

Fax

Mosher
ENGINEERING

Mosher Engineering Limited
Industrial Contracting • Project Management

Head Office:
71 Wright Ave
Dartmouth, NS
B3B1H4

Tel: (902) 468-8792
Fax: (902) 468-8524

Date: August 30, 2004

Company: Nunavut Water Board

Attention: Chief Administrative Officer

Fax #: (867) 360-6369

Cc: Scott Stewart, Water Resources Officer, (867) 979-6445

Pat Fuentes, GN, (867) 899-7328

Lloyd Mandeville, ADWE, (867) 873-2547

Tony King, Mosher Engineering, (867) 328-8258

Of pages: 11

From: Marc Losier - Mosher Engineering Ltd.

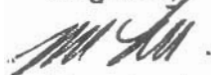
Re: Hall Beach Fuel Facility Expansion – Water License
NWB4HAL0304

Comments:

Please find attached water test result for the hydrostatic test of tank
8 for the reference project.

Can we proceed with the disposal of the water?

Regards,



Marc Losier



**JACQUES
WHITFORD**

Consulting Engineers
Environmental Scientists
Information Consultants

Jacques Whitford Building
3 Spectacle Lake Drive
Dartmouth, Nova Scotia
Canada B3B 1W8

Tel: (902) 468-7777
Fax: (902) 468-9009

Environmental Sciences
Environmental Engineering
Air Quality
Hydrogeology
Geotechnical Engineering
Materials Engineering & Research
Mining Engineering

Facsimile
Transmiss

TO: COMPANY
Mosher Engineering

ATTENTION

Dave Mosher

FAX NUMBER
468-8524

FROM: Joanne Whalen-Gayton
NSD19081

DATE: August 27, 2004

OUR REF:

We are transmitting a total of 10 pages, including this page. If not well received please call (902) 468-7777. This fax is being sent from (902) 468-9009.

Original to Follow No X Yes _____ By _____

COMMENTS/MESSAGES

Dave

As requested the analytical results for the water sample are attached.

Please don't hesitate to contact us at your earliest convenience should you require additional information or clarification.

Regards,

Joanne Whalen-Gayton
Field Co-ordinator
Jacques Whitford Limited
468-0452

08/27/2004 11:14 FAX 902 468 9009

JACQUES WHITFORD

0002

AUG 26 2004 4:58 PM FR PSC ANALYTICAL SRVS 420 8612 TO 468 9009

PSC

ANALYTICAL SERVICES

Inorganic Parameters

page : 1

Client : Jacques Whitford Environment Ltd.
 3 Spectacle Lake Drive
 Dartmouth

MCCULLOUGH, ROB

NS B3B 1W8

FAX # : 468-9009

PSC Project Number : 0415271R

Printed : 2004/08/26 (Event 697)

Client Project Number : MSD 19081

Reported : 2004/08/26

Matrix
 Philip ID
 Client ID

Water
 04-E057585
 #1

Date Sampled (y/m/d)
 Date Received (y/m/d)

04/08/25

Munavut Water
 Board

AUG 30 2004

Public Registry

Analyte	Units	EQL	
Sodium	mg/L	0.1	85.1
Potassium	mg/L	0.1	5.5
Calcium	mg/L	0.1	48.5
Magnesium	mg/L	0.1	17.7
Alkalinity (as CaCO ₃)	mg/L	5.	99.
Sulfate	mg/L	2.	83.
Chloride	mg/L	1.	150
Reactive Silica (as SiO ₂)	mg/L	0.5	0.9
Ortho Phosphate (as P)	mg/L	0.01	0.01
Phosphorus	mg/L	0.1	nd
Nitrate + Nitrite (as N)	mg/L	0.05	nd
Nitrate (as N)	mg/L	0.05	nd
Nitrite	mg/L	0.01	0.01
Ammonia (as N)	mg/L	0.05	nd
Color	TCU	5.	22.
Total Org. Carbon (by UV)	mg/L	0.5	2.9
Turbidity	NTU	0.1	8.5
Conductance (RCap)	uS/cm	1.	880.
pH	Units	-	8.0

INTERNAL	
PC	chp
MA	
FO	
LA	
BS	
ST	
TA1	
TA2	
RC	
ED	
CH	
BRD	
EXT.	

