

APPENDIX C

MINE CLOSURE PLAN



Science, Technology, Energy and Mines

Mines Branch

Unit 360, 1395 Ellice Avenue, Winnipeg, Manitoba R3G 3P2

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www.gov.mb.ca/minerals

October 22, 2009

Mr. Tom Hilliard
Tanco
Box 2000
Lac du Bonnet MB R0A 1L0

Dear Mr. Hilliard:

RE: Tanco Mine Closure Plan (Revision 4)

This letter confirms that Mines Branch received Tanco Mine Closure Plan (Revision 4) dated September 25, 2008. Since then, it has been reviewed by the regulatory authorities, and comments were discussed at our July 2009 meeting when I was at the Mine site.

Your submission satisfies The Manitoba Mine Closure Regulation MR 67/99. Also, by submitting the Closure Plan (Rev 4), Tanco is in compliance with The Mines and Mineral Act M162, clause 111(1) c.

The submission addresses well the outstanding issues from the previous revision. The Closure Plan (Rev. 4) was reviewed by provincial and federal regulatory agencies, enclosed are comments received from Department of Water Stewardship that were discussed during our meeting. We suggest that you contact them directly to have an understanding on what is needed in order to address their comments. Mines Branch needs to be informed in writing if there are changes made to the Mine Closure Plan (Revision 4) as a result of these comments.

It is understood from Section 4.4 - Mine Process; that the expected life of the mine, from October 1, 2008 is approximately 10 years, based on current reserves and mining levels.

Mines Branch accepts the estimated closure cost submitted. At the present time financial assurance is required in accordance with the Financial Guideline enclosed. Mines Branch requires Tanco to provide installments of financial assurance as per the table attached.

.../2

As per Mines Mineral Act M162, Part 14 clause 189, progressive rehabilitation is required to be undertaken. Mines Branch will need to be annually informed on the projects of this nature undertaken at the mine site. A full revision of the Closure Plan is required by March 31, 2013.

Please do not hesitate to contact me if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. Priscu', with a stylized flourish at the end.

Doina Priscu, P.Eng.
Chief Mining Engineer

Encl.:

Schedule for Financial Assurance Table
Memorandum WSD
Mine Closure Guideline Financial Assurance

SCHEDULE FOR FINANCIAL ASSURANCE TO BE PROVIDED

Tanco Mine

Mine Closure Cost = \$2,240,300.00

Year	Years to Closure	Percentage (%)	Amount (\$)	Due Date
2008-2009	10	-	-	-
2009-2010	9	26.5	593,679.50	March 31, 2010
2010-2011	8	22.5	504,067.50	March 31, 2011
2011-2012	7	17.7	396,533.10	March 31, 2012
2012-2013	6	16.3	365,168.90	March 31, 2013
2013-2014	5	9.5	212,828.50	March 31, 2014
2014-2015	4	5.5	123,216.50	March 31, 2015
2015-2016	3	2	44,806.00	March 31, 2016
2016-2017	2	-	-	-
2017-2018	1	-	-	-
2018	CLOSED	100	2,240,300.00	



Tantalum Mining Corporation of Canada Limited

A CABOT CORPORATION COMPANY
Box 2000, Lac du Bonnet, MB R0E 1A0

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September 25, 2008

Manitoba Science, Technology, Energy and Mines - Mines Branch
Unit 360 - 1395 Ellice Avenue
Winnipeg, Manitoba R3G 3P2

Attention: Ms. Doina Priscu, P.Eng., M.Eng (Chief Mining Engineer)

Re: TANCO Mine Closure Plan, Revision 4

Dear Ms. Priscu,

Please find attached Tantalum Mining Corporation of Canada's revised Mine Closure Plan (Revision 4).

In response to your letter dated November 21, 2007, please reference the following:

1. General

- a) We have made an effort to include referenced reports or summaries in the Appendices. It is hoped that this will provide the background needed to understand the references included in the closure plan.

2. Part 4 – Current Property Configuration

- a) The daily production rate and estimated mine life have been added to section 4.4, Mining Process, as per M.R. 67/99, Section 9 (k) and (l).
- b) Section 4.4, Mining Process, has been revised to reflect the section title and remove misunderstanding.

3. Part 5 – Tailings Management Area

- a) Estimates of the quantities of tailings are included in Sections 5.1.1 and 5.1.2.
- b) An general description of the tailings composition is included in Section 5.1.
- c) There are no identified areas of seepage or potential seepage through the dams. However, the large quantity of monitoring wells in the inactive TMA is designed to determine flow direction and rate within the inactive TMA. This will give Tanco an idea of any potential seepage areas and direction of flow. Results of this monitoring will be compiled and reviewed as it is completed, and potential seepage areas will be reported in future revisions of the closure plan. The dams in the active TMA are monitored visually for potential seepage, with no areas detected as of the date of this plan revision.
- d) See item c)
- e) Tailings pond effluent quality test results have been compiled and are mentioned in Section 5.1.2 and included in Appendix F.
- f) Results of acid-base accounting testing done in 1992 are included in Appendix E ,and referred to in Section 5.1.

4. Part 8 – Property Management Plans

- a) Section 8.1 – Wash Bay Sump Effluent: an update of the Wash Bay Sump Effluent investigation is included in Section 8.1.1.
- b) Section 8.1.3 – Continued Revegetation of the Inactive Tailings Disposal Area: In 2008, a study was begun to quantify the revegetation characteristics of the active and inactive TMA, plus the cesium byproduct dry stacked material. Results are discussed in Section 8.1.3 and a copy of the preliminary report included in Appendix H.
- c) Section 8.2 – Environmental Monitoring: The environmental monitoring requirements have been discussed with Tanco's environmental consultant and a revised schedule included in the closure plan. An estimate of monitoring costs are also included in the cost estimate (Appendix I). Monitoring estimates are just that: an estimate. Any variation from the estimate will be dealt with at the time in the future that it occurs.

Revegetation monitoring will be completed according to the conclusions of the revegetation study.

5. Part 9 – Rehabilitation and Reclamation

- a) Section 9.1.3 – Water Management: Information has been added to more fully define Tanco's plans for the causeway/culvery removal. A defined plan has not been developed; this will be done nearer to the time that the mine closes, in consultation with the appropriate government agencies.
- b) Section 9.2 – An expanded description of the plans for the shaft and raises and the stability of the crown pillar is included in Section 9.2.1.
- c) Section 9.2.3 – Tanco's plans regarding concrete foundations has been updated in Section 9.2.3

6. Part 10 – Proposed Costs

Updated costs are included in Appendix I. There has been a significant increase in the total cost, partially for inflation and mainly for environmental monitoring.

- a) Periodic inspection of dams and dykes: included in "Miscellaneous Engineering"
- b) Water quality monitoring - Added to costs under "Environmental Monitoring"
- c) Environmental Effects monitoring - Added to costs under Environmental Monitoring"
- d) Disposal of Hazardous materials – Tanco currently has a contractor who collects hazardous materials on a regular basis. No amount was given in the closure plan as it is currently expected that the materials will be disposed of in this manner as part of regular operations, and that the remaining materials after notification of closure will be too insignificant to include in costing estimates.
- e) Demolition of the headframe was included in the Mill demolition costs.

7. Part 11 – Environmental Monitoring Schedule

- a) The environmental monitoring schedule has been clarified, and costs added to reflect Tanco's obligations for federal and provincial monitoring.

8. Covering Letter Item 14(c)

- a) The covering letter of September 9, 2004 refers to the waste disposal ground, which had been in use from 1968 until it's closure in 2007. It has now been converted into a transfer station, with all waste collected in bins and subsequently shipped off site.

The reference to a bedrock basin refers to the fact that the waste disposal site had been constructed on bedrock initially, and the only drainage direction is into the active TMA. Any groundwater contamination will flow into the TMA, from whence the only point of discharge is into Bernic Lake. Current effluent quality monitoring would also be measuring any detectable contamination from the waste disposal site.

Tantalum Mining Corporation of Canada Ltd.

9. Appendix D

All drawings in Appendix D have been converted into portable document format (pdf) for easy review. Also, paper copies of all drawings are included with the submitted revision.

Please do not hesitate to call if you have any questions.

Yours truly,
Tantalum Mining Corporation of Canada Ltd.

A handwritten signature in black ink, appearing to read 'H. Landry', with a large, sweeping flourish at the end.

Henry Landry
General Manager

Copies: Bart Bakke
Tom Hilliard, P.Eng.
Colleen Bugslag
Peter Lussier
Mike Enns, P.Eng

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APPENDICES

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Appendix C	-	Site History
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Appendix F	-	Mine effluent averages 1997-2007
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Appendix I	-	Project Cost Breakdown & Estimates
Appendix J	-	Project Schedule

1. GENERAL

1.1 Acknowledgements

The following plant personnel should be acknowledged for their contribution in preparing and / or gathering information for, this mine closure plan (in alphabetical order):

Henry Landry.....	General Manager
Peter Lussier.....	Surface Superintendent
Michael Enns, P.Eng.....	Projects Manager
Stephen Young.....	Mill Superintendent
Susan Appleyard.....	Environmental Coordinator
Thomas Hilliard, P.Eng.....	Technical Services Manager
Many other staff and hourly personnel	

1.2 Referencing to Mine Closure Regulation

The Tanco Mine Closure Plan has been cross-referenced with the Mine Closure Regulation for ease of referencing.
Refer to Appendix A - Closure Plan / Mine Closure Regulation Cross-Reference Index, for further details.

2. INTRODUCTION

2.1 Operator Name and Address

Operator Name: Tantalum Mining Corporation of Canada Ltd.
(hereafter referred to as TANCO)
Address: P.O. Box 2000
Lac du Bonnet
Manitoba R0E 1A0
Canada

2.2 Name of Project

- Project Name: Bernic Lake Mine



2.3 Legal Description of Project Site

- The legal description of the project site is, “In the Winnipeg Mining District and being all that portion of the Southeast quarter of Section Fifteen in Township Seventeen, in Range Fifteen East of the Principal Meridian in Manitoba”.

2.4 Closure Plan Contact

- Contact Person: Henry Landry
General Manager
- Address: As per Section 1.1
- Telephone No.: (204) 884 2400 ext. 201
- Facsimile No.: (204) 884 2211
- Email Address: henry_landry@cabot-corp.com

3. SITE DESCRIPTION

3.1 Surface Rights / Mineral Rights / Mining Claims

3.1.1 Surface Rights

Tanco currently holds 13 surface leases.

Surface lease numbers are as follows:

- M-126 to M-130, inclusive (dated April 2nd, 1968)
- M-145 to M-149, inclusive (dated April 7th, 1971)
- SL-1 (dated September 8, 1992)
- SL-3 (dated October 16, 1995)
- SL-11 (dated August 20, 2008)

3.1.2 Mineral Rights

Tanco currently holds 3 mineral leases.

Mineral lease numbers are as follows:

- ML-04 to ML-06, inclusive (dated April 1st, 1992)

Refer to Appendix B – Lease Details, for further information.

3.1.3 Mining Claims Held by Tanco

Tanco currently holds numerous mining claims.

Refer to Appendix B – Lease Details, for the mining claims held by Tanco as of September 30, 2008

Updated information is available through the Manitoba Mining Recorder's Office.



3.1.4 Mining Claims Held by Coltan Mines Ltd.

Coltan Mines Ltd. is a subsidiary of Tanco.
Coltan is fully administered by Tanco.
Coltan currently holds four (4) mining claims.
Refer to Appendix B – Lease Details, for the mining claims held by Coltan as of September 30, 2008
Updated information is available through the Manitoba Mining Recorder's Office.

3.2 TANCO History

3.2.1 Bernic Lake Mine Site

- The use and ownership of the mine site has varied from the initial staked claims by Jack Nutt Mines in 1928.
- The mine currently produces spodumene (Li_2O), tantalum (Ta_2O_5) and pollucite (Cs_2O) ores.
- The spodumene and tantalum concentrates are sold as a raw material with the pollucite ore being processed (on site) into various cesium products.
- Refer to Appendix C - Site History, for further details.

3.2.2 Molson Facility

- The Molson Facility is located on the Canadian Pacific Limited (CP) main line.
- The legal description of the Molson site is, "Part of the W ½ Section 21, Township 12, Range 9, EPM".
- The facility is used for transporting spodumene concentrate to customers via rail or truck.
- The property is currently leased from CP Rail with ownership of the building belonging to TANCO.
- Upon surrender of the CP premises, TANCO will return the site to conditions acceptable to CP under Article 8.04 of the Lease Agreement.

3.3 Pre-Existing Site Impacts

- There are no known previous disturbances or other activities which have, or could have, resulted in contamination of the project site or land adjoining the site



4. CURRENT PROPERTY CONFIGURATION

4.1 Site Conditions and Activities

TANCO is a currently operating mining facility, using underground mining methods, milling and ore processing operations as described below.

4.1.1 Mine

- The following methods of mining are used by TANCO.
 - Room and Pillar
 - Initial pass - conventional drift round
 - Second pass - arch and slash to stope width
 - Further development - benching
 - Selected sill and pillar reduction within the Room-and-Pillar mining plan is carried out using longhole mining methods
- See the drawing titled “Mine Inspectorate” in Appendix D – Drawings, for a layout of the underground mine.
- TANCO is currently mining spodumene and tantalum ores for processing in the mill (refer to sub-section 4.1.2 for further details).
- Pollucite ore is mined for the purpose of producing cesium formate and other cesium chemicals in the Chemical Plant.
- Refer to Section 6 for further details regarding the mine development.

4.1.2 Mill and Dry Grinding Plant

- The tantalum and spodumene concentrates are processed in the mill facility via a combination of various processes (i.e. industrial mineral flotation, heavy media separation, magnetic separation, and gravity separation).
- The dry grinding plant processes the pollucite ore to a mesh size suitable for use in the Chemical Plant.

4.1.3 Cesium Products Facility (“Chemical Plant”)

- The Chemical Plant is capable of producing a cesium brine for use as a drilling and completion fluid in the oil industry. The plant also produces cesium compounds that are used in various other chemical industries.



4.2 Security

- Access to site is via a single, gravel road from Provincial Highway 315 (i.e. Tanco Road).
- A security service is maintained at the main entrance to the mine site.
- All Tanco personnel check on and off the site using an electronic swipe card system which records their time entering and leaving the site. All Contractors and visitors must sign in at the security building before entering the site.
- The access roads to the tailings disposal area are located approximately 1 km and 2.5 km northeast respectively, from the security building off Tanco Road.
- Access to the tailings disposal area roads is restricted via a locked chain barricade situated across each of the roads.
- The access road to the Project's waste transfer station is locked with a chain barricade.
- Access to the powder magazine is through the site security service. In addition, the entrance road to the powder magazine is locked with a chain barricade. The powder magazine is also monitored 24 hours per day by Security using an IP security camera.
- Refer to Drawing No. Tanco#2 in Appendix D – Drawings, for the location of the security building and security gates.

4.3 Equipment Description – Surface and Underground

- A wide variety of equipment is located on site. A general listing of equipment is shown below.

Underground / Mine Equipment	
Rock Breakers	Twin Boom Drill Jumbos
Aerial Lift Devices	Longhole Drill Jumbo
Load Haul Dump Units	26 Ton Trucks
Locomotives	Service / Man Carrier Vehicles
Mine Hoist	Ventilation fans (surface & underground)

Mill and Dry Grinding Plant Equipment	
Ball Mills	Compressors
Conveyors	Process Tanks
Screens	Flotation Cells
Crushers	Material Storage Bins



Dust Collectors	Pumps
Ventilation Fans	Hydrosizers

Chemical Plant Equipment	
Process Tanks	Heat Exchangers
Evaporators	Agitators
Conveyors (Belt and Screw)	Belt Filter
Boiler	Material Storage Bins
Pumps	Ventilation Fans

Miscellaneous Equipment	
Electrical Transformers	Motor Control Centres
Various Site Vehicles	

- Refer to Drawing No. Tanco#2 in Appendix D, for the area locations associated with the aforementioned equipment.

4.4 Mining Process

- Mining and milling processes to be employed during the life of the project are as described in section 4.1
- Planned mining production levels are at approximately 750 tonnes per mine operating day. Milling production levels are approximately 900 tonnes per mill operating day.
- The expected remaining life of the project, from October 1, 2008 is approximately 10 years, based on current reserves and mining levels.



5. TAILINGS MANAGEMENT AREAS

5.1 Tailings Disposal Area

- The tailings disposal area comprises of an eastern portion (inactive) and a western portion (active).
- The general composition of the tailings is a combination of tantalum and spodumene gangue consisting of various feldspars, quartz, amphiboles, gabbro, unrecovered tantalum and lithium minerals, and other minor pegmatite minerals. There is an insignificant amount of sulphide-containing material in the rock: in a 1992 study of ore samples, the pegmatite was found to be acid-consuming rather than acid-producing. (Appendix E)
- Refer to Drawing No. Tanco#1 in Appendix D, for the plan view of the tailings disposal area.

5.1.1 Inactive Area

- The southern portion of the tailings disposal area was active between 1969 and 1991.
- The estimated size of the inactive area is 32 hectares, and the estimated quantity of material deposited during the time the area was active is approximately 3,000,000 tonnes.
- Excavated material from the Process-Byproduct Cells (refer to Section 5.2) has been deposited in the northern area of the inactive tailings management area, as shown in Appendix D. It is expected that the material will be reprocessed in the Chemical Plant upon completion of new process development activities, and a benign tailings produced.
- The estimated quantity of cesium residue material deposited on top of the old tailings is approximately 300,000 cubic metres to date. Estimated amount at mine closure based on current reserves and mining rates is approximately 600,000 cubic metres. The reprocessing method mentioned above is expected to either significantly impact this estimate or eliminate the residue entirely.

5.1.1.1 Wash Bay Sump Effluent

- There exists (potentially) a contaminated area within the inactive area.
- The area resulted from the discharge of the Maintenance Shop wash bay sump effluent over a period of five (5) years.
- Discharge of the sump effluent into the inactive portion of the TMA ended in the early 1990's.
- Refer to sub-section 8.1.1 for the progressive rehabilitation plan for the areas such as described above.



5.1.2 Active Area

- The northern portion of the tailings disposal area has been active since 1991.
- Estimated quantity of material deposited in the active area since 1991 is approximately 3,000,000 tonnes.
- An embankment (separator dike) was constructed (in 1993) north of the polishing pond (established in 1985) allowing tailings to be deposited in an area north of this location (i.e. the primary settling area).
- Effluent discharges from the primary settling area to the polishing pond are controlled via a concrete weir that is built into the separator dike.
- The estimated size of the active area (including the polishing pond) at the end of the mine life is 40 hectares, containing approximately 6,000,000 tonnes of tailings at the current mining levels.
- TMA effluent quality is measured several times per year, and the data is included in an annual report submitted to Environment Canada. A summary of the annual results of testing from 1997 to 2007 are included in Appendix F.

5.2 Process-Byproduct Cells

- Two (2) process-byproduct cells are located in the inactive portion of the TMA. Refer to Drawing No. Tanco#1 in Appendix D, for a plan view of the cells' locations.
- Process Description:
 - The solid byproducts from the Chemical Plant are slurried in the plant and pumped into the double lined, containment cell.
 - The containment cell retains the slurry, allowing the suspended solids and liquid (the decant) to separate via a settlement process. The decant is pumped back to the Chemical Plant for use in the process whilst the solids remain in the cell
- Cell #1 and Cell #2 are alternately used for solids containment from Chemical Plant. Once a cell is full of solids, the remaining water is decanted and pumped back to the Chemical Plant to be used in the process. The remaining solids are then removed from the cell and placed into the inactive TMA. All work is performed in accordance with Notices of Alteration as issued by Manitoba Conservation.
- Cell #1 volume: 54,600 m³
- Cell #2 volume: 98,500 m³
- Refer to Drawing No.'s 08-C-003 to 08-C-005 in Appendix D, for the typical construction details of the waste containment cells.

5.3 Treatment Systems

- Approximately 2 to 3 ppm of coagulant is added to the tailings to promote settling.

5.4 Dams and Control Structures

There currently exist various dams, which are associated with both the active and inactive tailings disposal areas.

Refer to Drawing No. Tanco#1 in Appendix D, for the locations of the dams.

5.5 Watercourses

There is a concrete causeway (culvert) that traverses the Bird River.

The causeway is an integral part of the main access road (as described in subsection 4.2)

The causeway was built to conform to all applicable codes and regulations at the time of its construction.

6. MINE DEVELOPMENT

6.1 Crown Pillars / Mine Openings

- Refer to the drawing titled "Mine Inspectorate" in Appendix D for the locations of the mine openings.

6.1.1 Crown Pillar

- A minimum horizontal beam of 50 feet is required, extending from surface, or lake bottom, to any potential workings. The factor of safety versus calculated required thickness is 3.3.
- One exception exists – The roof in the 10-SR area extends into the crown pillar with a remaining pillar beam of 43 feet. This leaves a factor of safety of 2.9
- This occurred in 1985 when mining along the lower boundary of the crown pillar. The roof spalled until a natural arch was formed, the area was bolted, strapped and grouted. The back has since been visually monitored with no changes noted.

