

- NANISIVIK MINE -
2004 ANNUAL WATER REPORT
(Per Water License NWB1NAN0208)

Submitted To:

The Nunavut Water Board

NANISIVIK MINE

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March 30, 2004

Nunavut Water Board

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Executive Director
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Gjoa Haven, NU
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RE: Water License No: NWB1NAN0208 Nanisivik Mine CanZinco Ltd.

In accordance with the Part B Item 6 of License NWB1NAN0208 and item 2 of the July 6th NWB Letter of Approval regarding the Nanisivik Mine Reclamation Plan and Closure Plan, please accept this submission as Nanisivik Mine's 2004 Annual Water Report and Reclamation Report.

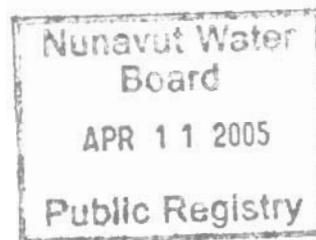
If further information is required please do not hesitate to contact me.

Regards,

Murray Markle
Site Manager

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c.c. B. Heath
R. Carreau
File



ORIGINAL

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Executive Summary

2004 saw the approval of the final closure and reclamation plan in early July. The main focus for the year was getting the tailings area covered. This work began in Late August with the arrival of large earthmoving equipment by sea lift. Work on mill dismantling began in June.

There was no major maintenance work necessary on the potable water system, however, the tailings and reclaim pipe lines were salvaged and prepared for shipping. To facilitate water treatment at West Twin Lake, lime was added as required to pH modify the water and treat metals, prior to releasing effluent to the creek. Most of the surface cell and test cell were covered with shale. The total amount of shale quarried and placed in the West Twin Disposal Area was 491,000 m³. The final cover and grading will be completed in 2005.

The total expenditures on reclamation activities and site maintenance during the year were approximately \$5,785,000.

The total volume of potable water pumped from East Twin Lake was 127,900 m³. The average East Twin Lake level was 371.73 metres with maximum and minimum levels of 372.56 metres and 371.04 metres respectively. The level of East Twin Lake was not at anytime, lower than the level of the West Twin Reservoir. During the year approximately 550,000 m³ of water was decanted from the West Twin Reservoir. All sampling, sample preservation and quality control procedures were conducted in accordance with methods prescribed in the current edition of "Standard Methods for the Examination of Water and Wastewater".

Approximately 2500 m³ of solid waste from mill and townsite dismantling were hauled underground and an additional 1000 m³ were placed into the West open pit. The PCB storage facility was shipped off site, but a new one will be established some time in 2005 for the remaining PCB transformers and lamp ballasts.

1.0 Introduction

The Nunavut Water Board issued Nanisivik Mine, a division of CanZinco Ltd., the current license, NWB1NAN0208, on Oct 1, 2002. In compliance with Part B, Item 6 of the License, the following information is submitted as the 2003 Annual Water Report.

2.0 Required Reporting (As per part B - General conditions)

Item 6i.

