

**CERTIFICATE OF ANALYSIS**

Norfolk Ram Group  
Attn: Mr. Steve Lemoine  
Birchwood Business Park  
25 Birch St., Bldg. B  
Milford, MA 01757

**Date Received:** 3/11/08  
**Date Reported:** 3/17/08  
**P.O. #:**  
**Work Order #:** 0803-04114

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**DESCRIPTION:** PROJECT# 1213.1.1 WAYLAND FIELD

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Subject sample(s) has/have been analyzed by our Warwick, R.I. laboratory with the attached results.

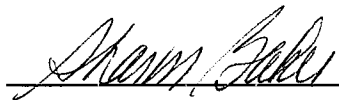
Reference: All parameters were analyzed by U.S. EPA approved methodologies.  
The specific methodologies are listed in the methods column of the Certificate Of Analysis.

Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.

Certification #: RI-033, MA-RI015, CT-PH-0508, ME-RI015  
NH-253700 A & B, USDA S-41844

If you have any questions regarding this work, or if we may be of further assistance, please contact our customer service department.

Approved by:



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Data Reporting

enc: Chain of Custody

## R.I. Analytical Laboratories, Inc.

## CERTIFICATE OF ANALYSIS

Norfolk Ram Group  
 Date Received: 3/11/08  
 Work Order #: 0803-04114

Approved by:   
 Data Reporting

Sample # 001  
**SAMPLE DESCRIPTION:** OUTFALL 1  
**SAMPLE TYPE:** GRAB

**SAMPLE DATE/TIME:** 3/10/2008 @ 10:30

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
pH	7.0		SU	SM 4500-H+ B	3/11/08	ML
BOD 5	<2.0	2.0	mg/l	SM 5210B	3/11/08	KL
Total Suspended Solids	<2.0	2.0	mg/l	EPA 160.2	3/13/08	ML
Semi-volatile organic compounds						
Acenaphthene	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Acenaphthylene	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Anthracene	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Benzidine	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Benzo(a)anthracene	<1	1	ug/l	SW-846 8270C	3/13/08	RGM
Benzo(b)fluoranthene	<1	1	ug/l	SW-846 8270C	3/13/08	RGM
Benzo(k)fluoranthene	<1	1	ug/l	SW-846 8270C	3/13/08	RGM
Benzo(g,h,i)perylene	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Benzo(a)pyrene	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Bis(2-chloroethyl)ether	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Bis(2-Chloroethoxy)methane	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Bis(2-Chloroisopropyl)Ether	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Bis(2-ethylhexyl)phthalate	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
4-Bromophenyl phenyl ether	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Butylbenzyl phthalate	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
2-Chloronaphthalene	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
4-Chlorophenyl phenyl ether	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Chrysene	<2	2	ug/l	SW-846 8270C	3/13/08	RGM
Dibenzo(a,h)anthracene	<0.5	0.5	ug/l	SW-846 8270C	3/13/08	RGM
Di-n-butyl phthalate	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
1,2-Dichlorobenzene	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
1,3-Dichlorobenzene	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
1,4-Dichlorobenzene	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
3,3'-Dichlorobenzidine	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Diethyl phthalate	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Dimethyl phthalate	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
2,4-Dinitrotoluene	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
2,6-Dinitrotoluene	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Di-n-octyl phthalate	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
1,2-Diphenylhydrazine	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Fluoranthene	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Fluorene	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Hexachlorobenzene	<1	1	ug/l	SW-846 8270C	3/13/08	RGM
Hexachlorobutadiene	<0.6	0.6	ug/l	SW-846 8270C	3/13/08	RGM

