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Accepted by Review Board NOV/1
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CANADIAN ZINC CORPORATION

March 05, 2001

Mackenzie Valley Land & Water Board
File
MAR 07 2001
Application #MV2001L2-0003
Copied To VC 16S1Rog

Mr. Ken Weagle
Executive Director
Mackenzie Valley Land and Water Board
PO Box 2130, 7th Floor – 4910 50th Ave.
Yellowknife, NT
X1A 2P6

Dear Mr. Weagle:

Re: Prairie Creek Mine – Application for Type "B" Water Licence
Metallurgical Pilot Plant Operation

Please find enclosed our application for a Type B Water Licence to authorize operation of a small scale pilot plant at the Prairie Creek Mine this coming summer over the period May through September, 2001.

We have enclosed five (5) hard copies of our application package, plus an electronic version on CD. The application package includes:

- A completed Schedule III application
- Our cheque in the amount of $31.00 payable to the Receiver General for Canada to cover the Application Fee ($30.00) and Water Use Fees ($1.00) for the proposed use of under 100 m3/day.
- A Project Description Report, in lieu of the generic questionnaire, providing detailed information on all facets of the proposed operation.
- Drawings and plans showing the location of facilities and activities

We look forward to working with you and your staff on the preliminary screening of our application.

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

J. Peter Campbell
Vice President, Project Affairs

cc: Chief Leon Konisenta – NBDB
Chief Rita Cli – LKFN
Chief Judy Kotchea – ADKFN
Grand Chief Michael Nadli - DCFN

Suite 1202-700 West Pender Street
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Mackenzie Valley Land and Water Board
7th Floor - 4910 50th Avenue
P.O. Box 2130
YELLOWKNIFE NT X1A 2P6
Phone (867) 669-0506
FAX (867) 873-6610

APPLICATION FOR WATER LICENCE, AMENDMENT OF LICENCE, OR RENEWAL OF LICENCE

TYPE B

Application/License No:
(amendment or renewal only)

1. Name and Mailing Address of Applicant	2. Address of Head Office in Canada if Incorporate
Canadian Zinc Corporation	Canadian Zinc Corporation
Suite 700 – 1202 West Pender Street	Suite 700 – 1202 West Pender Street
Vancouver, BC V6C 1G8	Vancouver, BC V6C 1G8
Telephone: (604) 688-2001	Telephone: (604) 688-2001
Fax: (604) 688-2043	Fax: (604) 688-2043

3. Location of Undertaking (describe and attach a map, indicating watercourses and location of any proposed waste deposits).

Latitude 61° 33' Longitude 124° 48'

4. Description of Undertaking (describe and attach plans)

To operate a 1.5 tonne per hour pilot plant within the existing mill facilities at the Prairie Creek mine to confirm metallurgical and environmental performance.
To obtain up to 75 m^3/day of water from the Prairie Creek Valley Aquifer via the existing groundwater well servicing the minesite and use the water in the pilot plant operation.
To discharge treated process water from the pilot plant operation to the existing tailings impoundment at the minesite.

5. Type of Undertaking.

1.	Industrial		5.	Agriculture	
2.	Mining and Milling	X	6.	Conservation	
3.	Municipal		7.	Recreation	
4.	Power		8.	Miscellaneous	

6. Water Use

To obtain water	X	Flood control	
To cross a watercourse		To divert water	
To modify the bed or bank of a watercourse		To alter the flow of, or store water	

Other (describe): To discharge treated process water from the pilot plant operation to the existing tailings impoundment.

7. Quantity of water involved (litres per second, litres per day or cubic meter per year, including both quantity to be used and quality to be returned to source.

Up to 75 m^3 per day
(Based on approx. use of $2m^3$ of water for every tonne of ore; 1.5 t/hr ore = 3 m^3/hr water)

Up to 4000 m^3 for the entire pilot plant program (May – September, 2001)
(Based on processing of approx. 2000 t of ore)

8. Waste deposited (quantity, quality, treatment and disposal)

4000 m^3 treated process water – retained in mill, treated with lime to remove dissolved metals, tested to confirm quality, discharged to tailings impoundment

1500 t tailings solids – retained in mill thickener

9. Other persons or properties affected by this Undertaking (give name, mailing address and location. Attach a list if necessary.

No persons or properties affected directly by this undertaking
Local Outfitter – South Nahanni Outfitters; No active local trapping

Other interested parties: Nahanni Butte Dene Band, Lidlii Kue First Nation, Acho Dene Koe First Nation, Deh Cho First Nations, Parks Canada, CPAWS

10. Predicted environmental impacts of Undertaking and proposed mitigation.

None

All processing equipment to be contained within existing mill facilities.

All process water to be treated to remove dissolved metals prior to discharging to existing tailings facility where process water be mixed 50:1 and retained with existing pond water. All tailings solids will be retained in the mill thickener.

11. Contractors and sub-contractors (names, addresses and functions). Attach a list if necessary.

Gary Hawthorne – Westcoast Mineral Testing Inc. – Metallurgical Engineer
2806 Thorncliffe Cr., N. Vancouver, BC

Gordon Parkin – North East Minerals Ltd. – Metallurgist
10 Baden Powell Cr., W. Yorkshire, UK

Estimated total number of personnel – 6 – 8; Total person days – up to 900 - 1200

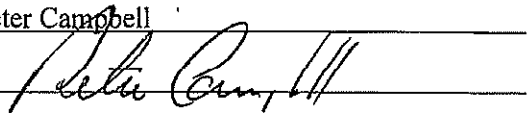
12. Studies undertaken to date. Attach a list if necessary.

Lists of Environmental and Metallurgical Studies attached

13. Proposed time schedule.

Start date: May 1, 2001 Completion date: September 30, 2001

Name (print): J. Peter Campbell

Signature: 

Title (print): Vice President, Project Affairs

Date: March 05, 2001

FOR OFFICE USE ONLY

Application Fee Amount: $_____ Receipt No: _____

Water Use Deposit Amount: $_____ Receipt No: _____

CANADIAN ZINC CORPORATION

March 05, 2001

Project Description
Type "B" Water Licence Application

Prairie Creek Mine
Metallurgical Pilot Plant Program

Introduction

As a key component of mine development planning, considerable effort has been directed at testwork aimed at defining metallurgical performance in processing the polymetallic ores encountered at Prairie Creek, the current resource of which stands at 11.8 million tonnes grading 12.5% zinc, 10.1% lead, 0.4% copper and 161 grams per tonne silver.

The mineral processing philosophy at Prairie Creek has changed over time in conjunction with changes in metal prices, as well as with changes in mineral industry economics generally. When the mine was constructed in the early 1980's, the focus of the metallurgical testwork was on producing a copper/lead concentrate containing the high value silver credits. More recent studies conducted on behalf of San Andreas Resources in the mid-1990's focused on efficient separation of metal values to produce separate zinc, lead and copper concentrates, with silver reporting to the lead and copper concentrates.

In its preliminary evaluation of the economics of re-establishing mining operations at Prairie Creek, Canadian Zinc identified the need to increase mill throughput in order to benefit from the economies of scale contingent with a higher processing rate, while at the same time avoiding the high capital costs associated with installing additional grinding capacity.

In order to achieve this, Canadian Zinc commissioned several studies designed at evaluating the feasibility of incorporating a gravity pre-concentration step at the front end of the existing mill process. These tests, conducted in 2000, successfully demonstrated the ability of a gravity step to selectively reject, based on specific gravity, up to 65% of the lower density non-mineralized host rock prior to grinding. This is significant in that it will allow the mill to reach a target throughput of 1500 tonnes per day without the requirement for additional grinding capacity and without the need for significant mill expansion. At the same time, this process has the added benefits of reducing energy requirements, water usage and reagent consumption. In addition, preliminary mill re-design to incorporate these changes has included provision for an enhanced state-of-the-art thickened tailings or paste backfill plant which will see the vast majority of the tailings returned underground, thus minimizing the use of the surface tailings impoundment primarily to that of a process water settling and reclaim pond. Combined, these considerations provide significant positive economic and environmental benefits to the operation.

In view of the obvious potential benefits of the proposed changes, it is important that these findings be confirmed at a larger scale. All of the metallurgical testwork conducted to date has been at the bench scale at off-site laboratories on relatively small quantities of up to 100 kg of ore transported out of the site by air. Typically, bulk samples are collected and trucked off-site for pilot plant processing. However, given the remoteness of the Prairie Creek mine, the lack of established road access and the presence of the existing on-site milling facility, it makes more sense to conduct the pilot plant operation on-site. The provision of a small scale pilot plant operated on-site for processing up to 2000 tonnes of ore has a number of significant advantages in terms of understanding the metallurgical and environmental aspects of mill processing and tailings disposal. This will provide important information for mine design planning and environmental assessment.

Canadian Zinc proposes to run such a small metallurgical pilot plant program at the Prairie Creek Mine over the period from May to September, 2001 to confirm the results of the most recent bench scale testwork conducted on Prairie Creek ore in 2000, and to provide additional information on process water quality, tailings chemistry and amenability of thickened or paste backfill to support future application for mine and mill operations.

Operation of the pilot plant will require the use of water and the discharge of treated process water. As the pilot plant will process a maximum of about 1.5 tonnes per hour, or 36 tonnes per day, and use of water will be less than 100 cubic meters per day, only a Class "B" Water Licence will be required.

