

B.3. Bell Mine – Drainage Collection and Discharge

by

Kevin Morin

Minesite Drainage Assessment Group

and

Brian Rosendale

Bell Mine, Noranda

Bell Mine – Drainage Collection and Discharge

by

Kevin Morin, Minesite Drainage Assessment Group
(www.mdag.com)



and

Brian Rosendale, Site Manager, Bell Mine, Noranda



noranda

Bell 92 Project

CLOSURE PLAN

Support Document E

**MINE ROCK AND TAILINGS GEOCHEMISTRY
AND PREDICTION OF WATER CHEMISTRY**



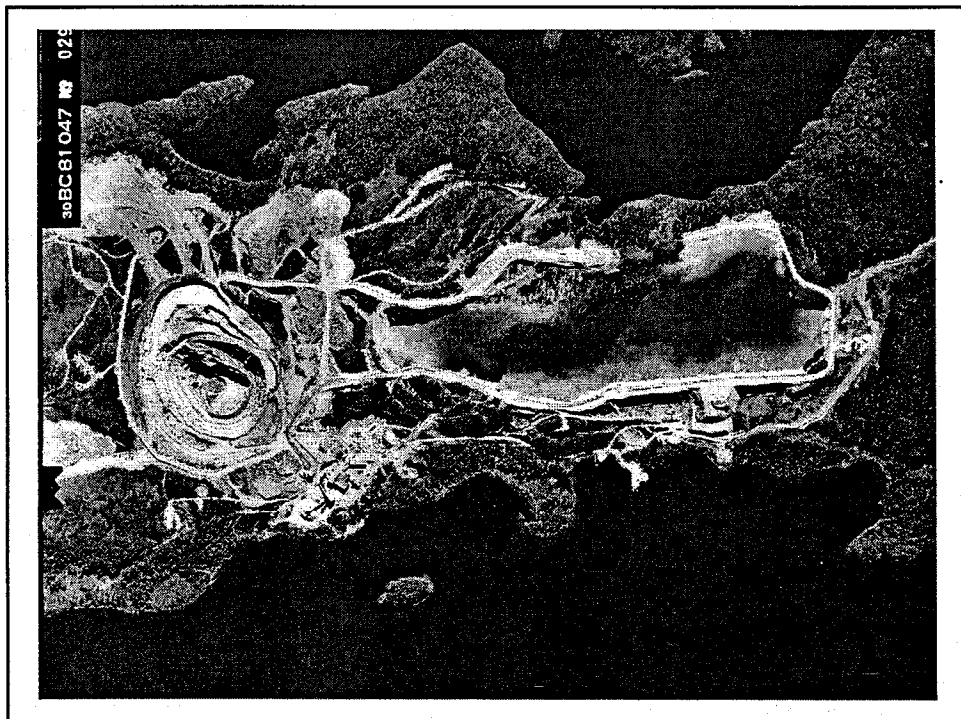
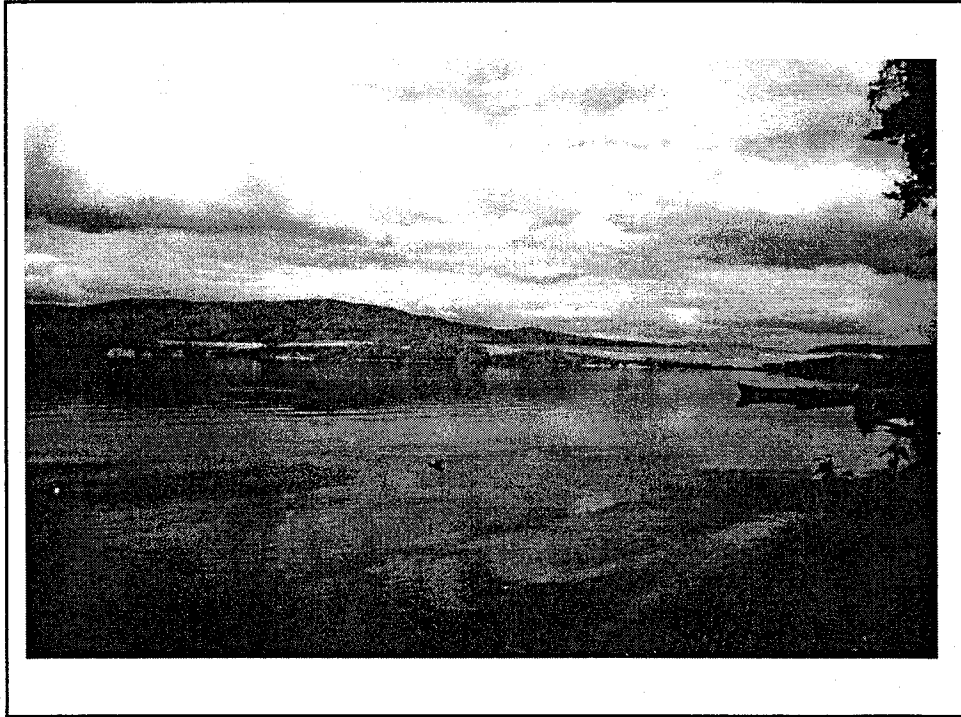
**BELL MINE
GRANISLE, BRITISH COLUMBIA**