6.1.2 Mine Openings

- There are four (4) mine openings, as follows:
 - One (1) main ramp portal
 - One (1) shaft
 - Two (2) ventilation raises

6.2 Stability of Surface Areas

- The current layout of pillars, taking into account their sizes and strengths, and thickness of the crown pillar, indicates that there will be no long-term stability issues with respect to overlying surface areas. This is true of the areas both under the land and beneath the lake.

6.3 Future Developments

- No future developments that will cause disturbances or hazards to the project site, or land adjoining the site, are planned at present.

6.4 Waste Rock

Small quantities of waste rock are stockpiled near the “hill”, north of the parking lot.

The quantity of rock is less than 5,000 tonnes.

The potential for any leachate from this rock is extremely low due to low concentrations of sulfide minerals (Appendix E)

7. HAZARDOUS MATERIALS MANAGEMENT

7.1 Site Locations

- Refer to Drawing No.s Tanco#1 and Tanco#2 in Appendix D for locations of material storage as described in sub-sections 7.2 to 7.5.

7.2 Waste Transfer Station

The waste transfer station (WTS) is located approximately 1.5 km east of the mine and had been in operation as a waste disposal ground since 1968. In 2007, the site's use as a waste disposal ground was discontinued, and it is now used as a collection area for waste, which is then transported off site to a licensed facility.



Two bins are located at the WTS. One bin is used for the collection of rubber (such as V-belts, rubber skirting, tires etc. The second bin is used for general garbage and lunchroom waste.

The general garbage bin is collected by a contractor approximately every two weeks and transported to a landfill off site. The bin for rubber is collected quarterly.

Geological data pertaining to the WDG include:

- WDG is underlain by clay and glacial till from 0 to 15 m thick over granite bedrock
- Few aquifers are located in the area which were confined to gravel and sand lenses in or below the till and fracture zones in the bedrock.
- No wells in the vicinity.
- An assessment by Manitoba Water Resources Branch stated that the potential for aquifer pollution by dump leachates was low.

7.3 Petroleum Products

7.3.1 Buried Storage Tanks

All buried fuel storage tanks were removed from the site on May 29, 2001. Manitoba Conservation has stated that no further site monitoring, based on the soil sample tests (Appendix G), would be required in the tank removal area (La Rue-van Es, Manitoba Conservation, 17 Sept 2001). (Appendix G)

7.3.2 Used Oil Storage Facility

An oil storage facility is located inside the northern boundary of the warehouse storage compound.

Typical materials stored in the facility include new and used oil and oil sludge.

New oil (in drums) is also stored in the warehouse storage compound.

7.3.3 Wash Bay Sump

The wash bay sump is located in the Maintenance Shop and is used to collect shop spillage (generally limited to wash water and oils).

The shop spillage is collected in the sump and separated with an oil / water separator. The oils are collected in drums and shipped off site for recycling. The water is discharged into the tailings disposal area.

7.3.4 Aboveground Storage Tanks

- Two double wall contained storage tanks are installed at the Tanco facility.



The capacity of the diesel tank is 10,000 litres and the capacity of the gasoline tank is 4,500 litres.

7.4 Hazardous Chemicals

Various chemicals are stored on-site in accordance with the applicable standards, codes and / or regulations.

7.5 Sewage Systems

There exist two (2) sewage ejector systems: one system services the facility's main office; the other system services the mill and mine dry buildings.

Both ejector systems operate as per the following process:

- Sewage from the system's service area drains into a septic tank
- The liquid effluent is decanted within the tank, leaving solid effluent in the tank
- The liquid effluent is pumped in to a designated gray water area
- The solid effluent is periodically pumped out of the tank by local septic tank cleanout contractors."

The gray water area for the main office sewage system is located immediately north of the main office complex. The gray water area for the mill / mine dry sewage system is approximately 200 metres from the security building and adjacent to the west side of the existing tailings line.

8. PROPERTY MANAGEMENT PLAN

8.1 Progressive Rehabilitation

8.1.1 Wash Bay Sump Effluent

An environmental review of the area described in sub-section 5.1.1.1 found that the effluent from the wash bay was dumped over a wide area within the inactive TMA, as opposed to a single location.

In 2008, a number of new groundwater monitoring wells were added to those already existing in Tanco's inactive TMA. This area will be assessed as part of the expanded groundwater monitoring program.

If required, a remediation plan will be developed and the details included in future revisions of this closure plan.

8.1.2 Removal of Buried Petroleum Storage Tanks

The buried fuel storage tanks were removed from service (see Section 7.3.1) and replaced with aboveground, double wall, storage tanks (see Section 7.3.4).



8.1.3 Re-Vegetation of the Inactive Tailings Disposal Area

In 2008, a revegetation study was commenced to quantify the revegetation potential for the TMA.

The preliminary results of the study show that, in the mine tailings, natural revegetation provides rapid and adequate plant cover after cessation of tailings placement (89% after one year). Native trees established in older (eight plus years) plant communities within the tailing area indicate long term ecosystem restoration.

There are no plans to interfere with the continued natural re-vegetation of this area. Refer to Appendix H for a copy of the report, entitled "Preliminary Report: Initial Revegetation Study of the TANCO Mine Tailings" (Wardrop, 2008)

8.1.4 Process-Byproduct Cells

It is anticipated that through the Pollution Prevention (P2) Initiative (between TANCO and Manitoba Environment) that a new process will allow for the re-treatment of the cell contents.

Such a process will leave the cells devoid of material at the end of the mine life.

Based on the previous statement, the following procedure will be used to decommission the cells:

- Holes will be cut in the liners to allow drainage of future water accumulation in the cells due to precipitation.
 - Cover the exposed geomembrane with tailings.
- Allow natural re-vegetation of the tailings as outlined in sub-section 8.1.3.

8.1.5 Removal of Aboveground Storage Tanks

- The tanks will be disposed of in compliance with "Manitoba Conservation: A Guideline for the Dismantling and Removal of Underground and Aboveground Petroleum Storage Tank Systems in Manitoba".
- If contaminated solid is discovered during the removal of the tanks, the soil will be excavated and remediated in accordance with "Manitoba Environment Guideline 96-05, Treatment and Disposal of Petroleum Contaminated Soil".

8.2 Environmental Monitoring

- Water quality monitoring will be performed during the decommissioning of the mine, as per the Metal Mining Effluent Regulations (MMER) (SOR/2002-222). The MMER monitoring will continue for 3 years after notification of closure, at which time the monitoring will revert to meet Manitoba Water Quality Standards, Objectives and Guidelines (MWQSOG) for the following 3 years.
- Tanco will in the event of non-compliant liquid discharge from the tailings pond following closure, undertake to rectify the situation in compliance with the Metal Mining Effluent Regulation.
- Monitoring of the revegetation trials for the Cesium Products Facility (CPF) Residue Stockpile, will be completed in accordance with the conclusions of the revegetation study (Appendix H)

8.3 Audit

- The General Manager (at the time of the mine closure) will designate a Project Leader to implement, evaluate and verify compliance with the plan for the life of the project and at each stage of closure.
- The Project Leader will be responsible for submitting all reports associated with the mine closure to the Department of Energy and Mines.

8.4 Closure Conditions

- At project closure, it is anticipated that the mine area will revert back to Crown Land.
- The mine site will be left in a state compatible with the surrounding natural environment, and in accordance with the plans outlined in this closure plan.

9. REHABILITATION AND RECLAMATION

9.1 Tailings Management Areas

9.1.1 Active Tailings Disposal Areas

The following procedure will be used to decommission the tailings disposal areas:



- Drain water off.
 - Allow top surface of the tailings to dry.
- Grade tailings to surrounding topography.
Establish watersheds.

If the Cesium Process by-product cells have not been fully decommissioned at the end of mine life, then they will be dealt with as per Section 8.1.4

Refer to sub-section 9.1.3 for dam decommissioning plans.

Allow re-vegetation of the tailings as outlined in sub-section 8.1.3.

It should be noted that the potential for any acid leachate from the tailings is extremely low due to very low concentrations of sulfide minerals (refer to section 5.1).

9.1.2 *Dams and Control Structures*

All stable dams will remain intact. All non-stable dams, if any, will be demolished to blend into the surrounding topography.

The control structures in the main dam and the polishing pond will be fully opened to allow for water bodies to equalize and to allow for drainage of water from the main settling area (as described in sub-section 9.1.1).

9.1.3 *Water Management*

- Unless directed otherwise by regulatory agencies, the causeway/culvert at the Bird River crossing will be removed at the end of the project.
- The removal of the causeway will be completed so as to return the Bird River to its former contour as closely as possible. The shoreline, where it has been altered by road construction, will be established to a self-maintaining form, with the aim of preventing un-natural erosion into the river.
- The causeway will be removed in compliance with the Department of Fisheries and Oceans' Regulations.

9.2 **Mine Site**

9.2.1 *Crown Pillars / Mine Openings*

- As the crown pillar is stable, no monitoring or stabilization work is planned as part of the mine closure (refer to section 6.2).
- All vertical mine openings (mine shaft and 2 ventilation raises) will be capped with engineered concrete plugs, and the mine portal entrance



will be filled with mine waste materials, as per W120 - The Workplace Safety and Health Act, M.R. 228/94, Sub-Section 19 (3).

9.2.2 Stopes

- All moveable equipment will be removed from the mine, including all electrical equipment.
- The mine will be allowed to naturally flood once the mine openings are permanently closed.

9.2.3 Surface Areas, Buildings and Equipment

- All buildings and equipment will be demolished and removed from site.
- A Contractor (who will be selected via a tendering process during the initial stages of the project) will perform the demolition and removal work.
- Concrete foundations which are not removed during the demolition process will be covered with overburden to promote revegetation.
- Surface areas shall be scarified to assist in the natural re-vegetation of the area. Any areas as defined by "W210 - The Workplace Safety and Health Act, M.R. 228/94, Sub-Section 19 (4)" will be re-sloped.

9.2.4 Roads / Services

- Road access will be maintained until all project activities requiring road access are complete.
 - All roads under Tanco responsibility, including TMA access roads, will be scarified to promote natural re-vegetation during the project.
- Manitoba Hydro and Manitoba Telephone Systems will be notified of the mine closure. It will be the responsibility of the service providers to remove their respective service equipment.

9.3 Material Management

9.3.1 Waste Disposal Ground

- The waste disposal ground was decommissioned in 2007. No further decommissioning will be required at the time of mine closure.

9.3.2 Petroleum Storage Area

- All petroleum products will be either re-sold, or disposed of, utilizing either a recycling firm, original supplier or registered disposal facility.



- Areas found to be contaminated by petroleum will be reviewed as per Section 8.1.1.

9.3.3 Hazardous Chemicals

- All chemicals will be either re-sold, or disposed of, utilizing either a recycling firm, original supplier or registered disposal facility.

10. PROJECT COST

- The estimated total cost for project completion, in 2008 dollars, is **CAD\$2,240,300.**
- TANCO proposes to post the company's reputation as the form of security.
- Refer to Appendix I – Project Cost Breakdown, for further details.

11. PROJECT SCHEDULE

11.1 Project Life

- It is expected that the project life will be approximately 40 months.

11.2 Proposed Project Schedule

- Based on the proposed project schedule contained in Appendix J – Project Schedule, the major milestones (starting from project initiation) are:

➤ Project Commencement	Month 0
➤ Commencement of Tailings Disposal Area Re-Vegetation	Month 1
➤ Completion of Tailings Disposal Area Re-Vegetation	Month 36
➤ Completion of Capping of Mine Openings	Month 2
➤ Removal of All Equipment	Month 9
➤ Demolition of Buildings	Month 18
➤ Removal of Causeway	Month 40
➤ Project Completion (including Enviro. monitoring)	Month 72

11.3 Environmental Monitoring Schedule

- The environmental monitoring schedule will follow MMER/EER and Manitoba Environmental Act License requirements up until 3 years after notification of closure. The monitoring will then continue to comply with Environmental Act License only for the following 3 years. See Appendix I – Project Cost Breakdown, for further details.



Appendix A

Closure Plan / Mine Closure Regulation Cross Reference Index

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- 1.2 REFERENCING TO MINE CLOSURE REGULATION

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- 2.2 NAME OF PROJECT..... SECTION 9, ITEM (B)
- 2.3 LEGAL DESCRIPTION OF PROJECT SITE..... SECTION 9, ITEM (C)
- 2.4 CLOSURE PLAN CONTACT..... SECTION 9, ITEM (D)

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- 3.1 SURFACE RIGHTS / MINERAL RIGHTS / MINING CLAIMS..... SECTION 9, ITEM (E)
 - 3.1.1 *Surface Rights*..... Section 9, Item (E)
 - 3.1.2 *Mineral Rights*..... Section 9, Item (E)
 - 3.1.3 *Mining Claims Held by Tanco*..... Section 9, Item (E)
 - 3.1.4 *Mining Claims Held by Coltan Mines Ltd*..... Section 9, Item (E)
- 3.2 TANCO HISTORY..... SECTION 9, ITEM (F)
 - 3.2.1 *Bernic Lake Mine Site*..... Section 9, Item (F)
 - 3.2.2 *Molson Facility*..... Section 9, Item (F)
- 3.3 PRE-EXISTING SITE IMPACTS..... SECTION 9, ITEM (G)

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 - 4.1.1 *Mine*..... Section 9, Item (H)
 - 4.1.2 *Mill and Dry Grinding Plant*..... Section 9, Item (H)
 - 4.1.3 *Cesium Products Pilot Plant*..... Section 9, Item (H)
- 4.2 SECURITY..... SECTION 9, ITEM (H)
- 4.3 EQUIPMENT DESCRIPTION – SURFACE AND UNDERGROUND..... SECTION 9, ITEMS (I) & (J)
- 4.4 MINING PROCESS..... SECTION 9, ITEM (K)

5. TAILINGS MANAGEMENT AREAS

- 5.1 TAILINGS DISPOSAL AREAS..... SECTION 9, ITEM (M)
 - 5.1.1 *Inactive Area*..... Section 9, Item (M)
 - 5.1.2 *Active Area*..... Section 9, Item (M)
- 5.2 PROCESS BYPRODUCT CELLS..... SECTION 9, ITEM (M)
- 5.3 TREATMENT SYSTEMS..... SECTION 9, ITEM (M)
- 5.4 DAMS AND CONTROL STRUCTURES..... SECTION 9, ITEM (N)
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6. MINE DEVELOPMENT

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8.1.2	<i>Removal of Buried Petroleum Storage Tanks</i>	<i>Section 9, Item (U)</i>
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8.1.4	<i>Process-Byproduct Cells</i>	<i>Section 9, Item (U)</i>
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10. PROJECT COST SECTION 9, ITEM (W)

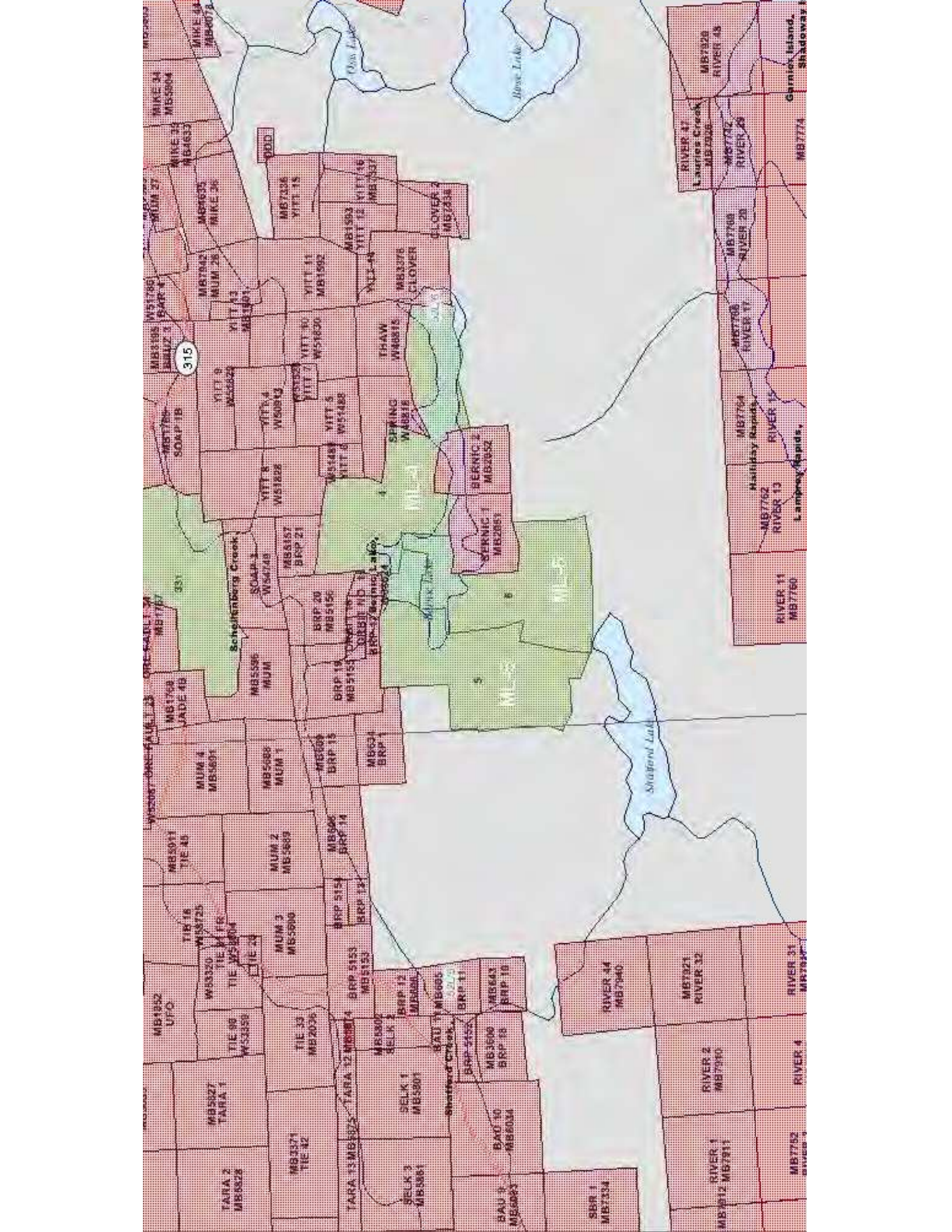
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11.1	PROJECT LIFE.....	SECTION 9, ITEM (L)
11.2	PROPOSED PROJECT SCHEDULE	SECTION 9, ITEM (L)
11.3	ENVIRONMENTAL MONITORING SCHEDULE	SECTION 9, ITEM (L)