Pilot Plant Program Objectives

Preliminary test work and metallurgical review has indicated that installation of a gravity pre-concentration circuit and a thickened or paste backfill circuit will provide a number of significant benefits to the Prairie Creek Mine, such as:

- Increased mill throughput
- Improved metallurgical recoveries
- Improved process water quality
- Reduced power consumption per tonne of ore milled
- Reduced reagent consumption per tonne of ore milled
- Placement of the majority of tailings underground as thickened or cemented fill
- Reduced tailings pond requirements

A small scale pilot plant operation will confirm the process philosophy and highlight any operational constraints that may exist. The pilot plant will be designed in such a way that every aspect of the operation can be investigated and will incorporate gravity and flotation separation as well as having facilities for thickening and filtration equipment. The final design of the main circuit may then be completed with a much higher degree of confidence. As well, the process will result in representative quantities of concentrates being available for potential customers to assess, thus providing reliable estimates of applicable smelter charges.

The pilot plant program will also allow detailed analysis of the quantity and quality of the water required for the full-scale milling process, the percentage of re-cycle water applicable to the process and the quantity and quality of water required to be treated and disposed of after use in the process plant.

Additionally, the tailings solids produced from the pilot plant operation will be available for paste and thickened backfill testing, which will in turn allow for accurate design and sizing of the full-scale backfill plant and of the surface tailings facility required for process water settling and reclaim in addition to placing the vast majority of tailings underground. Representative tailings solids will also be characterized as to chemical composition and potential reactivity through standard analytical procedures for metal content, acid base accounting and neutral pH metal leaching potential.

The operation of an on site pilot plant at this scale will provide operating and financial certainty for the eventual mine design and flow sheet. Operating costs from a plant of this capacity can be accurately extrapolated so that costs relating to the main plant can be calculated.

The plant will provide the following information for the full feasibility study and environmental assessment:

- Firm metallurgical performance data, including recoveries, grades, grind sizing, cell sizing etc.
- Firm design and throughput data for the eventual mill overhaul.
- Actual concentrate available to potential customers for evaluation and treatment charges estimates.
- Actual reagent usage data scalable to full size operation.
- Actual operating cost data that can be extrapolated to the full size plant.
- Actual water quality and volumetric data for permitting and eventual plant operation.
- Firm data on tailings quantity, quality and suitability for paste or thickened backfill.
- Actual volumes of tailings that can be placed underground and the volume implications for tailings or settlement pond facility required.

In combination, the above information will then be used to build up a complete financial model of the process operation, from which confident financial returns will then be produced.

Proposed Pilot Plant Description

Arrangements have been made to purchase a suitable pilot plant currently available in the United Kingdom. The plant is composed of a number of individual components which will be airlifted into the mine site in sections. The pilot plant will be re-assembled and totally contained within the existing mill building at Prairie Creek.

The milling and classification circuit is a typical Hardinge-type set-up where the mill discharges into a launder, which feeds an inclined 12-inch classifier. Oversize sands are returned to the feed box of the mill for re-grinding. The mill is driven by 'V' belts. A 7.5kW motor supplies the necessary power.

The entire pilot plant will fit into an approximate 40 foot by 16 foot open area of the mill basement adjacent to the existing ball mill as shown on the attached general arrangement diagram. Photographs and a flowsheet for the pilot plant are also attached.

The Pilot flotation plant set-up will consist of the following:
4 – Gravity Spirals. These will be new production units and will replicate the gravity section of the plant.
1 - Wilfley 500 gravity table. For study of final pre concentration of ore and production of a high-grade lead product by gravity.
1 - Hardinge conical ball mill complete with screw classifier and 7.5 kW motor
1 - 1m x 1m steel conditioner tank powered by a 0.75 kW motor.
1 - bank of 3 Denver pilot scale sub 'A' type flotation cells
1 - bank of 4 Denver pilot scale sub 'A' type flotation cells
1 - Sturtevant rotary crusher
1 - SALA 25mm vertical spindle pump
1 - 1.2m-diameter cone base thickening tank
1 - Denver scaled pilot plant thickener 1.8m diameter x 2 m high on a 2 m support frame powered by a 2 kW motor. standard Denver rake mechanism
1 - Pilot thickening and filtration unit consisting of the following:
1 - Stockdale 1m x 0.5m rotary drum vacuum filter in a 1.5m x 1m bath complete with control skid in stainless steel powered by a 0.75 kW motor
1 - Vacuum module consisting of 1 Nash Huyter vacuum pump, filtrates receiver and filtrates pump all constructed in stainless steel powered by a 5 kW motor with a 1 kW filter air blower fitted with wheels for easy maneuverability.
1 - Motor control centre for the above 2 modules which caters for one mains connection. The equipment is connected to the MCC with one multi-core cable socket.
1 - Goodwin 24in. X 14in. Roller Crusher. To be used for size reduction to minus 1mm in closed circuit with a small screen.

Pilot Plant Operating Parameters

The pilot plant is essentially a miniature, scaled-down version of the proposed full-scale mill gravity pre-concentration, grinding, flotation and concentrate filtration process. As stated in the previous section, the pilot plant will be air-lifted in sections into the minesite where it will be re-assembled and totally contained within the existing mill building. The program will utilize the existing crushing and conveying systems within the mill to supply feed to the pilot plant

All process equipment will be operated by diesel power generation facilities currently existing at the minesite. Reagents will be taken from existing onsite stockpiles or flown in by aircraft in small batches.

Reagents used successfully in the bench scale testwork and planned for use in the pilot plant include:

Lime	0 - 3 kg per tonne
Cytec Aerophine 3418A promoter	30 – 60 grams per tonne
Sodium isopropyl xanthate	0 – 60 grams per tonne
Copper sulphate	550 – 600 grams per tonne
Sodium sulphide	50 grams per tonne
Glycol frother (Dowfroth 250)	40 grams per tonne

All of the proposed reagents are standard reagents used at similar operations throughout the world. The nature of these reagents is such that they tend to have a selective affinity for the mineral of interest and as a result report primarily to the concentrates and not to the tailings. Material Safety Data Sheets for each of the proposed reagents are attached.

The plant will be self-contained and operated in batches at approximately 1.5 tonnes per hour, fed via the current mill crushing circuit. Process water requirements for the pilot plant will be about 2 m^3 per tonne of ore, of which approximately 50% would be fresh and 50% reclaim. On a continuous operating basis, therefore, the pilot plant would use about 3 m^3 per hour or 72 m^3 per day, half of which would be fresh and half reclaim.

Fresh water will be acquired from the existing water well drawing from the Prairie Creek Valley aquifer. Initially, fresh water would be pumped into one of the two thickeners to a ½ to ¾ full level equivalent to 125 to 200 m^3 of fresh water storage. Process water and tailings from the pilot plant would be stored in the other existing onsite 35-foot thickener inside the mill building to simulate tailings production and recycling of process water.

It is expected that the plant will be operated up to several days in a row at 10-24 hours per day over a period of four to five months. Because of the limited size of the pilot plant, only one circuit can be imitated at a time. As a consequence, a variety of streams of material in process will need to be stored while each circuit is tested and reintroduced to the revised circuit as treatment progresses. This will result in a batch type process where the pilot plant is started up and shut down regularly over the test period.

The water recycling system will be flexible so that various close circuits operating within the main circuit can be explored. Efforts will be made as well to operate the pilot plant on a continuous basis in order to explore the build up of reagent complexes in the circuits. Water would be recycled between the two thickeners and the plant to study the changes in water chemistry brought about by the milling process. This information will be invaluable for design of the ultimate water treatment process for the operating mine.

The total tonnage processed will be in the region of 1,000 -2,000 tonnes of ore taken principally from the surface ore stockpile, possibly supplemented from underground development. Total water use over the whole of the pilot plant program will therefore be in the range of 2000 – 4000 m^3 of which half or 1000 – 2000 m^3 will be fresh and half or 1000 – 2000 m^3 will be reclaim. For comparison purposes, when the Prairie Creek mine was originally permitted for operation in 1982 under Water Licence N3L3-0932, it was authorized to draw up to 1,150 m^3 per day from the Prairie Creek Valley Aquifer via the existing on-site wells.

All process water will be retained in available tankage within the mill pending treatment and testing to ensure it is of acceptable quality prior to discharging to the existing tailings pond. Treatment will be accomplished through lime addition within the mill to precipitate dissolved metals. The tailings pond, which covers approximately 10 ha, is currently filled with water to elevation 868m for an average depth of just over 2m and a contained volume of about 225,000 m^3. The crest elevation of the impoundment dike is at 876m for a freeboard of about 8m. Pumping of the entire volume of treated process water to the impoundment will add less than 2% to the volume and result in a rise in pond level of only about 4cm. Handling of the process water in this manner will provide for a 50 times dilution of process water within the impoundment and no direct discharge of process water to Prairie Creek.

Tailings solids, consisting principally of inert sands from which the mineralization has been removed, will be stored in one of the two thickeners inside the mill building. Representative samples of the tailings will be assessed for performance in paste or thickened backfill application, as well as for chemical characterization.

The concentrate produced would be stored in 2 tonne bags and transported off-site by air for test marketing purposes.

Key operating parameters for the pilot plant will include:

- All pilot plant components air portable or currently available on site
- Total of approximately 1000 - 2000 tonnes of ore to be processed from the existing surface ore stockpile, possibly supplemented from underground development
- Pilot plant to treat up to 1.5 tonnes per hour in batches over several days at a time for 10 to 24 hours per day
- Water requirement of up to 3 m^3 per hour for a total of up to 4000 m^3 to be extracted from the Prairie Creek Valley aquifer by existing well
- All tailings to be stored within the mill building in the existing 35-foot thickeners.
- All process water to be held within the mill pending treatment and testing prior to discharge to the existing tailings impoundment
- Concentrate produced will be stored in the mill building in 2-tonne bags or flown off site for test marketing.
- Power will be generated on site using existing diesel supplies and generators.