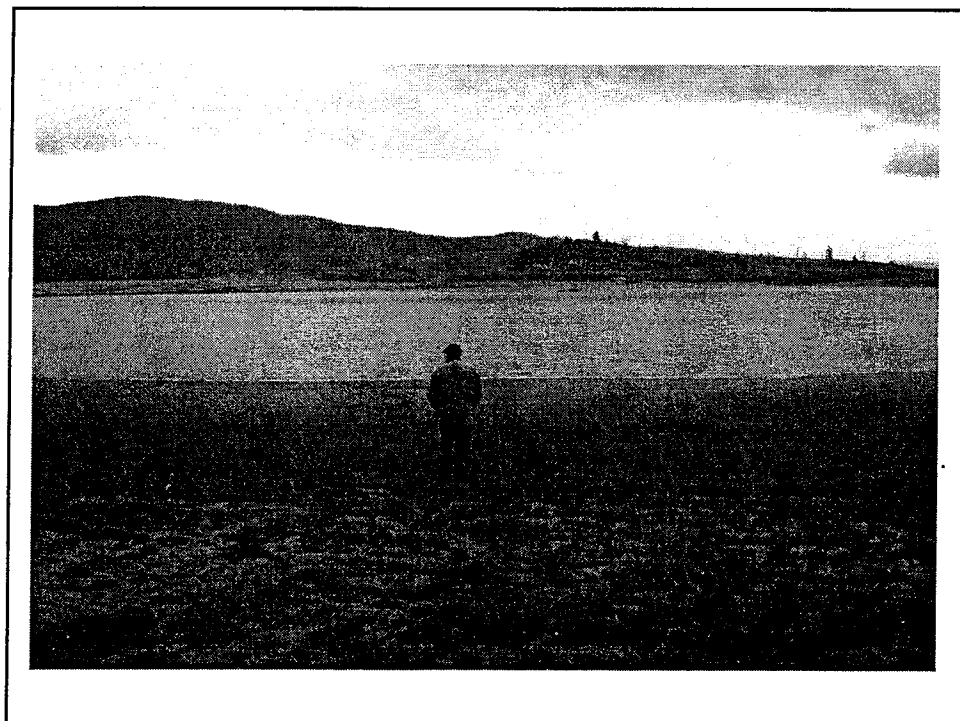
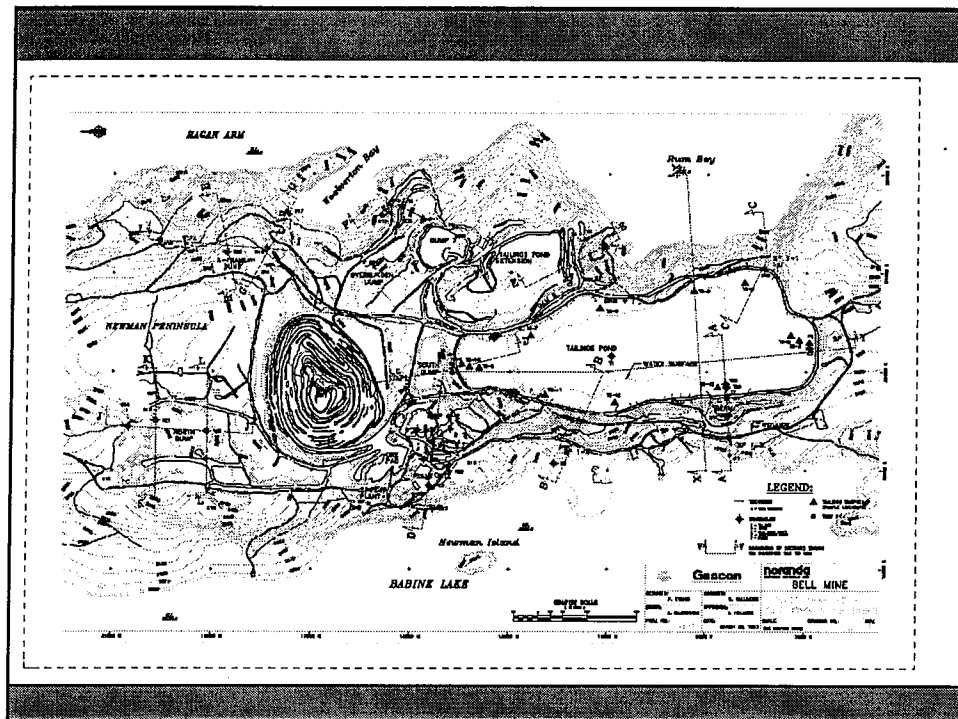
Geocon

