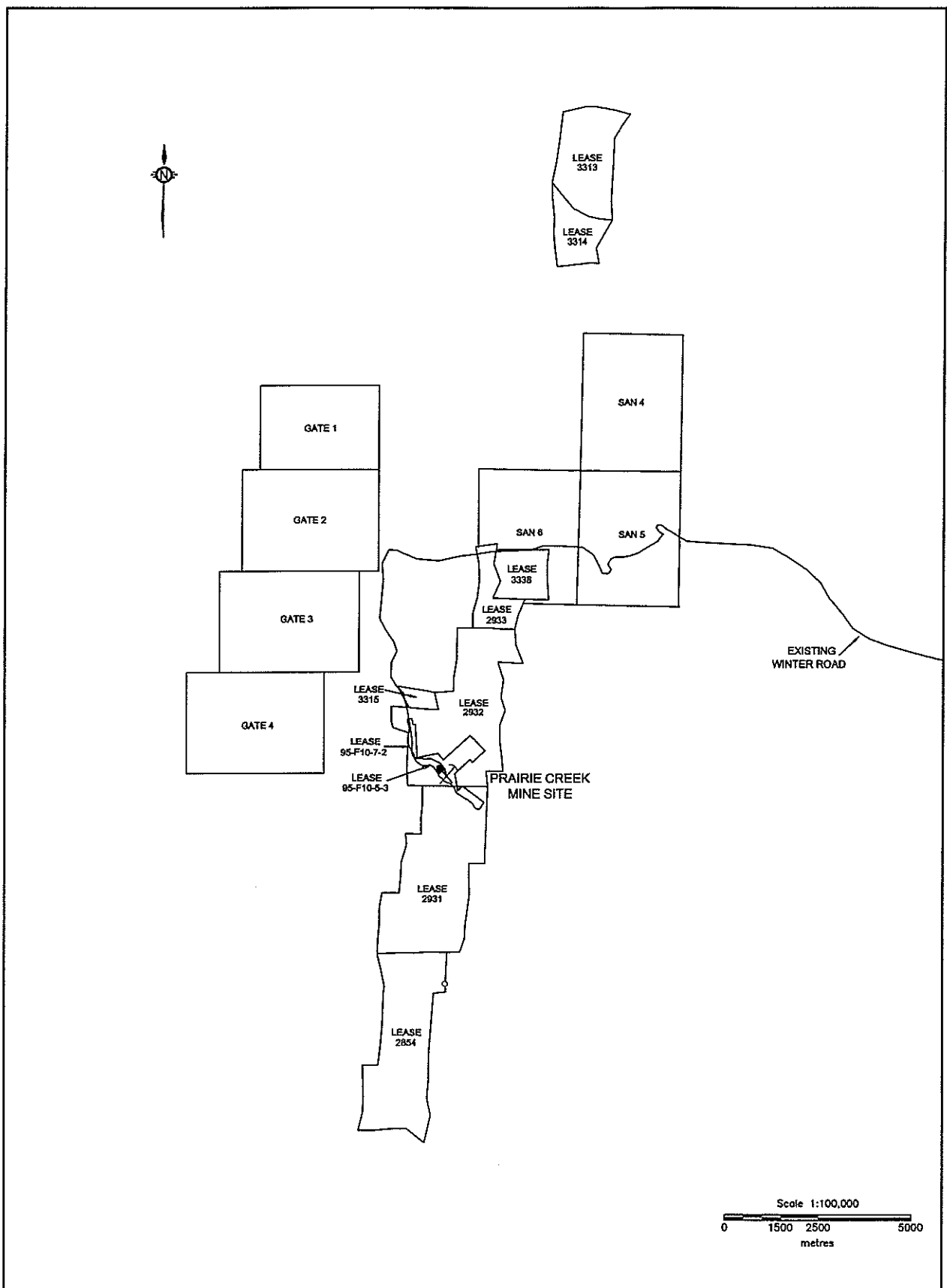
Upon completion of drilling, drill pads and access roads will be inspected to confirm adequacy of seasonal or permanent reclamation measures designed to stabilize these features. Such stabilized and reclaimed sites will be inspected again the following summer season to ensure durability of mitigation measures. Follow-up inspections will occur in conjunction with routine care and maintenance activity at the site.