Personnel

It is expected that operation of the pilot plant will require the following personnel:

- 1 metallurgical engineer
- 1 metallurgical technician
- 1 certified pipefitter/mechanic
- 1 certified electrician
- 2 – 4 labourers

It is expected that the pilot plant program will be conducted while other activity is ongoing at the site, including development of an exploration decline and exploration drilling. This will likely result in sharing of personnel between programs. All personnel involved in the operation of the pilot plant will be accommodated within the existing camp facility. Domestic water is supplied from an existing well, sewage is discharge to a sump and garbage is incinerated. Site operations will be supported by a camp cook and a project manager.

Consultation

Following is a summary of consultations undertaken, including those with government regulatory agencies, the Nahanni Butte Dene Band, the Liidlii Kue First Nation, Acho Dene Koe First Nation and the Deh Cho First Nations.

August 14-16, 2000 Yellowknife
- Meetings with INAC, GNWT/RWED, EC, DFO, MVLWB, MVEIRB, Parks Canada, DCFN (Petr Cizek)

October 6, 2000
- Letter request to NBDB, LKFN, ADKFN, DCFN for meeting

November 21, 2000 Yellowknife
- Meeting with Mineral Development Advisory Group (MDAG)
- INAC, EC, DFO, GNWT/RWED, WCB, SRHB,

November 22, 2000 Nahanni Butte
- Meeting with First Nation community and association representatives
- NBDB, LKFN, DCFN, CPAWS, Parks Canada

December 27, 2000
- Letter enclosing Draft Application package to NBDB, LKFN, ADKFN & DCFN requesting comments

January 5,2001
- Letter request to NBDB, LKFN, ADKFN for traditional knowledge

February 26, 2001
- Telephone conversation with Chief Leon Konisenta (NBDB) advising of intention to submit permit applications

February 27, 2001
- Letter to NBDB, LKFN, ADKFN & DCFN advising of intention to submit permit applications

Plans for operation of the pilot plant at Prairie Creek in 2001 were among the issues discussed by Canadian Zinc at these meeting. At each of these meetings, an information package was distributed to attendees which contained among other things a memo describing the pilot plant operation, photographs of the key components of the pilot plant and a flowsheet for the pilot plant.

No specific concerns were raised at any of these meetings or in response to any correspondence with respect to the proposed mineral exploration program.

Archaeology

An archaeological database search was conducted on August 18, 2000 through the Canadian Museum of Civilization in support of previous Land Use Application MV2000C0030 submitted by Canadian Zinc.

The database search area encompassed the entire minesite area, as well as the entire access road corridor from the Prairie Creek mine to the Liard River. To accomplish this, the search parameters were defined by geographical coordinates to cover a block extending from 61° 00' to 61°45' N. latitude and from 122°45' to 125°00' W. longitude.

No archaeological sites were identified within the minesite area proposed for use under this Water Licence application. The closest identified sites are south of the South Nahanni River near the mouth of the Meilleur River, 35-40 km south of the minesite.

All areas proposed for use in this application have been previously developed. No new development is planned in conjunction with this application.

BIBLIOGRAPHY AND REFERENCES

Arrow Transportation Systems Inc.; **TRANSPORTATION RATES**, Correspondence to Canadian Zinc Corporation, December 4, 2000.

B.C. Rail; **RE: CONCENTRATE TRANSPORTATION – PRAIRIE CREEK PROJECT**, Correspondence to San Andreas Resources Corporation, August 12, 1997.

B.C. Rail; **TRANSPORTATION PROPOSAL**, December 30, 1998.

Beak Consultants Ltd.; **FISHERIES AND INVERTEBRATE STUDIES**, September, 1981.

Beak Consultants Ltd.; **VEGETATION AND WILDLIFE STUDIES, JANUARY TO JULY, 1981**, Prairie Creek Project, Cadillac Explorations Ltd., September 1981.

Beak Consultants Ltd.; **FALL FISHERIES STUDY**, December, 1981.

Beak Consultants Ltd.; **SUMMARY DOCUMENT WATER QUALITY AND AQUATIC BIOLOGY**, Cadillac Explorations Ltd., February, 1982.

Beak Consultants Ltd.; **WILDLIFE STUDIES 1982 ADDENDUM**, October, 1982.

Behre, Dolbear; **GEOLOGICAL REPORT ON TONNAGE CALCULATION**, Penarroya Canada Ltee., 1970.

Behre, Dolbear; **ESTIMATED NET SMELTER RETURN AND CASH FLOW FROM POSTULATED OPERATION**, Prairie Creek, Nahanni District, N.W.T., May 23, 1974.

BGC Engineering Inc.; **STUDY OF ROAD CONSTRUCTION COSTS**, 2000.

Bruce Geotechnical Consultants Inc.; **GEOTECHNICAL DRILL HOLES**, Prairie Creek Tailings Pond, San Andreas Resources Corporation, October, 1994.

Bruce Geotechnical Consultants Inc.; **SUMMARY OF GEOTECHNICAL ASPECTS TAILINGS FACILITY AND ACCESS ROAD**, Prairie Creek Project, N.W.T., San Andreas Resources Corporation, July 20, 1995.

Canadian Zinc Corporation (Findlay, A.); **GEOLOGY AND EXPLORATION POTENTIAL OF THE STRATABOUND MASSIVE SULPHIDES, PRAIRIE CREEK MINE, NT**, Interim Report, October, 2000.

Canadian Zinc Corporation (Taylor, A. and Findlay, A.); **2000 NAHANNI RECONNAISSANCE EXPLORATION PROGRAM, PRAIRIE CREEK AREA, NT, CANADA**, August, 2000.

Colorado School of Mines; **A PILOT PLANT INVESTIGATION FOR BENEFICIATION OF A COPPER, LEAD, AND ZINC ORE**, Research Institute Project N20481, August 6, 1982.

Cominco Engineering Services Ltd. (CESL); **PRELIMINARY EVALUATION OF PRAIRIE CREEK PROJECT ANALYSIS OF 2000 tpd OPERATION**, November 12, 1992.

Cominco Engineering Services Ltd. (CESL – Mosher, G.); **REPORT ON THE PRAIRIE CREEK PROPERTY, SOUTH MINING DISTRICT, N.W.T.**, October, 1993.

Crowe Schaffalitzky & Associates Ltd. (CSA - Earls, G. and Davies, R.J.); **A REVIEW OF THE PRAIRIE CREEK ZN-PB-AG PROJECT, LOCAL INFRASTRUCTURE AND THE EXPLORATION POTENTIAL OF THE SURROUNDING AREA, N.W.T., CANADA**, 1993.

Crowe Schaffalitzky & Associates Ltd. (CSA - Earls, G.); **A REVIEW OF THE PRAIRIE CREEK DEPOSIT, N.W.T., CANADA**, 1995.

DelCan; **ENGINEERING ASSESSMENT OF PROPOSED ALL WEATHER ACCESS ROAD MINE SITE TO LIARD HIGHWAY**, Procan Exploration Co., Prairie Creek Project, N.W.T., July, 1983.

DelCan; **HAUL ROAD**, November, 1994.

Earls, G.; **A REVIEW OF THE PRAIRIE CREEK DEPOSIT**, September 1995.

G&T Metallurgical Services Ltd.; Met Engineers Ltd.; **PRELIMINARY METALLURGICAL TEST PROGRAM**, KM424, October 1993.

G&T Metallurgical Services Ltd.; **FLOTATION RESPONSE OF PRAIRIE CREEK OXIDIZED VEIN ORE**, KM488, November 24, 1994.

G&T Metallurgical Services Ltd.; **PRELIMINARY COPPER-LEAD SEQUENTIAL TEST RESULTS**, KM454.

Gillies, N.B.; **RECONNAISSANCE GEOLOGICAL EXAMINATION OF THE STANNEX BELLCAN CLAIMS**, Snow Claim Group, South Nahanni River, N.W.T., September, 1970.

Golder Associates; **PRELIMINARY APPRAISAL TAILINGS STORAGE FACILITIES**, Cadillac Explorations Ltd., June, 1980.

Golder Associates; **TAILINGS STORAGE AND MINE PLANT FACILITIES**, Cadillac Explorations Ltd., September, 1980.

Golder Associates; **PROGRESS REPORT ON MINE ACCESS ROUTE**, Prairie Creek Project, Cadillac Explorations Ltd., October, 1980.

Hardy Associates Ltd.; **PRAIRIE CREEK TAILINGS POND**, Cadillac Exploration Ltd., October 12, 1982.

Hardy Associates Ltd.; **REPORT ON TAILINGS POND REHABILITATION**, August, 1983.

Hardy Associates Ltd.; **TAILINGS POND REHABILITATION**, Procan Exploration Co., March, 1984.

Hardy Associates Ltd.; **REPORT ON CONSTRUCTION DETAILS, QUANTITIES AND GEOTECHNICAL COSTS ASSOCIATED WITH TAILINGS POND REHABILITATION**, Prairie Creek Mine, N.W.T., Procan Exploration Co., August, 1985.

J.D. Mollard and Associates Ltd.; **REMOTELY SENSED TERRAIN ANALYSIS AND ASSESSED IMPACT OF THE EXISTING ROADWAY ALONG AND NEAR THE 185 KM LONG PRAIRIE CREEK EXISTING WINTER ROAD ROUTE**, September, 1995.

JN Davies Electric; **RE CANADIAN ZINC PROJECT SCOPING STUDY**; Letter, December 29, 2000.

