teckcominco

John B. Knapp
Manager

March 31, 2003

Mr. Thomas Kudloo, Chairman,
Nunavut Water Board,
P.O. Box 119,
Gjoa Haven, N.W.T.
X0E 1J0
Fax: 867-360-6369

Dear Mr. Kudloo:

Re: 2002 Annual Report - Water License N4L2-0262

Please find enclosed the 2002 Annual Report for the Polaris Mine.

Since the Polaris Mine permenantly ceased operation in September, 2002, some normally reported parameters won't have values recorded for the months subsequent to September.

If any questions arise from this report, please do not hesitate to contact me by mail, or directly at 867-253-2201 or 867-253-2241.

Yours truly,

TECK COMINCO LTD.

John Knapp
Site Manager
Polaris Reclamation & Closure Project

INTERNAL	
PC	IP
LA	PB.
OM	
TA	
BS	
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ED	
CEO	
BRD	
EXT	

Attachments

c.c. R.J. Hutchinson, General Manager, Projects
B.J. Donald, Reclamation Manager
W.J. Kuit, Director, Environmental Affairs
H.L. Malkin, Corporate Counsel, Vancouver
DIAND Water Resources, YK – Fax – 867-979-6445
Central Files

POLARIS OPERATIONS WATER LICENCE N4L2-0262

ANNUAL REPORT 2002

Part B, Item 3.

a) Table VI "Fresh Water Usage" satisfies this requirement.

b) Table VII "Tailings Discharge to Garrow Lake" satisfies this requirement.

c) Tables I - XII satisfy this requirement. Tables have been numerically ordered for easy reference and identified as per the requirements appearing in the SNP portion of the water licence.

d) Major maintenance work carried out in 2002 was as follows:

On April 25, 2002 the North Tailing Line was cut back by 150m. The new discharge point was surveyed and recorded.

e) There was one unauthorised discharge of diesel fuel in 2002. It was reported promptly in compliance with regulatory requirements and remediation was undertaken immediately. Further studies in the area of impact will be undertaken during 2003, and any additional remediation that is identified will be undertaken in the course of implementing the Polaris Reclamation and Closure Plan. A copy of the spill report has been appended.

f) There were no studies or reports requested by the Board other than those outlined in the Water Licence.

g) A revised Polaris Reclamation & Closure Plan was submitted to the Nunavut Water Board and other regulatory parties during 2001. A conditional approval by the Nunavut Water Board and DIAND for the terrestrial aspects of the Polaris Reclamation and Closure Plan was received on April 15th 2002. Although the Iqaluit DFO has voiced acceptance of the Plan in principle, ongoing procedural and technical requirements have prevented the issuance of a Fisheries Authorisation for the marine aspects of the Plan. This, in turn, has prevented their acceptance of the Polaris R & C Plan to date.

h) The 2002 Garrow Lake Model summary report by Axys Environmental Consulting Ltd. is appended to this report. Please note, however, the report has been issued under the letterhead of "Seastar Chemicals Inc.", which is an affiliate of Axys Environmental Consulting Ltd. A hardcopy of the report, bearing the correct letterhead, will be issued shortly.

No other details on water use or waste disposal were requested by the Board.

SEASTAR CHEMICALS INC
A Member of the Axys Group
PO Box 2219, 10005 Macdonald Park Rd.
Sidney, B.C. CANADA V8L 3S8

March 22, 2003

Mr. Bruce Donald
Teck Cominco Ltd.
Bag 2000,
Kimberley, B.C.
V1A 3E1

Dear Mr. Donald:

Re: Garrow Lake Model - 2002 Summary Report

REVIEW OF 2002 DATA

1.0 Physical Structure

No data was obtained in the summer of 2002 due to conditions on the lake. In addition, there were problems with the HydroLab CTD profiler in the March sampling so that the data are suspect. However, an additional CTD profile was obtained in May with a different and more accurate instrument which provided an indication of lake properties at the end of winter. Since this was the last data collected prior to mine closure and because of the reliability of this data, the following discussion is based on the May CTD data.

The conductivity and temperature profile data from the May sampling do not indicate any changes in the overall basic three-layer structure of the lake (figure 1). However, there were some differences between observations and predictions in the bottom and surface layers.

1.1 Bottom Layer:

Bottom water salinity continued to decrease as predicted but the actual salinities were considerably lower than predicted (figure 2). The much lower salinity in 2002 is likely a result of the different calibrations of the Hydrolab and the SeaBird instrument used in May. The May 2002 result is considered accurate. The present model had been modified in 1998 to account for the higher than expected salinities from 1996 to 1998. If the bottom layer salinities from 1996 (an accurate salinity was obtained in 1995) to 2000 are omitted and the original model used, the predicted salinity in 2002 at the end of winter

would have been 64.9 ppt, much closer to the observed value of 63.5. Bottom layer salinity will stabilize and slowly start to increase now that tailings discharge has stopped.