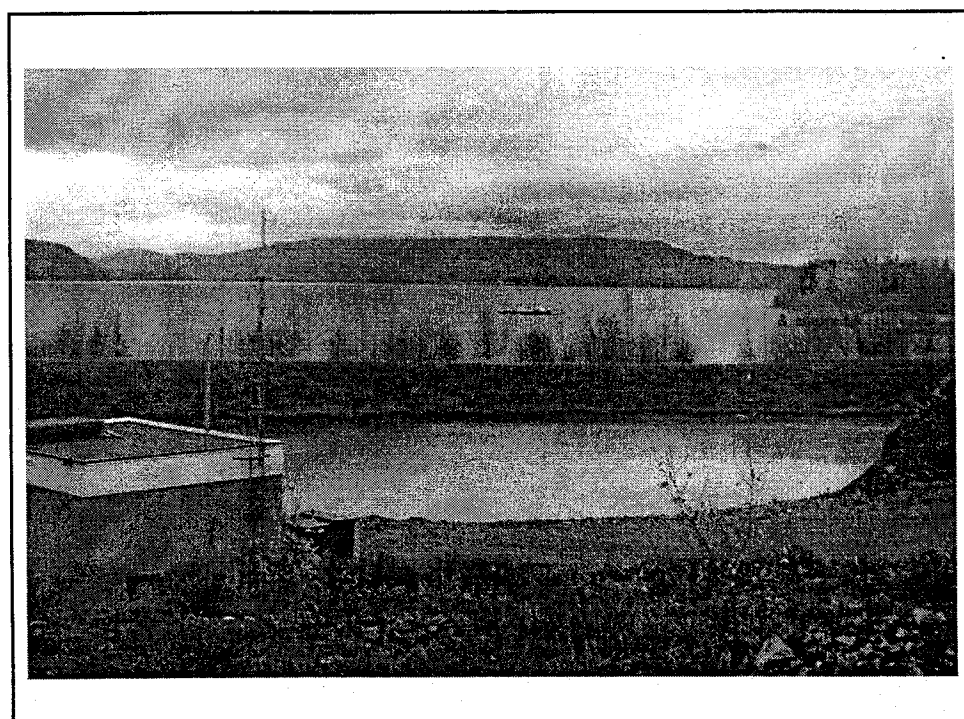
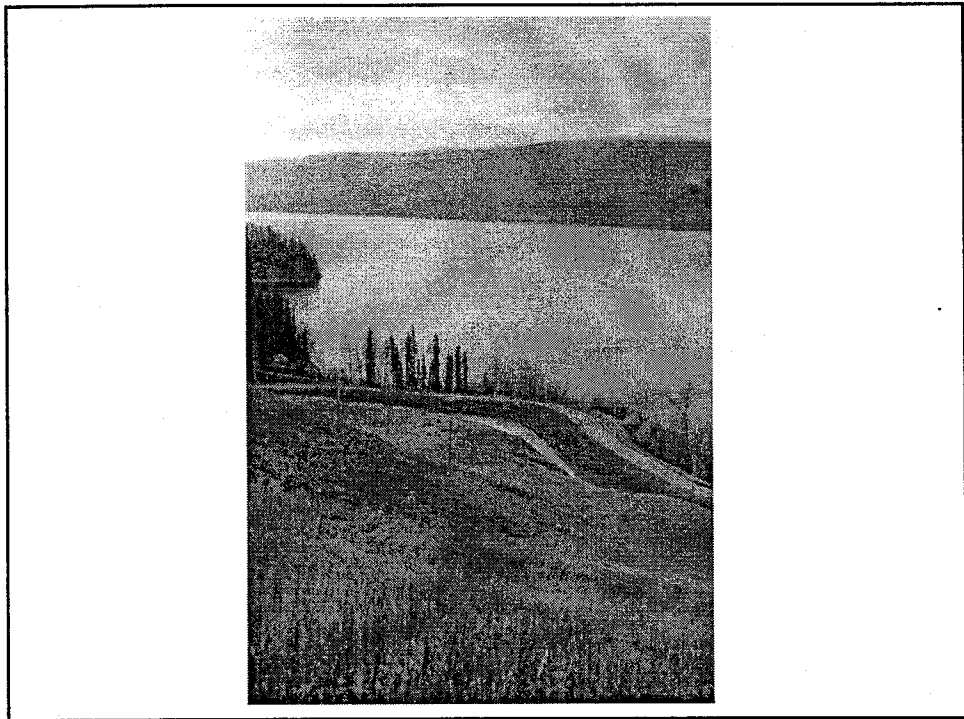
Rescan

ME ANALYTICAL SERVICES LTD.

noranda
noranda minerals inc.