Kamloops Research and Assay Laboratory Ltd.; **A PRELIMINARY STUDY OF FLOTATION RESPONSE – CADILLAC OXIDE ORE**, KM019, May 24, 1980.

Kamloops Research and Assay Laboratory Ltd.; **INVESTIGATION OF FLOTATION RESPONSE – CADILLAC LOWER ADIT ORE**, KM034, September 1980.

Kamloops Research and Assay Laboratory Ltd.; **DETAILED FLOTATION STUDIES**, KM040, January 1981.

Kamloops Research and Assay Laboratory Ltd.; **DETAILED FLOTATION STUDIES**, KM048, March 1981.

Kamloops Research and Assay Laboratory Ltd.; **CADILLAC EXPLORATIONS TESTWORK**, KM077, February 19, 1982.

Kamloops Research and Assay Laboratory Ltd.; **CADILLAC EXPLORATIONS TESTWORK**, KM081, April 29, 1982.

Kamloops Research and Assay Laboratory Ltd.; **PILOT PLANT FEED TESTWORK**, April 29, 1982.

Ker, Priestman & Associates Ltd.; **PRELIMINARY ENVIRONMENTAL EVALUATION FOR MINE, MILL & CAMP**, Prairie Creek Project, Cadillac Explorations Ltd., May, 1980.

Ker, Priestman & Associates Ltd.; **PRELIMINARY ENVIRONMENTAL EVALUATION FOR WINTER ACCESS ROAD**, Prairie Creek Project, Cadillac Explorations Ltd., May, 1980.

Ker, Priestman & Associates Ltd.; **ENVIRONMENTAL EVALUATION FOR CADILLAC EXPLORATIONS LTD.**, October, 1980.

Ker, Priestman & Associates Ltd.; **PROJECT DESCRIPTIONS FOR PROPOSED ALL-WEATHER ROAD, AIRSTRIP AND ORE HAUL ROAD**, Cadillac Explorations Ltd., Prairie Creek Project, N.W.T., May, 1982.

Ker, Priestman & Associates Ltd.; **SUMMARY OF PROJECT STATUS PREPARED FOR WATER LICENCE HEARING**, Cadillac Explorations Ltd., Fort Simpson, February, 23, 1982.

Kilborn Engineering Ltd.; **ORE RESERVE CALCULATION NO. 3 ZONE**, August 1980.

Kilborn Engineering Ltd.; **DEFINITIVE FEASIBILITY STUDY**, Cadillac Property, Nahanni Mining District, September 29, 1980.

Lakefield Research of Canada Limited; **AN INVESTIGATION OF THE RECOVERY OF COPPER, LEAD AND ZINC ON CADILLAC EXPLORATION SAMPLES**, L.R. 2252 Progress Report No. 1, April 21, 1980.

Lakefield Research of Canada Limited; **MINERALOGICAL EXAMINATION OF CADILLAC PROJECT SAMPLES**, L.R. 2252 Progress Report no. 2, June 18, 1980.

McAleenan, Colin; **SAN ANDREAS RESOURCES CORPORATION ECONOMIC MINERAL INVENTORY 1992**, Internal Report, 1992.

Met Engineers Ltd.; **PRAIRIE CREEK PROJECT**, KM370, December 1992.

Met Engineers Ltd.; **A PRELIMINARY STUDY OF METALLURGICAL RESPONSE – VEIN TYPE ORE**, KM440, February 1994.

Met Engineers Ltd.; **A PRELIMINARY STUDY OF METALLURGICAL RESPONSE – STRATIFORM TYPE ORE**, KM462, June 1994.

Met Engineers Ltd.; **PRELIMINARY REAGENT OPTIMIZATION STUDIES**, KM474, August 1994.

Met Engineers Ltd.; KM469, September 1994.

Met Engineers Ltd.; KM497, December 15, 1994.

Morrow, D.W. and Cook, D.G.; **THE PRAIRIE CREEK EMBAYMENT AND LOWER PALEOZOIC STRATA OF THE SOUTHERN MACKENZIE MOUNTAINS**, Geological Survey of Canada, Memoir 412, Ministry of Supply and Services Canada, Ottawa, 1987.

MRDI Canada; **PRAIRIE CREEK – ZONE 3 GEOLOGICAL RESOURCE**, report prepared for San Andreas Resources Corporation, January, 1998.

Neil S. Seldon & Associates Ltd. (Seldon, Neil S.); **REVIEW OF METAL PRICES AND SMELTER TERMS RELATIVE TO ASSUMPTIONS FOR SCOPING STUDY**, December 2000.

Patrick Downey & Associates Ltd.; **ZINC AND COPPER CONCENTRATE PROCESSING OPTIONS**, Notes to San Andreas Resources Corporation file, November 28, 1997.

Penarroya Canada Ltee.; **GEOLOGICAL REPORT AND ORE TONNAGE CALCULATIONS**, 1970.

Procan Exploration Company (Joy, R.J.); **PRAIRIE CREEK ORE RESERVES**, November, 1983.

Procon Mining & Tunnelling Ltd.; **PROPOSAL FOR EXPLORATION DECLINE AND UNDERGROUND DRILLING FOR CANADIAN ZINC CORPORATION, PRAIRIE CREEK PROPERTY, NT**, November 7, 2000.

Rescan; **PROJECT DESCRIPTION REPORT**, Prairie Creek Project, San Andreas Resources Corporation, December, 1994.

Rescan; **PRAIRIE CREEK EFFLUENT TREATMENT PLANT**, San Andreas Resources Corporation, January, 1995.

San Andreas Resources Corporation (Taylor, A.); **REPORT ON THE 1993 EXPLORATION RECONNAISSANCE PROGRAM, PRAIRIE CREEK PROPERTY**, South Mining District, N.W.T., 1993.

San Andreas Resources Corporation (Taylor, A.); **GEOLOGICAL SUMMARY OF THE NORTHERN SECTOR PB-ZN TREND ON THE PRAIRIE CREEK PROPERTY, N.W.T.**, 1995.

Simons Mining Group (Jones, P.R.); **PRAIRIE CREEK PROJECT OVERVIEW STUDY**, January 23, 1995.

Singhai, G.C., M.Tech, P.Eng.; **REPORT ON LEAD, ZINC, SILVER DEPOSITS AT PRAIRIE CREEK**, April 3, 1975.

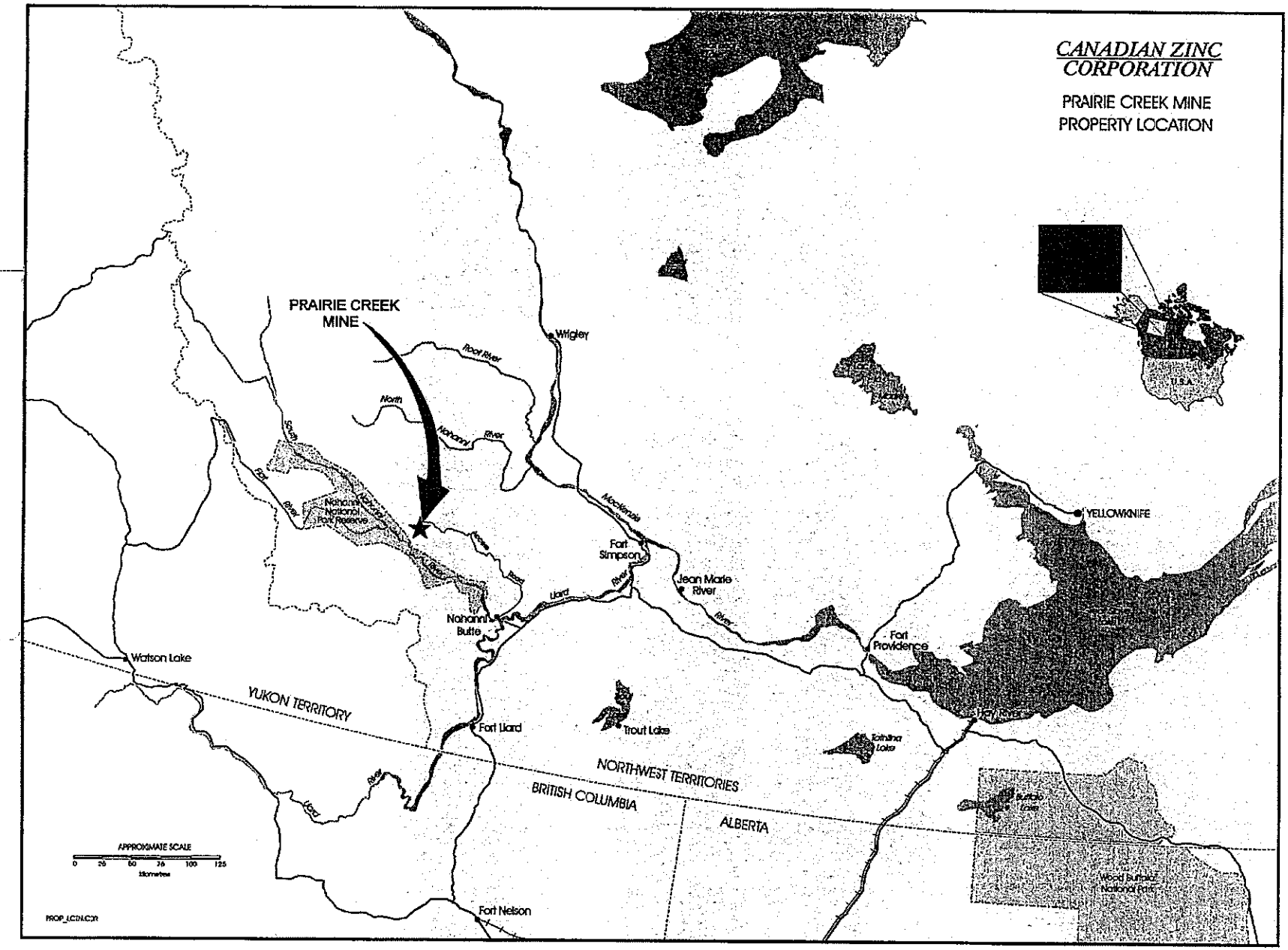
Spirito, W.A., et. al.; **COMPARISON OF GOLD, TUNGSTEN AND ZINC IN STREAM SILTS AND HEAVY MINERAL CONCENTRATES, SOUTH NAHANNI RESOURCE ASSESSMENT AREA, DISTRICT OF MACKENZIE**, Current Research, Part E, Geological Survey of Canada, Paper 88-1E, 1988.