Tanco/Coltan Claims as of Sept 11, 2008

NAME	NUMBER	HOLDER	STAKED	RECORDED	EXPIRES	HECTARES	GROUPING
SPRING THAW	W46816 W46815	Tantalum Mining Corporation of Canada Limited Tantalum Mining Corporation of Canada Limited	1982/04/02 1982/04/05	15-Apr-82 15-Apr-82	14-Jun-12 14-Jun-12	115 109	G1987 G1987
BAU 1	MB6025	Tantalum Mining Corporation of Canada Limited	2005/08/16	31-Aug-05	30-Oct-09	111	G11311
BAU 10	MB6034	Tantalum Mining Corporation of Canada Limited	2005/08/22	31-Aug-05	30-Oct-09	256	G11311
BAU 11	MB6035	Tantalum Mining Corporation of Canada Limited	2005/08/23	31-Aug-05	30-Oct-09	54	G11311
BAU 2	MB6026	Tantalum Mining Corporation of Canada Limited	2005/08/17	31-Aug-05	30-Oct-09	208	G11311
BAU 3	MB6027	Tantalum Mining Corporation of Canada Limited	2005/08/18	31-Aug-05	30-Oct-09	224	G11311
BAU 4	MB6030	Tantalum Mining Corporation of Canada Limited	2005/08/18	31-Aug-05	30-Oct-09	192	G11311
BAU 5	MB6028	Tantalum Mining Corporation of Canada Limited	2005/08/19	31-Aug-05	30-Oct-09	64	G11311
BAU 6	MB6029	Tantalum Mining Corporation of Canada Limited	2005/08/19	31-Aug-05	30-Oct-09	96	G11311
BAU 7	MB6031	Tantalum Mining Corporation of Canada Limited	2005/08/21	31-Aug-05	30-Oct-09	256	G11311
BAU 8	MB6032	Tantalum Mining Corporation of Canada Limited	2005/08/20	31-Aug-05	30-Oct-09	256	G11311
BAU 9	MB6033	Tantalum Mining Corporation of Canada Limited	2005/08/21	31-Aug-05	30-Oct-09	256	G11311
BERNIC 1	MB2051	Tantalum Mining Corporation of Canada Limited	1999/05/27	3-Jun-99	2-Aug-09	152	G11021
BERNIC 2	MB2052	Tantalum Mining Corporation of Canada Limited	1999/05/27	3-Jun-99	2-Aug-09	141	G11021
BRP 1	MB634	Tantalum Mining Corporation of Canada Limited	1999/01/05	11-Jan-99	12-Mar-09	111	G11215
BRP 10	MB643	Tantalum Mining Corporation of Canada Limited	1999/01/08	11-Jan-99	12-Mar-09	64	G11215
BRP 11	MB605	Tantalum Mining Corporation of Canada Limited	1999/01/08	11-Jan-99	12-Mar-09	96	G11215
BRP 12	MB606	Tantalum Mining Corporation of Canada Limited	1999/01/08	11-Jan-99	12-Mar-09	64	G11215
BRP 13	MB607	Tantalum Mining Corporation of Canada Limited	1999/01/09	11-Jan-99	12-Mar-09	32	G11215
BRP 14	MB608	Tantalum Mining Corporation of Canada Limited	1999/01/09	11-Jan-99	12-Mar-09	128	G11215
BRP 15	MB609	Tantalum Mining Corporation of Canada Limited	1999/01/09	11-Jan-99	12-Mar-09	102	G11215
BRP 17	MB611	Tantalum Mining Corporation of Canada Limited	1999/01/05	11-Jan-99	11-Mar-12	12	G11215
BRP 18	MB3600	Tantalum Mining Corporation of Canada Limited	2003/05/03	6-May-03	5-Jul-09	96	G11215
BRP 19	MB5155	Tantalum Mining Corporation of Canada Limited	2004/05/03	18-May-04	17-Jul-09	170	G11215
BRP 20	MB5156	Tantalum Mining Corporation of Canada Limited	2004/05/04	18-May-04	17-Jul-09	160	G11215
BRP 21	MB5157	Tantalum Mining Corporation of Canada Limited	2004/05/05	18-May-04	17-Jul-09	82	G11215
BRP 5152	MB5152	Tantalum Mining Corporation of Canada Limited	2004/04/22	18-May-04	17-Jul-09	48	G11215
BRP 5153	MB5153	Tantalum Mining Corporation of Canada Limited	2004/04/25	18-May-04	17-Jul-09	142	G11215
BRP 5154	MB5154	Tantalum Mining Corporation of Canada Limited	2004/04/25	18-May-04	17-Jul-09	32	G11215
CLOVER	MB3376	Tantalum Mining Corporation of Canada Limited	2002/10/03	15-Oct-02	14-Dec-09	182	
CLOVER 2	MB7338	Tantalum Mining Corporation of Canada Limited	2007/04/07	12-Apr-07	11-Jun-09	108	
EILEEN 3	W53238	Tantalum Mining Corporation of Canada Limited	1992/07/15	11-Jun-82	10-Aug-09	141	G11284
SPOT 2	MB3919	Tantalum Mining Corporation of Canada Limited	2002/08/12	21-Aug-02	20-Oct-09	85	G11284
SPOT 1	MB3920	Tantalum Mining Corporation of Canada Limited	2002/08/11	21-Aug-02	20-Oct-09	65	G11284
SPOT 3	MB3921	Tantalum Mining Corporation of Canada Limited	2002/08/14	21-Aug-02	20-Oct-09	247	G11284
SPOT 4	W53239	Tantalum Mining Corporation of Canada Limited	1992/08/19	4-Sep-92	3-Nov-09	61	G11284
SPOT 5	W53240	Tantalum Mining Corporation of Canada Limited	1992/08/19	4-Sep-92	3-Nov-09	57	G11284
SPOT 6	MB3923	Tantalum Mining Corporation of Canada Limited	2005/07/21	5-Aug-05	4-Oct-10	92	G11284
SBR 1	MB7334	Tantalum Mining Corporation of Canada Limited	2007/04/06	12-Apr-07	11-Jun-09	256	
SBR 2	MB7335	Tantalum Mining Corporation of Canada Limited	2007/04/05	12-Apr-07	11-Jun-09	256	
YITT 4	W50913	Tantalum Mining Corporation of Canada Limited	1986/05/26	23-Jun-86	22-Aug-10	152	G11050
YITT 5	W51488	Tantalum Mining Corporation of Canada Limited	1986/08/18	2-Sep-86	1-Nov-10	120	G11050
YITT 6	W51489	Tantalum Mining Corporation of Canada Limited	1986/08/28	2-Sep-86	1-Nov-10	32	G11050
YITT 7	W51528	Tantalum Mining Corporation of Canada Limited	1987/11/11	12-Nov-87	11-Jan-10	29	G11050
YITT 8	W51828	Tantalum Mining Corporation of Canada Limited	1987/10/06	21-Oct-87	20-Dec-11	227	G11050
YITT 9	W51829	Tantalum Mining Corporation of Canada Limited	1987/10/08	21-Oct-87	20-Dec-10	212	G11050
YITT 10	W51830	Tantalum Mining Corporation of Canada Limited	1987/10/15	21-Oct-87	20-Dec-10	196	G11050
YITT 11	MB1592	Tantalum Mining Corporation of Canada Limited	1997/11/04	7-Nov-97	6-Jan-10	210	G11050
YITT 12	MB1593	Tantalum Mining Corporation of Canada Limited	1997/11/04	7-Nov-97	6-Jan-10	51	G11050
YITT 13	MB1601	Tantalum Mining Corporation of Canada Limited	2000/05/04	15-May-00	14-Jul-10	20	G11050
YITT 14	MB3922	Tantalum Mining Corporation of Canada Limited	2003/03/26	15-Apr-03	14-Jun-10	18	G11050
YITT 15	MB7336	Tantalum Mining Corporation of Canada Limited	2007/04/09	12-Apr-07	11-Jun-09	63	
YITT 16	MB7337	Tantalum Mining Corporation of Canada Limited	2007/04/08	12-Apr-07	11-Jun-09	112	
ORBIT No. 14	W33024	Coltan Mines Limited		7-Jun-60	6-Aug-09	24	G5507
ORBIT No. 15	W40003	Coltan Mines Limited		1-Mar-67	30-Apr-09	18	G5507
ORBIT No. 16	W40004	Coltan Mines Limited		1-Mar-67	30-Apr-09	15	G5507
ORBIT No. 17	W40005	Coltan Mines Limited		1-Mar-67	30-Apr-09	14	G5507
Totals	58	claims				6892	hectares



Appendix C Site History

Year	Property Activity	Company Activity
1914	On January 1, federal land surveyors Harry E. Beresford and James Nicole located their camp on the shores of an un-named lake. They named the lake Bernic Lake.	
1926	Tin first discovered at Shatford Lake by K.E.Miller.	
1928	Jack Nutt Mines staked 35 claims and commenced a program of stripping, trenching and sampling of the exposed, shallow dipping pegmatites on the Ackman claim. Sample values up to 6.9% metallic tin were reported.	Jack Nutt Mines, Limited incorporated under a Dominion of Canada charter on October 18, 1928.
1929	<p>Bernic Lake Mines acquired a group of claims west of and adjoining the Jack Nutt claims.</p> <p>Jack Nutt Mines continued the program of stripping, trenching and sampling the exposed pegmatites.</p> <p>In May, a camp was erected and construction of a 10 ton test mill began. The mill was completed in July and the first concentrates produced in August. Mill feed was the rock from the trenched pegmatites. Some of the concentrates assayed 72% tin and 4.46% combined tantalum and columbium (niobium).</p> <p>Construction of a wagon road from Lamprey Falls (Winnipeg River) to the south shore of Bernic Lake began.</p> <p>In February, sinking of a 2 compartment shaft started (Jack Nutt Shaft). Water inflow delayed the shaft sinking at 125 feet. The shaft was scheduled for 200 feet based on pegmatite(s) intersected by diamond drilling .</p> <p>During march and April, a Radiore survey was carried out over the Ackman, Bernic-1 and Bernic-2 claims.</p> <p>During the year, 4 diamond drill holes were completed by W.J. Mitchell Diamond Drilling Company. Hole # 3 (collared on the east side of Beryl Bay and drilled at -50° @ N30°E to a depth of 496 feet) intersected a thick, buried pegmatite (the Tanco Pegmatite).</p> <p>Drill holes: #1 - 200 feet at -70°; #2 - 300 feet at -40°; #3 496 feet at -50° @ N30E; #4 - 555 feet at -70° @ SE 20.</p>	Bernic Lake Mines, Limited incorporated.
1930	A 90 foot cross-cut was driven to the northwest at the 125 foot level. The shaft was eventually stopped at 179 feet due to water problems and the stock market crash.	On May 15, Jack Nutt Mines, Limited changed its name to The Consolidated Tin Corporation, Limited to better reflect the nature of its main business.
1932	The Consolidated Tin Corp. abandons property; claims eventually revert back to the Crown.	
1933	The name Bernic Lake was officially approved.	

Year	Property Activity	Company Activity
1934-40	Minor production of hand sorted lithium ores from an open cut on the Buck/Coe/Pegli claims at the east end of Bernic Lake.	
1938	Area was explored for tin.	
1943	Area was explored for tin.	
1955	Steve Grewinski staked 12 claims at Bernic Lake for George McCartney (Montgary Petroleum) and Stan McLeod. Claims later sold to Montgary Petroleum Corporation Ltd. Montgary Petroleum drilled 26,000 feet (B-series of surface drill holes). Mine access road constructed.	
1956	Montgary Petroleum spent \$200,000 to construct an electrical transmission line from Pointe du Bois to the minesite and build a substation at the minesite. A 3 compartment shaft (Montgary Shaft) was sunk to 305 feet. Holes L-1 to L-4 drilled for Lithium Corporation of Canada.	
1957	American Metal Company, Limited (Amco) options property from Montgary Explorations Ltd. and drills 6,693 feet (M-series of surface drill holes). Internal zonation of pegmatite recognized (Hutchinson). Pollucite was identified in the core by the University of Toronto. Montgary terminated the option with Amco as Montgary wanted development of the property to proceed at a faster rate than did Amco. Construction: 90 foot headframe, hoist/compressor room, bunkhouse/kitchen, water tower, shaft sunk to 334 feet, limited drifting. Operations suspended for financial reasons during last half of year for a 20 month period.	Montgary Petroleum renamed as Montgary Explorations Limited (share for share).
1959	Operations recommenced in the spring. Montgary Shaft deepened to 339 feet. From May 1959 to June 1961, 1,586 tons of quartz were sold.	In December, Montgary Explorations Ltd. was reorganized and name changed to Chemalloy Minerals Limited (1 new share for 2 1/2 old shares).
1960	Chemalloy carried out a surface winter drill program (6,000 feet; Alphabet-series; Griffiths Brothers) to find more cesium bodies. An underground, 5,000 foot drill program completed (U-series; Midwest Diamond Drilling). A second underground drill program completed (X-series). Holes L-5 to L-10 were drilled from a barge by Griffiths Brothers Drilling. Two raises driven up from exploratory level (1st level) to access pollucite. 2,500 tons pollucite mined. Limited selective mining of amblygonite.	

Year	Property Activity	Company Activity
1961	Operations suspended and mine placed on care and maintenance. Holes L-11 to L-23 were drilled from a barge by Griffiths Brothers Drilling.	
1962	Pumps were removed from the mine and the mine allowed to flood.	
1966	A.C.A. (Peter) Howe (A.C.A. Howe International Limited and VP Exploration for Chemalloy) recommends to Chemalloy that the Bernic Lake pegmatite be evaluated for tantalum potential. Howe and Bob Crouse carried out the evaluation by re-sampling the existing drill cores from 75 holes. Laboratory tests conducted by Department of Energy and Mines, Ottawa, on a 400 pound composite of channel sample from the Main Drift South.	
1967	Chemalloy obtained funds from Goldfield Corporation of New York, USA to put the property into production. Pumping out of the mine began. Deepening of the shaft from 334 feet began. A 500 ton bulk sample was taken from the 1 st level south drift A 75 ton (0.31% Ta ₂ O ₅) sample from the 500 ton sample was sent to Energy, Mines and Resources, Mineral Processing Division in Ottawa for metallurgical testing and flow sheet design. A tantalum market study was carried out by Batelle Memorial Institute. A surface diamond drill program commenced in June from a barge; 2 other drills later added to drill on land (C-series); drilling done by Midwest Drilling.	In November, Chemalloy Minerals (40%) and Northern Goldfield Limited (the Canadian, wholly owned subsidiary of The Goldfield Corporation of New York) (60%) formed a joint venture, Tantalum Mining Corporation of Canada Limited.
1968	Completion of the Montgomery shaft to current 553 foot depth; deepening of the Jack Nutt shaft to second level (vent raise); work on the haulage level and associated developmen; started development of the main decline from both surface and underground. Construction of a 500ton/day tantalum concentrator was started. Spodumene samples were sent to Mineral Processing Division (EMR) and Colorado School of Mines for research on feasibility of lithium extraction. C-series surface drill holes continue.	
1969	Development of main decline completed. The first tantalum concentrates were produced in March and the plant reached full production in September. Start of pollucite shipments to Russia.	
1970	Diamond drilling from surface (C-series) and underground (CU-series).	In February, Chemalloy Minerals acquired 100% ownership of Tanco by purchasing the 60% interest held by The Goldfield Corporation.

Year	Property Activity	Company Activity
1972	Tantalum mill tonnage is increased to 700 tons/day. Limited surface drill program completed by _____.	
1973	Tantalum operations were suspended for 9 months and the production of ceramic grade spodumene concentrate was piloted. From 1969-73, approximately 1,000 tons pollucite (at $\pm 28\%$ Cs ₂ O) were shipped to Russia.	Funds (\$1.5MM) for pilot operation obtained through sale of 25% interest in Tantalum Mining to Manitoba Development Corporation.
1974	Chemalloy announced plans for construction of 8-10 million pound lithium carbonate plant with completion in late 1976. Connors Drilling Limited carried out a 5,000 foot surface drill program (last of C-series).	In May, Kawecki Berylco Industries purchased 24.9% of Tantalum Mining Corporation; Kawecki Berylco was to assist with financing, technology and marketing of lithium carbonate. In October, Chemalloy Minerals changed name to International Chemalloy Corporation (1 new share for 3 old shares).
1975		In March, International Chemalloy put into receivership (The Clarkson Company Ltd.).
1976	3 month strike. Heath and Sherwood Drilling carried out a 14,000 foot surface drill program. Production Leases 7, 8, and 9 issued for a 21 year term.	
1977	End of pollucite shipments to Russia. Canadian government advised Tanco that cesium was on the restricted list and refused to issue an export permit. 1969 to 1977, in excess of 1,300 tons at 27% Cs ₂ O shipped to Russia. A 10,000 foot surface drill program completed by Heath and Sherwood Drilling.	Efforts by receiver to re-finance company unsuccessful; charges brought against certain former company directors and officers for financial indiscretions.
1978	Commenced feasibility study into a 15-20 million pound/annum lithium carbonate plant.	Hudson Bay Mining and Smelting Co. Ltd. (HBMS) purchased from the receiver, International Chemalloy's 50.1% interest in Tantalum Mining for \$6.8MM. Resold (?) 12.6% to Kawecki Berylco Industries to hold 37.5%; HBMS was the operator of the joint venture.
1979	Feasibility study into a 15-20 million pound/annum lithium carbonate plant A tantalum flotation circuit installed to treat the slimes fraction. Tantalum plant capacity increased to 1,000 tons/day.	
1980	Decision not to proceed with lithium carbonate plant. Tantalum tails reprocessed during summer months. Record high tantalum price.	October 15: Kawecki Berylco Industries Inc. changes name to Cabot Berylco Inc.

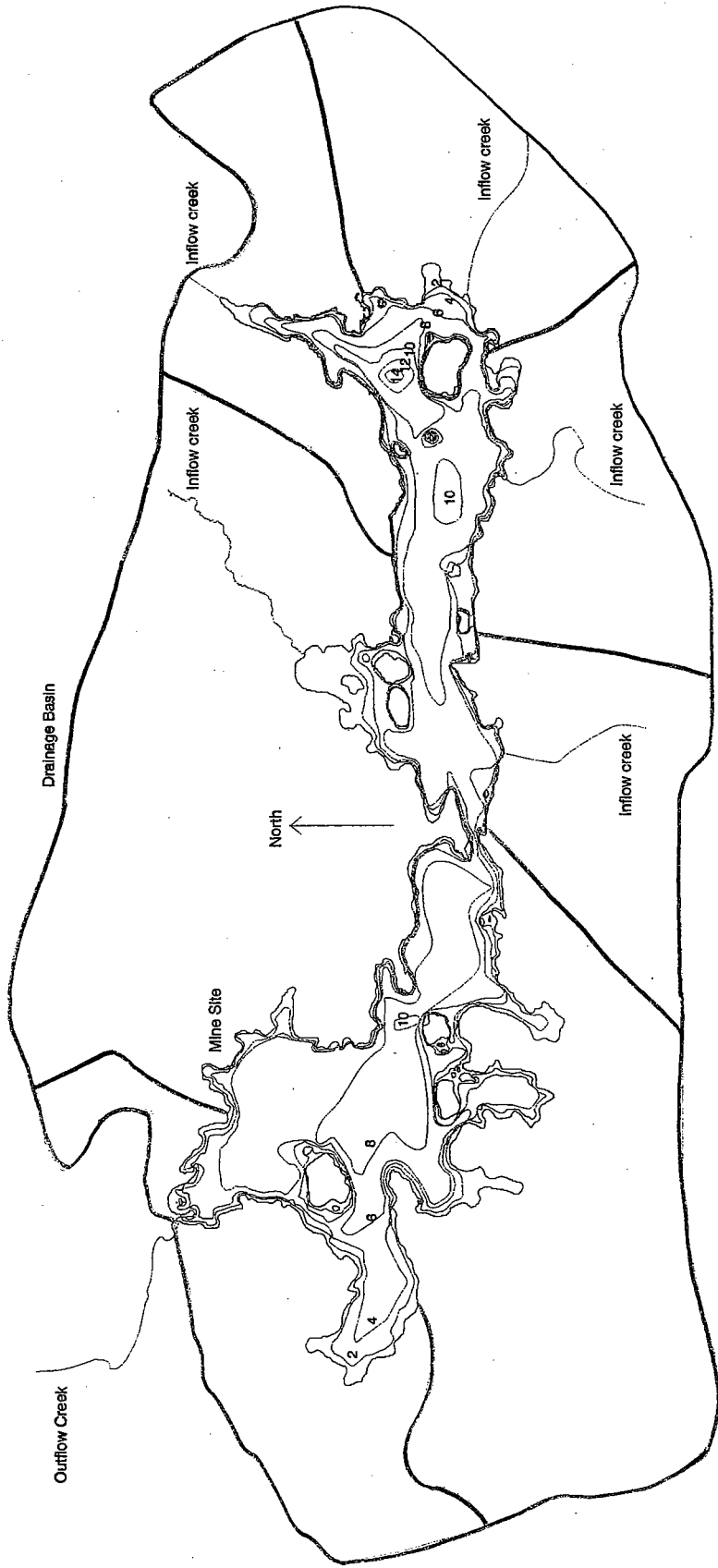
Year	Property Activity	Company Activity
1981	Tantalum tails reprocessed during summer months.	
1982	Tantalum tails reprocessed during summer months. Tantalum operations were suspended at year's end and the facilities put on care and maintenance due to reduced market demand and low price.	September 13: Cabot Berylco Inc. amalgamates with Cabot Corporation.
1984	In April, a pilot operation to produce ceramic grade spodumene concentrate commenced utilizing the idle tantalum mill. First trial shipment of ceramic grade spodumene concentrate to Corning France for the manufacture of Corning's Visionware	
1985	Construction of a 20,000 tonne/annum dedicated spodumene mill begins.	International Chemalloy Corp. changes name to Denbridge Capital Corporation (1 new share for 100 old shares).
1986	Spodumene mill completed and commissioned.	
1988	Tantalum operations re-commenced. Tantalum pillar reduction program began utilizing longhole mining method. Tanco gains "major supplier" status with Corning.	
1989	Production of high phosphate (Amblygonite) concentrates began.	
1992	In August, the tantalum operations were suspended. Production Leases 7, 8 and 9 converted to Mineral Leases ML-004, -005 and -006, respectively, for a 21 year term.	
1993	Tantalum tails reprocessed during summer months.	Cabot Corporation of Boston buys 100% interest in Tantalum Mining Corporation.
1994	Tantalum tails reprocessed during summer months.	
1995	Tantalum operations recommenced on a reduced scale (combination of tails and ore). Construction began on a plant to produce cesium formate brine drilling fluid from pollucite .	
1996	Tantalum operations resumed at a rate of 550 tons/day.	
1997	The cesium formate brine plant was commissioned. The Dibs pegmatite was discovered.	
1999	The cesium formate brine plant was placed under care and maintenance due to downturn in oil well service sector. First field trial of cesium formate brine complete in September by Shell.	

Appendix D Drawings

- All drawings are contained on the attached CD.
- Drawings are all in pdf format.