MINISTRY OF ENVIRONMENT,
LANDS AND PARKS

PERMIT
PE-1505

Under the Provisions of the Waste Management Act

Noranda Minerals Inc.

Bell Mine

P.O. Box 2009

Granisle, British Columbia

V8J 1W8

is authorized to discharge effluent from a closed copper mine located on Newman Peninsula, British Columbia, to seepage collection ponds, a tailings impoundment, an open pit and to Babine Lake subject to the following terms and conditions. Contravention of any of these conditions is a violation of the Waste Management Act and may result in prosecution.

1. AUTHORIZED DISCHARGES

1.1 This subsection applies to the discharge of superantigen from the tailings impoundment to Run Bay in Babine Lake via a submerged outfall. The site reference number for this discharge is E209289.

1.1.1 The maximum authorized rate of discharge is 9,000 m³/day with the annual maximum volume of effluent discharged being 300,000 m³.

1.1.2 The characteristics of the discharge shall not exceed:

| | |
|------------------------|---------|
| Total Suspended Solids | 25 mg/L |
| pH | 6.5-8.5 |

Date Issued: April 21, 1972
Date Amended: AUG 2 1 1987
Order Number
Page: 1 of 11

J. H. H. H.
J. H. H. H., P. Eng.
Authorized Regional Waste Manager

FORM 16-1000

BELL MINE
WATER MANAGEMENT MANUAL

Noranda Inc.
Bell Mine
Granisle, British Columbia



June 1989

| Noranda Inc. Belt Mine | | Water Management Manual Table of Contents | | Revision No. 11 Date June 24, 1979 | | Page II |
|---------------------------|--|--|--|--|--|---------|
|---------------------------|--|--|--|--|--|---------|

| TABLE OF CONTENTS | | Page |
|---------------------------------|---|------|
| Preface | | 1 |
| Distribution and Revision Index | | 1 |
| 1.0 | INTRODUCTION | 1-1 |
| 1.1 | OBJECTIVES | 1-1 |
| 1.2 | PERSONNEL | 1-2 |
| 1.3 | COMPLETENESS OF THE MANUAL | 1-3 |
| 2.0 | WATER MANAGEMENT SYSTEM COMPONENTS | 2-1 |
| 2.1 | GENERAL LAYOUT | 2-1 |
| 2.2 | DESIGN CRITERIA AND CONSIDERATIONS | 2-1 |
| 2.3 | DESIGN OF COLLECTION POND DAMS | 2-2 |
| 2.4 | PCS STORAGE FACILITY | 2-3 |
| 3.0 | COLLECTION POND DESCRIPTIONS | 3-1 |
| 3.1 | GENERAL | 3-1 |
| 3.2 | COLLECTION POND CP 1-3 | 3-1 |
| 3.3 | COLLECTION POND CP 1-5 | 3-1 |
| 3.4 | COLLECTION POND CP 2 | 3-1 |
| 3.5 | COLLECTION POND CP 4 | 3-1 |
| 3.6 | COLLECTION POND CP 5 | 3-2 |
| 3.7 | COLLECTION POND CP 7-1 | 3-2 |
| 3.8 | COLLECTION POND CP D7 | 3-2 |
| 3.9 | COLLECTION POND CP 8 | 3-2 |
| 3.10 | TAILINGS POND EXTENSION (TEX) | 3-2 |
| 4.0 | PUMPING FACILITIES | 4-1 |
| 4.1 | PUMP HOUSES | 4-1 |
| 4.2 | PIPELINES | 4-1 |
| 4.3 | ELECTRICAL POWER | 4-1 |
| 5.0 | MONITORING AND CONTROL | 5-1 |
| 5.1 | WZCOM RADIO TELEMETRY MONITORING SYSTEM | 5-1 |
| 5.2 | OPERATION | 5-1 |
| 5.3 | MONITORING SYSTEM DETAILS | 5-2 |
| 5.4 | WATER SAMPLING AND MONITORING DETAILS | 5-3 |

| Noranda Inc. Belt Mine | | Water Management Manual Table of Contents | | Revision No. 11 Date June 24, 1979 | | Page IV |
|---------------------------|--|--|--|--|--|---------|
|---------------------------|--|--|--|--|--|---------|