**R.I. Analytical Laboratories, Inc.**  
**CERTIFICATE OF ANALYSIS**

Norfolk Ram Group  
 Date Received: 3/11/08  
 Work Order #: 0803-04114

Approved by:   
 Data Reporting

Sample # 001  
**SAMPLE DESCRIPTION:** OUTFALL 1  
**SAMPLE TYPE:** GRAB

**SAMPLE DATE/TIME:** 3/10/2008 @ 10:30

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
Hexachlorocyclopentadiene	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Hexachloroethane	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Indeno(1,2,3-cd)pyrene	<0.5	0.5	ug/l	SW-846 8270C	3/13/08	RGM
Isophorone	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Naphthalene	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Nitrobenzene	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
N-nitrosodimethylamine	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
N-nitrosodiphenylamine	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
N-nitrosodi-n-propylamine	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Phenanthrene	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Pyrene	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
1,2,4-Trichlorobenzene	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
4-Chloro-3-methylphenol	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
2-Chlorophenol	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
2,4-Dichlorophenol	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
2,4-Dimethylphenol	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
2-Methyl-4,6-dinitrophenol	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
2,4-Dinitrophenol	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
2-Nitrophenol	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
4-Nitrophenol	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Pentachlorophenol	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Phenol	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
2,4,6-Trichlorophenol	<5	5	ug/l	SW-846 8270C	3/13/08	RGM
Surrogates			RANGE	SW-846 8270C	3/13/08	RGM
Phenol-d5	21		15-110%	SW-846 8270C	3/13/08	RGM
2-Fluorophenol	26		15-110%	SW-846 8270C	3/13/08	RGM
2,4,6-Tribromophenol	78		15-110%	SW-846 8270C	3/13/08	RGM
Nitrobenzene-d5	52		30-130%	SW-846 8270C	3/13/08	RGM
2-Fluorobiphenyl	61		30-130%	SW-846 8270C	3/13/08	RGM
P-Terphenyl-d14	68		30-130%	SW-846 8270C	3/13/08	RGM
Dissolved Metals Analyzed by ICPMS						
Cadmium	<0.00020	0.00020	mg/l	EPA 200.8	3/12/08	LS
Chromium	0.002	0.001	mg/l	EPA 200.8	3/12/08	LS
Copper	0.005	0.001	mg/l	EPA 200.8	3/12/08	LS
Lead	<0.001	0.001	mg/l	EPA 200.8	3/12/08	LS
Selenium	<0.0020	0.0020	mg/l	EPA 200.8	3/12/08	LS
Zinc	0.031	0.005	mg/l	EPA 200.8	3/12/08	LS

Customer Name : Norfolk Ram Group

W.O. Number 0803-04114

MADEP MCP Response Action Analytical Report Certification Form	
Laboratory Name: R.I. Analytical Laboratories	Work Order No: 0803-04114
Project / Location: PROJECT# 1213.1.1 WAYLAND	MADEP RTN 1:
This Form provides certifications for the following data set: [List Laboratory Sample ID Number(s)]	
0803-04114-001	

Sample Matrices:  Groundwater  Soil / Sediment  Drinking Water  Other: *Surface water*

MCP SW-846 As specified in MADEP Compendium of Analytical Methods. (check all that apply)	8260B ( )	8151A ( )	8330 ( )	6010B ( )	7470A/1A ( )
	8270C (X)	8081A ( )	VPH ( )	6020 ( )	9014M 2 ( )
	8082 ( )	8021B ( )	EPH ( )	7000 S 3 ( )	OTHER (X)
1 List Release Tracking Number (RTN), if known. 2 M - SW-846 Method 9014 or MADEP Physiologically Available Cyanide (PAC) Method 3 S - SW-846 Methods 7000 Series List individual method and analyte.					

**An affirmative response to questions A, B, C and D is required for "Presumptive Certainty" status**

A	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of Custody documentation for the data set?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 1
B	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 1
C	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty", as described in Section 2.0 of the MADEP document CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 1
D	<u>VPH and EPH methods only:</u> Was the VPH or EPH method run without significant modifications, as specified in Section 11.3?	<input type="checkbox"/> Yes <input type="checkbox"/> No 1

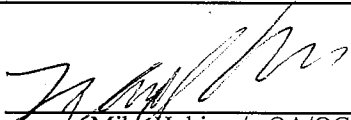
**A response to questions E and F below is required for "Presumptive Certainty" status**

E	Were all QC performance standards and recommendations for the specified methods achieved?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 1
F	Were results for all analyte-list compounds/elements for the specified method(s) reported?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 1