The increase in salinity in the bottom few metres observed in the past few years was absent. Station 262-3 was moved in 2002 (to avoid recently placed tailing material and in order to sample the full depth of the lake). It would appear that the higher salinity water near the bottom observed in the past few years was associated with a relatively isolated pocket of water perhaps surrounded by tailing piles.

1.2 Surface Layer:

Surface layer salinity continued to increase as predicted. The observed value of 7.5 ppt was in close agreement with the model prediction (figure 3).

1.3 Halocline Thickness:

The surface mixed layer depth was 9 m in May 2002 while the bottom of the halocline was at 11.5 m (figure 4). The surface layer depth is close to the predicted value. However, the bottom of the halocline is almost 2.0 m shallower than predicted (even when the net lake level drawdown of 0.8 m is considered).

The present halocline thickness of 2.5 - 3 m is almost 6 m less than it was in 1990. Thinning of the halocline was predicted as mixing in the bottom layer (driven by the tailings plume) extends into the bottom of the halocline, slowly entraining lower halocline water. Despite the difference between the predicted and observed halocline thickness, we believe the halocline will continue intact and gradually broaden now that tailing placement has ceased.

2.0 Zinc and Lead Concentrations in the Surface Layer and Halocline

The metal data collected in 2000 gave low field blanks and good reproducibility and excellent agreement with the 3 m and 15 m reference samples.

2.1 Surface Layer

Lead concentrations were less than 0.01 ppm in agreement with expected values.

Mean zinc concentrations in the surface layer in 2002 were 0.25 ppm, about 0.01 ppm lower than predicted (figure 5). Concentrations have been very slowly decreasing since 1997 in agreement with the trend predicted by the model. This decreasing trend is expected to continue and accelerate now that mining operations have ceased. The present model continues to provide a conservative estimate of zinc concentrations in the surface layer.

2.2 Halocline

The maximum concentration of zinc in the halocline was about 0.1 ppm higher than the predicted value (figure 6). Variations in the maximum in Zn value in the last several years partly reflect analytical variability as indicated by results for the reference samples (which have been variable and generally low). The results from this years' analysis of the reference samples were in agreement with the accepted value so that this data is considered to be a reliable estimate of the present halocline maximum.

2.3 Bottom Layer

Zn concentrations in the bottom layer were essentially unchanged from the previous year at about 0.5 ppm. These values were confirmed in the May sampling. Sampling in May also indicated that most of the Zn is dissolved (finer than 0.2 microns) and not particulate.

3.0 Sulphide Concentrations in the Bottom Layer

Sulphide measurements in 2002 were essentially unchanged from 2001 (Figure 7).

4.0 Siphoning from the Surface Layer

Siphoning removed approximately 5.048 Mm^3 from the upper few metres between July 26 and October 2. Zinc levels as expected were lowest while the lake was at least partially ice covered in July and through most of August (less than 0.07 ppm). Concentrations were highest after the lake cleared of ice in September. Maximum Zn concentrations in the siphon discharge were 0.18 ppm. Although no summer sampling was possible on the lake, the siphon data for September likely reflects end of summer conditions in the surface layer.

The lake level at the end of siphoning in 2002 (1006.86) was 0.8 m lower than at the end of siphoning in 2001 (1007.56). This is about 1.1 m above the original lake level.

5.0 Summary

SNP observations in 2002 indicated that surface layer zinc concentrations were essentially unchanged and about 0.01 ppm less than model predictions. The current zinc model therefore continues to provide a conservative estimate of surface layer zinc concentrations. High levels in the halocline continue. Maximum zinc concentrations in the halocline were slightly higher than predicted.

As predicted, bottom layer salinity continued to decrease and surface layer salinity to increase and the strong halocline remained. The accelerated thinning of the halocline observed in previous years continued in 2002. The present halocline thickness of 2.5 - 3 m is about 2 m less than predicted. However, despite these differences, the physical data

do confirm the model predictions of lake stability. It is our opinion that the halocline will remain intact and slowly start to broaden now that mine operations have ceased.

Siphoning from July 26 to October 2 reduced the lake level by about 0.8 m compared to the end of summer 2001. Zinc concentrations in the siphon discharge did not exceed 0.18 ppm.

The 2002 SNP sulphide data are unchanged from the previous year.

If you have any comments or questions, please let me know.

Sincerely,
SEASTAR CHEMICALS INC.