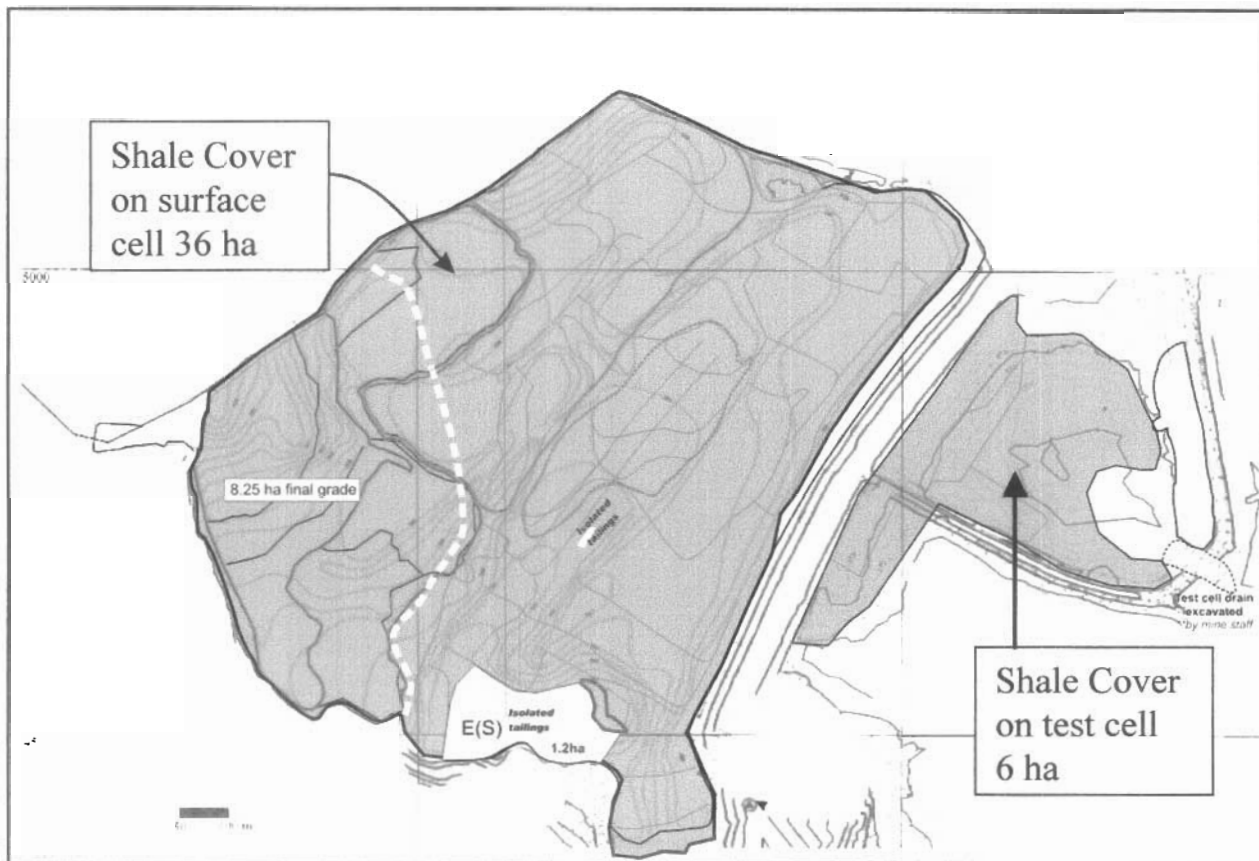
A summary of any construction work, modification and major maintenance work and/or demolition work carried out on the Water Supply Facilities, West Twin Disposal Area, East Adit Treatment Facility, and associated structures;

Regular preventative maintenance was performed on the potable water system, including changing delivery pumps, fittings, and piping as required. However, no major maintenance work was necessary on this system. The reclaim waterline and tailings line which were not in use since the mine closed, were salvaged and prepared for shipment off site. The stop log gate was reinstalled at the outlet structure to facilitate the lowering of the water level in 2005. The entire structure will then be removed and the outlet spillway constructed. To facilitate water treatment at West Twin Lake, a lime tank was brought to the outlet weir between the reservoir and the polishing pond. Lime was added as required to pH modify the water and treat metals, prior to releasing effluent to the creek.

The majority of the surface cell and test cell were covered with shale in September and October. Some areas required re-grading prior to covering. Placement/construction of the shale cover started at the South West corner of the surface cell and proceeded in a northeast direction toward the Dyke (Figure 1). Construction of the cover proceeded as per the approved cover design plan and was supervised by a qualified Field Representative (BGC Engineering Ltd.). Several isolated ponds of standing water on the surface area were channelled and/or pumped into the reservoir portion of the WTDA prior to shale placement.

A total of 491,000 cubic metres of shale were placed on the surface and test cells in 2004. This material covered 36 hectares of the surface cell and 6 hectares of the test cell.

SHALE COVER AT THE WEST TWIN DISPOSAL AREA



Item 6 ii.

A list of unauthorized discharges and summary of follow-up actions taken;

There was one spill reported in 2004.

- 1) West Twin Disposal Area – Noncompliant water was released into Twin Lakes Creek.

Follow up Action: Lime was added to the pond in order to reduce the zinc level. Sampling continued and when the water quality was back in compliance, it was released.