| TABLE OF CONTENTS (Cont'd) | | Page |
|----------------------------|--|------|
| 6.0 | MAINTENANCE PROCEDURES | 6-1 |
| 6.1 | MECHANICAL | 6-1 |
| 6.1.1 | Diesel Generator Sets | 6-1 |
| 6.1.2 | Collection Pond Pumps | 6-1 |
| 6.1.3 | Barge and Tug | 6-1 |
| 6.2 | ELECTRICAL | 6-1 |
| 6.2.1 | Collection Ponds | 6-1 |
| 6.2.2 | Motor Control Centers, Substations and Power Lines | 6-1 |
| 6.3 | COLLECTION PONDS | 6-2 |
| 6.4 | DIVERSION DITCHES | 6-2 |
| 6.5 | MAINTENANCE SCHEDULE | 6-2 |
| 7.0 | STANDARD OPERATING PROCEDURES | 7-1 |
| 8.0 | TAILINGS DAM OPERATIONS MANUAL | 8-1 |
| 8.1 | TAILINGS IMPOUNDMENT DESCRIPTION | 8-1 |
| 8.2 | SCOPE AND FREQUENCY OF DAM SURVEILLANCE | 8-1 |
| 8.3 | DAM SAFETY INSPECTIONS AND REVIEWS | 8-2 |
| 8.4 | DAM INSTRUMENTATION | 8-3 |
| 9.0 | REFERENCE REPORTS/DOCUMENTS | 9-1 |

| Noranda Inc. Last Name | | Water Management Manual | | Revision | | Page v |
|---------------------------|--|-------------------------|---------------|----------|--|--------|
| Table of Contents | | No. | Date | | | |
| | | 8 | June 25, 1999 | | | |

LIST OF APPENDICES

| | |
|---------------------|--|
| A | Record Sheets |
| B | Collection Pond Data Sheets |
| C | Water Sampling Procedures |
| D | Bed Mine Permits |
| E | Generator Set Operating Guide |
| F | Spare Parts Inventory |
| G | Reference Drawings |
| | 121 1901 Test Hole Locations & Sections |
| | 201 Closure Plan, Reference Plan |
| | 203 Closure Plan, Ditches |
| | 204 Closure Plan, Watersheds |
| | 205 Closure Plan, Pipelines |
| | 220 Tailings Pond NW |
| | 230 Tailings Pond SW |
| | 240 Tailings Pond SE |
| | 250 Tailings Pond NE |
| | 260 A-Frame Dump, Plan |
| | 270 North Dump, Plan |
| | 400 Closure Design, Water Management |
| | 402 Collection Pond CP 1-3, Plan |
| | 403 Collection Pond CP 1-3, Sections |
| | 404 Collection Pond CP 1-5 |
| | 405 Collection Pond CP 2 |
| | 406 Collection Pond, CP TEX |
| | 407 Collection Pond CP 4 |
| | 408 Collection Pond CP 5 |
| | 409 Collection Pond CP 7-1 |
| | 410 Collection Pond CP D7 |
| | 411 Collection Pond CP 8 |
| | 412 Pump Schematic and Construction Details |
| | 413 Air Valve Manhole Details and Embankment and Pond Sections |
| | 414 Pipeline Profiles & Design, CP 1-3, CP 1-5 and CP 2 |
| | 415 Pipeline Profiles & Design, CP 4, CP 5 and CP 7-1 |
| | 416 Pipeline Profiles & Design, CP D7, CP 8 and TEX |
| Electrical Drawings | |
| | BL-E-001 Bell Copper Substation, 138kV Single Line Diagram |
| | BL-E-002 Bell Copper Substation, 4kV Single Line Diagram |
| | BL-E-003 Emergency Power System, Single Line Diagram |
| | BL-E-013 Emergency Power System, Ground Fault Detection, Schematic Diagram |
| H | Water Treatment |

Key Issues in the Manual

- The key design concepts for the seepage collection facilities.
- An outline of the water management strategy for the site for the current and future conditions.
- Brief descriptions of each of the collection ponds in terms of available volume, pumping capacity and other design data.

- A description of the pumphouse facilities including the monitoring and control of these facilities.
- Water monitoring and sampling requirements (i.e., frequency of water sampling and test parameters) for the piezometers, overflow weirs and collection ponds in accordance with PE-1505 (Appendix D).
- Maintenance procedures for the seepage collection facilities, an emergency response plan in case of pump failure, pipeline failure and/or power failure, which include personnel and agencies to be contacted during emergencies.

- Operating procedure for the generator sets.
- An inventory of spare parts and equipment for future reference.
- An operating manual for the tailings dam structures.

The water management system for the mine closure was designed to meet the British Columbia Ministry of Energy, Mines and Petroleum Resources guidelines and regulations. The water management components were designed based on the following criteria:

- Collection ponds were designed to contain the 1 in 200 year flood event resulting from a combined snow melt and rainfall event or a 24 hour rainfall storm event, whichever was the governing. The design storage capacity was based on the above storm event in combination with continuous pumping to the open pit.