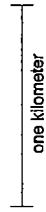


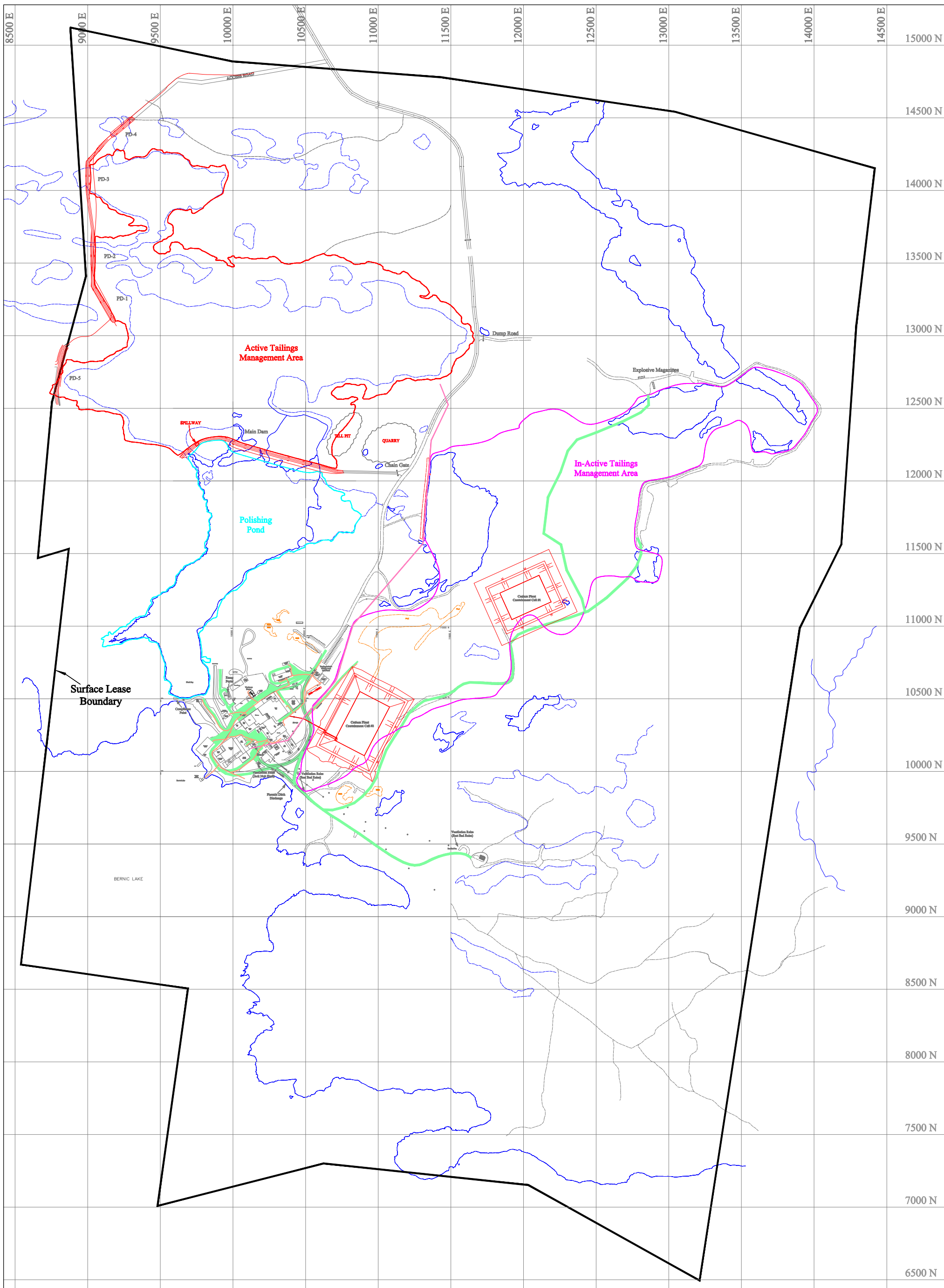
Drainage Basin 1800 ha
 Surface Area 390 ha
 Lake Volume 31,255,203 cubic meters
 Mean Depth 8.0 meters
 Shoreline Length 37.5 kilometers



Bernic Lake
Bathymetric and Drainage Basin Map

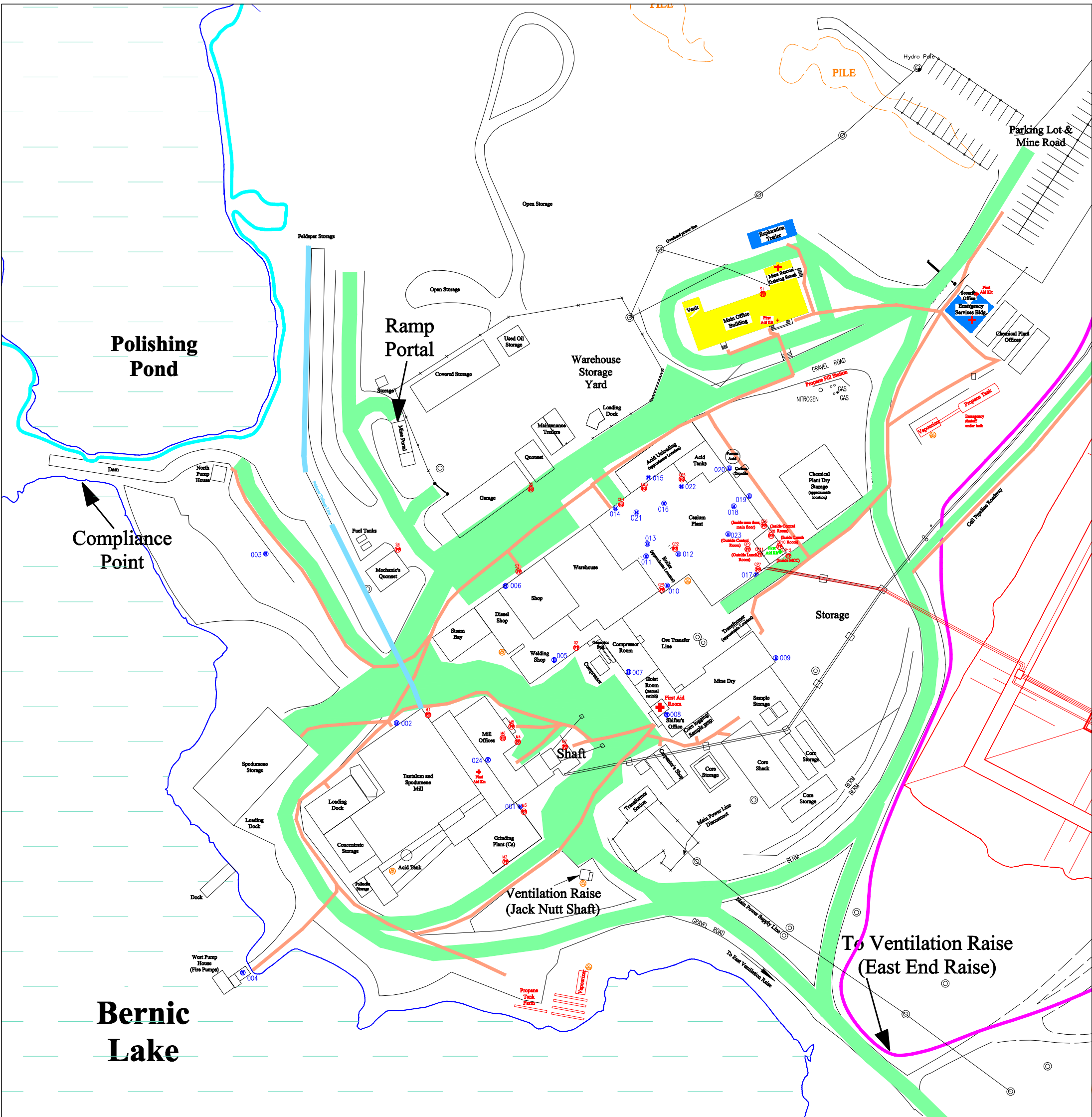
Figure 2-4





DATE: Sept. 25, 2008
 SCALE: 1 : 200
 By: Engineering
 Dwg No: Tanco #1

Tantalum Mining Corporation of Canada Limited



DATE: April, 2007
 SCALE: 1 : 50
 By: TRH
 Dwg No:

Mine Site Location Map

LEGEND:	Pedestrian Travelways	First Aid Kit	Fire Pull
	Vehicle Travelways	Emergency Equipment	Fire Hydrant
	Propane Shutoff		

LEGEND:

- GRAVEL ROAD
- PATH/TRAIL
- FENCE
- BUILDING
- TREE LINE
- POWER POLE
- ROCK OUTCROP
- SHORELINE
- INDEX CONTOUR
- CONTOUR
- SPOT HEIGHT
- DEPRESSION INDEX CONTOUR
- DEPRESSION CONTOUR
- SWAMP
- STREAM
- CONSTRUCTION CONTROL POINT
- SITE SURVEY CONTROL MONUMENT

NOTES:

- 1) CONTOUR INTERVAL IS TWO FEET
- 2) DATE OF PHOTOGRAPHY 1994
- 3) DATE OF MAPPING AUGUST, 1994
- 4) PHOTO SCALE 1:6000

1

CONTROL POINT DATA (Imperial)			CONTROL POINT DATA (Metric)		
POINT	NORTH	EAST	ELEVATION	NORTH	EAST
A	10188.8'	10586.1'	1110.56'	3105.550	3226.629
B	10010.0'	10929.4'	1110.56'	3051.055	3331.291
TR-105	10322.95'	10613.83'	1091.99'	3146.435	3235.095
TR-108	9987.82'	10862.40'	1103.13'	3044.288	3310.960

See the first issue of this drawing for the original signatures and initials of signatories named in the title block.

CONTROL POINT ELEVATIONS AND TABLE ADDED			
NO.	DESCRIPTION	DATE	BY
2	ISSUED "AS BUILT"		
1	CONTROL POINT ELEVATIONS AND TABLE ADDED	08/06/96	R.I.T.
0	ISSUED FOR CONSTRUCTION	08/07/97	R.I.T.
0	ISSUED FOR TENDER		

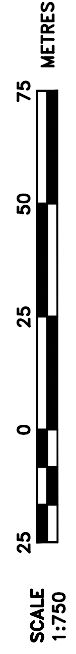
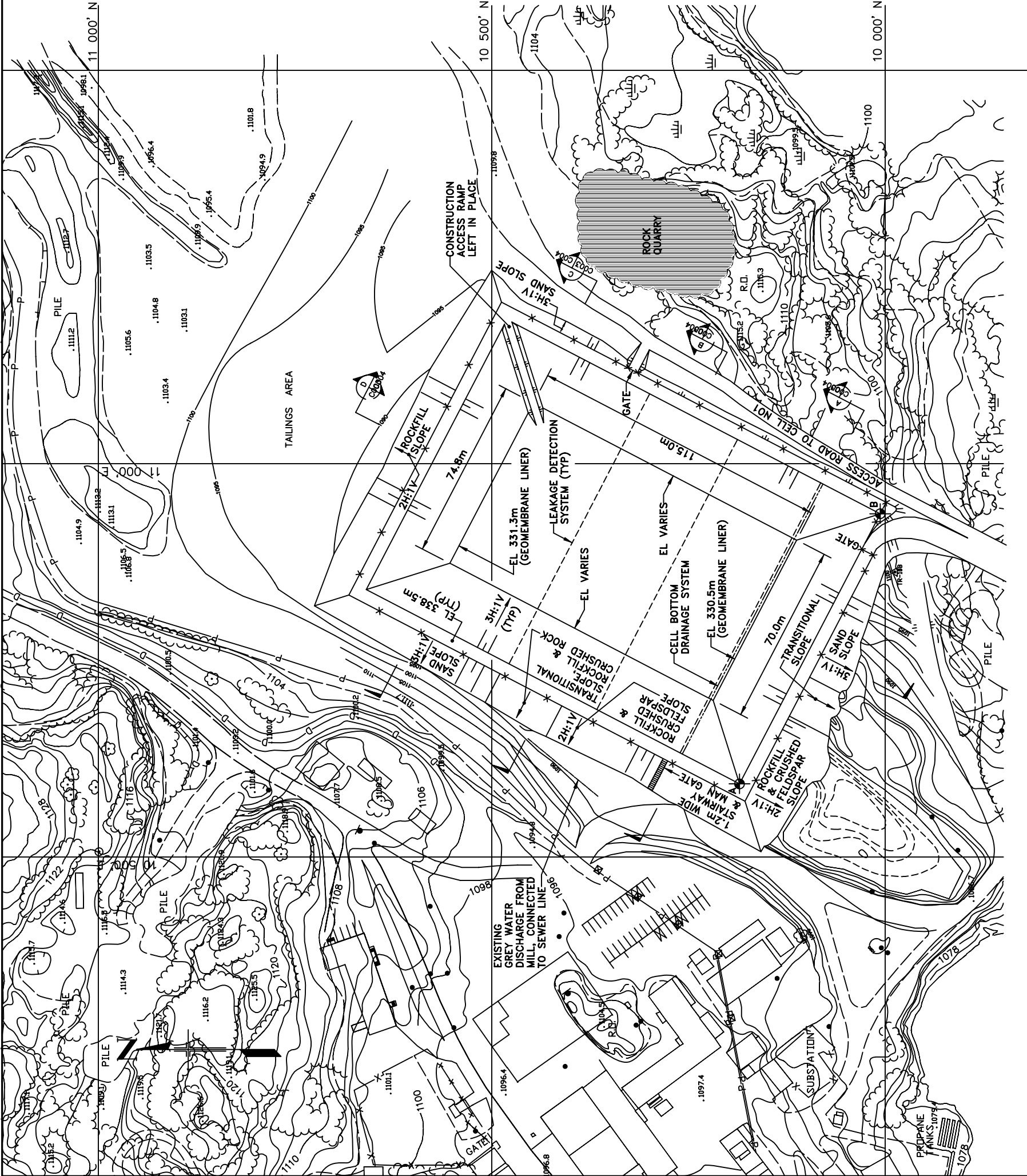
ACRES INTERNATIONAL LIMITED
WINNIPEG

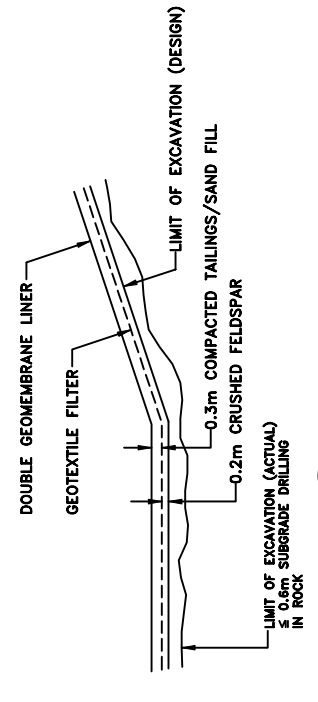
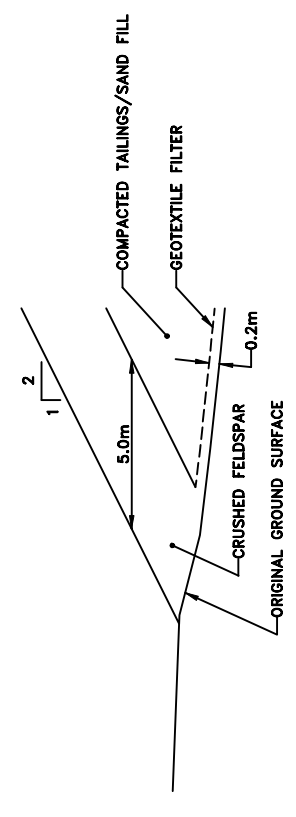
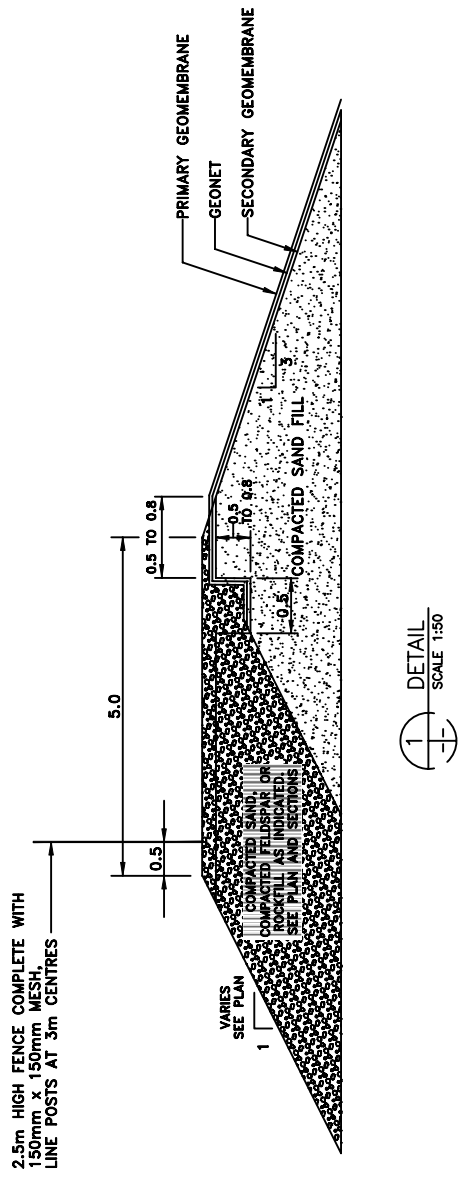
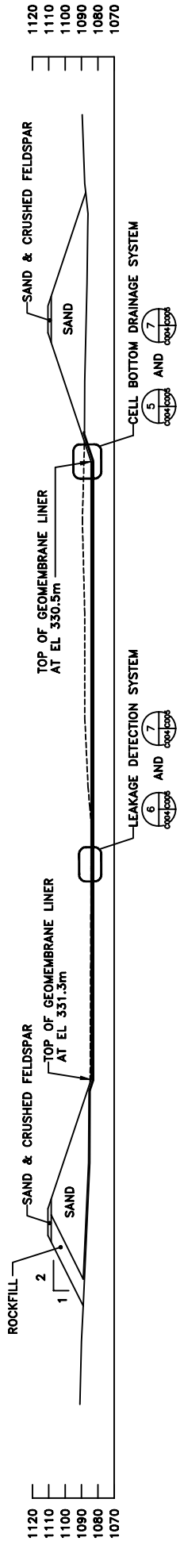
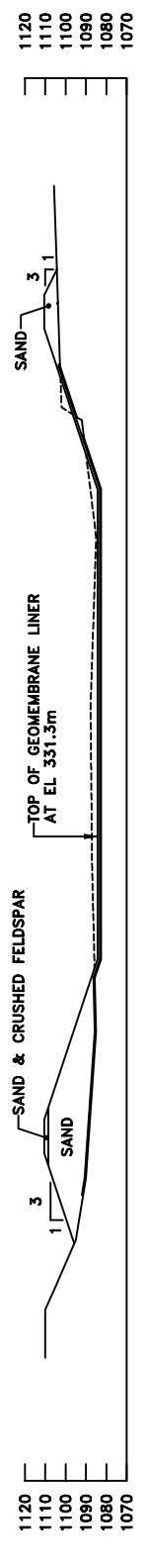
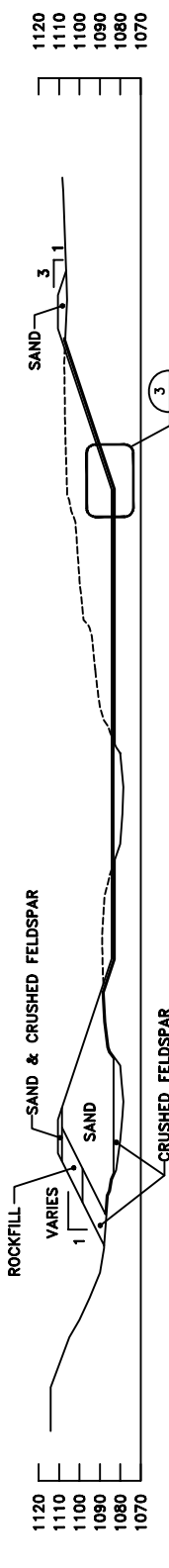
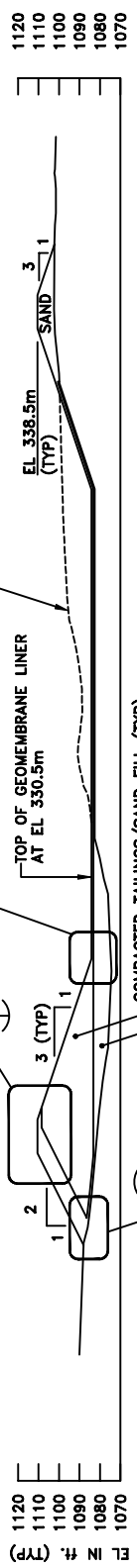
TANTALUM MINING CORPORATION
OF CANADA LIMITED
BOX 2000, LAC DU BONNET, MANITOBA

PROJECT NAME
WASTE CONTAINMENT CELL No.2

DWG. DESCRIPTION
CONTAINMENT CELL PLAN

ENG. STAMP
DESIGNED BY: R.I.T. DRAWN BY: R.A.R. CHECKED BY:
APPROVED BY:
SCALE: 1:750 DATE: 98-07-07
DRAWING NO: CFSYS08-C-003 REV: 2





See the first issue of this drawing for the original signatures and initials of signatories named in the title block.