P. Erickson

Paul Erickson

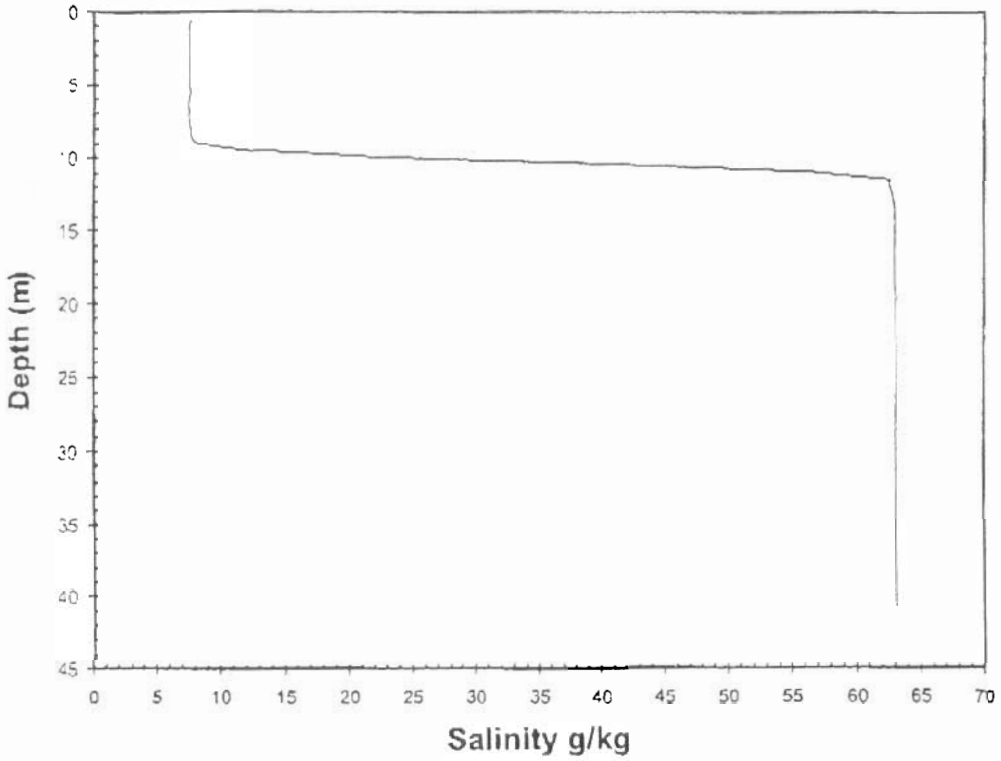

Figure 1: Salinity-Depth Profile Garrow Lake May 13, 2002.

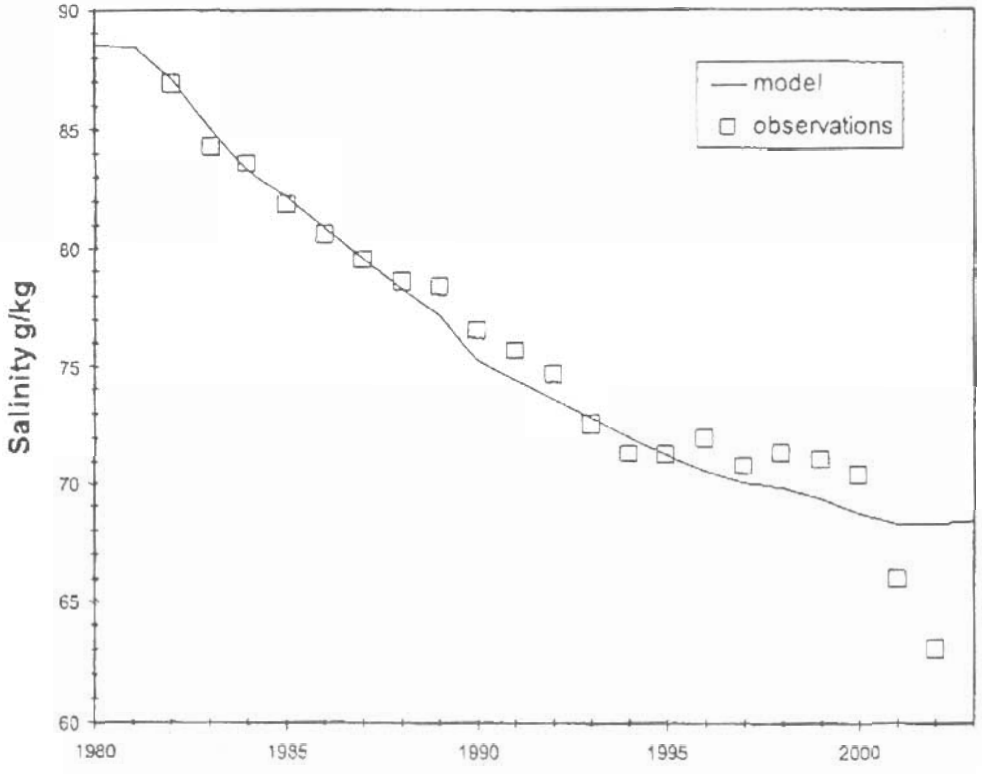

Figure 2: Predicted and Observed Garrow Lake Bottom Layer Salinity.

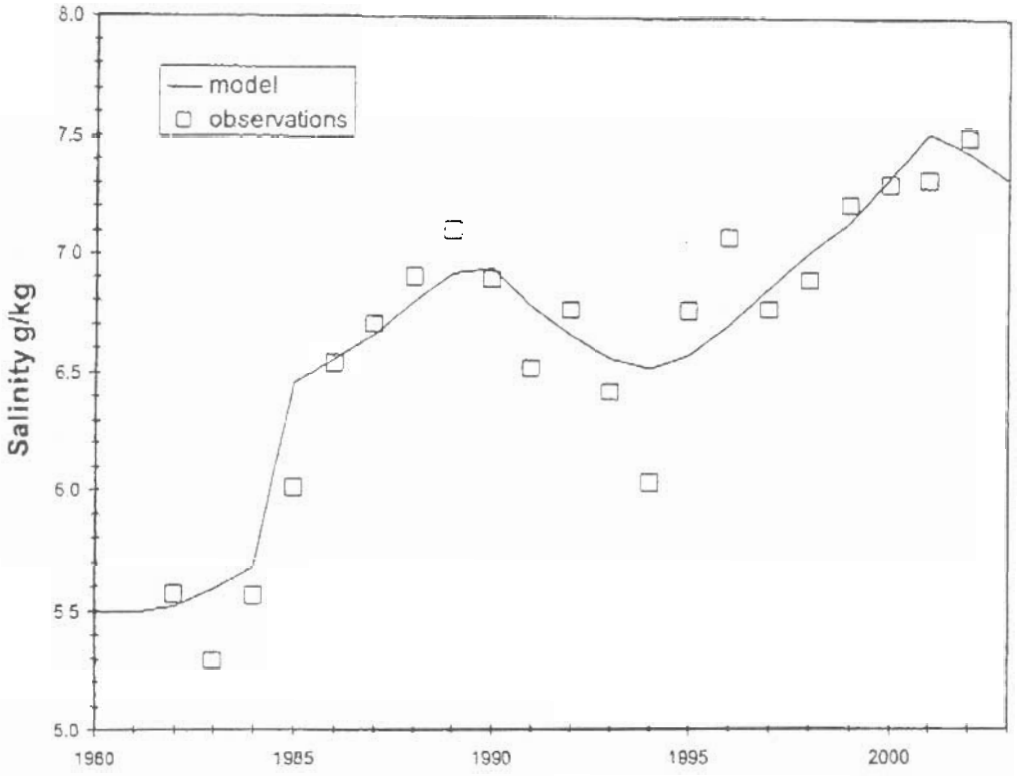

Figure 3: Predicted and Observed Garrow Lake Surface Layer Salinity.

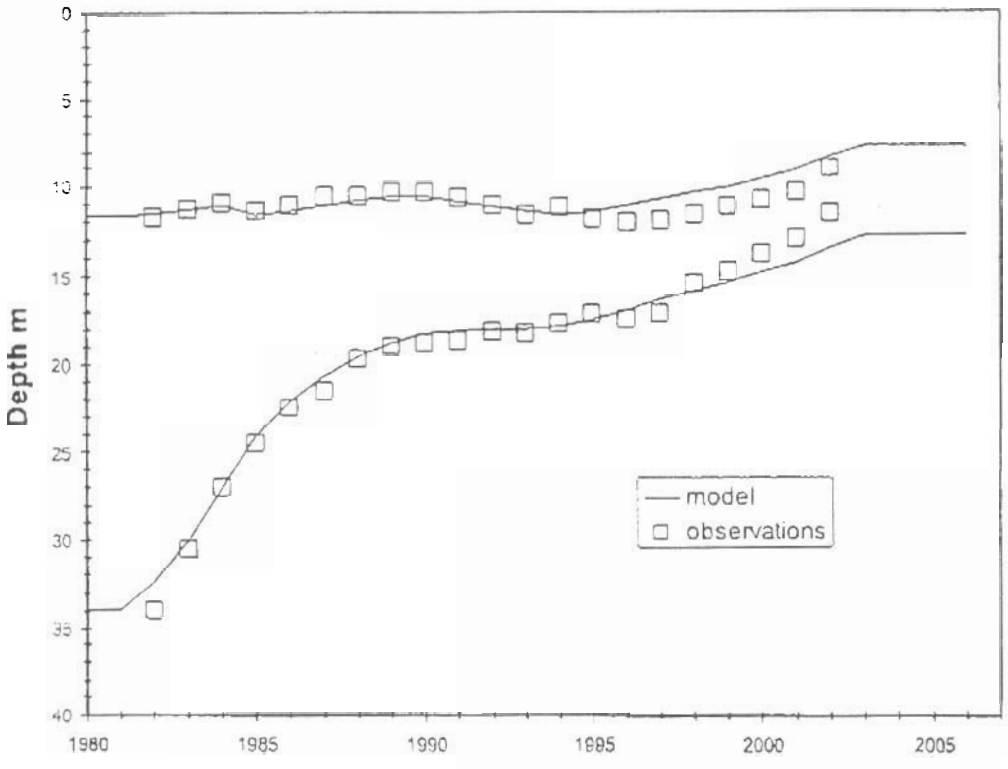

Figure 4: Predicted and Observed Depths of the Surface Mixed Layer and the Bottom of the Halocline in Garrow Lake.

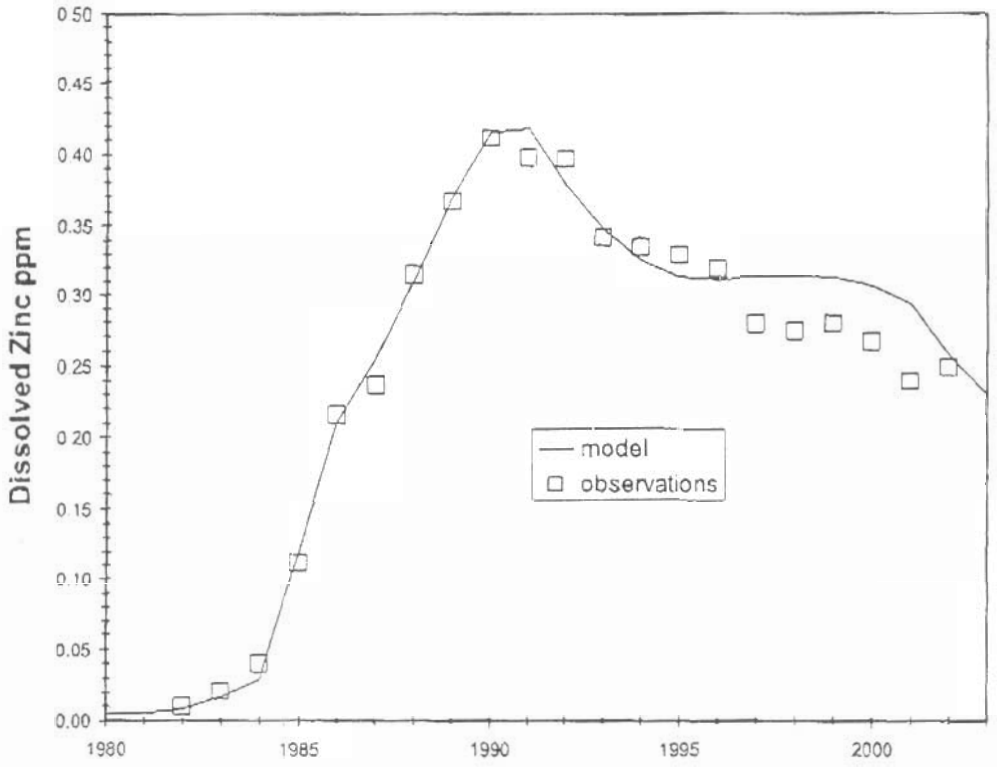

Figure 5: Predicted and Observed Zinc Concentrations in the Surface Layer of Garrow Lake.

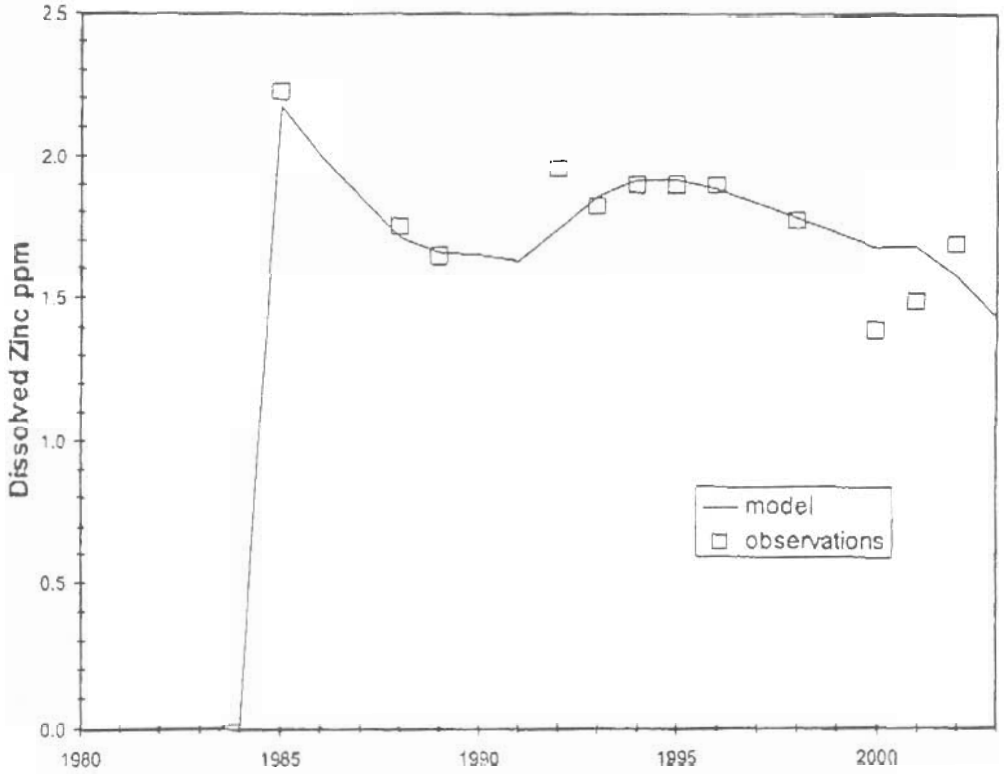

Figure 6: Predicted and Observed Maximum Zinc Concentrations in the Garrow Lake Halocline.

N.W.T. SPILL REPORT (Oil, Gas, Hazardous Chemicals or other Materials)

Northwest Territories

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24-Hour Report Line

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Phone/ᐅᖃᓘᑦ (403) 920-8130

Fax/ᓱᑲᔪᒃᑯᑦ (403) 873-6924

A Report date and time	June 26/02, 2:00 pm
B Date and time of spill (if known)	June 25/02, between 11 am & 5 pm
C Original report / Update no.	[X] Original report; [ ] Update no. ___
Spill number	
D Location and map coordinates (if known) and direction (if moving)	Little Cornwallis Island, NU
E Party responsible for spill	Cominco Mining Partnership, Polaris Mine
F Product(s) spilled and estimated quantities (provide metric volumes/weights if possible)	Diesel fuel, unknown quantity (estimate 5,000 - 10,000 litres)
G Cause of spill	See attached.
H Is spill terminated?	[X] yes [ ] no
I If spill is continuing, give estimated rate	N/A.
J Is further spillage possible?	[ ] yes [ ] no
K Extent of contaminated area (in square metres if possible)	600 m of shoreline
L Factors affecting spill or recovery (weather conditions, terrain, snow cover, etc.)	wind / tide / ice
M Containment (natural depression, dykes, etc.)	ice / ditch.
N Action, if any, taken or proposed to contain, recover, clean up or dispose of product(s) and contaminated materials	See attached.
O Do you require assistance?	[X] no [ ] yes, describe:
P Possible hazards to persons, property, or environment; eg: fire, drinking water, fish or wildlife	
Q Comments and/or recommendations	

FOR SPILL LINE USE ONLY

Lead Agency:

Spill significance:

Lead Agency contact and time:

Is this file now closed?

Reported by	Position, Employer, Location	Telephone
JOHN KNAPP	Manager, POLARIS Mine, Little Cornwallis Island.	867 253 2201
Reported to	**Position, Employer, Location**	**Telephone**

NWT 1752/0593

teckcominco

File Note

Subject: Initial Assessment of Diesel Fuel Spill – June 25th, 2002

Date: June 26, 2002

Background:

P20 diesel fuel was being transferred from the south tank to the north tank at the diesel tank farm to make room for a shipment of P50 diesel fuel expected in July. A pump normally used for pumping fuel from the tank farm area to the barge was being used to transfer the fuel. Temporary ABS piping was connected between the pump and the two tanks to accomplish the transfer. The pump and piping were located within the containment area surrounding the tanks. The transfer pump was operating at a rate of 3900 litres per hour.

Spill Details:

The transfer process was checked at 6:30 am on the morning of June 25th. The transfer process was not checked again until 5:30 pm later that day. At that time, a leak in the discharge pipe of the transfer pump was discovered. The pump was immediately shut down. It was assumed that the leak had been fully contained in the containment area surrounding the tanks. Approximately 1000 – 1200 litres of fuel was in the containment area when the transfer pump was shut off.

During spring runoff, water collecting in the containment area surrounding the diesel tank farm is pumped out on a routine basis to ensure the containment area is kept empty. At 11:00 am on June 25th, a worker who was not aware of the fuel transfer process, started the sump pump used to empty the water from the containment area. He did not notice any leaks at that time. At 4:30 pm, the same worker went back to check on the sump pump. The containment area had been pumped nearly empty, so he shut off the sump pump. He did not realize that there had been a fuel leak.

After the transfer pump was shut off at 5:30 pm and it was realized that a leak had occurred, the transfer process was discontinued and did not restart. At the time, no one realized that fuel had been pumped out of the containment area. Upon closer investigation of the leaking pipes and containment area this morning, it was noticed that fuel had been pumped out and had made its way to the shoreline. A detailed inspection showed that diesel fuel had spread along the shoreline to the north of the tank farm for approximately 500 metres. See the attached diagram showing the tank farm and the affected shoreline.

Volume Estimation:

As mentioned above, the transfer pump was checked at 6:30 am and then again at 5:30 pm. With the leak occurring at an estimated rate of 1200 litres per hour, the maximum amount of fuel that could have been pumped out is 12,000 litres. The exact amount of fuel released to the environment is unknown, but it is estimated that between 4,000 and 6,000 litres of diesel fuel was accidentally pumped from the containment area. Dip readings of the tanks support this estimate.

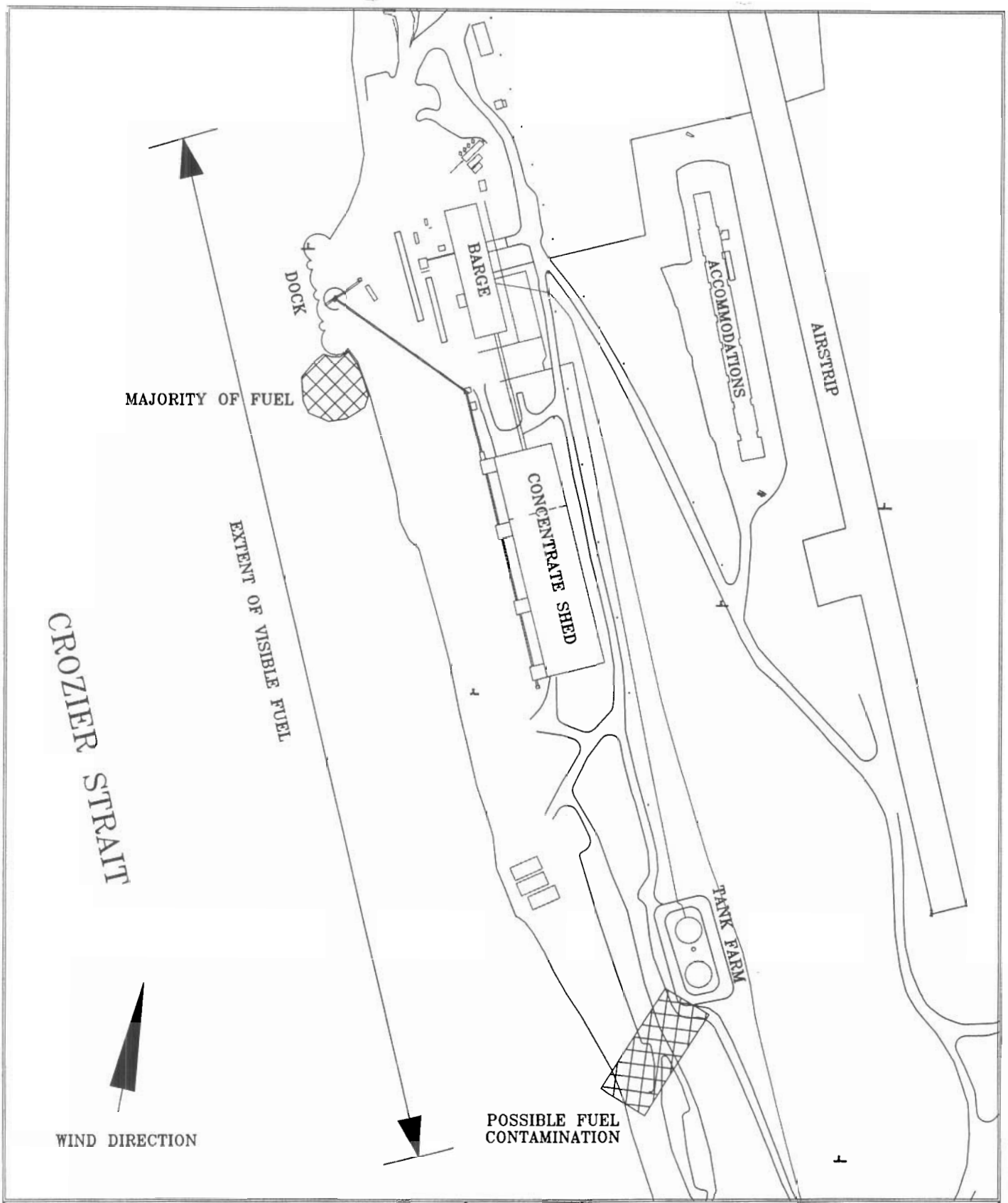
Initial Cleanup:

Once it was realized that fuel had been pumped out of the containment area, cleanup began immediately. A portion of the estimated 4,000 to 6,000 litres of spilled fuel made its way to the shoreline. Unfortunately over the past 24 hours, high winds from the south and tidal action has spread the diesel fuel along approximately 500 to 600 metres of inter-tidal beach area north of the tank farm. The shoreline is still icebound, but some oil is evident along the small channels of open water immediately adjacent to the shoreline. The ice has contained the majority of the spill along the shoreline.

All visible diesel fuel at the shoreline is currently being vacuum pumped into barrels and/or tanks or is being sopped up with spill containment materials. A ditch has been established near where the fuel entered the shoreline to prevent any further seepage from contaminated soils surrounding the tank farm.

Further assessment of any contamination surrounding the diesel tank farm and along the shoreline as a result of this spill will start after initial cleanup efforts have been completed.

Dale Andres
Operations Manager, Polaris



POLARIS MINE

Cominco

WEST SHORELINE POLARIS MINE

DRAWN BY: TSF	SCALE: 1:5000	DATE: JUN 2002	DWG #:

********** -COMM. JOURN: ********** DATE JUN-27-2002 *** TIME 08:32 *** P.01

MODE = MEMORY TRANSMISSION START=JUN-27 08:25 END=JUN-27 08:32

FILE NO.= 113

STN NO.	COM	ABBR NO.	STATION NAME/TEL.NO.	PAGES	DURATION
001	OK	8	16046853019	004/004	00:03'12"

********** - ***** - **********

Northwest Territories

N.W.T. SPILL REPORT

24-hr Spill Report Phone/Téléphone (403) 920-8130
Fax/Télécopieur (403) 873-6924

A Report date and time: June 26/02, 2:00 pm

B Date and time of spill (if known): June 25/02 between 11 am & 5 pm

C ☒ Original report

D Location and map coord nates (if known) and direction (if moving): Little Cornwallis Island, Nvt.

E Party responsible for spill: Cominco Mining Partnership, Polaris Mine

F Product(s) spilled and estimated quantities (provide metric volumes/weights if possible): Diesel fuel, unknown quantity (estimate 5,000 - 10,000 litres)

G Cause of spill: See attached.

H Is spill terminated? ☒ yes / no

I If spill is continuing, give estimated rate: N/A.

J Is further spillage possible? yes / no

K Extent of contaminated area (in square metres if possible): 600 m of shoreline

L Factors affecting spill or recovery (weather conditions, terrain, snow cover, etc.): wind / tide / ice

M Containment (natural depression, dykes, etc.): ice / ditch.

N Action, if any, taken or proposed to contain, recover, clean up or dispose of product and contaminated materials: See attached.

O Do you require assistance? ☒ no / yes, describe

P Possible hazards to persons, property, or environment; eg. fire, drinking water, fish or wildlife

Q Comments and/or recommendations

Feuillets de transmission par télécopieur Post-it™ Fax Note 7671
To/À: Walter Kurt
Co./Dept.:
Phone #/Tél.:
Fax #/Télécopieur: 604 685 3019
Date: June 27
# of pages/# de pages: 4
From/De: John Knapp
Co./Dept.: 867 253 2201
Phone #/Tél.:
Fax #/Télécopieur:

FOR SPILL LINE USE ONLY

Lead Agency

Spill significance

Lead Agency contact and time

Is this file now closed?

Reported by: JOHN KNAPP

Position, Employer, Location: Manager, Polaris Mine, Little Cornwallis Island.

Telephone: 867 253 2201

Reported to

Position, Employer, Location

Telephone

NWT 1752(09/97)