- Emergency spillways at the collection ponds were designed to convey the probable maximum flood (PMF) resulting from a 72 hour probable maximum precipitation (PMP) event plus maximum snow event.
- Collection ditches reporting to the ponds were designed for a 1 in 200 year flood based on a 24 hour intensity rainfall event. The collection ditches will require maintenance, for instance, in response to extreme erosion or snow/ice buildup conditions.

- Tailings impoundment can store three (3) PMF volumes simultaneously without overtopping the dam structures. Consequently, the no spillway structure was incorporated into the tailings impoundment because it was shown that the pond water level will drop with time due to lowering of the phreatic line. Furthermore, it has been shown that the pond water level is dropping with time.
- Tailings pond extension was designed as a collection pond system as the tailings area was not fully utilized. As a result, a large reservoir with only a small water surface exists at this site. Furthermore, the pumphouse and pumping rate were designed to handle the PMF volume.

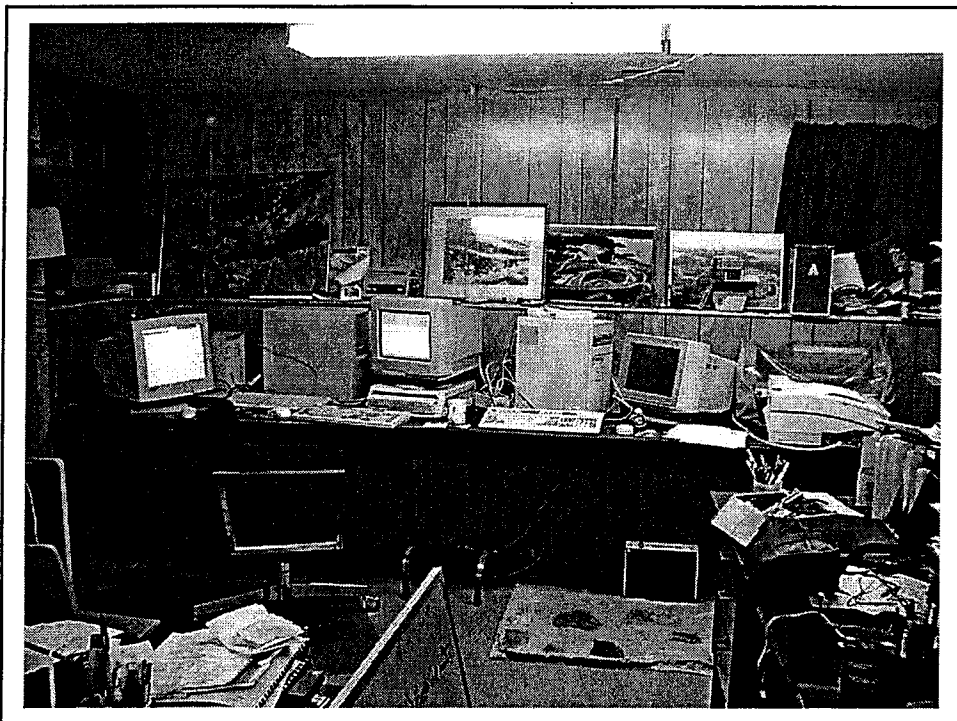
- Open pit was shown to be capable of temporarily storing the contaminated water collected at the collection ponds for a period of about 40 to 50 years before a water treatment plant needs to be installed. The maximum operating water level of the open pit was selected at El. 750 m (2,460 ft) to provide storage for a PMF event.

WIZCOM RADIO TELEMETRY MONITORING SYSTEM

The Wizcom system is a Supervisory Control and Data Acquisition (SCADA) system which gathers information from remote stations and transmits the data to a base station computer for on time reporting, analysis and storage. The radio telemetry equipment features packet switched store-and-forward data transmission technology with advanced error correction coding structures. The central site computer facility utilizes the QNX multi-tasking, multi-user, operating environment specifically developed for IBM compatible personal computers.