- Legend : EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
- ND = Not Detected, instrument did not detect anything above standard EQL.
- ND () = Not Detected at the elevated EQL specified, due to matrix interferences or sample pre-dilution.
- = Dash is reported when parameter not requested in sample.
- Note : Soil results are expressed as air dry weight basis.
- : Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

08/27/2004 11:15 FAX 902 468 9009

JACQUES WHITFORD

0003

AUG 26 2004 4:58 PM FR PSC ANALYTICAL SRVS 420 8612 TO 468 9009

Inorganic Parameters page : 2

PSC Analytical Services
200 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Jacques Whitford Environment Ltd. MCCULLOUGH, ROB
3 Spectacle Lake Drive
Dartmouth

NS B3B 1W8

PSC Project Number : 0415271H

Client Project Number : NSD 19081

FAX # : 468-9009

Printed : 2004/08/26 8697

Reported : 2004/08/26

Matrix Water
Philip ID 04-H057585
Client ID #1

Date Sampled (y/m/d)
Date Received (y/m/d) 04/08/25

Analyte Units EQL (Continued from previous page)

Hardness (as CaCO₃) mg/L 0.1 194.

Bicarbonate (as CaCO₃) mg/L 1. 98.

Carbonate (as CaCO₃) mg/L 1. nd

TDS (Calculated) mg/L 1. 450.

Cation Sum meq/L 0.10 7.72

Anion Sum meq/L 0.10 7.94

Ion Balance % - 1.38

Langlier Index @ 4C - -0.21

Langlier Index @ 20C - 0.19

Saturation pH @ 4C Units - 8.21

Saturation pH @ 20C Units - 7.91

Total Suspended Solids mg/L 0.5 3.4

Aluminum ug/L 10 nd

Antimony ug/L 2. nd

Arsenic ug/L 2. nd

Barium ug/L 5. 10.

Beryllium ug/L 2. nd

Bismuth ug/L 2. nd

Boron ug/L 5. 150

Cadmium ug/L 0.3 nd

Chromium ug/L 2. nd

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: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified *N*

08/27/2004 11:15 FAX 902 468 9009

JACQUES WHITFORD

0004

AUG 26 2004 4:58 PM FR PSC ANALYTICAL SR05 420 8612 TO 4689009

PSC Analytical Services
200 Blunwater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Inorganic Parameters

page : 3

Client : Jacques Whitford Environment Ltd. MCCULLOUGH, ROB
3 Spectacle Lake Drive
Dartmouth

NS B3B 1W8

PSC Project Number : 0415271H

Client Project Number : NSD 19081

FAX # : 468-9009

Printed : 2004/08/26 2697

Reported : 2004/08/26

Matrix
Philip ID
Client ID

Water
04-H057585
#1

Date Sampled (y/m/d)
Date Received (y/m/d)

04/08/25

Analyte	Units	EQL	(Continued from previous page)	
Cobalt	ug/L	1.	nd	
Copper	ug/L	2.	nd	
Iron	ug/L	50	120	
Lead	ug/L	0.5	nd	
Manganese	ug/L	2.	27.	
Mercury	ug/L	0.05	nd	
Molybdenum	ug/L	2.	4.	
Nickel	ug/L	2.	5.	
Selenium	ug/L	2.	nd	
Silver	ug/L	0.5	nd	
Strontium	ug/L	5.	200	
Thallium	ug/L	0.1	0.1	
Tin	ug/L	2.	4.	
Titanium	ug/L	2.	2.	
Uranium	ug/L	0.1	0.5	
Vanadium	ug/L	2.	nd	
Zinc	ug/L	5.	5.	
Filtration for Metals	-	-	In Lab	
Mercury Digestion	-	-	20040826-A	

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: Biota results are expressed on a wet weight basis unless otherwise stated.

page verified

Inorganic Parameters

page : 5

PSC Analytical Services
200 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Jacques Whitford Environment Ltd. MCCULLOUGH, ROB
3 Spectacle Lake Drive
Dartmouth

NS B3B 1W8

PSC Project Number : 0415271H
Client Project Number : NSD 19081

FAX # : 468-9009
Printed : 2004/08/26 2697
Reported : 2004/08/26

Certificate of Analysis

Method Summaries:

- Alkalinity: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #310.2
- Chloride: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #325.1
- Colour: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: Standard Methods, 16th Edition, 1985
- Conductance (RCAP): Electrometric @ 25 C, values >300 us/cm diluted for validation purposes. Ref: Standard Methods 4500-B+, 19th Edition, 1995.
- Total Organic Carbon: UV Digestion/Technicon AAL Analyser. Ref: Standard Methods, 19th Edition, 1995
- Mercury: Digestion/Cold Vapour Atomic Absorption. Ref: USEPA Method #245.1 SOP 3420 V1R3/ 3425 V1R2
- NO2/NO3: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #353.1
- pH: Electrometric @ 25 C. Ref: USEPA Method #150.1 SOP 1007 V1R1 / 1011 V1R2
- Phosphorus: PE Optima 3000 ICP-OES. Ref: USEPA Method #200.7
- Reactive Silica: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #370.1
- Sulphate: Automated Turbidimetric. Ref: USEPA Method #375.4 or Ion Chromatography. Ref: USEPA Method #300.1
- Total Suspended Solids: Gravimetric. Ref: USEPA Method #160.2
- Turbidity: Nephelometric. Ref: USEPA Method #180.1
- Ortho Phosphorus: Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #365.1 SOP 2160 V1R2 / 2165 V1R1
- Trace Metals in Aqueous Samples: Elan 5000 ICP-MS. Ref: USEPA Method #200.8
- Ammonia (NH3 plus NH4+): Roche Cobas Fara/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA 350.1 Determination of Ammonia (Colorimetric, Automated Phenate) Revision 2.0, 1993. SOP 2100 V1R2 / 2105 V1R2
- Nitrate: Roche Cobas/BMC Hitachi 911 Automated Colorimetric Analyser. Ref: USEPA Method #354.1
- Major Metals in Aqueous Samples: PE Optima 3000 ICP-OES. Ref: USEPA Method #200.7
- Dissolved Metals in Water: Filtration/ICP-MS, Ref: USEPA 200.8

08/27/2004 11:16 FAX 902 468 9009

JACQUES WHITFORD

0007

AUG 26 2004 4:58 PM FR PSC ANALYTICAL SRVS 420-8612 TO 468-9009

P-06

Inorganic Parameters

page : 6

PSC Analytical Services
200 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Jacques Whitford Environment Ltd. MCCULLOUGH, ROB
3 Spectacle Lake Drive
Dartmouth

NS B3B 1W3

PSC Project Number : 0415271H

Client Project Number : NSD 19081

FAX # : 468-9009

Printed : 2004/08/26 B697

Reported : 2004/08/26

Certificate of Analysis

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

All work recorded herein has been done in accordance with normal professional standards using accepted testing technologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. The results relate only to the items tested. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis performed. There is no other warranty expressed or implied. Excess sample will be discarded upon expiry of hold time.

Analyses reviewed by:

Inorganics Manager :

Jerry Arenovich

08/27/2004 11:16 FAX 902 468 9009

JACQUES WHITFORD

0008

AUG 26 2004 4:58 PM FR PSC ANALYTICAL SRVS 420 8612 TO 4689009

P. 07



Organic Parameters

page : 1

Client : Jacques Whitford Environment Ltd.
 1 Spectacle Lake Drive
 Dartmouth
 NS B3B 1W8
 PSC Project Number : 0418271H
 Client Project Number : NSD 19081

MCCULLOUGH, IOB

FAX # : 468-9009
 Printed : 2004/08/26 (Event 702)
 Reported : 2004/08/26

Matrix	Water
Philip ID	04-H057585
Client ID	#1
Date Sampled (y/m/d)	
Date Received (y/m/d)	04/08/25

Analyte	Units	EQL	
TPH C11-32 Water Event #	-		IW81
VPH Water Event #	-		IW84
Benzene	mg/L	0.001	nd
Toluene	mg/L	0.001	0.002
Ethylbenzene	mg/L	0.001	0.001

Xylenes	mg/L	0.002	0.008
C6 - C10 HC {less BTEX}	mg/L	0.01	0.03
>C10-C21 (Fuel Range)	mg/L	0.05	0.10
>C21-C32 (Lube Range)	mg/L	0.1	nd
Modified TPH - Tier 1	mg/L	0.2	nd

VPH Surrogate (I22)	% Rec.	-	87.
TPH Surrogate (I23)	% Rec.	-	94.
TPH Surrogate (C32)	% Rec.	-	91.

EQL = Estimated Quantization Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit. For soils, zero %moisture is assumed.
 The moisture corrected EQL = $EQL / (1 - (\%moisture/100))$

ND () = Analyte was not detected above the EQL. Raised EQL listed in Parenthesis.

- = Dash is reported when parameter not requested in sample.

Event # = PSC Quality Control Reference number for QC samples run with your sample.

%REC = Surrogate Recovery Values are results of PSC quality control tests.