Item 6 iii.

A Progress Report and/or revision of any studies or plans requested by the board under this licence

The following list of studies and reports as required under the License, were submitted in 2004

Table 1

License Reference	Report/Study
G/3	Final Closure and Reclamation Plan
G/4	Engineering Design for Reclamation Covers
G/5	Assessment of Surface Cell and Test Cell Talik
G/6	Borrow Areas Development and Reclamation Plan
G/7	Engineering Design for West Twin Dyke Spillway
G/8	Waste Rock Reclamation Plan
G/9	Reclamation and Closure Monitoring Plan
G/15	West Twin Disposal Area Closure Plan
G/16	Revised Underground Mine Solid Waste Disposal Plan
G/16 ix	Long Term Stability Assessment of the Underground Workings
G/17	Landfill Closure Plan
Approval Letter	Report of Concrete at Concentrate Shed
Approval Letter	QA/QC Plan for Reclamation Covers
Approval Letter	Report on Possible PCB Contamination of Town Site Buildings

The Mine Openings and Closure Plan was in Progress at Year end

Item 6 iv.

An executive summary in terms understandable to the general public, translated into Inuktitut, of all plans, reports, or studies conducted under this licence.

Executive summaries for the submitted reports are included in Appendix E.

Item 6v.

A summary of any closure and reclamation work undertaken during the year and an outline of any work anticipated for the next year, including any changes to implementation and scheduling;

2004 saw the approval of the final closure and reclamation plan in early July. The main focus for the year was getting the tailings area covered. The majority of this work was dependant on the arrival of large earthmoving equipment by sea lift in late August. The summary for this work is included in Item 6i. The revised implementation schedule is included in appendix G.

Town site Residences

The fuel tanks on the unoccupied houses were pumped out and the contents were used for heating oil in the carpenter shop (waste oil furnace). Several truckloads of furniture were cleaned and donated to the Hamlet Council of Arctic Bay for distribution. Demolition of the abandoned houses commenced in December. A total of 12 buildings were demolished and hauled underground by the end of the year.

Industrial Complex

The contractor continued dismantling the mill and related infrastructure. By year-end, most of the interior was stripped out while maintaining a shop area and power plant. Most of the process equipment was removed and prepared for shipment off site. The mill infrastructure and equipment was pressure washed and the wastewater was collected, sampled and pumped underground. Results of water monitoring appear in a tabular summary on the following page.

The Crusher and underground transformer will be removed by the end of April 2005. The dismantling of the DMS plant and Mill complex will continue through to the fall. It is anticipated that the main structures will come down after the arrival of a large crane on sea lift.

Table 2

NANISIVIK MILL WASH WATER							
Date	PH	Temp	Cond	Cd	Pb	Zinc	Total Hydrocarbons DRO(C10-C24)
01-Jul	8.00	16.00	1.15	0.0144	0.178	2.08	2.9
03-Jul	7.38	19.50	2.28	0.446	0.491	103	1.2
07-Jul	6.51	16.30	1.11	0.303	0.996	59.4	<0.2
08-Jul	7.10	16.10	2.69	0.295	6.68	85.5	0.9
10-Jul	9.20	15.40	1.63	0.0112	1.75	3.42	29
12-Jul	7.67	16.00	1.72	0.161	0.537	41.4	2.9
14-Jul	11.82	16.20	2.32	0.0075	11.7	3.32	0.3
16-Jul	6.52	16.50	1.82	0.407	5.53	95.3	<0.2
19-Jul	6.21	17.40	3.06	0.636	5.27	170	1.0
21-Jul	7.19	16.50	1.82	0.205	0.787	33.6	5.7
24-Jul	6.12	17.80	2.38	0.379	4.67	98.4	2.0
27-Jul	7.11	18.00	1.90	0.481	0.622	106	1.1
28-Jul	6.56	17.60	2.44	0.242	5.09	48.3	<0.2
29-Jul	6.82	18.60	1.42	0.295	5.04	68.7	0.4
30-Jul	6.70	17.80	1.08	0.78	2.88	159	0.2
31-Jul	6.79	12.40	0.49	0.183	0.96	41	<0.2
04-Aug	6.84	13.93	0.77	0.167	1.48	23.9	0.4
05-Aug	6.88	15.45	1.05	0.0119	0.367	0.9	<0.2
06-Aug	6.93	16.98	1.33	0.125	3.55	26.9	<0.2
07-Aug	6.97	18.50	1.61	0.0576	0.609	11.5	2.0
09-Aug	7.50	19.58	1.99	0.07	0.300	9.28	1.1
10-Aug	7.23	15.90	1.55	0.115	0.260	25.9	<0.2
12-Aug	7.21	17.50	2.20	0.333	0.589	79.4	0.4
13-Aug	6.76	18.00	0.87	0.0636	0.33	21.4	0.2
21-Aug	6.93	18.90	1.33	0.0175	1.02	6.2	<0.2
25-Aug	7.05	17.70	1.85	0.0267	0.331	7.97	0.4
28-Aug	7.38	19.20	0.99	0.0198	0.156	7.29	<0.2
10-Sep	7.17	15.20	0.79	0.0217	0.220	9.12	<0.2