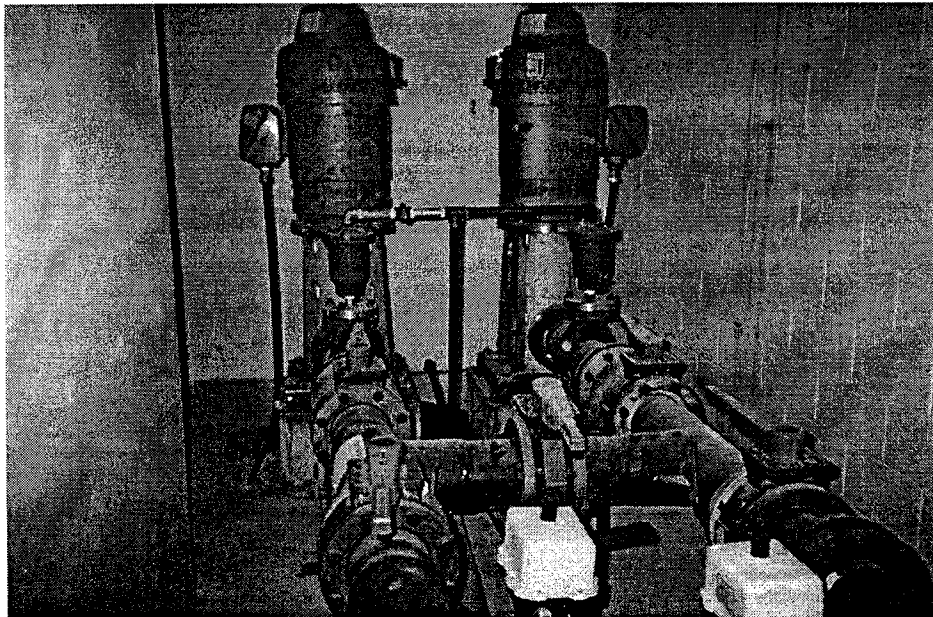


The Bell Mine Monitoring System consists of a Remote Terminal Unit (RTU) at each pump station. These communicate via radio telemetry to the Central Terminal Unit (CTU) at the Security Office. Each RTU has battery back-up power, terminal strip connection for analogue, digital and status devices, data logging memory, a radio telemetry port, and a serial port. The CTU receives information from RTUs and is connected to the base station 386 PC type computer that runs DataCommand software. In addition to data capture, control management, alarm analysis, and network communications, the base station computer provides password protected operator displays and accepts input for interrogations and control actions.



The following information is stored and/or gathered by the RTU at each pump house:

- Pump 1 Status (on, off, or FAIL)
- Pump 2 Status (on, off, or FAIL)
- Pump 1 Switches (hand or auto)
- Pump 2 Switches (hand or auto)
- Reservoir Controller (online or offline)
- Pump 1 Control (online or offline)
- Pump 2 Control (online or offline)
- Water Level (feet)
- Flow Meter (gallons per minute)
- Battery Power (volts)
- Power Status (on, off)



File Last Reported Value
10/6/99 21:06:51 13.20

Noranda Bell Mines SCADA System

Alarms

Reports

Login

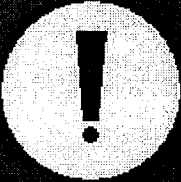
| Site | Pump 1 | Pump 2 | Level | Battery | Alarms |
|------------------------------|--------|--------|-------|---------|------------------------------|
| CP 2 | | | 4.77 | 13.20 | |
| CP 4 | | | 5.17 | 12.44 | |
| CP 5 | | | 6.75 | 12.00 | |
| CP 8 | | | | | |
| CP D7 | | | 2.35 | 12.38 | |
| CP TEX | | | 7.41 | 13.35 | |
| SP 1.3 | | | 4.25 | 12.69 | |
| SP 1.5 | | | 1.75 | 13.18 | |
| SP 3.1 | | | 42.42 | ***** | Reservoir Control is OFFLINE |
| SP 7.1 | | | 1.65 | 13.32 | |
| GM 10 | | | 0.97 | 13.90 | |
| Black Spruce Swamp | | | | | |
| SC 20 - Bear Island | | | | 13.80 | |
| TEX Pond Repeater - #40 | | | | 12.76 | |
| Tailings Pond Repeater - #50 | | | | 12.61 | |
| 18 Km Repeater - #60 | | | | 13.63 | |
| #2 Shop | | | | 13.76 | |
| Townsite CTU #10 | | | | 14.29 | |
| Minesite CTU #20 | | | | 13.38 | |

= Pump Off
 = Pump Running

= Active Alarm (Un-Acked)
 = Ended Alarm (Un-Acked)