Unit Electrical Engineering Ltd.; **RE PRAIRIE CREEK MINE, NORTHWEST TERRITORIES SCOPING STUDY REPORT**, Letter to Canadian Zinc Corporation, January 3, 2001.

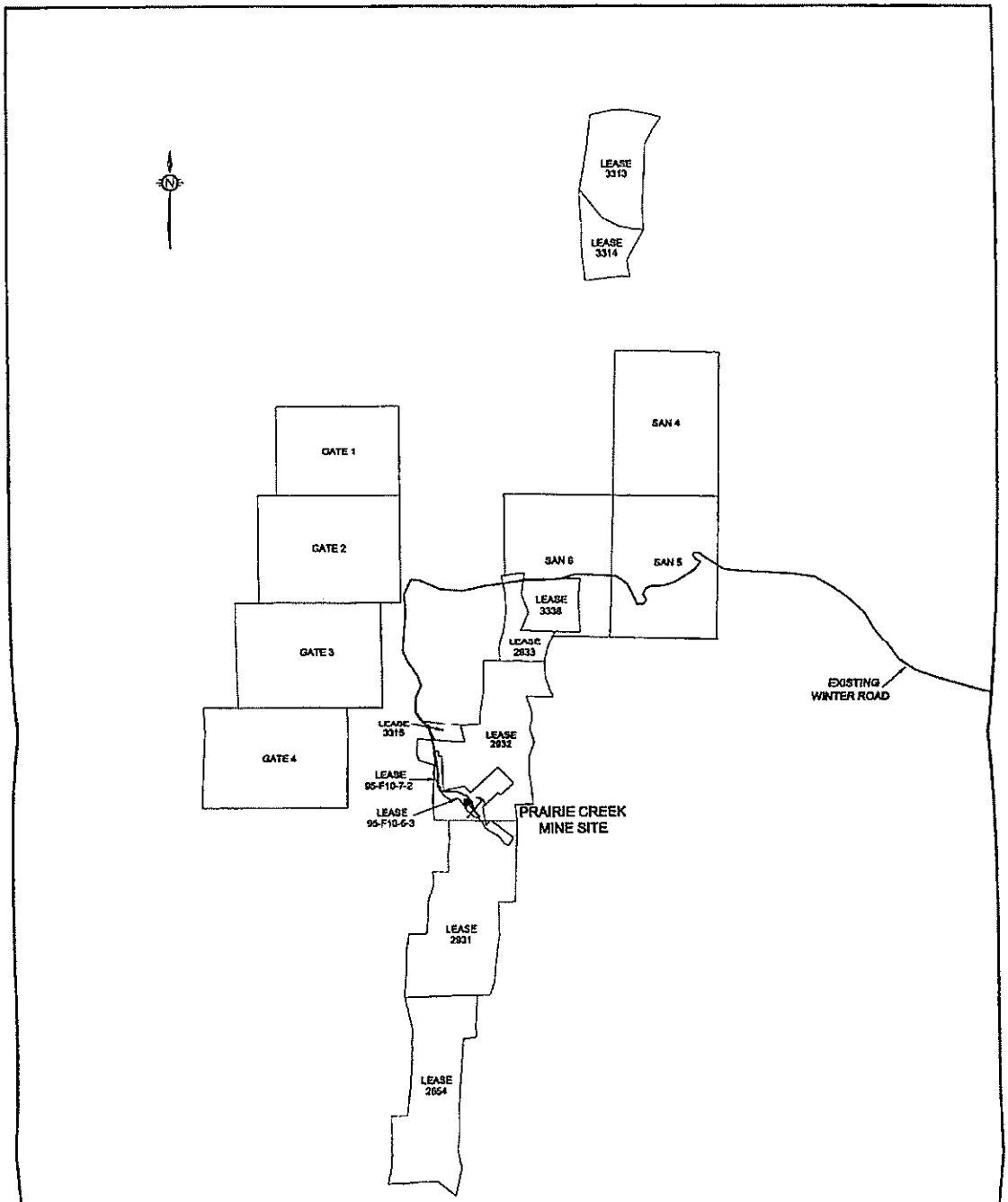
Watts, Griffis and McQuat Ltd.; **ACCESS ROUTES TO THE PRAIRIE CREEK PROPERTY**, Cadillac Explorations Limited, January 1980.

Watts, Griffis and McQuat Ltd.; **WORK DONE ON THE PRAIRIE CREEK PROPERTY**, January 1980.

Westcoast Mineral Testing Inc. (Hawthorn, Gary); **PROGRESS REPORT NO. 1 / REVIEW OF ONGOING MINERAL PROCESS FLOTATION TESTING / PRAIRIE CREEK DEPOSIT**, December 18, 2000


CANADIAN ZINC CORPORATION
PRAIRIE CREEK MINE
PROPERTY LOCATION
PRAIRIE CREEK MINE
Wrigley
Root River
North Nahanni River
South Nahanni River
Nahanni National Park Reserve
Mackenzie River
Fort Simpson
Liard River
Jean Marie River
Nahanni Butte
Fort Providence
YELLOWKNIFE
Great Slave Lake
Watson Lake
YUKON TERRITORY
Fort Liard
Trout Lake
Kakisa Lake
NORTHWEST TERRITORIES
BRITISH COLUMBIA
ALBERTA
Buffalo Lake
Wood Buffalo National Park
Fort Nelson
Liard River
APPROXIMATE SCALE
0 25 50 75 100 125
kilometres
U.S.A.
PROP_LOC.DGN

Not to Scale



GATE 1	Mineral Claim
LEASE 95-F-10-5-3	Surface Lease
LEASE 2933	Mining Lease

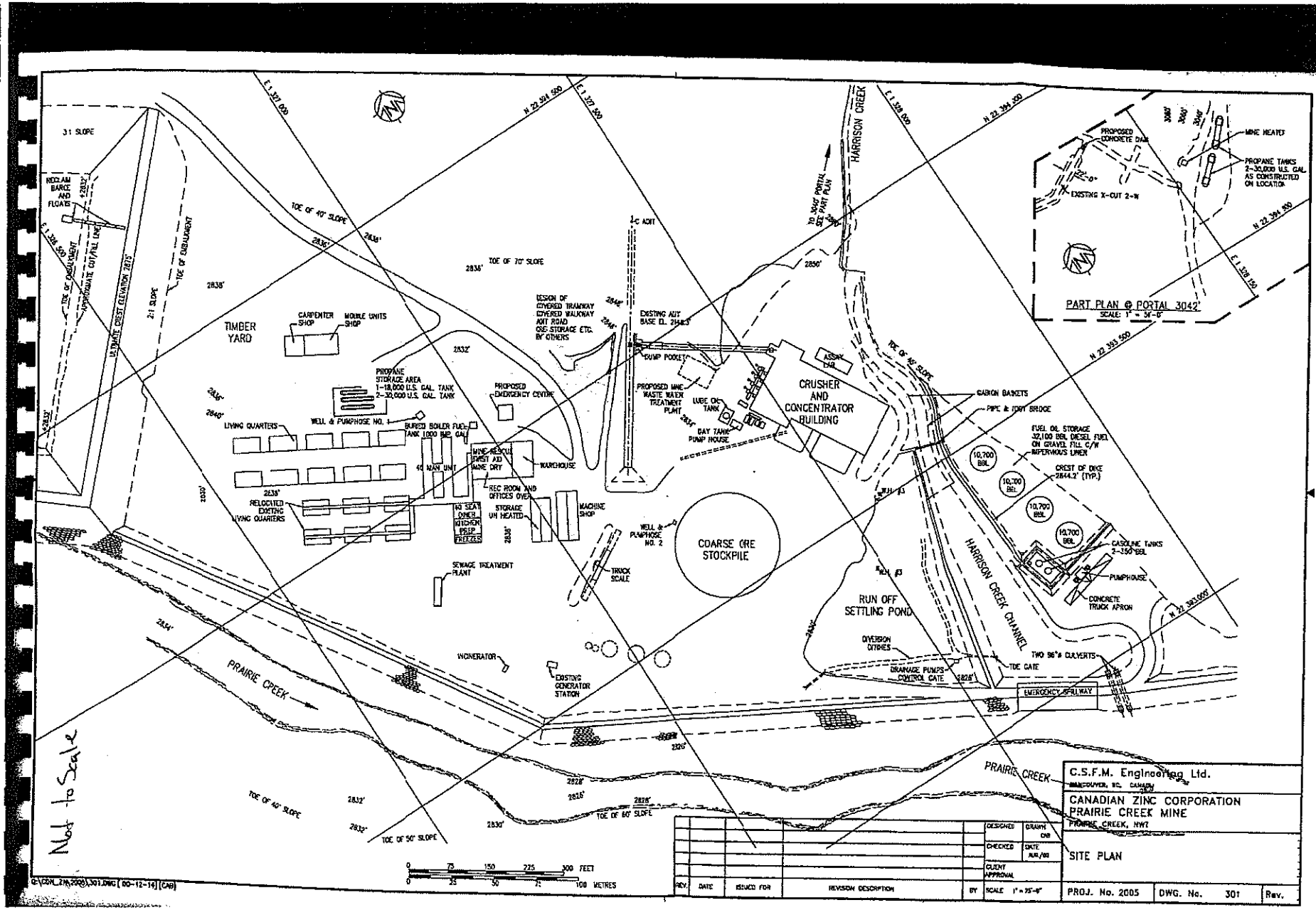
Scale:	1:100,000
Drawing:	claims.dwg
Revised:	