Regulated Materials

The PCB storage facility was decommissioned in August and the contents were shipped to an off site facility for destruction. A temporary storage facility will be established in 2005 for the remaining transformers as they are pulled out of service and prepared for shipment off-site. The unused laboratory chemicals have been containerized, secured and relocated to a lay down area in preparation for shipment/destruction off-site.

Waste Disposal Summary

The portals were reopened and ventilation was re-established in the underground mine. Inspection and scaling of the haulage routes and crusher access were completed, and preparation of the identified stopes for waste storage took place prior to materials being deposited. Demolition debris and waste that was disposed of in the underground mine and in the West open Pit (WOP) is summarized in the table below. The material in the WOP consisted largely of cement blocks from the industrial building's interior walls. The material was compacted/crushed via earth moving equipment and placed in layers on the floor of the pit where it will be covered as per the approved Reclamation Covers Plan.

Table 3

Waste Origin	Class	Volume (m3)	Storage Location
Miscellaneous	AE2	56	01 Block
Misc. Cable Pipe etc	DD1	40	01 Block
Industrial Complex	DD1	36	01 Block
Industrial Complex	DD1	937	West Open Pit
Houses	DD1	1955	10&11 Block Area
Houses	DD1	70	9South Portal Area
Compressor House	DD1	30	01 Block
Tires	AE2	120	NZ9 Area
Mobile Equipment	AE1	10	58 Block Area
House Oil Tanks	AE1	4	Z 54 Block Area
W Adit waste Rock	S1	140	01 Portal

Waste Rock Summary

The Waste rock inventory remained mostly unchanged during 2004. A few hundred cubic metres of material from the West Adit waste rock pile were moved underground for safety berms and road repairs. Remnant exposed rock at Area 14 was scraped up and amalgamated into the larger pile along the toe of the existing pad. This material is now prepared for the construction of the final cover in 2005. The remaining volume is estimated at 59,000 cubic metres for all areas.

Contaminated Soil Summary

The volume estimate of hydrocarbon-contaminated soil present at the Nanisivik Mine has been increased from an ex-situ volume of 68,000 m³ to 84,000 m³. The volume estimate of metal contaminated soil at the mine site has been revised from an ex-situ volume of 40,000 m³ to 61,000 m³ exclusive of the waste rock piles at the mine portals. This soil is scheduled for excavation and removal during 2005.

Item 6 vi.

A Summary of the estimate of the total current mine closure cost based upon mine reclamation and monitoring activities carried out during the past year.

A list of costs attributed to reclamation activities at Nanisivik Mine during 2004 is presented in Appendix F.

Item 6 vii.

A public consultation/participation report describing consultation with local organizations and the residents of the nearby communities

A technical meeting was held in Yellowknife in early May to review the final closure plan that was submitted in February. One representative of Arctic Bay attended the session. A public meeting was then held in Arctic Bay in June for a final review of the plan for the Arctic Bay residents prior to approval. The GN made it clear that due to contamination issues, that they would not support any alternate use of the Nanisivik infrastructure

Item 6 viii.