Screen updated at: 15:48:57 06/10/99 Current Operator: Rosendab

popup - Unacked : 1



Alarms : 1

Date : 10/06/99

Time : 21:06:51

10/06/99 21:06:51 0 Black Spruce Swamp Battery has risen above 14.25 volts

Clear
Clear All
Relax
Quiet

| ID | Task Name | Due Date | | | | | | | | | | | |
|-----|---------------------------|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| 1 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 2 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 3 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 4 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 5 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 6 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 7 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 8 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 9 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 10 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 11 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 12 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 13 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 14 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 15 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 16 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 17 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 18 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 19 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 20 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 21 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 22 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 23 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 24 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 25 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 26 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 27 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 28 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 29 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 30 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 31 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 32 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 33 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 34 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 35 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 36 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 37 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 38 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 39 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 40 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 41 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 42 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 43 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 44 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 45 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 46 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 47 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 48 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 49 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 50 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 51 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 52 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 53 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 54 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 55 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 56 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 57 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 58 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 59 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 60 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 61 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 62 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 63 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 64 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 65 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 66 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 67 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 68 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 69 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 70 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 71 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 72 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 73 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 74 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 75 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 76 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 77 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 78 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 79 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 80 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 81 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 82 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 83 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 84 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 85 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 86 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 87 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 88 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 89 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 90 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 91 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 92 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 93 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 94 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 95 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 96 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 97 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 98 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 99 | Annual At-Bank Inspection | | | | | | | | | | | | |
| 100 | Annual At-Bank Inspection | | | | | | | | | | | | |

| | | | | | |
|---------------------------|-------------------------------|--|---------------|--|----------|
| Noranda Inc. Belt Mine | Water Management Manual | | Revision | | Page 7-2 |
| | Section 7 | | Rev. 11 | | |
| | Standard Operating Procedures | | June 24, 1999 | | |

**TABLE 7.18
TAILINGS IMPOUNDMENT: EMERGENCY CONDITIONS AND UNUSUAL CONDITIONS
EVALUATION AND RESPONSE**

| Warning Sign/Situation | Actual or Potential Consequences | Action(s) to be Taken |
|---|---|---|
| Failure or suspected impending failure of a dam, slumping, sliding, or bulging of a dam or adjacent ground. Sinkholes observed on tailings beach or on downstream dam slope. | Catastrophic breach and release of pond. Catastrophic breach and release of pond. Indicative of internal erosion, which could progress to the point where dam breach results. | <ul style="list-style-type: none"> Initiate chain of communications. Initiate chain of communications. Initiate chain of communications. Check downstream area of dam for signs of increased and/or turbid leakage discharge. |
| Extreme seepage/sink. | Dam failure, breach and release of pond. | <ul style="list-style-type: none"> Initiate chain of communications. Carry out dam inspection of tailings impoundment. |
| Severe/interior runarounds and rapid snowmelt. | Overtopping and washout of dam, and release of pond. | <ul style="list-style-type: none"> Initiate chain of communications. Carry out dam inspection of tailings impoundment. |
| Rapid, unexplained increase in seepage rate and turbidity from dam slope and/or foundation. | Internal erosion (piping) failure leading to breach and release of pond/dam failure. | <ul style="list-style-type: none"> Initiate chain of communications. Carry out dam inspection of tailings impoundment. |
| Unusually high, one-time reading from a single piezometer. | Possible early warning of seepage conditions. | <ul style="list-style-type: none"> Check piezometer reading. If reading confirmed, check all other piezometers and examine downstream area of dam for changed seepage conditions. |
| Decreased seepage discharge accompanied by gradually increasing piezometer levels. | Possible sign of clogging of internal drainage system of dam. | <ul style="list-style-type: none"> Check chemistry of seepage discharge for any changes relative to the normal. |
| Increased presence of precipitates in seepage discharges from the downstream side of the dam. | Possible sign of clogging of internal drainage system of dam. | <ul style="list-style-type: none"> Check chemistry of seepage discharge for any changes relative to the normal. |

Note: Details of the tailings impoundment are given in Section 5.


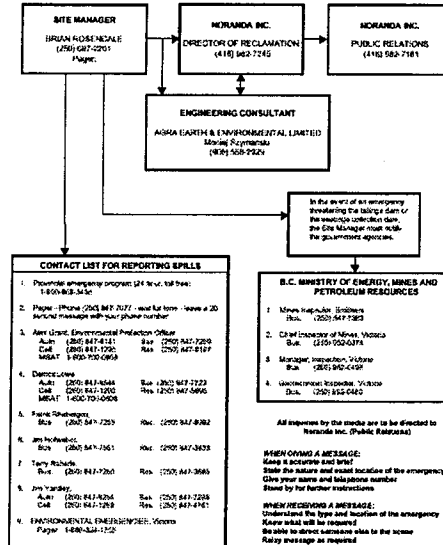
 **AGRA**

FIGURE 7.1
COMMUNICATIONS FLOWCHART
BELL MINE



WATER SAMPLING AND MONITORING DETAILS

CONCLUSIONS

- The 1992 Bell Mine Closure Plan still meets current government guidelines and recommendations for closed mines.
- The onset of acidic conditions are occurring as predicted in 1992.
- Water that is unacceptable for discharge is collected and diverted to the pit.
- The Water Management Manual contains details of all information, equipment, software, and the remote-monitoring system to ensure the water quality of Babine Lake is protected – now and when treatment of pit water begins.