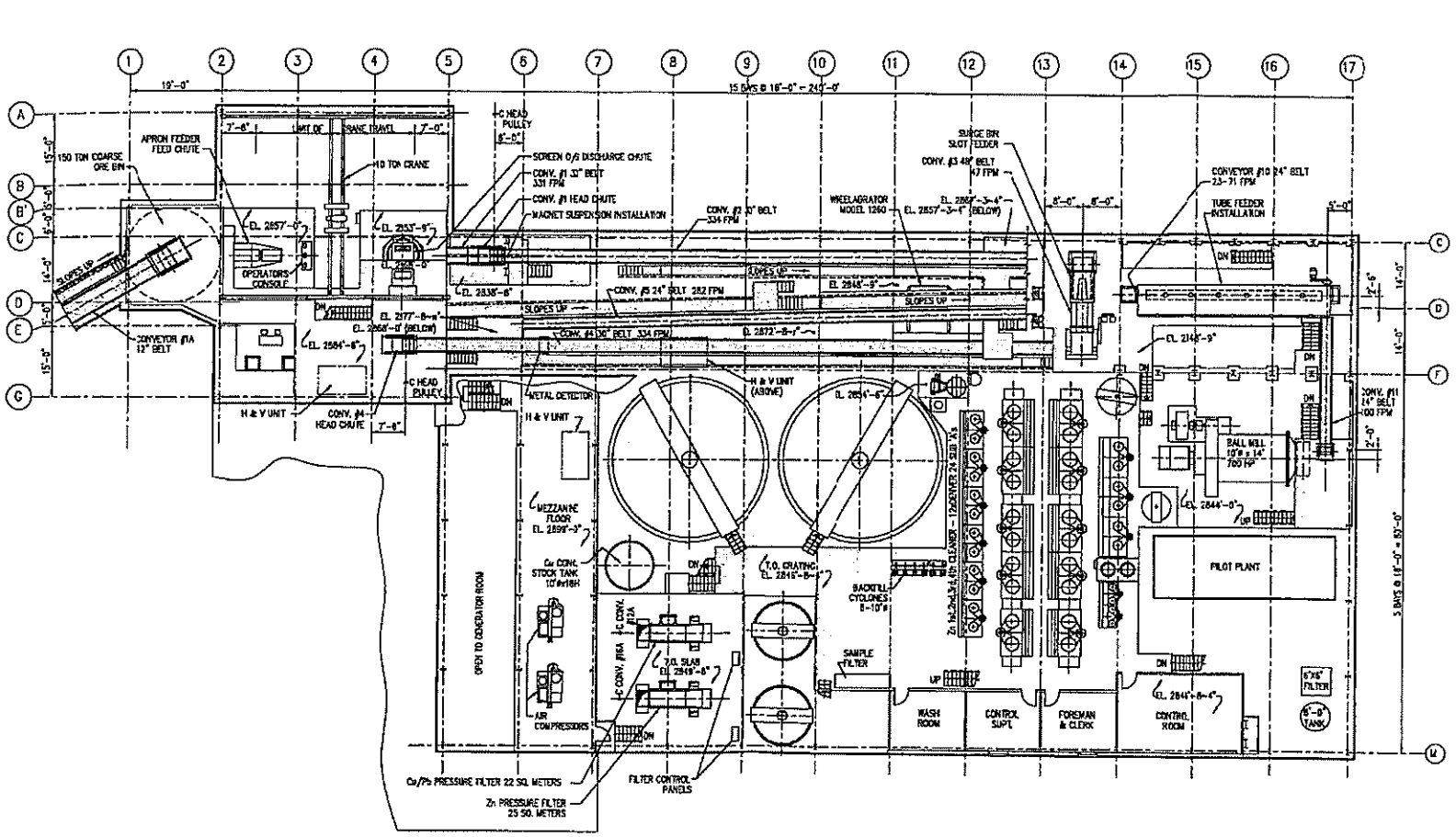
CANADIAN ZINC CORPORATION

PRAIRIE CREEK MINE

LAND TENURE

Date: January, 2001 | Figure:


TIMBER YARD
CARPENTER SHOP
MOBILE UNITS SHOP
LIVING QUARTERS
WELL & PUMPHOUSE NO. 1
BURIED BOILER FUEL TANK 1000 IMP. GAL.
PROPANE STORAGE AREA 1-18,000 U.S. GAL. TANK 2-30,000 U.S. GAL. TANK
PROPOSED EMERGENCY CENTRE
RELOCATED EXISTING LIVING QUARTERS
40 MAN UNIT
MINE RESCUE FIRST AID MINE DRY
WAREHOUSE
REC ROOM AND OFFICES OVER
40 SEAT DINER KITCHEN PREP FREEZER
STORAGE UN HEATED
MACHINE SHOP
SEWAGE TREATMENT PLANT
INCINERATOR
EXISTING GENERATOR STATION
WELL & PUMPHOUSE NO. 2
TRUCK SCALE
COARSE ORE STOCKPILE
CRUSHER AND CONCENTRATOR BUILDING
DESIGN OF COVERED TRAMWAY COVERED WALKWAY ADIT ROAD ORE STORAGE ETC. BY OTHERS
EXISTING ADIT BASE EL. 2848'
DUMP POCKET
PROPOSED MINE WASTE WATER TREATMENT PLANT
LUBE OIL TANK
DAY TANK PUMP HOUSE
ASSAY CAB
GABION BASKETS
PIPE & TOMY BRIDGE
FUEL OIL STORAGE 32,100 BBL DIESEL FUEL ON GRAVEL FILL C/W IMPERVIOUS LINER
CREST OF DIKE 2844.2' (TYP.)
10,700 BBL
GASOLINE TANKS 2-250 BBL
PUMPHOUSE
CONCRETE TRUCK APRON
RUN OFF SETTLING POND
DIVERSION DITCHES
DRAINAGE PUMPS CONTROL GATE
TOE GATE
TWO 96"ø CULVERTS
EMERGENCY SPILLWAY
HARRISON CREEK CHANNEL
HARRISON CREEK
PRAIRIE CREEK
TO 3042' PORTAL SEE PART PLAN
PART PLAN @ PORTAL 3042'
SCALE: 1" = 50'-0"
PROPOSED CONCRETE DAM
EXISTING X-CUT 2-W
MINE HEATER
PROPANE TANKS 2-30,000 U.S. GAL. AS CONSTRUCTED ON LOCATION
RECLAIM BARGE AND FLOATS
31 SLOPE
2:1 SLOPE
ULTIMATE CREST ELEVATION 2815'
TOE OF EMBANKMENT
APPROXIMATE CUT/FILL LINE
TOE OF 40° SLOPE
TOE OF 70° SLOPE
TOE OF 60° SLOPE
TOE OF 50° SLOPE
E 1,327,000
E 1,328,000
N 22,394,500
N 22,394,000
N 22,393,500
N 22,393,000
E 1,328,150
E 1,328,500
0 25 50 75 100 METRES
0 75 150 225 300 FEET
Not to Scale
C.S.F.M. Engineering Ltd.
VANCOUVER, B.C. CANADA
CANADIAN ZINC CORPORATION
PRAIRIE CREEK MINE
PRAIRIE CREEK, NWT
SITE PLAN
DESIGNED
DRAWN CAB
CHECKED
DATE JAN/00
CLIENT APPROVAL
SCALE 1" = 75'-0"
PROJ. No. 2005
DWG. No. 301
Rev.
REV. DATE ISSUED FOR REVISION DESCRIPTION BY
Q:\CDN_ZN\2005\301.DWG [00-12-14] [CAB]



PLAN
(ELEVATIONS AS NOTED)

Not to Scale.

				DESIGNED	DRAWN CAB
				CHECKED	DATE DEC/00
				CLIENT APPROVAL	
REV.	DATE	ISSUED FOR	REVISION DESCRIPTION	BY	SCALE 3/32" = 1'-0"

C.S.F.M. Engineering Ltd.
VANCOUVER, B.C. CANADA

CANADIAN ZINC CORPORATION
PRAIRIE CREEK MINE
PRAIRIE CREEK, NWT

CONCENTRATOR
GENERAL ARRANGEMENT
PILOT PLANT

PROJ. No. 2005 | DWG. No. 302 | Rev.