1 All NO answers must be addressed in an attached Environmental Laboratory case narrative.

**I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.**

Signature

  
Mike Hobin / QA/QC Manager

Date:

3/18/08



## Case Narrative

Date: 03/18/2008

Norfolk Ram Group  
Attn: Mr. Steve Lemoine  
Birchwood Business Park  
25 Birch St., Bldg. B  
Milford, MA 01757

Project: # 1213.1.1 WAYLAND FIELD

RIAL WO# 0803-04114

The following exceptions were noted for this Work Order:

Continuing Calibration Standard (CCAL)

For the Semi-Volatile Organic Compounds Method 8270C, the percent difference from initial calibration curve for benzidine was 32 %.

The Method allows up to six compounds to be greater than 30% with laboratory narration.

LCSD was not prepared for this sample's associated preparation batch.

Michael J. Hobin  
QA/QC Manager

## METHOD 8270

## SEMI-VOLATILE ORGANICS METHOD BLANK DATA SHEET

Lab Name: RI ANALYTICALCLIENT: Norfolk Ram GroupW.O #: 0803-04114

## COMPOUND

CONCENTRATION UNITS:  
ug/l

Acenaphthene	<5
Acenaphthylene	<5
Anthracene	<5
Benzidine	<5
Benzo(a)anthracene	<1
Benzo(b)fluoranthene	<1
Benzo(k)fluoranthene	<1
Benzo(g,h,i)perylene	<5
Benzo(a)pyrene	<5
Bis(2-chloroethyl)ether	<5
Bis(2-chlorethoxy)methane	<5
bis(2-Chloroisopropyl)ether	<5
Bis(2-ethylhexyl)phthalate	<5
4-Bromophenyl phenyl ether	<5
Butylbenzyl phthalate	<5
2-Chloronaphthalene	<5
4-Chlorophenyl phenyl ether	<5
Chrysene	<2
Dibenzo(a,h)anthracene	<0.5
Di-n-butyl phthalate	<5
1,2-Dichlorobenzene	<5
1,3-Dichlorobenzene	<5
1,4-Dichlorobenzene	<5
3,3-Dichlorobenzidine	<5
Diethyl phthalate	<5
Dimethyl phthalate	<5
2,4-Dinitrotoluene	<5
2,6-Dinitrotoluene	<5
Di-n-octyl phthalate	<5
1,2-Diphenylhydrazine	<5
Fluoranthene	<5
Fluorene	<5
Hexachlorobenzene	<1
Hexachlorobutadiene	<0.6
Hexachlorocyclopentadiene	<5
Hexachloroethane	<5
Indeno(1,2,3-cd)pyrene	<0.5
Isophorone	<5
Naphthalene	<5

**METHOD 8270**  
**SEMI-VOLATILE ORGANICS METHOD BLANK DATA SHEET**

Lab Name: RI ANALYTICAL

CLIENT: Norfolk Ram Group

W.O #: 0803-04114

COMPOUND

CONCENTRATION UNITS:  
ug/l

Nitrobenzene	<5
N-nitrosodimethylamine	<5
N-nitrosodiphenylamine	<5
N-nitrosodi-n-propylamine	<5
Phenanthrene	<5
Pyrene	<5
1,2,4-Trichlorobenzene	<5
4-Chloro-3-methylphenol	<5
2-Chlorophenol	<5
2,4-Dichlorophenol	<5
2,4-Dimethylphenol	<5
2-Methyl-4,6-dinitrophenol	<5
2,4-Dinitrophenol	<5
2-Nitrophenol	<5
4-Nitrophenol	<5
Pentachlorophenol	<5
Phenol	<5
2,4,6-Trichlorophenol	<5
Phenol-d5	73
2-Fluorophenol	55
2,4,6-Tribromophenol	81
Nitrobenzene-d5	65
2-Fluorobiphenyl	69
P-Terphenyl-d14	72