NO.	DESCRIPTION	DATE	BY
2	ISSUED "AS BUILT"	98/09/06	R.L.T.
1	ISSUED FOR CONSTRUCTION	98/07/07	R.L.T.
0	ISSUED FOR TENDER	98/07/07	R.L.T.

REVISIONS/ISSUE

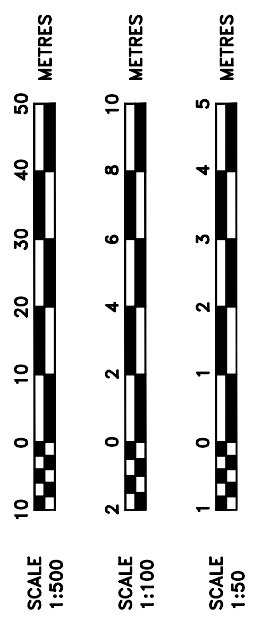
ACRES INTERNATIONAL LIMITED
WINNIPEG

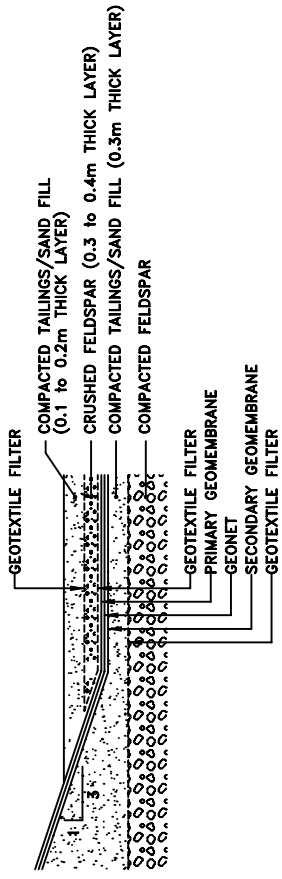
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OF CANADA LIMITED
BOX 2000, LAC DU BONNET, MANITOBA

PROJECT NAME
WASTE CONTAINMENT CELL No.2

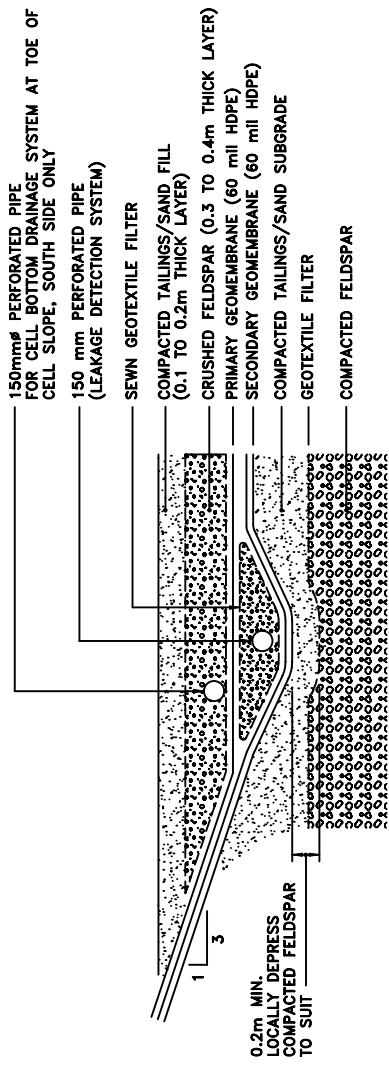
DWG. DESCRIPTION
CONTAINMENT CELL SECTIONS

ENG. STAMP
DESIGNED BY: R.I.T.
DRAWN BY: R.A.R.
CHECKED BY:
APPROVED BY:
SCALE: 1:500 U/NOTED
DATE: 98-07-07
DRAWING NO: CPSYS08-C-004
REV: 2

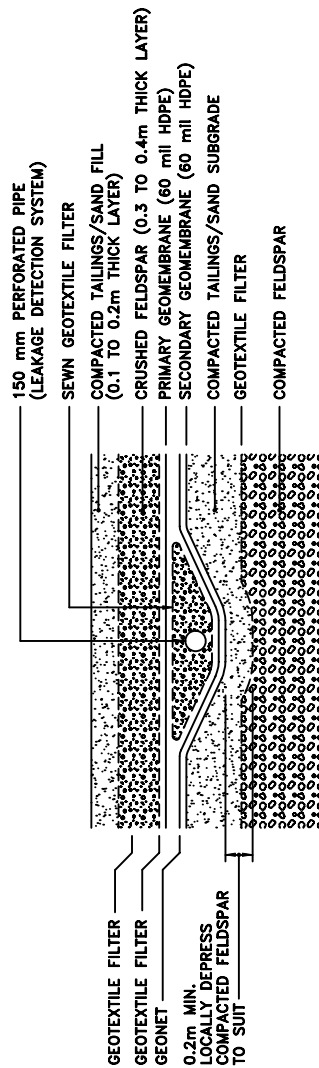




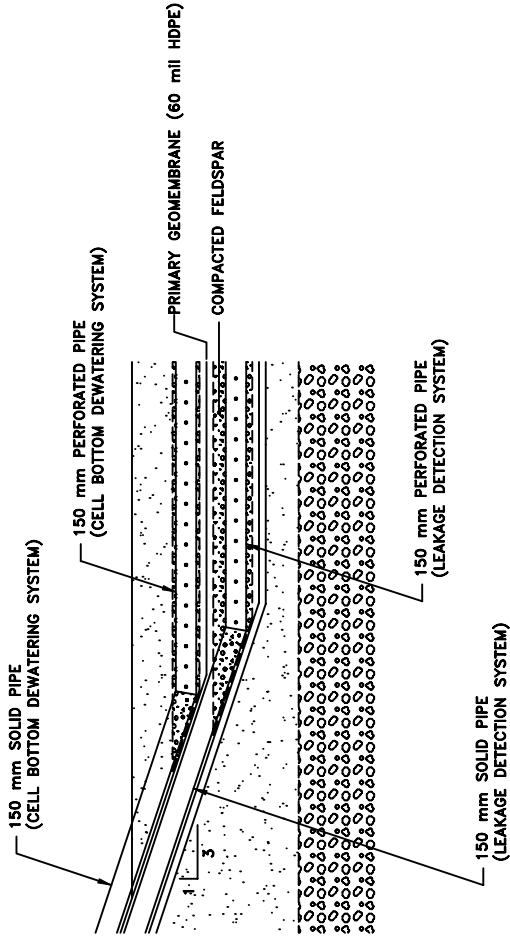
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SCALE 1:50
C004/C005



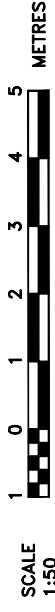
5 DETAIL — CELL BOTTOM DRAINAGE SYSTEM
SCALE 1:50
C004/C005



6 DETAIL — LEAKAGE DETECTION SYSTEM
SCALE 1:50
C004/C005



7 DETAIL — PIPING
SCALE 1:25
C004/C005



See the first issue of this drawing for the original signatures and initials of signatories named in the title block.

2	ISSUED "AS BUILT"		
1	ISSUED FOR CONSTRUCTION	98/09/06	R.L.T.
0	ISSUED FOR TENDER	98/07/07	R.L.T.
NO.	DESCRIPTION	DATE	BY
REVISIONS/ISSUE			

ACRES INTERNATIONAL LIMITED
WINNIPEG

TANTALUM MINING CORPORATION
OF CANADA LIMITED
BOX 2000, LAC DU BONNET, MANITOBA

PROJECT NAME
CONTAINMENT CELL No.2

DWG. DESCRIPTION
CONTAINMENT CELL DETAILS

ENG. STAMP
DESIGNED BY: R.I.T.
DRAWN BY: R.A.R.
APPROVED BY:
CHECKED BY:

THE ORIGINAL DRAWING SIGNED AND SEALED BY R.J. THOMSON ON 1998-07-07
SCALE: 1:50 U/NOTED
DATE: 98-07-07
DRAWING NO: CFSYS08-C-005
REV: 2

Appendix E

Acid-base testing



MEMO TO: Sheryl Waddick
Cabot Corporation

FILE: 3.9~~2~~4

FROM: Peter Vanstone
Tantalum Mining Corporation of Canada Limited

SUBJECT: Acid-base accounting sample results.

DATE: November 25, 1992

Results

Please find attached the certified analytical results for the seven samples sent to Lakefield Research for acid-base accounting tests. As can be seen, the different rock fills and tailings at Tanco are acid consuming and not acid producing. The last column on the right recommends confirmation tests for five of the samples. This morning I talked to Dr. Bob Johnston, Lakefield's Chief Chemist, regarding these recommendations and was told the reason was that the acid consuming and acid producing potentials for each of these samples were very close; in other words, the samples were in essence, neutral. The Total %S for all samples is $\ll 1\%$ *vis a vis* a typical base metal mine where the Total %S is in the 10 - 20% range.

Sampling

All sampling was carried out by P. Vanstone on October 30 and November 2, 1992.

The seven samples represent the different rock fills and tailing stored on surface at Tanco; two samples of tantalum tailings were taken due to the volume of these tailings. All samples of rock fills, with the exception of the samples from the Main and Lower Pegmatite Ramps, were unweathered rock; they had been mined and crushed within the previous 2 - 3 months. The two samples from the Main and Lower Pegmatite Ramps were both amphibolite, the host rock for the Tanco Pegmatite. This amphibolite fill, however, has been exposed to weathering for a number of years (the Main Ramp was mined in 1969 and the Lower Pegmatite Ramp was mined in 1982). To avoid weathered rock, composite samples of diamond drill cores were used, with only drill holes located within 25 feet of the ramps sampled. The core samples from these holes were from the same elevation as the ramp at the respective hole location.

The samples were dried and pulverized at Tanco, after which approximately 1.5 kilograms of each sample was cut to be sent to Lakefield Research for testing. The sample rejects have been retained and are stored at the minesite.

Sample Description1) *Main Ramp*

This composite sample consisted of medium to coarse grained, massive amphibolite; no visible sulphides were noted. The ramp elevations and corresponding core sample footages are presented in the table below.

D.D. Hole N°	Ramp Elevation	Hole Collar Elev.	Core intersection
78-20	1055' - 1070'	1096'	26' - 41'
C-22	938' - 955'	1075'	120' - 137'
C-26	995' - 1010'	1075'	82' - 97'
C-34	923' - 935'	1076'	141' - 153'

2) *L. Peg. Ramp (Lower Pegmatite Ramp)*

This composite sample consisted of similar material to the Main Ramp sample. As with the Main Ramp sample, no visible sulphides were noted. The ramp elevations and corresponding core sample footages are presented in the table below.

D.D. Hole N°	Ramp Elevation	Hole Collar Elev.	Core intersection
76-09	604' - 617'	1076'	459' - 472'
79-03	631' - 644'	1076'	432' - 445'
81-06	605' - 617'	1076'	459' - 471'

3) *Ta Tails #1 (Tantalum Tailings)*

A composite sample from the excavated face of the tailings recycling area west of the ditch; sample was taken from 4" - 6" deep to avoid as much weathered sample as possible. This sample included some lepidolitic tails.

4) *Ta Tails #2*

As per sample "Ta Tails #1", but from the east side of the ditch; no obvious lepidolitic tails were encountered during the sampling.

5) *Spod Tails (Spodumene Tailings)*

This sample was taken from the first stage discharge line, i.e., the area where the spodumene tails were being discharged on the day the sampling was carried out. Tails were being discharged through a number of spigot holes in the line and the sample was taken over a distance of approximately 100 feet.

6) *L.G.Pollucite (Low Grade Pollucite)*

This sample was from a ± 70 tonne pile of pollucite ore containing 17 - 18% cesium oxide. The main dilutants (pure pollucite contains 32 - 34% Cs_2O) include quartz, microcline feldspar, spodumene and petalite, all of which are silicate minerals. This ore had been produced within the preceding two months and has remained covered. This pile is stored in an area where pollucite has been stored for at least 30 years. The original surface was uneven and consisted of thin soil overburden and amphibolite outcrop.

7) *Dense Media Reject*

This was a composite sample of the +0.3 mm. to -12 mm. material rejected from the dense media circuit during the spodumene milling process. Typically, the material consists of 40 - 50% microcline feldspar with subordinate sodium feldspar and quartz, and minor muscovite micas; all minerals are silicates. The sample represented an estimated 3 months production.

Should you have any questions please contact me at Tanco.

LAKEFIELD RESEARCH

A Division of Falconbridge Limited

185 Concession Street, Postal Bag 4309, Lakefield, Ontario, K0L 2H0

Phone: (705) 652-3341, Facsimile: (705) 652-6365, Telex: 069628-02

No.

CERTIFICATE OF ANALYSIS

Company: Tantalum Mining
P. O. Box 2000
Lac Du Bonnet, Manitoba

Date: 11/24/92
Sample Received: 11/16/92
No. of Samples: 7
LR Reference No.: 9241153
P.O. No.:

B.C. Research Acid Production Potential Test Results

APP(Acid production potential) = %S x 30.6

ACA(Acid Consuming ability) = (Vol.consumed (mL) of 1.0 N H₂SO₄ x 49) / wt.of sample (g)

NACA(Net acid consuming ability) = ACA - APP

Sample Name	Rep.	%S total	%S= 0.12	wt. of sample(g)	Vol. of H ₂ SO ₄ consumed (mL)	APP* (A)	ACA* (A)	NACA* (A)	Acid consuming	Acid producing	Confirmation recommended
Main Ramp	a	0.13	0.12	10	2.95	3.98	14.46	10.48	Yes	No	No
	b	0.13	0.12	10	2.95	3.98	14.46	10.48	Yes	No	No
L. Peg Ramp	a	0.09	0.07	10	3.40	2.75	16.66	13.91	Yes	No	No
	b	0.09	0.07	10	3.30	2.75	16.17	13.42	Yes	No	No
Ta Tails #1	a	0.01	<0.01	10	1.40	0.31	6.86	6.55	Yes	No	Yes
	b	0.01	<0.01	10	1.40	0.31	6.86	6.55	Yes	No	Yes
Ta Tails #2	a	0.01	0.01	10	1.30	0.31	6.37	6.06	Yes	No	Yes
	b	0.01	0.01	10	1.30	0.31	6.37	6.06	Yes	No	Yes
Spod Tails	a	0.01	0.01	10	1.35	0.31	6.62	6.31	Yes	No	Yes
	b	0.01	0.01	10	1.30	0.31	6.37	6.06	Yes	No	Yes
L.G. Pollucite	a	0.01	<0.01	10	2.00	0.31	9.80	9.49	Yes	No	Yes
	b	0.01	<0.01	10	2.00	0.31	9.80	9.49	Yes	No	Yes
Dense Media Reject	a	0.01	<0.01	10	2.10	0.31	10.29	9.98	Yes	No	Yes
	b	0.01	<0.01	10	2.10	0.31	10.29	9.98	Yes	No	Yes

(A) Kg H₂SO₄ / tonne

Signed: Dave Hevenor
Dave Hevenor
Chemist

Appendix F

West Discharge historical quality results

- Summary of water quality testing of TMA discharge from 1997 - 2007



Cesium (Cs)	0.867	0.789	--	--	--	--	0.00081	0.00048	0.85657	0.15112	0.3595	0.4278
Chromium (Cr)	0.0004	0.0001	0.001	0.000	0.0003	0.0000	0.0007	0.0009	0.0005	0.0002	0.0004	0.0003
Cobalt (Co)	0.0004	0.0002	0.0003	0.0002	0.0004	0.0002	0.0008	0.0010	0.00034	0.00027	0.00042	0.00027
Copper (Cu)	0.002	0.001	0.002	0.002	0.0013	0.0005	0.0023	0.0013	0.0013	0.0006	0.00136	0.00066
Iron (Fe)	0.299	0.255	0.274	0.200	0.425	0.287	--	--	0.322	0.306	0.296	0.069
Lead (Pb)	0.0009	0.0004	0.0009	0.0027	0.00025	0.00006	0.00033	0.00020	0.00030	0.00033	0.00061	0.00082
Lithium (Li)	3.65	1.67	3.80	0.82	3.31	0.34	3.78	0.86	3.8418	0.3291	2.0833	1.5741
Magnesium (Mg)	3.13	0.67	3.19	0.64	3.0	0.3	3.2	0.3	3.43	0.28	1.66	1.45
Manganese (Mn)	0.294	0.284	0.587	0.412	0.81	0.66	1.83	1.93	1.00800	0.84852	0.93036	0.58198
Mercury (Hg)	--	--	0.0001	0.0000	0.00001	0.00000	0.00004	0.00003	0.00003	--	0.00003	0.00003
Molybdenum (Mo)	0.015	0.005	0.016	0.004	0.0185	0.0071	0.0202	0.0091	0.01592	0.00764	0.01154	0.00622
Nickel (Ni)	0.003	0.002	0.0045	0.0024	0.0076	0.0032	0.0141	0.0129	0.0067	0.0041	0.00639	0.00444
Phosphorus (P)	0.173	0.075	--	--	--	--	--	--	0.2	0.1	--	--
Potassium (K)	7.1	2.6	7.4	1.4	7.0	0.4	8.5	1.3	8.17	0.99	0.13	0.06
Rubidium (Rb)	0.692	0.468	--	--	--	--	0.0007	0.0004	0.9325	0.1603	4.1944	3.4747
Selenium (Se)	0.0029	0.0050	0.0002	0.0001	0.00020	0.00020	0.00025	0.00000	0.0003	--	0.31232	0.39570
Silicon (Si)	4.52	2.42	3.14	1.09	3.09	0.83	5.58	--	3.58	0.82	0.00	0.00
Silver (Ag)	0.0005	0.0004	0.0001	0.0001	0.00006	0.00003	0.00001	0.00000	0.00001	0.00001	2.56897	1.64559
Sodium (Na)	22.370	6.401	22.8	3.9	19.9	1.6	23.0	2.7	23.65	2.43	0.00	0.00
Strontium (Sr)	0.732	3.417	0.107	0.016	0.104	0.015	0.133	0.037	0.12273	0.01267	11.80628	10.11080
Sulphur (S)	13.3	5.1	24.8	5.9	25.1	3.0	56.1	--	34.0	5.5	0.4	1.1
Thallium (Tl)	0.0029	0.0042	0.00032	0.00027	0.0003	0.0001	0.0006	0.0005	0.00040	0.00022	19.93816	18.76612
Tin (Sn)	0.001	0.000	0.001	0.002	0.00050	0.00000	0.00021	0.00005	0.00017	0.00007	0.00078	0.00130
Titanium (Ti)	0.0011	0.0017	0.0025	0.0018	0.00175	0.00019	0.00073	0.00015	0.0007	0.0005	0.00051	0.00066
Uranium (U)	0.0029	0.0008	0.001	0.001	0.00105	0.00051	0.00130	0.00020	0.00159	0.00083	0.00110	0.00083
Vanadium (V)	0.0007	0.0007	0.0002	0.0002	0.00015	0.00006	0.00016	0.00018	0.00017	0.00006	0.0009	0.0005
Zinc (Zn)	0.0062	0.0060	0.010	0.012	0.006	0.004	0.004	0.002	0.0044	0.0029	0.0002	0.0002
Zirconium (Zr)	0.001	0.000	0.001	0.001	0.0005	0.0000	--	--	0.0025	--	0.00571	0.00331

*values half the DL were used for calculations

Appendix G

Underground Fuel Tank Removal (2001)

- Results of testing on soil
- Letter from Manitoba Conservation



Manitoba

**Conservation**

Environmental Operations Sector
Regional Operations Division

123 Main Street, Suite 160
Winnipeg MB R3C 1A5
CANADA

<http://www.gov.mb.ca/environ>

Telephone: (204) 945-7009

September 17, 2001

Tantalum Mining Corporation of Canada Ltd.
Box 2000
Lac du Bonnet, MB R0E 1A0

Attention: Tom Tonner

**RE: C. 1918 Tanco Tantalum Mine
Manitoba**

Manitoba Conservation has reviewed a report dated June 14, 2001, written by The National Testing Laboratories Limited regarding a tank pull at the Tanco Tantalum Mine located approximately 50 km north east of Lac du Bonnet along Highway 315. This report was received by Manitoba Conservation on August 27, 2001. This report is not considered a site investigation report.

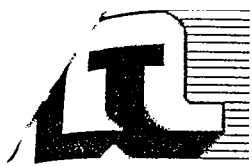
The report states that one 1000-gallon diesel fuel underground storage tank and one 2000-gallon gasoline underground storage tank as well as a pump island and underground fuel lines were removed by Beaver Pump Service. On May 29, 2001, two soil samples were recovered and analyzed for benzene, ethylbenzene, total xylenes, toluene, total volatile hydrocarbons and total semi-volatile hydrocarbons. Both samples were found to be less than Manitoba Environment Level III soil remediation criteria and less than the CCME 1999 Commercial land use Soil Quality Guideline for benzene, toluene, ethylbenzene, and total xylenes. No soil samples were taken from the pump island area. Manitoba Conservation understands that the fuel dispensing area will remain in service with an aboveground diesel fuel tank.

It is the position of Manitoba Conservation that no further work is required at this site at this time. Should any contamination create an exposure concern in the future, the responsible party will be directed by this Department to initiate remedial measures. This site has been added to the Manitoba Sites database as C. 1918.