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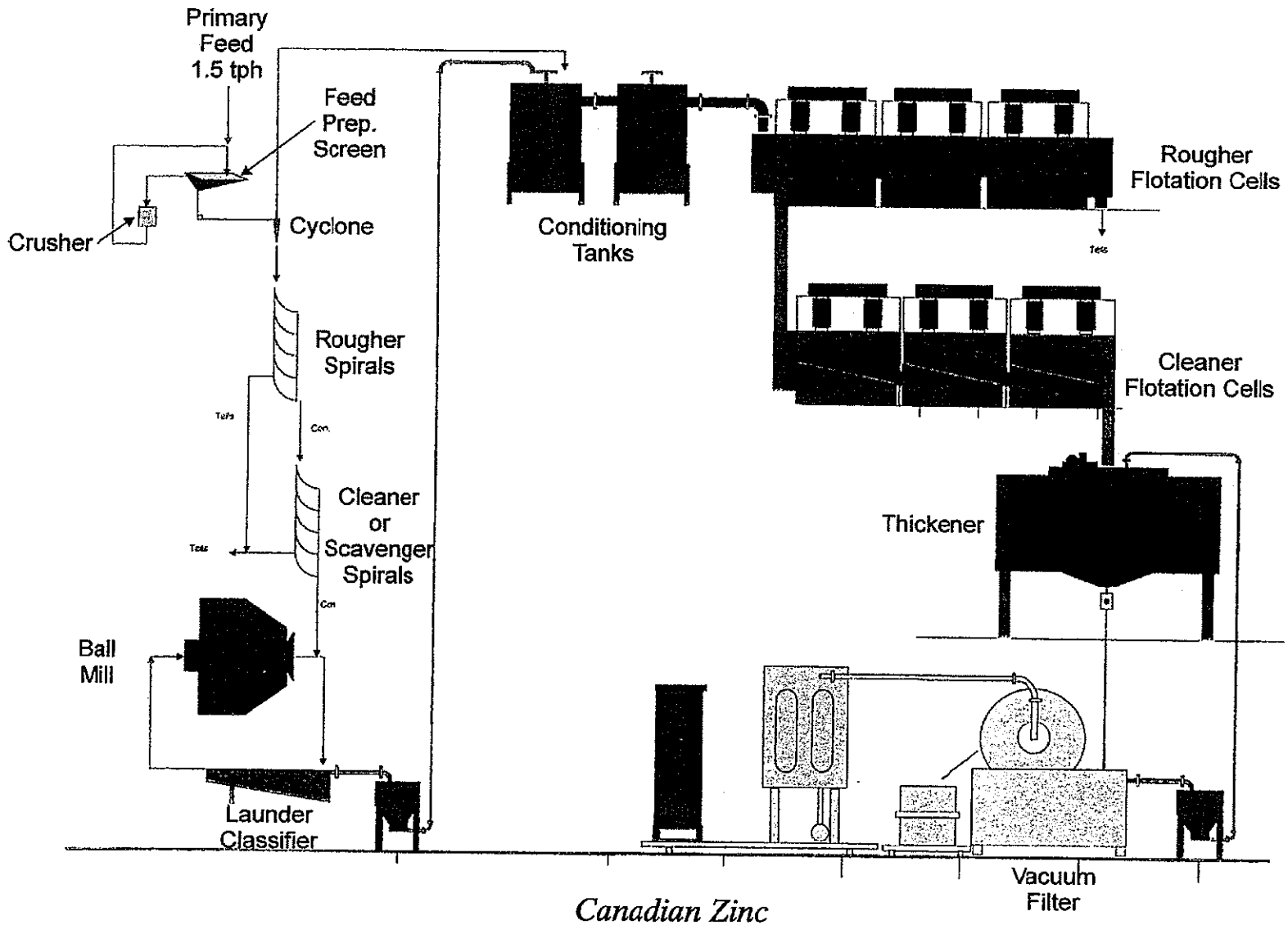
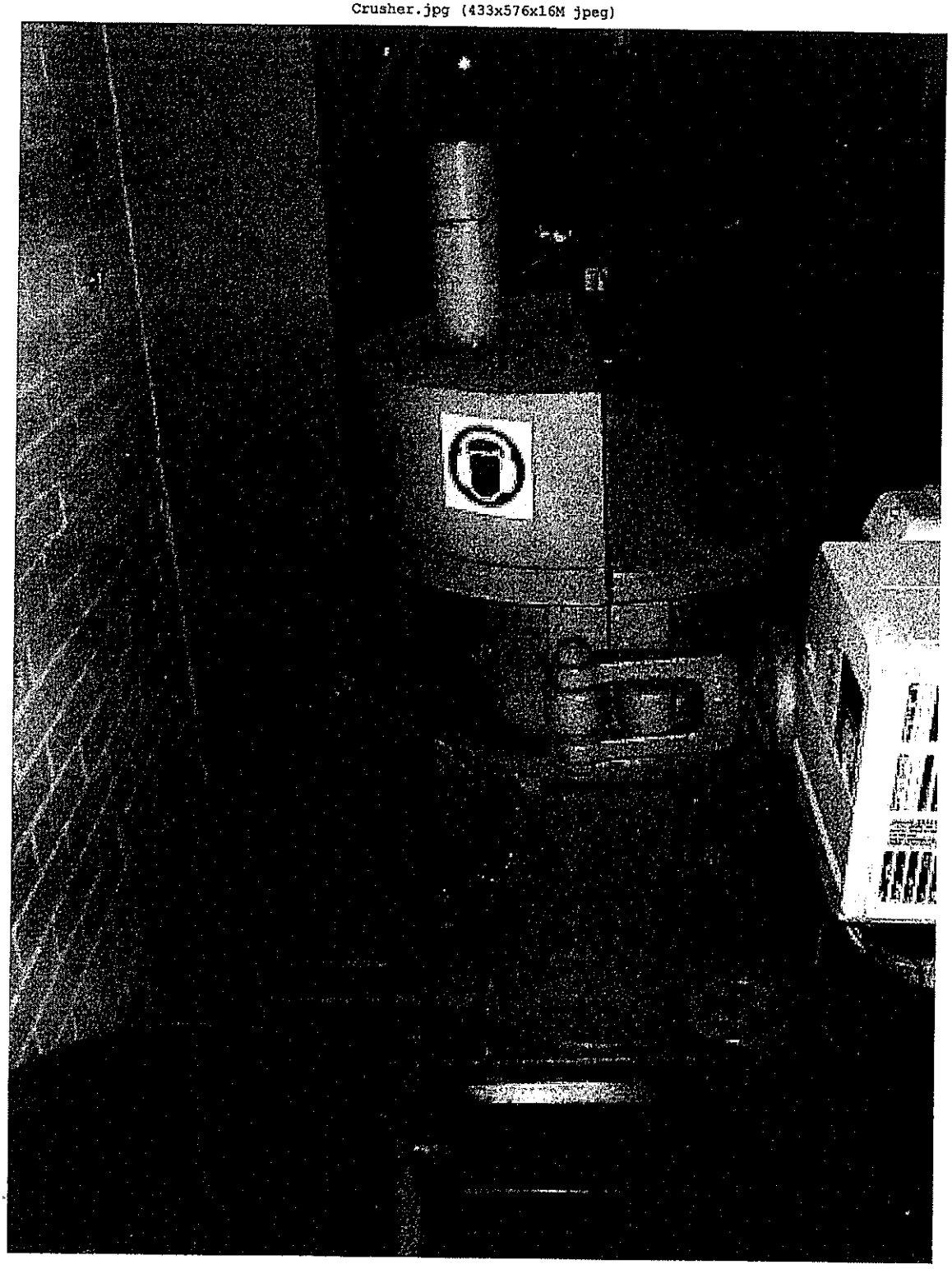


Canadian Zinc Corporation

PilotPlant.cdr

Proposed Pilot Plant Layout

Crusher.jpg (433x576x16M jpeg)



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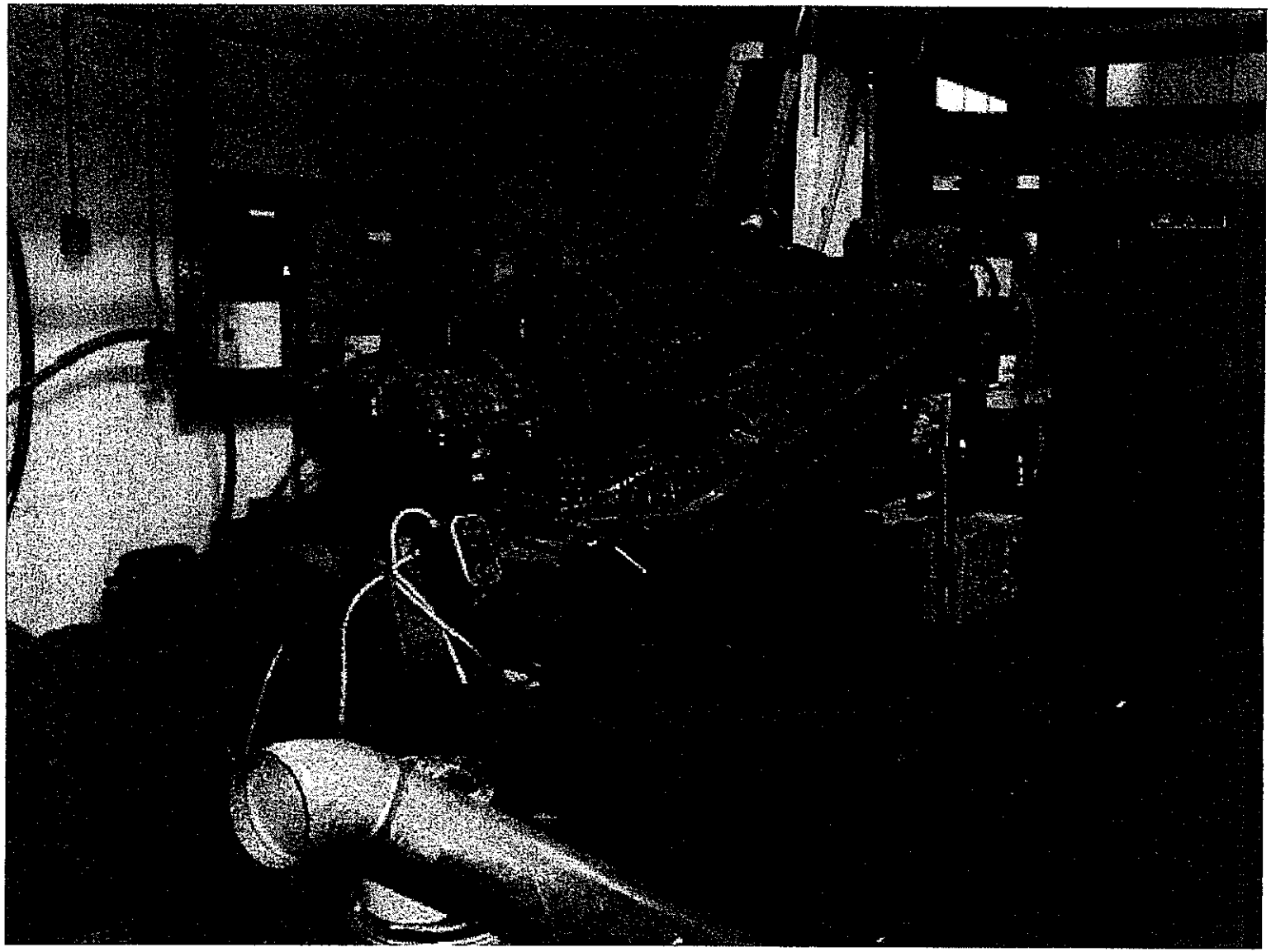