## METHOD 8270

## SEMI-VOLATILE ORGANICS LCS/LCS DUPLICATE DATA SHEET

Lab Name: RI ANALYTICALClient: Norfolk Ram GroupW.O. # 0803-04114

COMPOUND	SPIKE CONC. ug/L	LCS CONC. ug/L	LCS % REC.
Acenaphthene	50	43	86
Acenaphthylene	50	47	94
Anthracene	50	47	94
Benzo(a)anthracene	50	51	102
Benzo(b)fluoranthene	50	55	110
Benzo(k)fluoranthene	50	55	110
Benzo(g,h,i)perylene	50	52	104
Benzo(a)pyrene	50	54	108
Bis(2-chloroethyl)ether	50	43	86
Bis(2-chlorethoxy)methane	50	42	84
bis(2-Chloroisopropyl)ether	50	33	66
Bis(2-ethylhexyl)phthalate	50	47	94
4-Bromophenyl phenyl ether	50	49	98
Butylbenzyl phthalate	50	47	94
2-Chloronaphthalene	50	43	86
4-Chlorophenyl phenyl ether	50	48	96
Chrysene	50	48	96
Dibenzo(a,h)anthracene	50	40	80
Di-n-butyl phthalate	50	46	92
1,2-Dichlorobenzene	50	46	92
1,3-Dichlorobenzene	50	43	86
1,4-Dichlorobenzene	50	46	92
Diethyl phthalate	50	41	82
Dimethyl phthalate	50	46	92
2,4-Dinitrotoluene	50	44	88
2,6-Dinitrotoluene	50	45	90
Di-n-octyl phthalate	50	56	112
1,2-Diphenylhydrazine	50	46	92
Fluoranthene	50	46	92
Fluorene	50	42	84
Hexachlorobenzene	50	48	96
Hexachlorobutadiene	50	49	98
Hexachlorocyclopentadiene	50	53	106
Hexachloroethane	50	42	84
Indeno(1,2,3-cd)pyrene	50	48	96
Isophorone	50	43	86
Naphthalene	50	42	84

## METHOD 8270

## SEMI-VOLATILE ORGANICS LCS/LCS DUPLICATE DATA SHEET

Lab Name: RI ANALYTICALClient: Norfolk Ram GroupW.O. # 0803-04114

COMPOUND	SPIKE CONC. ug/L	LCS CONC. ug/L	LCS % REC.
Nitrobenzene	50	43	86
N-nitrosodimethylamine	50	48	96
N-nitrosodi-n-propylamine	50	41	82
Phenanthrene	50	46	92
Pyrene	50	50	100
1,2,4-Trichlorobenzene	50	47	94
4-Chloro-3-methylphenol	50	49	98
2-Chlorophenol	50	46	92
2,4-Dichlorophenol	50	47	94
2,4-Dimethylphenol	50	45	90
2-Methyl-4,6-dinitrophenol	50	38	76
2,4-Dinitrophenol	50	31	62
2-Nitrophenol	50	43	86
4-Nitrophenol	50	34	68
Pentachlorophenol	50	35	70
Phenol	50	43	86
2,4,6-Trichlorophenol	50	46	92
Phenol-d5			74
2-Fluorophenol			61
2,4,6-Tribromophenol			91
Nitrobenzene-d5			74
2-Fluorobiphenyl			73
P-Terphenyl-d14			86

**RI Analytical Laboratories, Inc.**  
**QA/QC Report**

**Client:** Norfolk Ram Group  
**W.O. #:** 0803-04114  
**Date:** 03/17/2008

**-Method Blank Results-**

Parameter	Units	Results	Date Analyzed
BOD 5	mg/l	<2.0	03/11/2008
Total Suspended Solids	mg/l	<2.0	03/13/2008

Cadmium	mg/l	<0.00020	03/12/2008
Chromium	mg/l	<0.001	03/12/2008
Copper	mg/l	<0.001	03/12/2008
Lead	mg/l	<0.001	03/12/2008
Selenium	mg/l	<0.0020	03/12/2008
Zinc	mg/l	<0.005	03/12/2008

**-Laboratory Control Standard-**

Parameter	Units	Spike Conc.	Detected Conc.	% Rec.	Date Analyzed
BOD 5	mg/l	198	183	92	03/11/2008
Total Suspended Solids	mg/l	80	82	103	03/13/2008