CANADIAN ZINC CORPORATION
PRAIRIE CREEK MINE
PROPERTY LOCATION

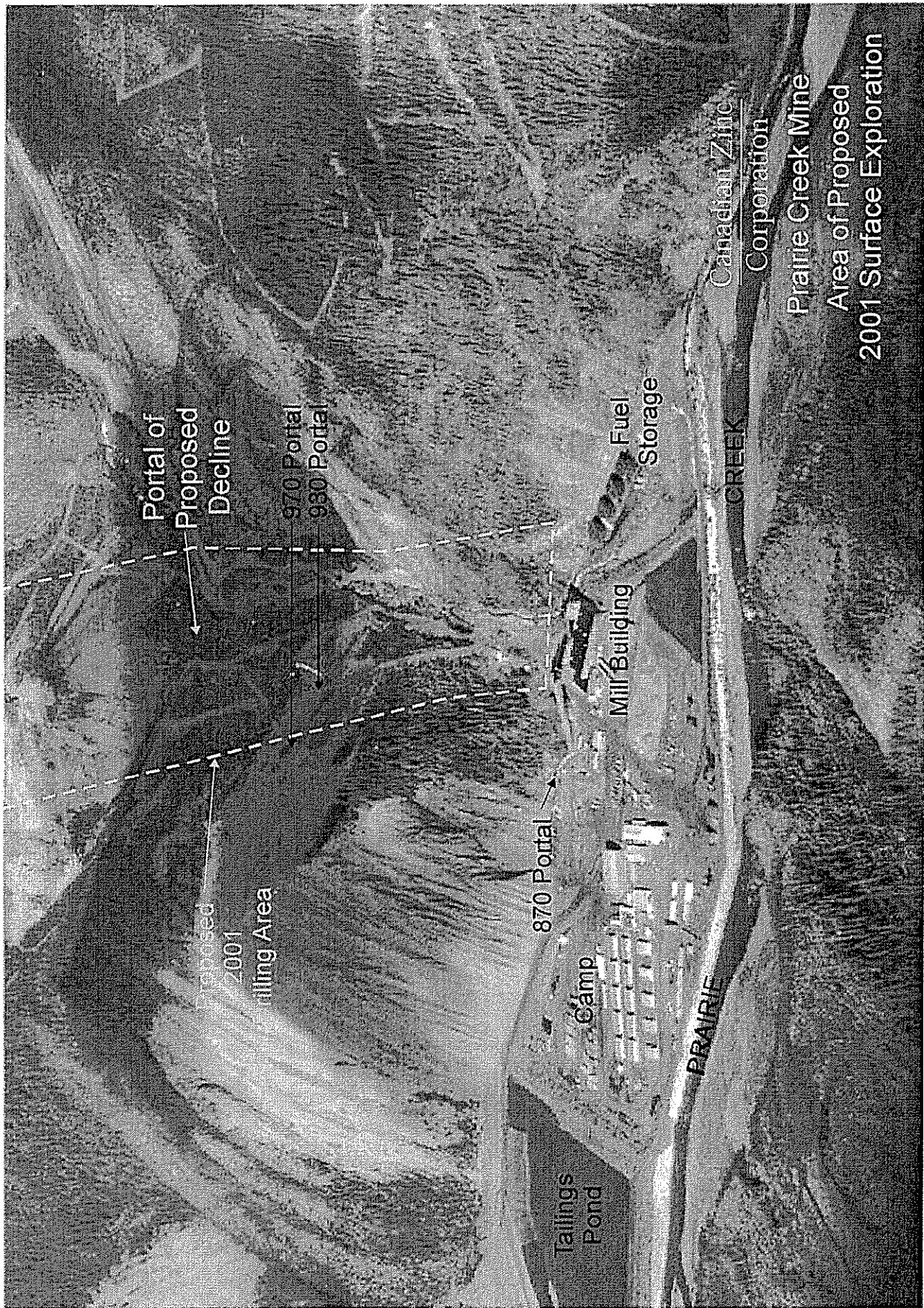


K4595





<p>GATE 1 LEASE 95-F-10-5-3 LEASE 2933</p>	<p>Mineral Claim Surface Lease Mining Lease</p>	Scale:	1:100,000	<p>CANADIAN ZINC CORPORATION</p>	
		Drawing:	claims.dwg		
		Revised:		<p>PRAIRIE CREEK MINE</p>	
				<p>LAND TENURE</p>	
				Date: January, 2001	Figure:



Canadian Zinc Corporation

Prairie Creek Mine
Area of Proposed
2001 Surface Exploration