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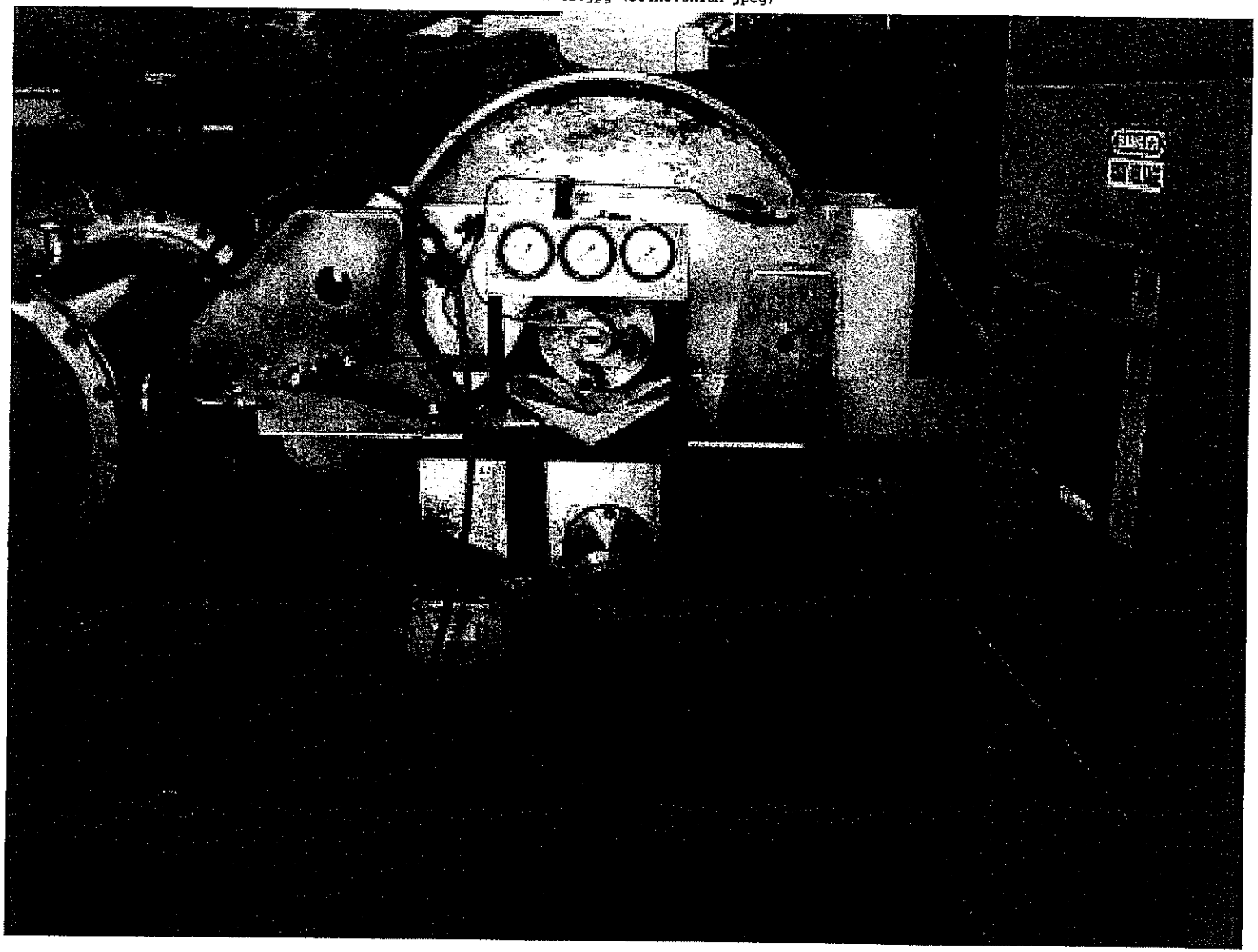

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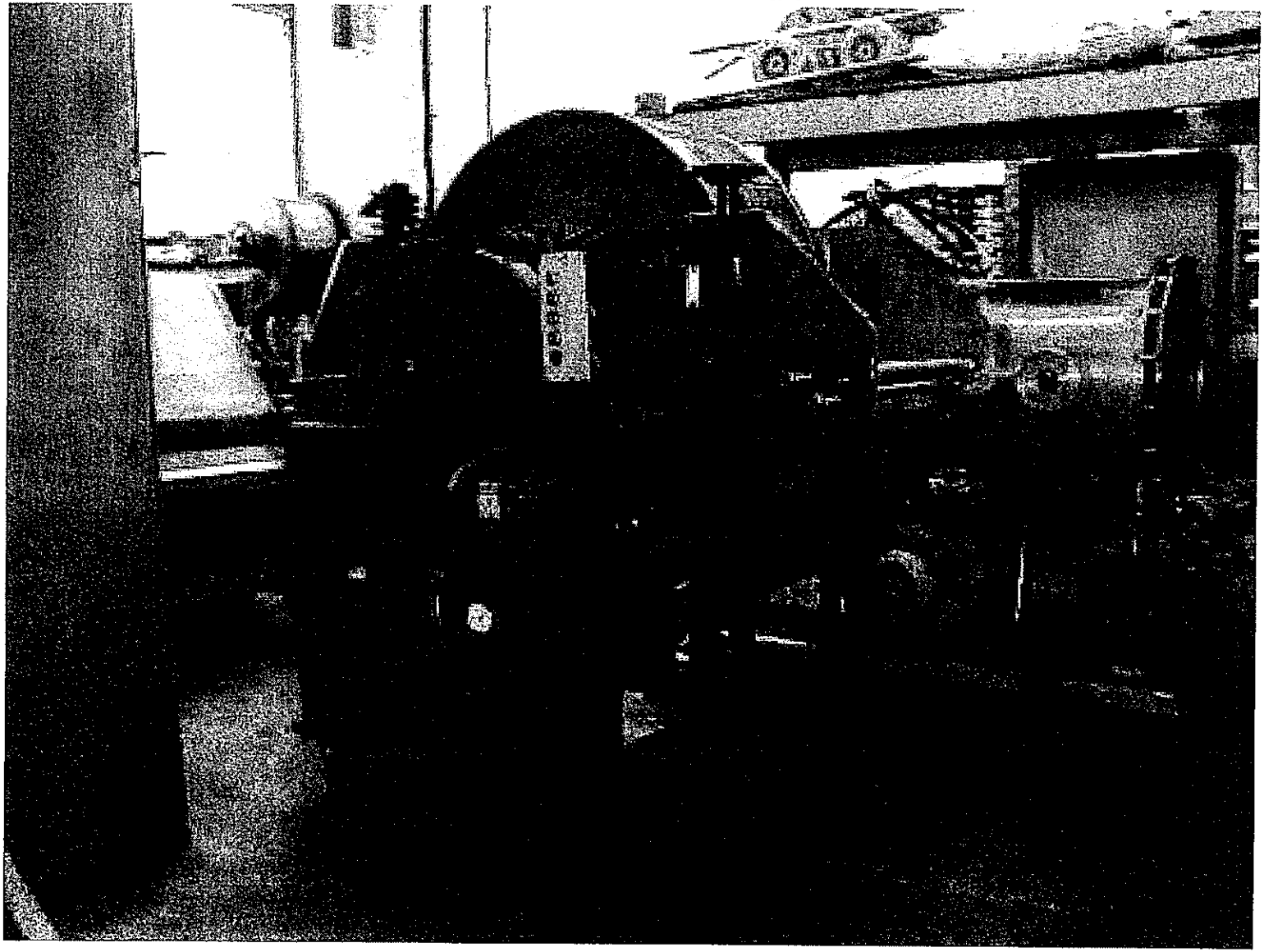

Conditioner pumps &cells.jpg (433x576x16M jpeg)