A Brief Summary of work done to address concerns or deficiencies listed in the inspection and/or compliance reports

An inspection was performed in July, 2004 by Sid Bruinsma of Environment Canada. He took a water sample from the decant station 159-4 and also inspected the PCB storage facility and the in-use transformers containing PCB's. He noted a small amount of oil in one of the town site transformer pans and requested that it be cleaned up and tested. The resulting test determined that there were PCB's in the sample. The material

that was cleaned up was placed in the main PCB storage container prior to the container being shipped off site. There have been no indications of further leaks thus far.

Mr. Geoff Claypool of BGC Engineering conducted the annual geotechnical inspection. Some minor maintenance work on the WTDA dyke was carried out following his inspection, and other minor deficiencies are scheduled during the spring and summer of 2005.

Item 6 ix.

A Report on the Effluent and Water quality monitoring studies conducted during a calendar year.

a. The total volume of potable water pumped from East Twin Lake (ETL) was 127,897 cubic metres. Domestic usage of water appeared high in last year's annual water report due to water being circulated back to the environment after it was metered and prior to it being carried into the town site. Adjustments were made at the water tower after the mine shut down in 2002, to prevent the town system from freezing up considering the reduced actual usage by a smaller workforce. Further adjustments were made in late July, 2004 to reduce the amount of water usage. The table below shows the dramatic reduction in water pumped from the lake starting in August, with 86 percent of the years total coming from January through July. With the current setup, it is anticipated that the 2005 consumption will fall somewhere between 50 and 60 thousand cubic metres.

TABLE 4 TOTAL VOLUME OF WATER PUMPED FROM EAST TWIN LAKE (2004)												
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Volume	15876	15404	15247	15914	16296	15792	15674	4480	3049	1889	4144	4132
YTD	15876	31280	46527	62441	78737	94529	110203	114683	117732	119621	123765	127897

The average lake level of ETL was 371.73 metres for the year with maximum and minimum levels of 372.56 metres and 371.04 metres respectively. The level of ETL was not at anytime, lower than the level of West Twin Lake. The minimum difference in elevation between the two lakes was 0.02 m recorded between June 4th and June 8th and again on June 20th and 21st. Elevations for East Twin Lake and West Twin reservoir are tabled in Appendix A-1 and Appendix A-2 respectively. A graphical comparison follows in Appendix A-3.

b. During the year approximately 492,825 cubic metres of water was decanted from the West Twin Reservoir. No water was discharged at the East Adit Treatment Facility from the Final Discharge point. All sampling, sample preservation and quality control procedures were conducted in accordance with methods prescribed in the current edition of "Standard Methods for the Examination of Water and Wastewater". Samples were collected at the West Twin decant, monitoring stations downstream in the Twin Lakes Creek and at monitoring stations along Chris Creek. The Sampling locations required by the water license are indicated on drawings 1 to 4 by solid red circles beside the name of the station. Tabulated summaries of the data generated for each monitoring station are included as Appendix B. Acute lethality tests and Daphnia Magna Monitoring tests were conducted on the effluent at station 159-4 as per the MMER. The first test was conducted on July 24, one month after effluent deposition began. The results of these tests were 0% mortality for rainbow trout and 80% mortality for daphnia magna at 100% effluent concentration. The second set of tests were conducted on September 19th and the results obtained were 0% mortality for rainbow trout and 13.3% mortality for daphnia magna at 100% effluent concentration. Appendix C contains the report summary and Appendix D contains the test reports in their entirety.

c. Appendix C contains the effluent characterization and water quality monitoring data required by the metal mine effluent regulations (MMER) and Appendix D contains the sublethal toxicity reports required by the EEM. The coordinates and elevations for the sampling stations are as follows:

Station	Latitude	Longitude	Elevation (m)
159-4	73° 01' 29.4" N	84° 28' 32.8" W	368.196
159-4A	73° 01' 32.3" N	84° 28' 33.5" W	366.914
159-4B	73° 01' 33.2" N	84° 28' 20.9" W	366.742

Water flows from the West Twin Reservoir to a polishing pond prior to being discharged to twin lakes creek. The water is held back by a Steel plate barrier with a 6 inch butterfly valve and a removable stop log gate. Sampling station 159-4 is located at this decant structure. 159-4A is located approximately 50 metres downstream from the decant structure and 159-4B is located approximately 50 metres upstream from the decant structure.