It should be noted that the position of Manitoba Conservation as stated in this letter is based on the information provided to this office by The National Testing Laboratories Limited and relates only to the matters within the scope of the investigation conducted by the Consultant. No additional site monitoring was performed by Manitoba Conservation.

Sincerely,

Joan La Rue-van Es, M.Sc.
Contaminated Sites



Beaver Pump Service (1988) Ltd.
1399 Dugald Road
Winnipeg, Manitoba
R2J 0H3

June 14, 2001

Attention: Keith Lalonde
Project: Tanco Tantalum Mine,
Manitoba (G1352)

1.0 SUMMARY

The National Testing Laboratories Limited (NTL) were retained to conduct a field and laboratory investigation during the removal of two underground storage tanks (USTs) located at the Tanco Tantalum Mine, approximately 50 kilometres northeast of Lac du Bonnet along Highway 315. The purpose of the investigation was to determine if there was any contaminated soil in the vicinity of the tanks and to ensure that any impacted soil be excavated and disposed of properly.

Following the removal of the tanks, 10 soil samples were recovered from the walls and base of the excavation. All samples were screened for hydrocarbon vapours and two were selected for laboratory analysis of parameters associated with gasoline and diesel fuel contamination. Samples were analyzed for BTEX (Benzene, Toluene, Ethylbenzene and Xylenes), TVH (Total Volatile Hydrocarbons) and TSH (Total Semi-Volatile Hydrocarbons).

Based upon the results of the field and laboratory investigation conducted, it can be concluded that the soils in the vicinity of two former USTs at the Tanco Tantalum Mine site, northeast of Lac Du Bonnet, Manitoba comply with the applicable CCME Soil Quality Guidelines (SQG) for Industrial Land Use as well as Manitoba Conservation Level III (Low Sensitivity) Soil Remediation Criteria (SRC).

2.0 INTRODUCTION

2.1 Terms of Reference

The National Testing Laboratories Limited were retained by Beaver Pump Service (1988) Ltd. to undertake soil sampling and laboratory analysis during the removal of two USTs located at the Tanco Tantalum Mine site, northeast of Lac du Bonnet, Manitoba. The work conducted included:

- Observe the removal of the tanks, inspect tanks and record pertinent information.
- Recover samples from the walls and base of the former USTs excavation.
- Screen all soil samples recovered for hydrocarbon vapours.
- Test selected soil samples for BTEX, TVH and TSH concentrations.
- Prepare a report outlining the field and laboratory results and providing a conclusion about the environmental status of the soils in relation to applicable guideline values.

2.2 Site Location and Description

The Tanco Tantalum Mine site is located approximately 50 kilometres northeast of Lac du Bonnet,

Accredited by the Standards Council of Canada for specific tests listed in our Scope of Accreditation (www.scc.ca)

Manitoba along Highway 315 as shown on the attached area location plan. The tank farm was located approximately 250 ft north of the security gate as shown on the attached site plan. The tank farm consisted of a 1000 gallon diesel fuel and a 2000 gallon gasoline UST as well as an above ground diesel fuel tank which would remain in service. In addition to the removal of the underground tanks, a pump island and underground fuel lines were also removed and disposed of.

3.0 FIELD INVESTIGATION AND LABORATORY WORK

3.1 Guidelines and Assessment Criteria

The following guideline documents were used to conduct the field work and to assess the environmental status of soils around the former tanks:

1. Manitoba Conservation Guideline for the Dismantling and Removal of Underground and Aboveground Petroleum Storage Tank Systems in Manitoba, June 1991 (Revised January 2000).
2. CCME 1999 Canadian Environmental Quality Guidelines, Canadian Soil Quality Guidelines for the Protection of Environment and Human Health.
3. Guideline for Environmental Site Investigations in Manitoba, June 1998.

3.2 Current and Anticipated Land Use

The site is currently and will continue to be an operating tantalum mine and is therefore designated as an industrial land use site.

3.3 Field Investigation

The field investigation was conducted by NTL field personnel on May 29, 2001. Soil excavation and tanks removal were performed under the supervision of Beaver Pump Service (1988) Ltd. which commenced after a short safety meeting. The 1000 gallon gasoline UST, removed first, was empty of product prior to removal and was slightly rusted but had no visible holes or perforations. After removal, the tank was purged of hydrocarbon vapours using a portable air compressor. The 2000 gallon diesel fuel UST was pumped out by A-1 Environmental Services prior to removal and was found to be slightly rusted but had no visible holes or perforations.

The general soil profile at the tank farm location consisted of naturally occurring sand with gravel and boulders. No groundwater was encountered.

Soil samples S1 to S10 were recovered from the walls and base of the excavation at depths varying from 3 to 8 ft.

The majority of the soil removed was stockpiled on site and later used as backfill. Approximately five cubic feet of soil were removed and taken to the Tanco waste disposal ground following approval by a

Manitoba Conservation Environmental Officer.

Figure 1, Sample Location Plan, illustrates the limits of the excavation as well as soil sample locations.

3.3 Hydrocarbon Vapour Screening

All soil samples recovered from the existing excavation were split with one-half of each sample placed in a sealed polyethylene bag and the other half in 125 mL EPA-approved clear glass sampling jar. The jarred samples were placed in a cooler for later laboratory analyses while the bagged samples were allowed to warm up to +20°C for hydrocarbon vapour screening using a GasTech Supersurveyor Hydrocarbon Vapour Tester calibrated to hexane.

The hydrocarbon screening values of soil samples recovered from the USTs excavation ranged from 24 to 240 ppm (parts per million). These hydrocarbon screening results are usually indicative of low-level hydrocarbon contamination. All hydrocarbon vapour concentrations in ppm are shown in Table 1.

Table 1: Hydrocarbon Vapour Concentrations, Tanco Tantalum Mine, Lac du Bonnet, Manitoba

Field I.D.- Sample Depth, ft	ppm	Field I.D.- Sample Depth, ft	ppm
S1-3*	140	S6-8'	64
S2-3'	110	S7-8'	80
S3-5.5'	26	S8-8**	240
S4-4'	30	S9-8'	64
S5-4'	24	S10-5.5'	64

* - Sample selected for laboratory analysis

3.4 Laboratory Analysis

Laboratory analyses were performed by the Analytical Chemistry Laboratory in Winnipeg, an environmental laboratory accredited by SCC/CAEAL (Standards Council of Canada/Canadian Association for Environmental Analytical Laboratories) for specific tests.

Two soil samples taken from the former USTs excavation were selected for laboratory analyses and the results are shown in Table 2. Laboratory QA/QC procedures and QC sample results are available upon request.

Table 2: BTEX, TVH and TSH Soil Test Results, Tanco Tantalum Mine, Lac du Bonnet, Manitoba

Field I.D.	Vapour conc., ppm	Concentration, mg/kg						
		Benzene	Toluene	Ethyl-benzene	Xylenes (m,p,o-)	TVH (C ₅ -C ₁₀)	TSH (C ₁₁ -C ₂₀)	
S1-3'	140	<0.05	<0.05	0.16	0.57	23	370	
S8-8'	240	<0.05	<0.05	0.05	0.17	<10	150	
CCME Soil Quality Guidelines ¹						Manitoba Conservation ²		
Agricultural		0.05	0.1	0.1	0.1	Level I	100	500
Residential/Parkland		0.5	0.8	1.2	1.2	Level II	150	2000
Commercial		5	0.8	20	17	Level III	800	2000
Industrial		5	0.8	20	20			

¹ Canadian Council of Ministers of the Environment (CCME), Canadian Environmental Quality Guidelines, 1999.
Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health.

² Manitoba Conservation "Guideline for Environmental Site Investigations in Manitoba", June 1998.

Level I - High Sensitivity

Level II - Medium Sensitivity

Level III - Low Sensitivity

The concentrations of BTEX, TVH and TSH parameters in the soil samples tested were found to be below the applicable industrial land use criteria.

4.0 CONCLUSIONS

Field and laboratory investigations of the subsurface soils were conducted during the removal of two underground storage tanks (USTs) located at the Tanco Tantalum Mine, approximately 50 kilometres northeast of Lac du Bonnet along Highway 315. The purpose of the investigation was to determine if there was any contaminated soil in the vicinity of the tanks and to ensure that any impacted soil is removed from the site and disposed of accordingly.

Following the removal of the tanks, 10 soil samples were recovered from the excavation. All samples were screened for hydrocarbon vapours and two were selected for laboratory analysis of parameters associated with gasoline and diesel-fuel contamination. Samples were analyzed for BTEX (Benzene, Toluene, Ethylbenzene and Xylenes), TVH (Total Volatile Hydrocarbons) and TSH (Total Semi-Volatile Hydrocarbons).

Based upon the results of the field and laboratory investigation conducted, it can be concluded that the soils in the vicinity of two former USTs comply with CCME Soil Quality Guidelines (SQG) for Industrial and Use as well as Manitoba Conservation Level III (Low Sensitivity) Soil Remediation Criteria (SRC).

5.0 **STANDARD LIMITATIONS**

If samples are recovered and testing conducted, results cannot necessarily be extrapolated over the entire site. Results are only representative of the vicinity in which they were taken.

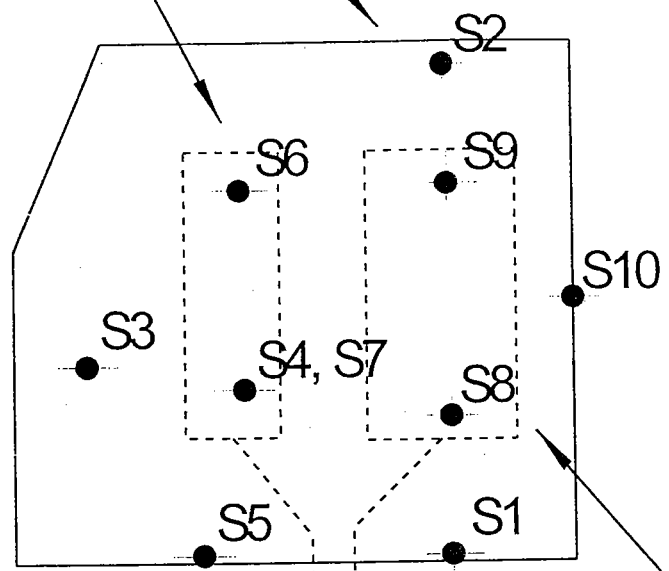
Prepared by: *I. Alguacil*
Ines Alguacil, B.Sc.,
Environmental and Geotechnical
Engineering Services

Reviewed by: *Peter Giesbrecht*
Peter Giesbrecht, P. Eng., Manager,
Environmental and Geotechnical
Engineering Services



Former location of 6000 gallon gasoline UST

Excavation limits



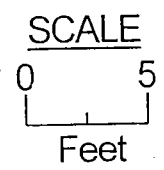
Former underground fuel lines

Former location of 2000 gallon diesel fuel UST

Above ground Diesel Fuel Tank

Former Pump Island

● - Sample locations, May 29/01



THE NATIONAL TESTING LABORATORIES LIMITED
Established in 1923

Sample Location Plan

Tanco Tantalum Mine, Manitoba

Project No.: G1252

Drawn By: I.A.

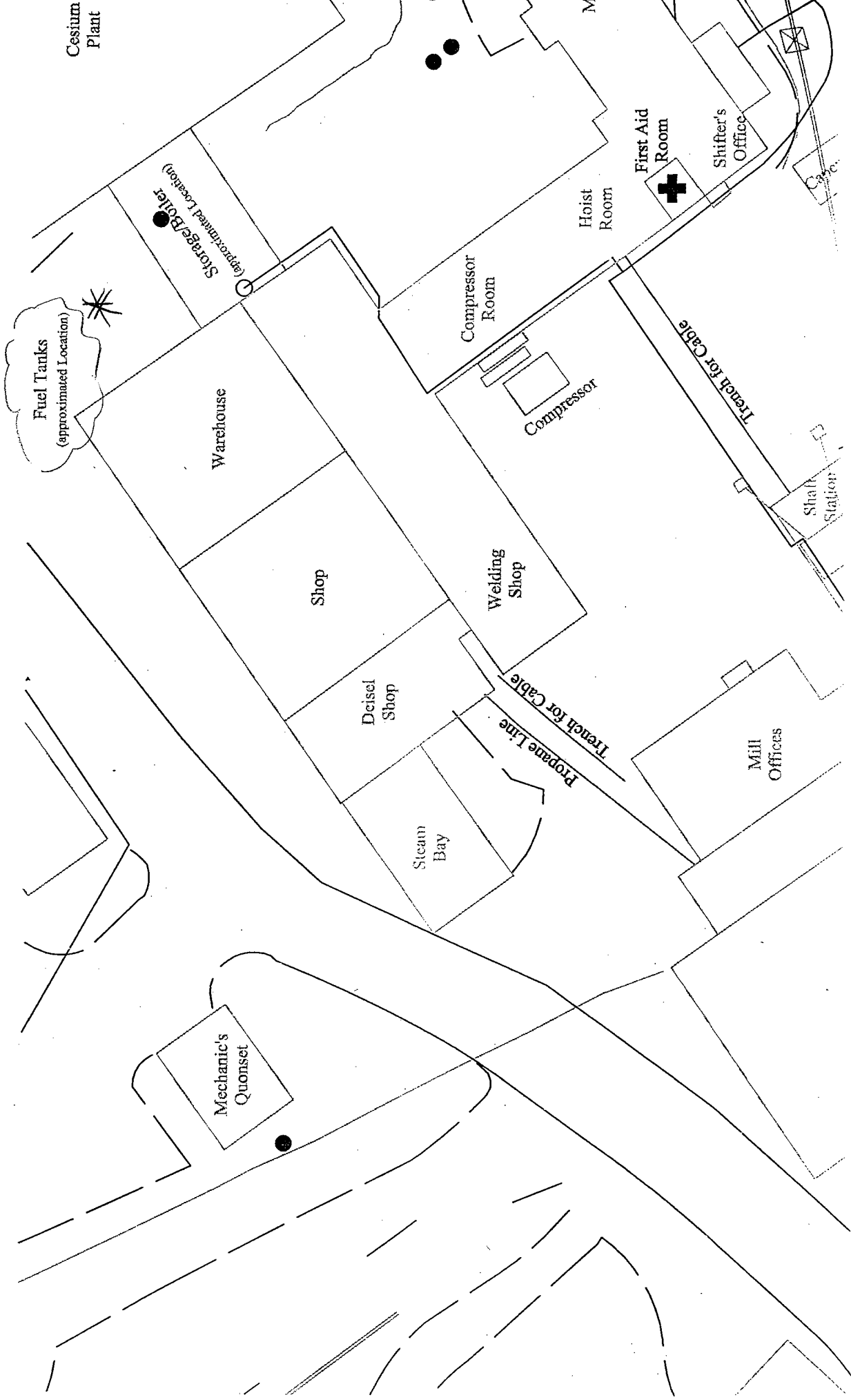
Figure: 1

Date: June 7, 2001

Checked By: P.G.

Scale: As shown

Cesium Plant



Fuel Tanks
(approximated Location)

Storage/Boiler
(approximated Location)

Warehouse

Shop

Deisel Shop

Welding Shop

Steam Bay

Compressor Room

Compressor

Hoist Room

First Aid Room

Shifter's Office

Trench for Cable

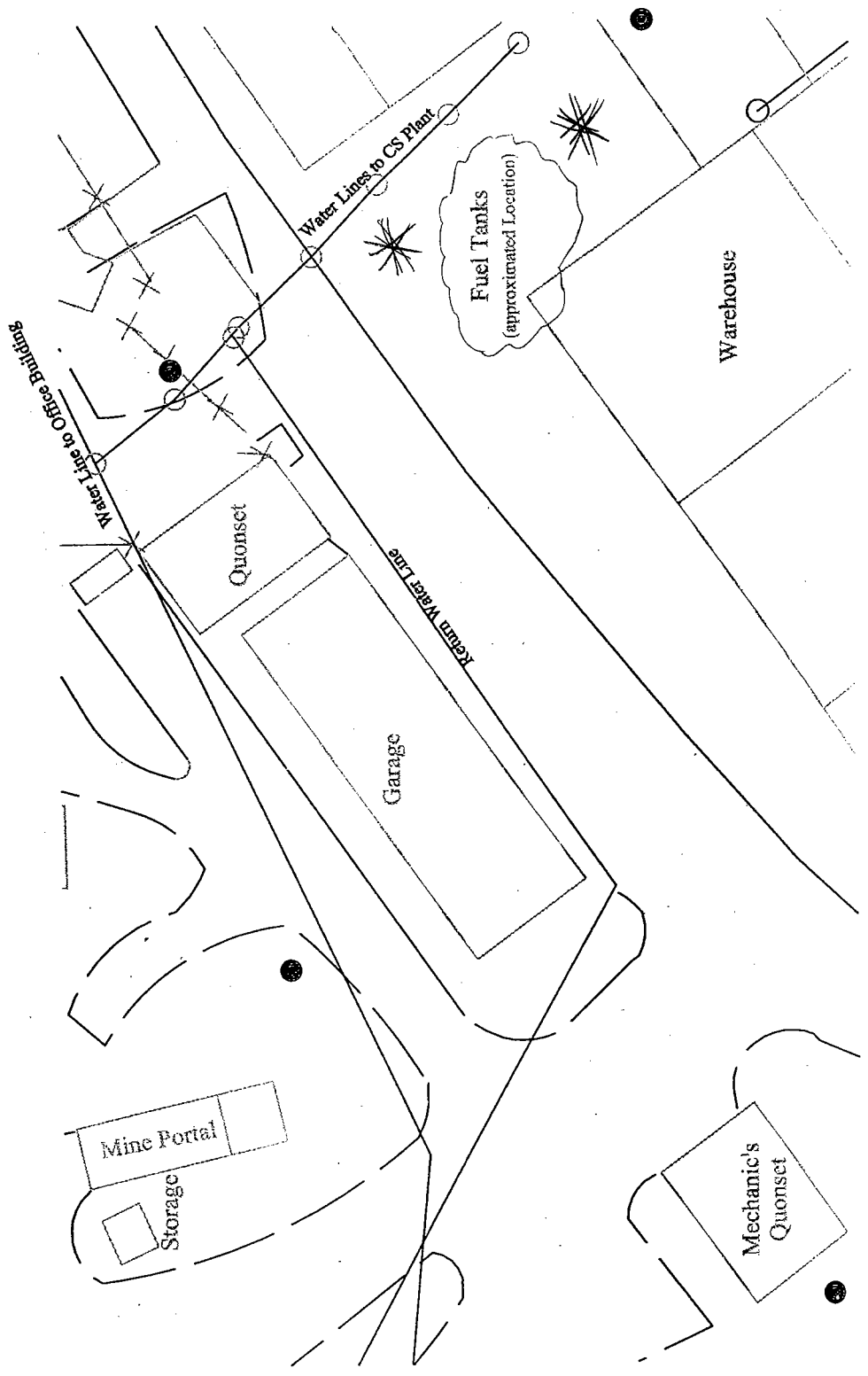
Shaft Station

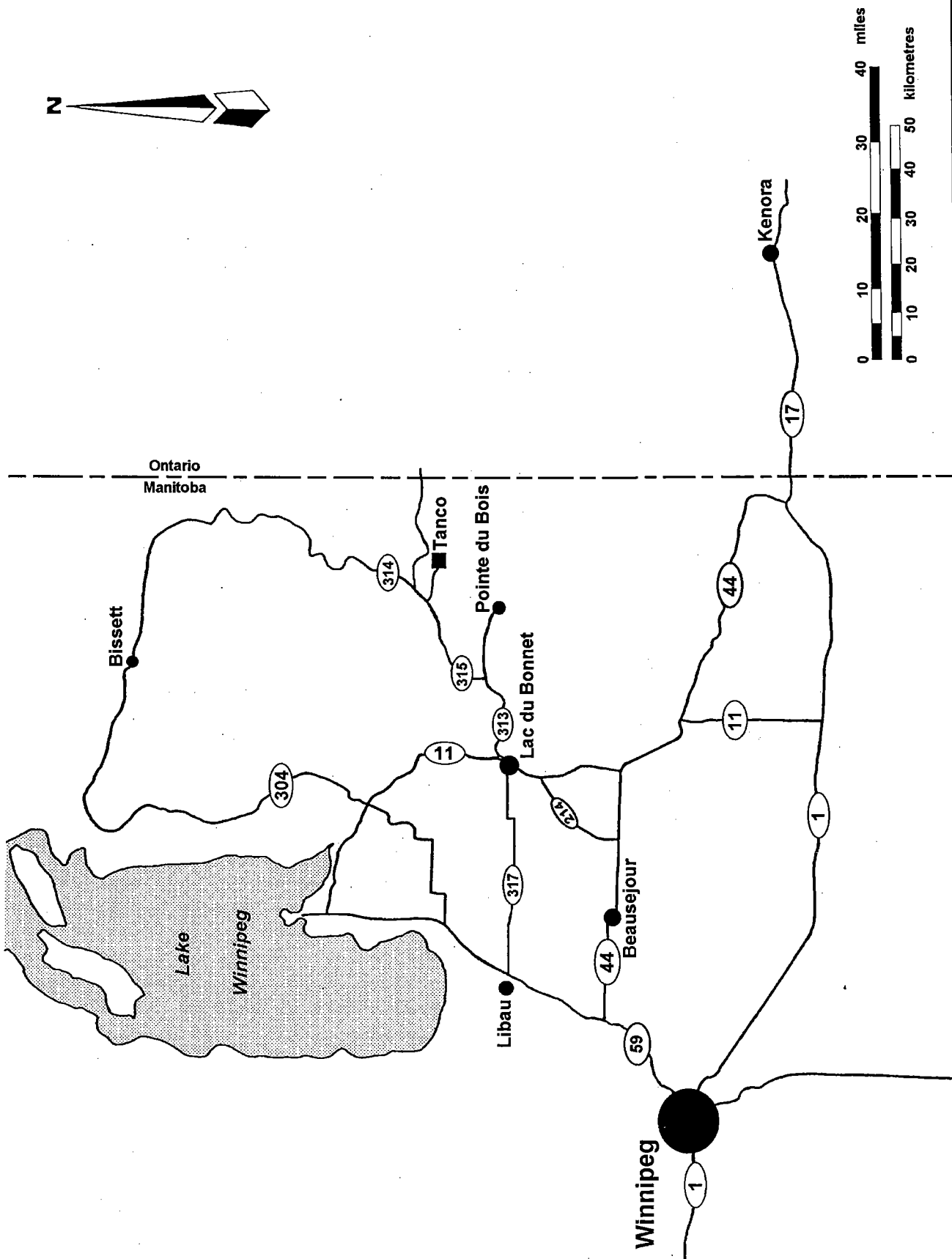
Mill Offices

Mechanic's Quonset

Propane Line

M





Appendix H Revegetation Study (Wardrop 2008)

- Preliminary Report: Initial Revegetation Study of the TANCO Mine Tailings



Report to:

**TANTALUM MINING CORPORATION OF
CANADA**

**Preliminary Report: Initial
Revegetation Study of the TANCO
Mine Tailings**

Document No. 0601660103-REP-R0003-00

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Report to:

TANTALUM MINING CORPORATION OF CANADA

PRELIMINARY REPORT: INITIAL REVEGETATION STUDY OF THE TANCO MINE TAILINGS

SEPTEMBER 2008

Prepared by		Date	<u>19 Sep 2008</u>
	Elena Khozhina, Ph.D., AIT		
Reviewed by		Date	<u>19 Sept 2008</u>
	Doug Ramsey, M.Sc., R.P.Bio		
Authorized by		Date	<u>19 Sept 2008</u>
	Doug Ramsey, M.Sc., R.P.Bio		

WARDROP

400-386 Broadway, Winnipeg, Manitoba R3C 4M8

Phone: 204-956-0980 Fax: 204-957-5389 E-mail: winnipeg@wardrop.com

REVISION HISTORY

REV. NO	ISSUE DATE	PREPARED BY AND DATE	REVIEWED BY AND DATE	APPROVED BY AND DATE	DESCRIPTION OF REVISION

EXECUTIVE SUMMARY

Tantalum Mining Corporation (TANCO) has proposed in their closure plan for the TANCO mine site at Bernic Lake to rely on natural revegetation of their Tailings Management Areas at closure (TANCO, 2004). Manitoba Conservation has requested that TANCO provide quantitative data on the suitability and effectiveness of natural revegetation for the TANCO tailings. This report describes the study and provides preliminary results.

The East Tailings Management Area (ETMA) plots were sited to represent a range of periods since the last physical disturbance in order to establish a time course for vegetation establishment.

All plants occurring within each study plot were identified to species or family, and their cover was measured. Soil samples were collected at each study plot and analyzed for moisture content, pH, total organic carbon, and available nutrients (nitrogen, phosphorus, and potassium).

A total of 31 plant species were found within the area, including 21 native and 10 introduced species. Five native trees identified in the ETMA are common to those observed in the forest and wetlands surrounding the mine.

It is evident that natural revegetation provides rapid and adequate plant cover (89% after 1 year; and 88% on average after 8+ years) development in the ETMA. Organic matter is formed on the surface of the ETMA from plant litter in older vegetation areas. The CPF Residue study plot did not support any vegetation after 1 year, and no organic matter accumulation was found in this plot. Therefore, revegetation trials are recommended to be carried out to select an optimal method of revegetation of the CPF Residue Stockpile.

ACKNOWLEDGEMENTS

The Wardrop Engineering Study Team acknowledges with appreciation, the contribution of the following individuals consulted during this investigation, particularly:

- Tom Hilliard at TANCO and Don Sikora at Don Sikora Contracting Ltd. for providing historical information regarding ETMA disturbance.
- Justin Avery who drafted the study plot location.

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1.0 INTRODUCTION

Tantalum Mining Corporation (TANCO) has proposed in their closure plan for the TANCO mine site at Bernic Lake to rely on natural revegetation of their Tailings Management Areas at closure (TANCO, 2004). Manitoba Conservation has requested that TANCO provide quantitative data on the suitability and effectiveness of natural revegetation for the TANCO tailings. Wardrop Engineering Inc. (Wardrop) was retained by TANCO to conduct a study to provide the requested information. This report describes the study and provides preliminary results.

1.1 SITE DESCRIPTION

The TANCO mine and mill complex is located approximately 160 km by road northeast of Winnipeg at Bernic Lake, Manitoba. The Tantalum mine is situated on the northwest shore of Bernic Lake (50°24'55"N, 95°26'30"W), which drains into the Bird River system (Figure 1).

The TANCO mine site is located in the Lower English River Section of the Manitoba Model Forest, which was established in 1992 and extends east from Lake Winnipeg to the Manitoba-Ontario boundary and north from Pinawa to Township 26 (510 15' N) (Punter, 1994). The Lower English River Section belongs to the Manigotagan Lake Plain Ecodistrict of the Mid-Boreal Precambrian Ecozone of the Boreal Shield Ecozone. The Boreal Shield Ecozone is characterised by dominating Precambrian outcrops, coniferous and broadleaved forest, brunisolic soils derived from morainic and lacustrine materials, and a cold, moist boreal climate (Wiken, 1996)

The forest cover in the Lower English River section consists primarily of mixed stands of trembling aspen (*Populus tremuloides Michx.*), balsam poplar (*Populus balsamifera L.*), white spruce (*Picea glauca (Moench) Voss*), balsam fir (*Abies balsamea (L.) Mill.*), and white birch (*Betula papyrifera Marshall*) (Punter, 1994). Black spruce (*Picea mariana Mill.*) and tamarack (*Larix laricina (Du Roi) K. Koch.*) are dominant in wetlands (Punter, 1994).

The facility has two tailings management areas (TMA). The East TMA (ETMA) was originally used for disposal of conventional tantalum and spodumene process tailings from the start of mine operations in 1969 through 1992. Since the 1980s, TANCO has occasionally mined and reprocessed surficial tailings deposits in the southern half of the ETMA for recovery of residual tantalum. Conventional tailings disposal was transferred to the West TMA in 1993 and continues. The ETMA was inactive until May 1997, when the first of two containment cells (CPF Cell No. 1) was constructed in the ETMA for the management of residue from the Cesium Products Facility (CPF). Construction of the second containment cell (CPF Cell No. 2) began in 1999 and the cell was commissioned in March 2000. Both cells were filled with residue by 2001, when TANCO received approval for the stockpiling of CPF residue in

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the ETMA. This approval enabled re-use of the containment cells for removal of solids and recycle of the CPF liquid waste back into the CPF plant process. CPF Cell No.1 has since been emptied 4 times, including 2008 residue removal, and Cell No.2 has been emptied 3 times for a total CPF stockpile volume of 326,600 m³ (Tom Hilliard, Technical Services Manager, TANCO, pers. com.).

The conventional tantalum/spodumene tailings consist of ore gangue. The CPF residue consists of approximately equal quantities of ore gangue and gypsum with approximately 25% mechanically encapsulated moisture.

2.0 METHODS

2.1 STUDY PLOT SELECTION

Inactive tailings (ETMA) and undisturbed residue on the CPF Residue Stockpile were studied. Five study plots (each 16 m² in area; 4 m x 4 m) were located on the conventional tailings within the ETMA and one plot was located on the CPF Residue Stockpile. The conventional tailings plots were sited to represent a range of periods since the last physical disturbance in order to establish a time course for vegetation establishment.

The vegetation cover over the entire ETMA was categorised as Young (one year since last disturbance), Intermediate (from two to seven years since last disturbance) or Old (eight plus years since last disturbance) on the basis of the history of disturbance and visual inspection. Old vegetation covers the largest area (52,062 m²), followed by Intermediate (14,132 m²), and young vegetation (8,823 m²) (Figure 2).

Three of the plots (TRO1, TRO2, and TRO3) were located in the oldest undisturbed area (Old Vegetation Area) between CPF Cell No. 1 and Cell No.2 (Figures 2, 7, 9, and 11). This area was identified as not having been disturbed for at least 8 years (Tom Hilliard, Technical Services Manager, TANCO, pers. com.). Each plot represents one of the three sub-areas (Old Vegetation Area No. 1, 2, and 3). Old Vegetation Area No. 1, 2, and 3 consists of plant communities similar to those in TRO1, TRO2, and TRO3 plots, accordingly.

One study plot (TRY) was established in what has been termed the Young Vegetation Area (Figures 2 and 3). This area was last disturbed in 2007 (Tom Hilliard, Technical Services Manager, TANCO and Don Sikora, Executive Director, Don Sikora Contracting Ltd., pers. com.).

One plot was established in what has been termed the Intermediate Vegetation Area (Figures 2 and 5). The precise age of the Intermediate Vegetation Area was not known at the time this interim report was prepared, but it is believed to be between that of the Young Vegetation Area and the Old Vegetation Area. The specific age of the Intermediate Vegetation Area will be determined for the final report.

2.2 PLANT IDENTIFICATION

All plants occurring within each study plot were identified to species where possible and to family in all cases. The majority of plant species were identified on site according to Cody and Britton (1989), Frankton and Mulligan (1993), Johnson et al. (1995), and Baldwin and Sims (1997). Plants not identified in the field were sampled and sent to the University of Manitoba Herbarium (WIN) in Winnipeg for identification.

2.3 PLANT COVER MEASUREMENT

Total plant cover and plant cover for each species were measured in each study plot by visual estimation (Gain and de Oliveira Castro, 1959; Burton and Burton, 2003). Each study plot was divided into four 2 m x 2 m quadrats with plant cover estimated in each quadrat.

2.4 SOIL SAMPLING

Three soil cores (7 cm diameter) were collected from the active root zone (0 to 30 cm depth) equidistantly along a diagonal across each plot. The soil cores were mixed together and homogenized to obtain a single composite sample for each plot (Carter, 1993). Three subsamples were taken from each composite sample and were sent to Maxxam Analytics, Burnaby, BC, for analysis of moisture content, pH, total organic carbon, and available nutrients (nitrogen, phosphorus, and potassium).

3.0 RESULTS AND DISCUSSION

3.1 PLANT COMMUNITY DEVELOPMENT

3.1.1 ETMA CONVENTIONAL TAILINGS

A total of 31 plant species were found within the East Tailings Management Area (ETMA), including native and introduced species (Table 1). Native species included five trees, one shrub, wildflowers (4), graminoids (1), ferns and allies (2), and mosses(1), and seven weeds. Introduced species included three legumes, and seven weeds (Table 1).

Revegetation of the tailings management areas at closure serves two primary purposes that are achieved on different schedules. The immediate requirement is stabilization of the tailings surface for the prevention of erosion by wind or water. This requirement is primarily addressed by establishment of pioneer plants, which are eventually replaced by more permanent vegetation (Solbrig and Solbrig, 1994). Over the longer term, revegetation also functions as ecosystem restoration, as the plant community diversifies through natural succession. In particular, the establishment of trees contributes to long term ecosystem restoration (Beyers, 2004).

All tree species found within the ETMA, including balsam poplar, black spruce, tamarack, trembling aspen, and white birch, are species that were observed in the surrounding forest cover and are commonly found in the forest cover and wetlands of the Lower English River Section of the Mid-Boreal Precambrian Ecoregion (Punter, 1994).

The legume species found within the ETMA were categorized separately from other plants as they provide fixation of nitrogen in soil and promote plant growth (Burton and Burton, 2003). Legume cover is one fifth of the total plant cover (89 %) in TRY Plot (Table 2).

Study plots in two of the three Old Vegetation areas (Old Vegetation Area No. 2 and 3), were primarily covered by native species (Table 2). Old Vegetation Area No.1 was covered by weeds with the exception of balsam poplar and pussytoe (Table 2).

The study plot in the Young Vegetation Area (TRY) was primarily covered by weed species, which are typical for recently disturbed areas (Table 2). Consistent with the time since past disturbance, the study plot within the Intermediate Vegetation Area (TRI) was covered by more native species than plot in the Young Vegetation Area and by fewer native species compared than in the Old Vegetation Area (Table 2).

3.1.2 RESIDUE

The CPF Residue study plot (TRR) did not support any vegetation (Table 2).

3.2 PLANT COVER

Effective erosion control requires 70 to 80 % plant cover for forest roadside disturbances after the first growing season (Carr, 1980). Minimum erosion of burn or otherwise disturbed forest sites was noted when plant cover was 60 to 70 % (Noble, 1965; Orr, 1970). The TRY plot within the Young Vegetation Areas had 89 % plant cover only one year after disturbance, which is sufficient for erosion control.

Plant cover in the Intermediate (TRI) and Old Vegetation plots (TRO1, TRO2, and TRO3) ranged between 66% (TRO1) and 100% (TRI) and averaged 88%. The lower plant cover on TRO1 appears to be a result of natural variation among plots related to variations in topographic relief in the Old Vegetation Area. The Old Vegetation Area No. 1 was not screened by hills as Old Vegetation Area No. 2 and 3. However, generally, it is evident that natural revegetation provides rapid and adequate plant cover development.

The plant community in the TRY plot was dominated by Capillary thread moss (63% cover) and redtop (53% cover) (Table 2). The TRI was dominated by common reed grass (83% cover), willow spp. (29% cover), and redtop (29% cover) (Table 2). Dominant plant cover within TRO1 was purple horn toothed moss (36% cover) (Table 2). Dominant plant cover in TRO2 was strawberry spp. (25% cover), white sweet clover (22 % cover), and raspberry spp. (20% cover) (Table 2). Dominant plant over in TRO3 was common reed grass (50% cover) and common ragweed (25% cover) (Table 2).

3.3 SOIL CHARACTERISTICS

An organic soil horizon develops on the surface of tailings as a result of the accumulation of plant litter. The organic soil horizon stabilises disturbed surface soils (Beyers, 2004). The depth of the organic layer was 3 cm in both TRO2 and TRO3 (Old Vegetation Areas No. 2 and No. 3) (Figure 10 and 12). The depth of organic layer in TRO3 (Old Vegetation Area No. 1) varied from 0 to 2 cm. One centimetre of organic matter was measured in TRI (Intermediate Vegetation Area). No organic layer was observed in TRY (Young Vegetation Area), although there was 1 mm of moss cover (Figure 4). No organic matter accumulation was found on the CPF Residue study plot (Figure 13).

No soil horizons have yet developed beneath the organic layer in the ETMA (Figure 4, 6, 8, 10, and 12)

Soil samples for analysis of physical and chemical properties were submitted to Maxxam on 20 August 2008 but the analytical work was still in progress at the time this preliminary report was prepared. These data will be included in the final report.

4.0 CONCLUSIONS

A total of 31 plant species were found in the five plots surveyed including 21 native and 10 introduced species. Five native trees identified in the ETMA are common to those observed in the forest and wetlands surrounding the mine. Recently (within 1 year) disturbed areas are dominated by weed species, which are replaced by native species in the older (eight plus years) plant communities.

It is evident that natural revegetation provides rapid and adequate plant cover (89% after one year, 88% on average after eight plus years) development in the ETMA. An organic soil horizon, which is known to stabilise surface soil, is developing in the ETMA from accumulated plant litter. However, no soil horizons have yet developed beneath the organic layer.

The CPF Residue study plot did not support any vegetation and no organic matter accumulation was found in this plot. We recommend establishment and monitoring of different trial revegetation plots within the CPF Residue area for selection of the optimal revegetation method. The trial revegetation plots should be established using the results of ETMA vegetation cover study and results of the laboratory analysis CPF Residue.

5.0 REFERENCES

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Wiken, E. B. 1996. Ecozones of Canada. Environment Canada Ottawa, ON.

Table 1: Plant species identified within the TANCO ETMA, August 19-20, 2008 (See Figure 2 for study plot locations).

Common Name	Scientific Name	Distribution	Habitat
I. Native			
Trees			
Balsam poplar	<i>Populus balsamifera</i> L.	Wide spread across western boreal forest and aspen parkland	Growth in moist depressions and on terraces along streams, rivers and floodplains ¹
Black spruce	<i>Picea mariana</i> Mill.	Wide spread across western boreal forest and aspen parkland	Cold, poorly drained, nutrient -poor sites; growth in bogs, swamps, and upland sites near wetlands ¹
Tamarack	<i>Larix laricina</i> (Du Roi) Koch.	Widespread and common across boreal forest and aspen parkland	Fens, swamps, and wet, mineral soils ¹
Trembling aspen	<i>Populus tremuloides</i> Michx.	Widespread and common across boreal forest and aspen parkland	Dry ridges to rich, moist sites ¹
White birch	<i>Betula papyrifera</i> Marshall	Widespread across boreal forest and occasional in aspen parkland	Well drained but moist sites of open to dense woodland ¹
Shrubs			
Willow spp.	<i>Salix</i> spp.	Particularly common in boreal forest and aspen parkland	Swamps, stream banks, lakeshores, wetlands ¹
Wildflowers			
Large-leaved avens	<i>Geum macrophyllum</i> Wild.	Common in western boreal forest and aspen parkland	Moist meadows, thickets ¹
Pussytoe spp.	<i>Antennaria</i> spp.	Widespread across boreal forest and aspen parkland	Dry, open areas ¹
Raspberry spp.	<i>Rubus</i> spp.	Widespread across boreal forest and aspen parkland	Rich moist woods and openings ¹
Strawberry spp.	<i>Fragaria</i> spp.	Widespread across boreal forest	Dry to moist open woodlands and clearings, disturbed areas ¹
Grasses			
Common reed grass	<i>Phragmites australis</i> L.	Across southern boreal forest and aspen parkland	Marshes, ditches, and shores ¹
Ferns			
Grape fern or Rattlesnake fern	<i>Botrychium virginianum</i> L.	Widespread across southern boreal forest, Northwest Territories and Northern British Columbia	Moist woodlands, thickets, and meadows ¹
Ostrich fern	<i>Matteuccia struthiopteris</i> L.	Widespread across boreal forest, Northwest Territories	Moist to wet forests, along stream banks, sawmips ¹
Mosses			
Capillary thread moss	<i>Meesia uliginosa</i> Hedw.	Widespread across boreal forest	Calcium-rich fens and swamps; wet soil or peat ¹
Weeds			
Canada Fleabane	<i>Erigeron canadensis</i> L.	Settled areas of all provinces	Dry sites, sandy soil, waste places, roadsides wood land trails, gardens, meadows, and pastures ²
Canada goldenrod	<i>Solidago canadensis</i> L.	Across Canada	Cultivated and non wooded areas ²
Common ragweed	<i>Ambrosia artemisiifolia</i> L.	All provinces	Waste places, along road sides, cultivated fields, gardens ²
Common yarrow	<i>Achillea millefolium</i> L.	Across Canada	Waste places, roadsides, lawns, meadows, pastures ²
Fireweed	<i>Epilobium angustifolium</i> L.	Throughout Canada; Persists in recent clearings	Waste places, roadsides, meadows, pastures ²
Foxtail barley	<i>Hordeum jubatum</i> L.	All provinces	Waste places, roadsides, meadows, lawns, ocean shores, borders of salt marshes, dry saline dipressions ²
Horsetail common	<i>Equisetum arvense</i> L.	All provinces	Roadsides, open woods; poorly drained soils and dry places ²
II. Introduced			
Legumes			
Alsike clover	<i>Trifolium hybridum</i> L.	Widespread across most of North America	Cultivated and waste ground ¹
White clover	<i>Trifolium repens</i> L.	Scattered across boreal forest and aspen parkland	Disturbed areas, along roads, meadows ¹
White sweet clover	<i>Melilotus alba</i> Desr.	Widespread across most of North America	Waste and cultivated ground ¹

Table 1 (continued): Plant species identified within the TANCO ETMA, August 19-20, 2008 (See Figure 2 for study plot locations).

Common Name	Scientific Name	Distribution	Habitat
II. Introduced			
Weeds			
Canada thistle	<i>Cirsium arvense</i> L.	Agricultural areas of all provinces	The commonest and most troublesome thistle in cultivated fields, meadows, pastures, roadsides, and waste places ²
Crab grass spp.	<i>Digitaria</i> spp.	All provinces, except Newfoundland and Saskatchewan	Waste places, roadsides, lawns, meadows, pastures ²
Narrow leaved hawkweed	<i>Hieracium umbellatum</i> L.	Wide spread across western boreal forest and aspen parkland	Open forests, meadows, clearings, disturbed ground ²
Purple horn toothed moss	<i>Ceratodon purpureus</i> (Hedw.) Brid.	Across western boreal forest and aspen parkland	Soil, rock, dead wood, burned or logged over areas, roadsides ¹
Redtop	<i>Agrostis stolonifera</i> L.	Southern boreal forest and throughout much of North America	Moist disturbances ¹
Smooth brome	<i>Bromus inermis</i> Leyss.	All provinces	Overgrazed range, abandoned farmlands, roadsides, railroads ²
Sow thistle spp.	<i>Sonchus</i> spp.	All provinces	Waste ground, roadsides, cultivated fields, river and lake shores ²

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Table 2: Plant cover (%) by species identified within the TANCO ETMA, August 19-20, 2008 (See Figure 2 for study plot locations).

	TRY		TRI		TRO1		TRO2		TRO3		TRR
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
I. Native											
Trees											
Balsam poplar					17	19			<0.1	--	No plants found
Black spruce											
Tamarack									2	3	
Trembling aspen									6	13	
White birch									6	13	
Shrubs											
Willow spp.	<0.1	--	29	41			7.5	5.7			
Wildflowers											
Large-leaved avens							0.5	1.0			
Pussytoe spp.			0.5	1.0	<0.1	--	7	4	1	2	
Raspberry spp.							20	20			
Strawberry spp.							25	29			
Grasses											
Common reed grass			83	9					50	0	
Ferns											
Grape or Rattlesnake fern							<0.1	--			
Ostrich fern							2	2			
Mosses											
Capillary thread moss	63	36									
Weeds											
Canada Fleabane	<0.1	--			2	3					
Canada goldenrod											
Common ragweed	2	2	1	1					25	20	
Common yarrow	9	6	6	3	1	0					
Fireweed			1	1							
Foxtail barley	9	14									
Horsetail common			3	2							
II. Introduced											
Legumes											
Alsike clover			3	5							
White clover									<0.1	--	
White sweet clover	16	6	4	3			22	9			

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Table 2 (continued): Plant cover (%) by species identified within the TANCO ETMA, August 19-20, 2008 (See Figure 2 for study plot locations).

	TRY		TRI		TRO1		TRO2		TRO3		TRR
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
ii. Introduced											
Weeds											
Redtop	53	43	29	23	8	15	12	1			
Canada thistle			6	5							
Crabgrass spp.					1	2					
Smooth brome					<0.1	--	3	6			
Narrow leaved hawkweed					0.3	0.5					
Purple horn toothed moss					36	19					
Sow thistle spp.	<0.1	--					7	3	<0.1	--	

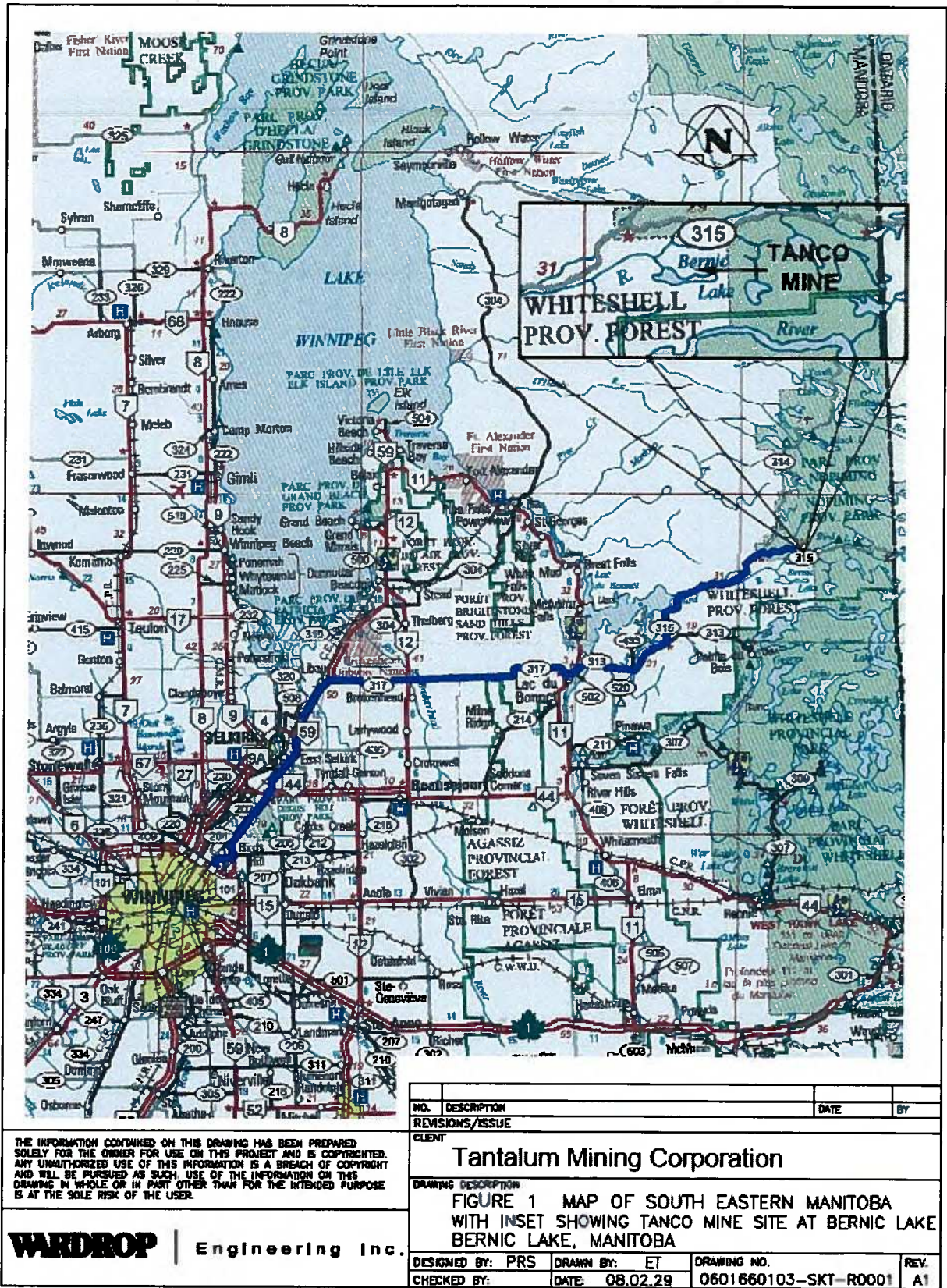


Figure 1: Location of the TANCO mine site at Bernic Lake in south-eastern Manitoba.

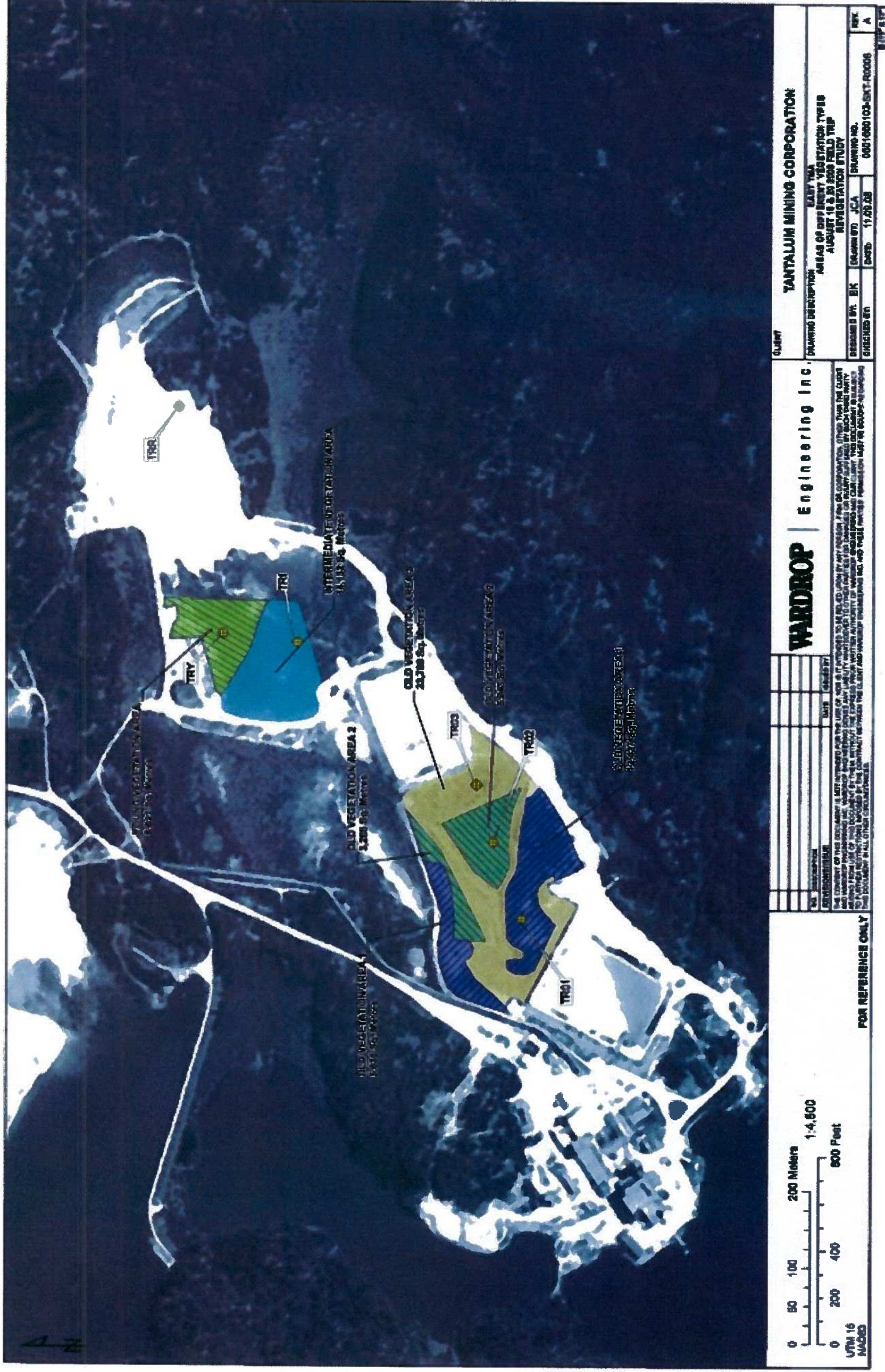


Figure 2: Location of study plots and vegetation areas in the TANCO ETMA and on the CPF Residue Stockpile August 2008.

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Figure 3: TRY facing Northwest.



Figure 4: TRY soil profile.



Figure 5: TRI facing South.



Figure 6: TRI soil profile.



Figure 7: TRO1 facing North



Figure 8: TRO1 soil profile.



Figure 9: TRO2 facing North.



Figure 10: TRO2 soil profile.



Figure 11: TRO3 facing East.



Figure 12: TRO3 soil profile.



Figure 13: TRR facing East.

Appendix I

Project Cost Breakdown



COST ESTIMATE										Tantalum Mining Corporation of Canada Ltd		Date		28 Sept 2008	
Project Name: TANCO Mine Closure Plan										Estimator : STP		Revision		4	
40 \$/hr labour rate										Const. Year		2008		2008	
Item	Description	Unit	Quantity	Labour		Material	unit price	total	TOTAL	Source					
				Hrs	\$/hr										
8.2	Environmental Monitoring														
	Years 1-3 after closure														
	Water quality & toxicity	YR	3			\$0	\$115,000	\$345,000	\$345,000	Wardrop, 2008					
	Biological study	EA	1			\$0	\$224,000	\$224,000	\$224,000	Wardrop, 2008					
	Years 4 - 6 after closure														
	Environmental Act License compliance	YR	3			\$0	\$60,000	\$180,000	\$180,000	Wardrop, 2008					
9.1.1	Tailings Disposal Area														
	East and West TMA	TO	1			\$0	\$30,000	\$30,000	\$30,000	Rakowski, 2008					
	Cesium Process by-product cells	TO	1			\$0	\$240,000	\$240,000	\$240,000	Rakowski, 2008					
9.1.2	Dams and Control Structures														
	No activities currently planned as dams are stable.														
9.1.3	Water Management														
	Remove culvert	EA	1			\$0	\$32,000.00	\$32,000	\$32,000	Rakowski, 2008					
	Re-contour shoreline	LS	1	200	200	\$40,000	\$0	\$40,000	\$40,000	Estimate					
9.2.1	Crown Pillars / Mine Openings														
	Ventilation Shaft - Concrete Cap and Breather	EA	2			\$0	\$7,500	\$15,000	\$15,000	Rakowski, 2008					
	Decline - Concrete Cap and Breather	EA	1			\$0	\$45,000	\$45,000	\$45,000	Rakowski, 2008					
	Headframe - Concrete Cap and Breather	EA	1			\$0	\$15,000	\$15,000	\$15,000	Rakowski, 2008					
9.2.2	Stopes														
	Remove Equipment from Mine	LS	1	320	40	\$12,800	\$0	\$12,800	\$12,800	Estimate					

COST ESTIMATE										Tantalum Mining Corporation of Canada Ltd		Date		28 Sept 2008		
Project Name: TANCO Mine Closure Plan					Estimator : STP					Revision		4		2008		
40 \$/hr labour rate					Labour		Material		TOTAL		Source					
Item	Description	Unit	Quantity	Hrs	\$/hr	total	unit price	total								
9.2.3	Surface Areas, Buildings and Equipment															
	Cranage (for equipment removal)	MO	12	160	40	\$76,800	\$10,300	\$123,600				\$200,400				
	Mill (incl. headframe) & Chemical Plant	TO	1			\$0	\$460,000.00	\$460,000				\$460,000				Rakowski, 2008
	Warehouse, Shops, other buildings	TO	1			\$0	\$225,000.00	\$225,000				\$225,000				Rakowski, 2008
	Molson facility	TO	1			\$0	\$45,000.00	\$45,000				\$45,000				Rakowski, 2008
	Grading	m ²	10000			\$0	\$0.98	\$9,800				\$9,800				Estimate
	Scarifying	m ²	20000			\$0	\$0.35	\$7,000				\$7,000				Rakowski, 2008
	General Labour	HR	8	160	40	\$51,200		\$0				\$51,200				Estimate
9.2.4	Roads / Services															
	Scarifying	m ²	50000			\$0	\$0.35	\$17,500				\$17,500				Rakowski, 2008
9.3.2	Petroleum Storage Area															
	General Labour	HR	2	160	40	\$12,800		\$0				\$12,800				Estimate
9.3.3	Hazardous Chemicals															
	General Labour	HR	2	160	40	\$12,800		\$0				\$12,800				Estimate
---	Miscellaneous Engineering	LS	1			\$0	\$20,000	\$20,000				\$20,000				Estimate
TOTALS						\$206,400		\$2,033,900				\$2,240,300				



"Ramsey, Doug"
<Doug.Ramsey@wardrop.com>
m>


09/24/2008 12:42 PM

To <tom_hilliard@cabot-corp.com>

cc

bcc

Subject RE: Environmental monitoring

History:  This message has been replied to and forwarded.

Tom

The closure related environmental monitoring costs are estimated as follows on the basis of current labour rates and analytical costs.

3 year close-out period -

MMER/EEM and MB License compliance monitoring - \$115K per year for water quality and toxicity plus one round of biological study at \$224k -
Total cost \$569K for the 3 year period.

3 year post-closure monitoring period -

MB License compliance monitoring only - \$60K per year = \$180K

Total cost of \$749K

Please give me a call if you have any questions.

Regards

Doug Ramsey, M.Sc., R.P.Bio.
Manager, Environmental Services

Wardrop Mining and Minerals
400-386 Broadway
Winnipeg, MB R3C 4M8

Phone: 204.988.0512

Fax: 204.988.0546

Mobile: 204.792-3492

Email: doug.ramsey@wardrop.com <mailto:doug.ramsey@wardrop.com>

-----Original Message-----

From: tom_hilliard@cabot-corp.com [mailto:tom_hilliard@cabot-corp.com]

Sent: Tuesday, September 23, 2008 1:24 PM

To: Ramsey, Doug

Subject: Environmental monitoring

Rakowski

Cartage & Wrecking Ltd.

Rakowski Cartage & Wrecking Ltd
 775 Plinquet Street
 Winnipeg, Manitoba
 Canada R2J 0G3
 Telephone (204) 233 0402
 Fax (204) 231 2005
info@rakowkicartage.com

24 Sept. 08

Tantalum Mining Corporation of Canada Ltd.
 P. O. Box 2000
 Lac du Bonnet, MB
 ROC 1A0

Attention: Mr. Tom Tonner

Re: Tanco Mining Closure Plan

The following items are from the Tanco Mine Closure Plan.
 Budget prices per item are as follows;

Item 9.1.1 Tailing Management	\$ 30,000.00
Item 9.1.1 Dams and control structure will remain intact	
Item 9.1.4 Water Management: Causeway removal	\$ 32,000.00
Item 9.1.2 Process by product by product cells	
Celsium containment cell # 1	\$ 110,000.00
Celsium containment cell # 2	\$ 130,000.00
<u>Mine site:</u>	
All mine openings will be capped with a concrete plug.	
4 openings	
a) 2 vents	\$ 7,500.00 ea
b) 1 decline	\$ 45,000.00
c) 1 head frame	\$ 15,000.00
Item 9.2.3 Surface areas, buildings, and equipment	
Mill and celsium plant	\$ 460,000.00
Warehouses and other structures	\$ 225,000.00
Item 9.2.4 Roads and surfaces	
Scarifying as required	\$ 24,000.00

Material Management:

Item 9.3.1 Waste Disposal Ground
Grade and cover necessary \$ 16,000.00

Item 9.3.2 Tanco forces

Item 9.3.3 Tanco forces

Item 3.2.2 Molson Facility \$ 45,000.00

Any applicable taxes extra.

**** Site visit may be required to confirm pricing. All above costing is for *budget* purposes only.**

Should you require more information, please contact Bob Molter @ (204) 233-0402.

Sincerely,



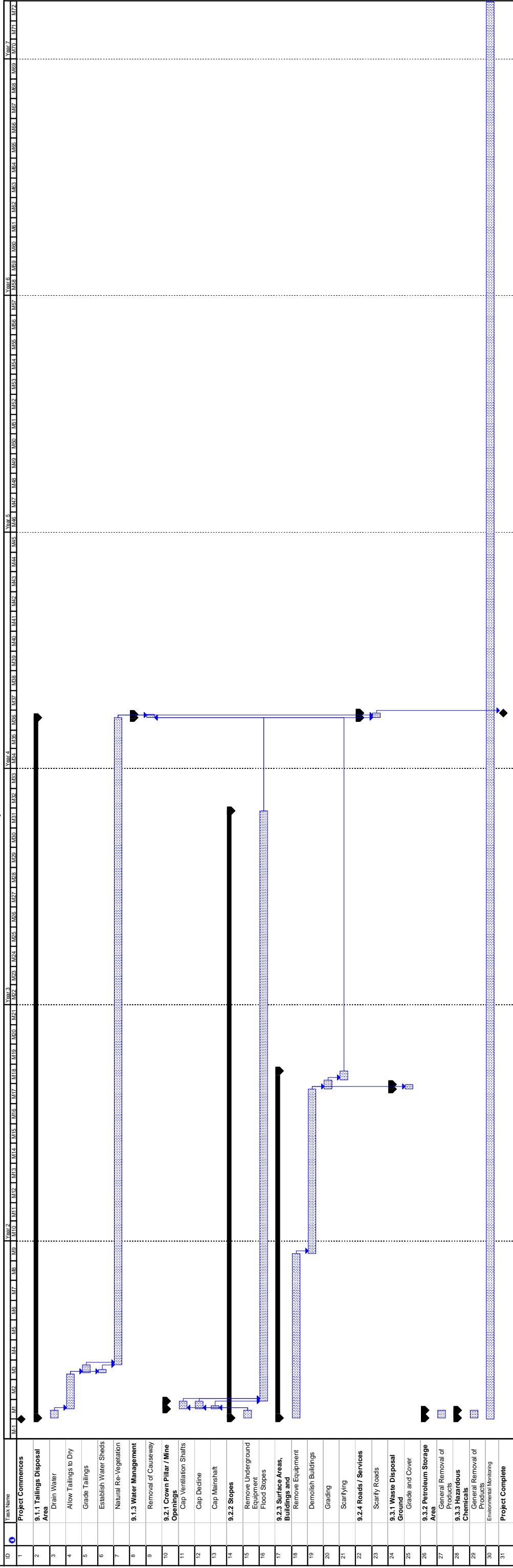
Bob Molter
General Manager
Rakowski Cartage & Wrecking Ltd.

Appendix J

Project Schedule



TANCO Mine Closure Plan Proposed Schedule



Erratum to TANCO Mine Closure Plan (Revision 4)

5.1.1 Inactive Area

Bullet 4, second sentence:

Estimated amount (of cesium residue) at mine closure based on current reserves and mining rates is approximately **1,200,000** cubic metres.