



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 1

5 Post Office Square, Suite 100

BOSTON, MA 02109-3912

CERTIFIED MAIL RETURN RECEIPT REQUESTED

APR 20 2011

Mark S. Barlett
President
Norfolk Ram Group, LLC
One Roberts Road
Plymouth, MA 02360

Re: Authorization to discharge under the Remediation General Permit (RGP) –
MAG910000. North Carver Landfill site located off Green Street at Plymouth Street (Old
Route 44), North Carver, MA 02330, Plymouth County; Authorization # MAG910448 –
Reissuance

Dear Mr. Barlett:

Based on the review of a Notice of Intent (NOI) submitted on behalf of the Town of
Carver by your firm Norfolk- