

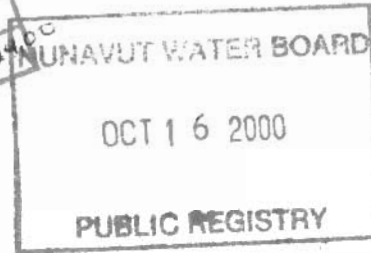
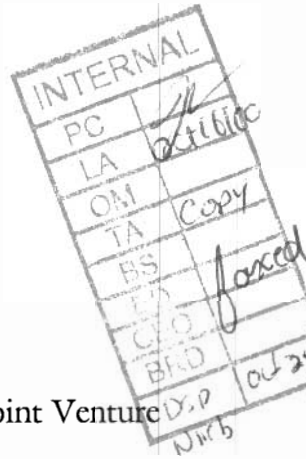


NWB1BOS9801

INAC, Nunavut District
Box 100
Iqaluit, NU
X0A 0H0

October 6, 2000.

Hugh Wilson
Manager, Environmental Affairs
Miramar Mining Co., Hope Bay Joint Venture
311 West First Street
North Vancouver, BC V7M 1B5



July 11, 2000 Water Licence Inspection - Report

Firstly, I wish to thank Adrian Fleming, Dean McDonald, and yourself, for the much appreciated time and assistance provided during the visit of the Hope Bay belt. Attached for your records is the Industrial Water Use Inspection Report pertaining to the July 11, 2000 inspection of the Boston site; while the camp facilities generally appeared in a satisfactory condition, a handful of aspects nevertheless warrant some additional attention.

- Water supply: At the time of the inspection, minimal information relating to the temporary modifications of the water intake line (see figure 1) had yet been made available by the Licensee. Since then however, an amendment to the Water licence has been requested, and duly approved. The Inspector also acknowledges that the Licensee intends to install an additional gauging device, thus allowing for distinct domestic and industrial water use measurements. On a side note, the attached analytical results reveal that parameters sampled at Surveillance Network Program (SNP) station 162-1a lie within the *Guidelines for Canadian Drinking Water Quality* standards.


- Ore and waste rock stockpiles: The purpose of the three (3) sumps in the vicinity of the main ore stockpile area is at the moment somewhat unclear. Indeed, while the Inspector was informed on-site that both outer sumps, whether unlined (figure 2) or lined (figure 3), were essentially unused or at best only fulfilled a contingency role, other notifications appear to point to slightly more active use. Consequently, the Licensee would eliminate much confusion by outlining the current/planned use of the sumps located at the periphery of the ore storage pad. In parallel, the function of the lined holding pond (figure 4) situated in the middle of the ore storage pad, labelled *Original Pond* on the *Boston Gold Project Site: Land Use Plan*, is equally ambiguous. As such, the Inspector would more than welcome clarifications relating to the nature, and eventual discharge path, of its contents.

- Minewater discharge: It was related during the inspection that water encountered at the underground workings had already been sampled and discharged; this would in fact concur with the Licensee's June 15, 2000 memo providing a notice of imminent discharge. However, only a fragment of the associated quantitative and qualitative data has been provided within the June and July monthly SNP reports. In addition, while the said discharge memo stated that the minewater was to be pumped from the underground workings to the lined holding pond, the *Boston Gold Project Site: Land Use Plan* appears to set the discharge path along the unlined, and significantly deteriorated, sump. Moreover, ground conditions downslope of the ore storage pad sumps (figure 5) seem to support the occurrence of discharge in the general area. As such, a more detailed account on the matter would prove warranted.

- Restoration activities: Several former drill sites by the camp's airstrip show signs of surface scarring centred around the protruding drill casings (figure 6). While the Inspector recognizes that these drilling and various other operations may have taken place under prior management, it is nevertheless hoped that the Licensee will extend its elevated environmental standards to the entirety of reclamation undertakings.

Please feel free to contact me at (867) 975-4298 or lavalleep@inac.gc.ca if any questions/comments arise.

Sincerely,



Philippe Lavallée
Water Resources Officer
INAC, Nunavut District

c.c. - Nunavut Water Board, Gjoa Haven
- INAC Water Resources, Yellowknife
- KIA lands, Kugluktuk (Jack Kaniak)
- EC Environmental Protection, Yellowknife (Anne Wilson)
- DFO Habitat Management, Iqaluit (Jordan DeGroot)



INDUSTRIAL WATER USE INSPECTION REPORT

Date: 2000/07/11 Company Rep.(Name/Title): Hugh Wilson / Manager, Environmental Affairs
Licensee: Miramar Mining / Hope Bay Gold Licence No.: NWB1BOS9801

WATER SUPPLY

Source(s): Aimaoktak (Spyder) Lake Quantity used: Not inspected Meter Reading: 6395; 0,21 flow

Indicate: A - Acceptable U - Unacceptable NA - Not Applicable NI - Not Inspected
Intake Facilities: NI Storage Structure: NI Treatment Systems: NI Recycling: NA
Flow Meas. Device: A Conveyance Lines: A Pumping Stations: NA Modifications: A

Comments: All freshwater is pumped from Surveillance Network Program (SNP) station 1652-1a; total consumption is measured.

WASTE DISPOSAL

Tailings: Tailings Pond: Natural Lake: Underground:
Sewage: Sewage Treatment System: RBC Tailings Pond: Natural Water Body: x
 Continuous Discharge: Intermittent Discharge: x
Solid Waste: Open Dump: Landfill: Burn & Bury: Underground:

Indicate: A - Acceptable U - Unacceptable NA - Not Applicable NI - Not Inspected
Discharge Quality: sampled Decant Structure: NA Dyke Inspections: NA
Conveyance Lines: NA Pond Treatment: NA Runoff Diversion: A
Discharge Meas. Device: NA Dams, Dykes: NA Erosion: A
Freeboard: NA Seepages: NA Spills: NI
Effluent Discharge Rate: A Samples Collected: 1652-1a, 1652-4 / receiving waters

Comments: No observed effluent from the Sewage Treatment plant discharge (SNP station 1652-3), and no flow encountered either by the shoreline (SNP station 1652-4); therefore sample was collected in shallow receiving waters below the effluent drainage channel. Solid waste is either incinerated or removed from site.

GENERAL CONDITIONS

Indicate: A - Acceptable U - Unacceptable NA - Not Applicable NI - Not Inspected
Ore & Waste Rock Stockpiles: U Records & Reporting: A SNP: A
Geotechnical Inspection: NA Posting/Signage: A Contingency Plan: A
Restoration Activities: U New Construction: NA Fuel Storage: A
Mine Water Discharge: U Chemical Storage: A Annual Report: A

Comments: Sumps in and around the main ore stockpile are in a deteriorated state, and their usage or purpose is unclear. Drill sites by the airstrip show noticeable scarring and protruding drill casings. The incidence, and path of discharge, of water released from the underground workings both require a certain degree of clarification.

Violations of Act or Licence: Indeterminate facets of effluent discharge and related use of the holding ponds/sumps in the vicinity of the ore storage pad. Certain parameters lacking from the summer's monthly SNP reports.

General Comments: Most, if not all, of the noted concerns appear to have arisen from minor communication gaps. Therefore, these issues should readily be discarded through clarifications on the part of the Licensee.

Philippe Lavallée

Inspector's Name

Inspector's Signature



figure 1. Active water intake station; 2000/07/11.

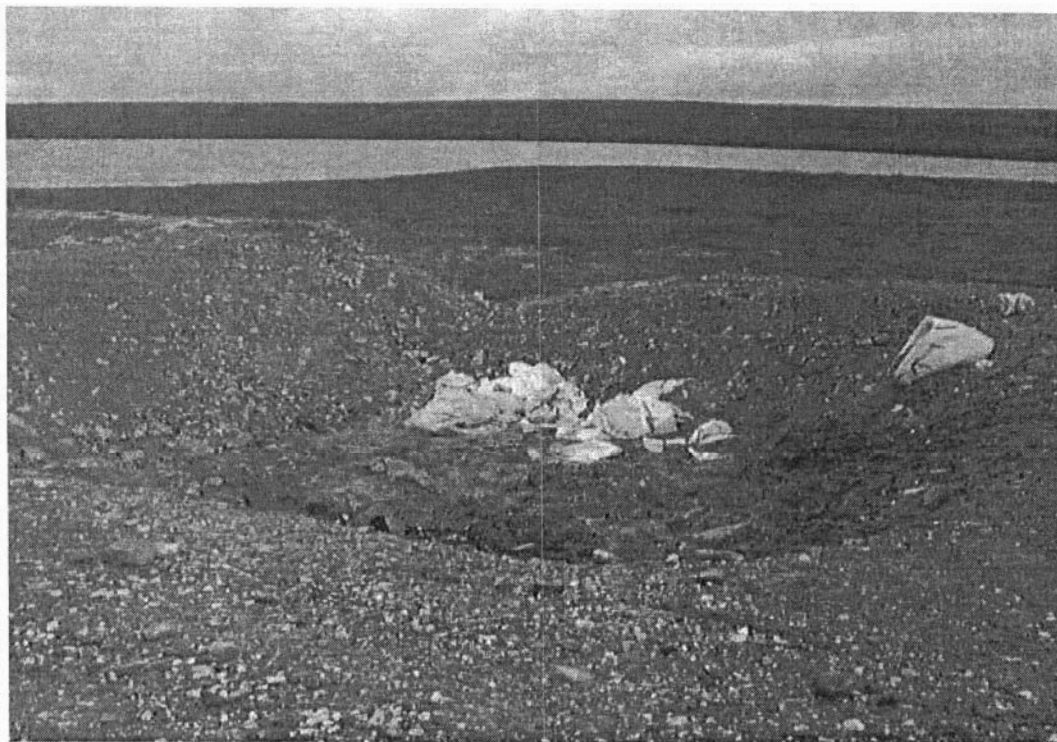


figure 2. Unlined sump in periphery of the ore storage pad; 2000/07/11.

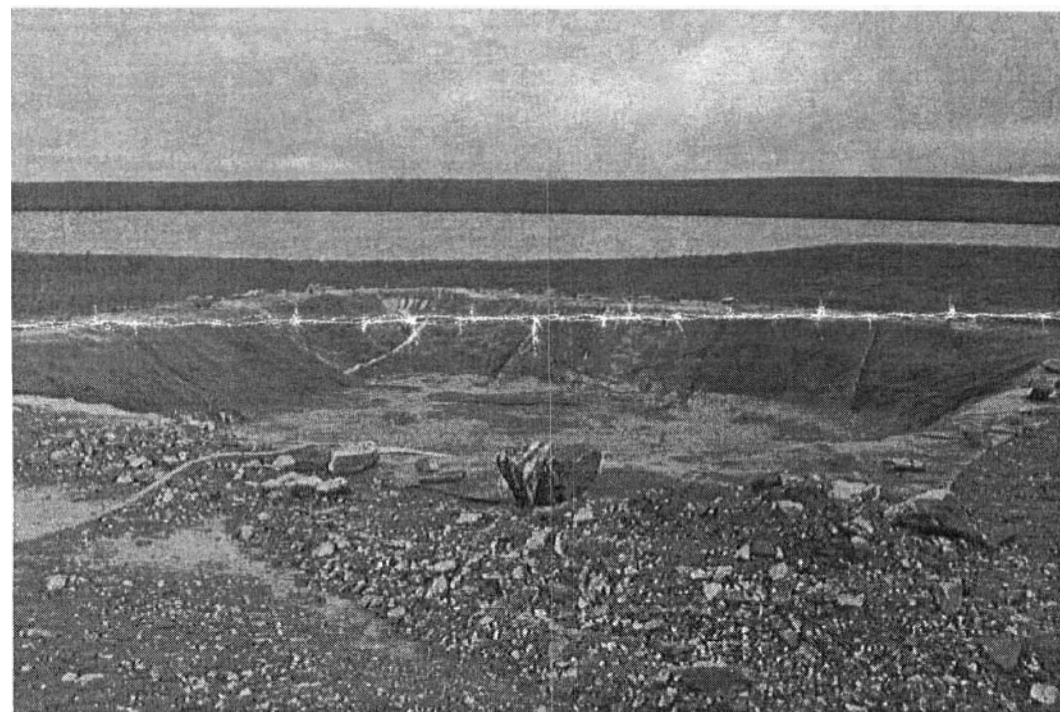


figure 3. Lined sump in periphery of the ore storage pad; 2000/07/11.

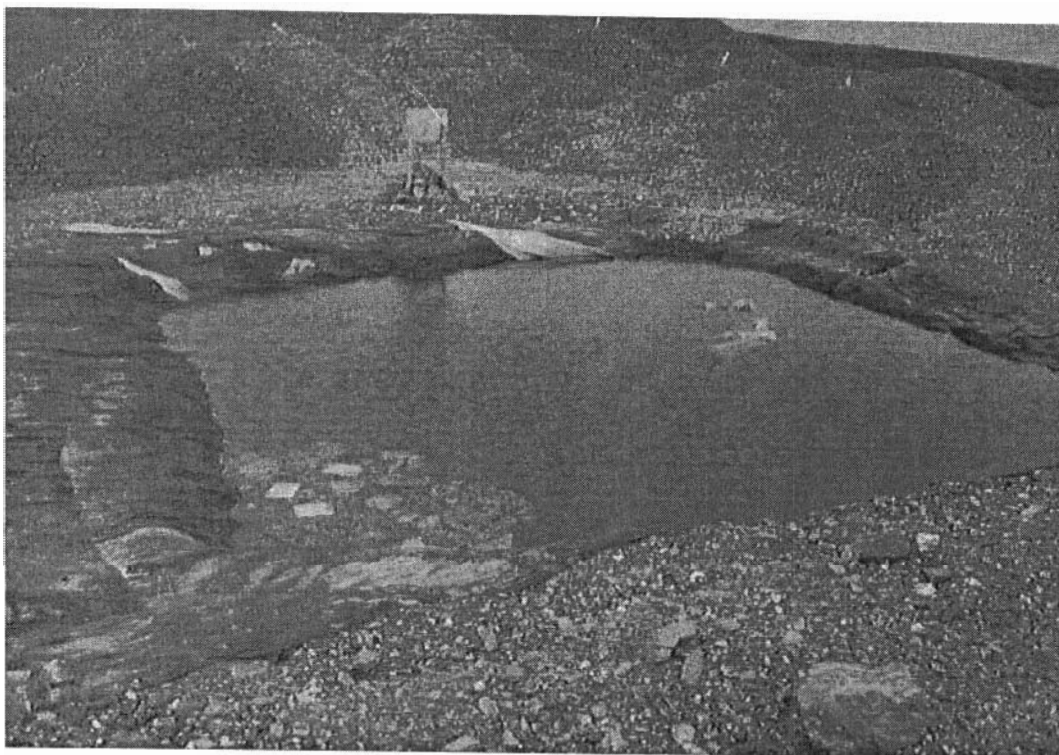


figure 4. Lined sump within the ore pile and ore storage pad areas; 2000/07/11.



figure 5. Ground conditions downslope of the ore storage pad sumps; 2000/07/11.

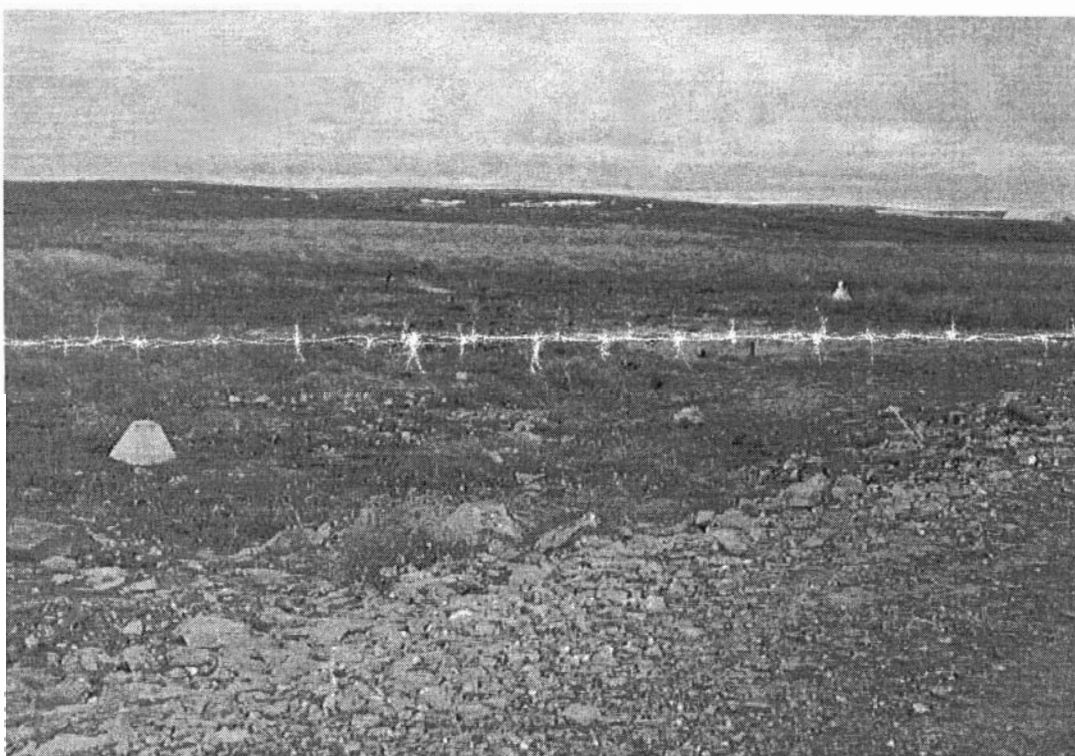


figure 6. Surface scarring and drill casings at a former drill site; 2000/07/11.

VIGA ENVIRONMENTAL LABORATORY

Dept. Indian Affairs & Northern Development

4601-52 nd Ave., Box 1500

Yellowknife, NT. X1A 2R3

Tel. (867) 669-2788

Fax: (867) 669-2718

To: NUNAVUT

Operations Directorate, DIAND

BOX 100

IQALUIT

X0A 0H0

Att'n: Philippe Lavallee

LAB# 201390

SAMPLE INFORMATION

Our Lab#: 201390

Your Sample ID: Water Intake

Sample Matrix: water

Collection:

Location: Boston

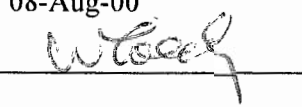
Date: 7/14/00

By: Philippe Lavallee

PROJECT:

Received Date: 7/19/00

Report Date: 08-Aug-00

Approved By: **- SAMPLE ANALYSIS REPORT -**

Lab#	Test	Result	Units	Detection Limit	Analysis Date	Analytical Method
201390	Tot-Suspended-Solids	7	mg/L	3	7/24/2000	EC10406
	Ammonia-N	0.052	mg/L	0.005	7/21/2000	EC7557
	Tot-Mercury(water) <	0.01	ug/L	0.01	7/24/2000	080314
	Tot-Cadmium(ICP-MS)	3.2	ug/L	0.3	7/20/2000	ICP-MS
	Tot-Cobalt(ICP-MS) <	1	ug/L	1	7/20/2000	ICP-MS
	Tot-Chromium(ICP-MS) <	3	ug/L	3	7/20/2000	ICP-MS
	Tot-Copper(ICP/MS)	3	ug/L	2	7/20/2000	ICP-MS
	Tot-Iron(AA)	0.25	mg/L	0.03	7/25/2000	ICP-MS
	Tot-Manganese(ICP-MS)	16	ug/L	1	7/20/2000	ICP-MS
	Tot-Nickel(ICP-MS)	3	ug/L	1	7/20/2000	ICP-MS
	Tot-Lead(ICP-MS)	1	ug/L	1	7/20/2000	ICP-MS
	Tot-Zinc(ICP-MS) <	10	ug/L	10	7/20/2000	ICP-MS

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Fax: (867) 669-2718

To: NUNAVUT

Operations Directorate, DIAND

BOX 100

IQALUIT

X0A 0H0

Att'n: Philippe Lavallee

LAB# 201391

SAMPLE INFORMATION

Our Lab#: 201391

PROJECT:

Your Sample ID: Receiving Waters

Sample Matrix: sewage

Collection:

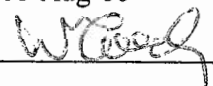
Location: Boston

Date: 7/14/00

By: Philippe Lavallee

Received Date: 7/19/00

Report Date: 08-Aug-00

Approved By: **- SAMPLE ANALYSIS REPORT -**

Lab#	Test	Result	Units	Detection Limit	Analysis Date	Analytical Method
201391	Tot-Suspended-Solids	9	mg/L	3	7/24/2000	EC10406
	Ammonia-N	0.035	mg/L	0.005	7/21/2000	EC7557

MICROTOX DATA REPORT
Basic Test

FILE: 00072003.K15

Boston Sample - Sewage receiving water - Collected July 11/2000

@ 20:45

Test Time: 15 minutes

Osmotic Adjustment: y

NUMBER	IO/IT	CONC.	CR/GAMMA	% EFFECT
Control	92.71/ 74.42	0.0	0.8027 #	
1	109.74/ 88.12	5.6250	0.000 *	
2	105.75/ 84.58	11.2500	0.004 *	
3	100.31/ 83.67	22.5000	-0.038 *	
4	108.36/ 86.04	45.0000	0.011 *	

CR = Control Ratio

CORRECTION FACTOR = 0.8027

* Invalid data or controls

EC50 IS GREATER THAN HIGHEST CONCENTRATION

Signature *LeRomain*TEST DATE: July 20/2000
TIME: _____

RA 7.2

MICROTOX DATA REPORT

Basic Test

T. E: 00072001.K15

Reference sample - July 20/2000

Test Time: 15 minutes

Osmotic Adjustment:n

NUMBER	IO/IT	CONC.	CR/GAMMA	% EFFECT
Control	91.58/ 74.21	0.0	0.8103 #	
1	93.70/ 26.55	5.6250	1.860 #	65.0
2	74.67/ 15.31	11.2500	2.952 #	74.7
3	99.46/ 11.13	22.5000	6.241 #	86.2
4	84.49/ 5.21	45.0000	12.141 #	92.4

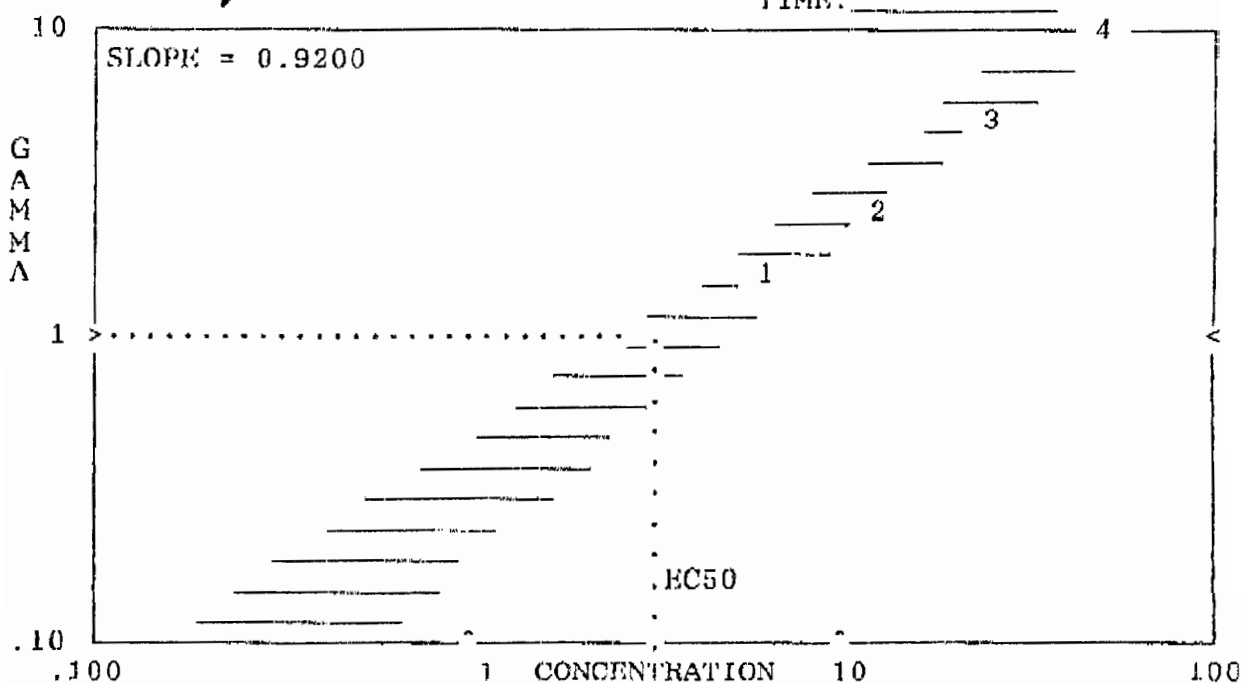
CR = Control Ratio
Used for calculations

CORRECTION FACTOR = 0.8103

EC50 3.133 mg/L (95% CONFIDENCE RANGE:1.894 TO 5.181)

Signature *U. Romar*

TEST DATE: July 20/2000
TIME: _____

ESTIMATING EQUATION: $\text{LOG } C = 1.0778 \times \text{LOG } \Gamma + 0.4959$

95% CONFIDENCE FACTOR: 1.65381 FOR EC50

COEFFICIENT OF DETERMINATION: $R^2 = 0.99162$