Ontario’s Abandoned Mines Program

Orphaned/Abandoned Mines Workshop
Winnipeg, Manitoba
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Ontario’s Abandoned Mines Program

• Historical Background
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  – mining vital part of Ontario’s development
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  - historical operations met rules of day, but basically non-existent for close-out
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    • accelerate testing and remedial work for high risk areas
    • conduct further research for stabilization of acid mine wastes
    • locate, assess abandoned mines hazards
• Abandoned Mines Inventory
  – Approximately $2 million spent 1991-94
  – Two phased approach
    1. “Desktop” Evaluation of Existing Records
      – focusing on:
        • openings more hazardous than natural topography
        • exploration excavations
        • past producers’ structures, tailings areas, waste piles, equipment and machinery
information collected included

- site name, alternates and location (UTM, Lat. and Long.)
- mine features/dimensions
- hazard type and status/existing protection
- inspections/recommended action

- 18,000 records searched from which 6000 sites and 16,000 features identified
- each site provided a unique numerical identifier and entered into database (AMIS)
- coordinated with MDI system
2. Assessment of Identified hazards

– consultants engaged to review in stages and by Residents District Boundaries.
– confirmed entered data as well as collecting/providing
  • site photos and video
  • location maps
  • recommendations for remedial measures and cost estimates
  • updated AMIS database
  • hazard rating assessment
– inventory program was able to assess approximately 1/3 of the sites 1991-93 at a cost of $900 per site.
– gross cost estimates were approximately $300 million with 30-40% identified as crown held.
– fund was discontinued in late 1994 as a part of general cost cutting measures, but AMIS lives on
# Abandoned Mines Report

<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site Name</th>
<th>OBM Map</th>
<th>Date Opened</th>
<th>Date Closed</th>
</tr>
</thead>
<tbody>
<tr>
<td>63420</td>
<td>NERLIP</td>
<td>760325</td>
<td></td>
<td>Friday, December 01, 1944</td>
</tr>
</tbody>
</table>

## Operational Access

<table>
<thead>
<tr>
<th>Access</th>
<th>Plans</th>
<th>MDI #</th>
<th>NTS</th>
<th>UTM Zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL WEATHER ROAD</td>
<td>Y</td>
<td>T0198</td>
<td>31M65NE</td>
<td>17</td>
</tr>
</tbody>
</table>

## Division

<table>
<thead>
<tr>
<th>Township</th>
<th>Lot</th>
<th>Concession</th>
<th>District File #</th>
</tr>
</thead>
<tbody>
<tr>
<td>COBALT</td>
<td>2</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>COLEMAN</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Northing</th>
<th>Easting</th>
<th>Latitude</th>
<th>Longitude</th>
<th>NTS Zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>525095</td>
<td>601715</td>
<td>47.3989</td>
<td>79.6528</td>
<td>17</td>
</tr>
</tbody>
</table>

## Background Information

*PAST PRODUCER WITH ONE SHAFT*

## Alternate Names

NERLIP

## Features (Dimensions in Metres)

### Mine Feature

<table>
<thead>
<tr>
<th>Feature</th>
<th>Shaft Collar</th>
<th>Depth</th>
<th>Width</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHAFT - 2 COMPARTMENT</td>
<td>UNKNOWN</td>
<td>232</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>LATERAL WORKINGS</td>
<td><em>NOT APPLICABLE</em></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TAILINGS</td>
<td><em>NOT APPLICABLE</em></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TRENCH OR PIT</td>
<td><em>NOT APPLICABLE</em></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>WINZE</td>
<td><em>NOT APPLICABLE</em></td>
<td>44</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

## Known Hazards

<table>
<thead>
<tr>
<th>ID No.</th>
<th>Rank</th>
<th>Rating</th>
<th>Status</th>
<th>Hazard Type</th>
<th>Existing Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>S01</td>
<td>0</td>
<td>0</td>
<td>C</td>
<td>SHAFT - 2 COMPARTMENT</td>
<td>CAP CONCRETE FIXED</td>
</tr>
<tr>
<td>W01</td>
<td>0</td>
<td>0</td>
<td>A</td>
<td>WASTE ROCK DUMP</td>
<td>NO PROTECTION EVIDENT</td>
</tr>
<tr>
<td>T01</td>
<td>0</td>
<td>0</td>
<td>A</td>
<td>TRENCH OR PIT</td>
<td>FELLED SAND</td>
</tr>
</tbody>
</table>

## Hazard Action

<table>
<thead>
<tr>
<th>Action ID</th>
<th>Action Name</th>
<th>Date Completed</th>
<th>Performed By</th>
</tr>
</thead>
<tbody>
<tr>
<td>S0101</td>
<td>CAP CONCRETE FIXED</td>
<td>Sunday, December 01, 1985</td>
<td></td>
</tr>
<tr>
<td>T0101</td>
<td>FILL SAND</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Inspection

<table>
<thead>
<tr>
<th>ID No</th>
<th>Inspector Name</th>
<th>Last Inspected</th>
</tr>
</thead>
</table>

## References

<table>
<thead>
<tr>
<th>Reference Type</th>
<th>Description</th>
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</thead>
</table>
• Hazard Rating System
  – developed by MNDM through Laurentian University
  – subject of several papers presented at several conferences mid-90’s
  – objective to assist in directing resources
– considers both technical and socio-economic factors using “Expert System”
  • each feature scored for public safety, health, environment and economic and social factors for risk, magnitude (along with exposure for health and safety) criteria
  • pairwise comparison method and measure of consistency of experts judgement used to develop conceptual model and relative weights for the criteria and factors
• rating values are an integration of inspectors scores and weights from expert system
• heaviest weightings favour public health and safety
ratings were applied to those sites assessed in 92/93. Results indicated one contractor consistently scored features higher resulting in skewed ratings for one particular area.

- priority listing is of limited value currently until all sites have been assessed and rating system applied.

- the system has considerable merit and expect to complete its application late this year.
• **Current Program**
  – $27 million provided late ‘99 over 4 years
  – includes
    • capital works and specific engineering studies
    • completion of site assessments
    • provision of AMIS stored data to general public
      – note AMIS, in addition to electronically stored data contains significant information in hardcopy
completed year 2 of program with total expenditures of $7 million. Major projects include:

- Coldstream Copper
- Caland Mine
- Zenmac
- Hollinger/McIntyre
- Kam Kotia
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  - By year end will have completed and entered field assessment data for the approximate 6000 sites and 19,000 features
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  – **AMHAX will be applied to all sites**
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