Figure 1

Twin Lakes Area Water Sampling Stations

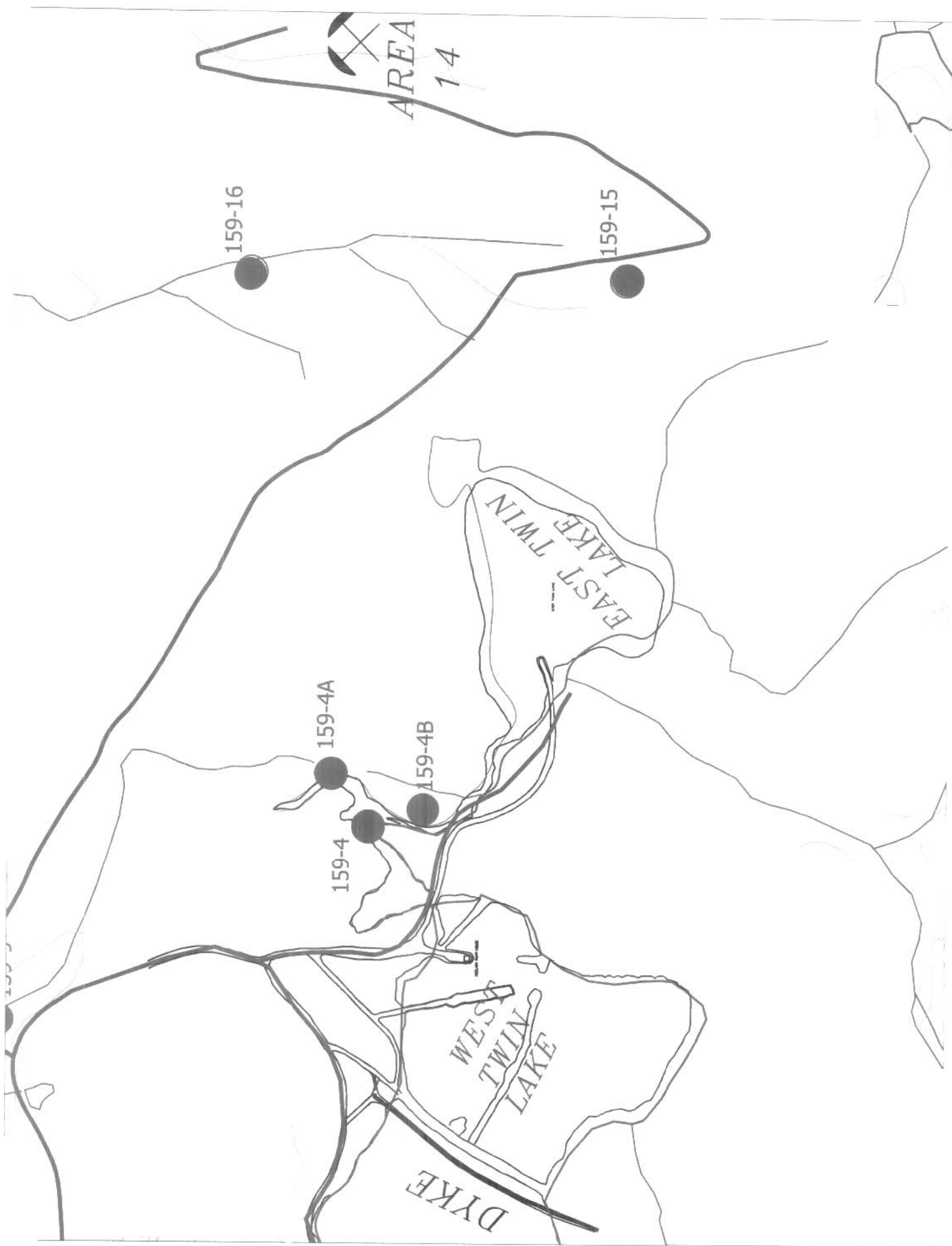


Figure 2

Industrial Area Water Sampling Stations

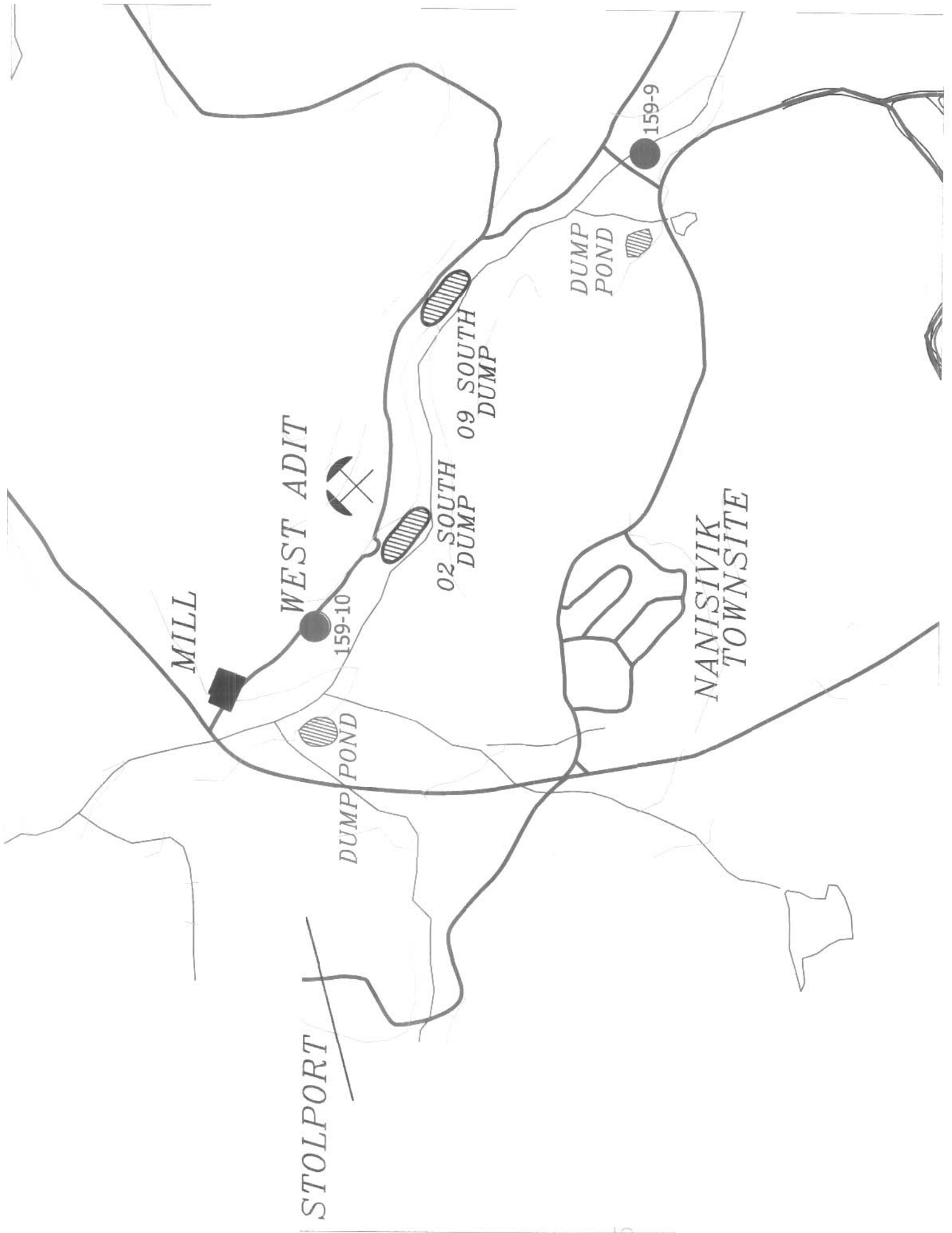


Figure 3

East Adit Area Water Sampling Stations

EAST ADIT
TREATMENT
FACILITY

RETENTION
POND 159-12

159-12P

39 NORTH
DUMPS

159-12A

TREATMENT
POND

EAST ADIT

EAST
PIT

K BASELINE

OCEANVIEW

OPEN PIT

159-19

159-18