Cadmium	mg/l	0.100	0.101	101	03/12/2008
Chromium	mg/l	0.100	0.096	96	03/12/2008
Copper	mg/l	0.100	0.102	102	03/12/2008
Lead	mg/l	0.100	0.102	102	03/12/2008
Selenium	mg/l	0.100	0.097	97	03/12/2008
Zinc	mg/l	0.100	0.101	101	03/12/2008

**-Laboratory Control Standard Duplicate-**

Parameter	Units	Spike Conc.	Detected Conc.	% Rec.	RPD	Date Analyzed
Total Suspended Solids	mg/l	80	84	105	2	03/13/2008

Cadmium	mg/l	0.101	0.101	100	1	03/12/2008
Chromium	mg/l	0.101	0.101	100	4	03/12/2008
Copper	mg/l	0.102	0.102	100	2	03/12/2008
Lead	mg/l	0.100	0.104	104	2	03/12/2008
Selenium	mg/l	0.100	0.098	98	1	03/12/2008
Zinc	mg/l	0.100	0.102	102	1	03/12/2008

# CHAIN OF CUSTODY RECORD

## R.I. Analytical Laboratories, Inc.

41 Illinois Avenue  
 131 Coolidge St, Suite 105  
 Warwick, RI 02888-3007  
 Hudson, MA 01749-1331  
 Tel: 800-937-2580  
 Tel: 800-937-2580  
 Fax: 401-738-1970  
 Fax: 978-568-0078

Date Collected	Time Collected	Field Sample Identification		Grab or Composite	# of Containers & Type <sup>c</sup>	Preservation Code <sup>p</sup>	Matrix Code <sup>m</sup>	BOD	TSS	pH	Diss. Metals **
3/10	10:30	Outfall 1		G	16 HDL SW		X				
3/10	10:30	Outfall 1		G	16 NP SW		X	X			
3/10	10:30	Outfall 1		G	25 NP SW						X

4770

**Send Report To** Norfolk RAM Group - Milford  
 25 Birch Street  
 Milford, MA 01757  
 Telephone: 508-478-1276  
 Contact Person: Brian Moran

**Send Invoice To** Norfolk RAM Group - Plymouth  
 One Roberts Road  
 Plymouth, MA 02360  
 Telephone: 508-747-7900  
 Accounts Payable

**Project Information**  
 Project Name: Weyland Field  
 Project Number: 12.13.1.1  
 Report To: Steve Lammie  
 P.O. Number:  
 Phone: 508-478-1276  
 Email address: slammie@hexfil/krum.com

Relinquished By	Date	Time	Received By	Date	Time
<i>[Signature]</i>	3/10/08	12:00	Brian Moran	3/11/08	9 AM
<i>[Signature]</i>	3/11/08	17:28	<i>[Signature]</i>	3/11/08	17:28
<i>[Signature]</i>	3/11/08	18:15	<i>[Signature]</i>	3/11/08	18:15

**Project Comments**  
 Circle if applicable: (GW-1), GW-2, GW-3, S-1, S-2, S-3  
 MCP Data Enhancement QC Package? (Yes) No  
 \*\* Zn, Pb, Cd, Cr, Cu, Se only. Please lab filter + preserve  
 Temperature Upon Receipt 8 °C

**Lab Use Only**  
 Sample Pick Up Only  
 RIAL sampled, attach field hours  
 Shipped on ice 2/11/08  
 Workorder No: 0803-3791

**Turn Around Time**  
 Normal  EMAIL Report  
 5 Business days  
 Rush  (business days)

Containers: P=Poly, G=Glass, AG=Amber Glass, V=Vial, ST=Sterile  
 Preservatives: A=Ascorbic Acid, NH4=NH4Cl, H=HCl, M=MeOH, N=HNO3, NP=None, S=H2SO4, SB=NaHSO4, SH=NaOH, T=Na2S2O3, Z=ZnOAc  
 Matrix Codes: GW=Groundwater, SW=Surface Water, WW=Wastewater, DW=Drinking Water, S=Soil, SL=Sludge, A=Air, B=Bulk/Solid, O=