Note : Soil results are expressed on a dry weight basis.

: Biota results are expressed on a wet weight basis.

page verified

08/27/2004 11:18 FAX 902 468 9009
 AUG 26 2004 4:59 PM FR PSC ANALYTICAL

JACQUES WHITFORD

SRVS 420 8612 TO 4689009
 PSC ANALYTICAL SERVICES

PSC Analytical Services
 200 Bluewater Road
 Bedford, NS Canada B4B 1G9
 Tel (902) 420-0203
 Toll free (800) 565-7227
 Fax (902) 420-8612

Organic Parameters page : 2
 Client : Jacques Whitford Environment Ltd. MCCULLOUGH, ROB
 3 Spectacle Lake Drive
 Dartmouth
 NS B3B 1W8
 PSC Project Number : 0413271H
 Client Project Number : NSD 19081

FAX # : 468-9009
 Printed : 2004/08/26 2702
 Reported : 2004/08/26

Note: The product resemblance comments are provided for general guidance only and may not be accurate. Resemblances are based on comparison with available reference standards. Due to chromatographic similarity of certain products, the influence of weathering effects and interference of non-petrogenic compounds, it is not always possible to positively identify products.

Notes: Modified TPH - Tier 1 (C6-C32) does not include BTEX

04-H057585 #1

Traces of gasoline fraction.
 VPH analysis performed on previously opened vial.
 VPH sample contained headspace.

EQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit. For soils, zero moisture is assumed.
 The moisture corrected EQL = $EQL / (1 - (\%moisture/100))$

ND () = Analyte was not detected above the EQL. Raised EQL listed in Parenthesis.

- = Dash is reported when parameter not requested in sample.

Event # = PSC Quality Control Reference number for QC samples run with your sample.

%REC = Surrogate Recovery Values are results of PSC quality control tests.

Note : Soil results are expressed on a dry weight basis.

: Biota results are expressed on a wet weight basis.

page verified */m*

08/27/2004 11:18 FAX 902 468 9009 JACQUES WHITFORD
AUG 26 2004 4:59 PM FR PSC ANALYTICAL SRUS 420 8612 TO 4689009

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P:09

Organic Parameters page : 3

PSC Analytical Services
200 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Jacques Whitford Environment Ltd. MCCULLOUGH, ROB
3 Spectacle Lake Drive
Dartmouth
NS B3B 1W8
PSC Project Number : 0415271H
Client Project Number : NSD 19081

FAX # : 468-9009
Printed : 2004/08/26 E702
Reported : 2004/08/26

Certificate of Analysis

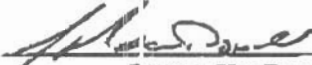
Method Summaries :

- Extractable Hydrocarbons - Water: Hexane extraction. HP5890 GC/FID.
Ref: Atlantic PIRI Guidelines for Laboratories, Draft 1.0, 1999.
- Volatile Petroleum Hydrocarbons - Water: Tekmar LSC2000. Autosampler. Varian
3400/Saturn II or HP5890 GC/MS. Ref: Atlantic PIRI Guidelines for Laboratories,
Draft 1.0, 1999.

Conversions: 1 mg/L = 1000 ug/L = 1 part per million (ppm)
1 ug/L = 0.001 mg/L = 1 part per billion (ppb)

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Analyses reviewed by:

Organics Manager : 
James MacDonald

08/27/2004 11:15 FAX 902 468 9009
AUG 26 2004 4:58 PM FR PSC ANALYTICAL SRVS 420 8612 TO 4689009

JACQUES WHITFORD

EXP. 04

Inorganic Parameters

page : 4

PSC Analytical Services
200 Bluewater Road
Bedford, NS Canada B4B 1G9
Tel (902) 420-0203
Toll free (800) 565-7227
Fax (902) 420-8612

Client : Jacques Whitford Environment Ltd. MCCULLOUGH, ROB
3 Spectacle Lake Drive
Dartmouth

NS B3B 1W8

PSC Project Number : 0415271H

Client Project Number : NSD 19081

PIX # : 468-9009

Printed : 2004/08/26 E697

Reported : 2004/08/26

Legend RQL = Estimated Quantitation Limit is the minimum concentration that can be reliably reported. It is not a regulatory limit.
ND = Not Detected, instrument did not detect anything above standard RQL.
ND () = Not Detected at the elevated RQL specified, due to matrix interferences or sample pre-dilution.
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page verified *P*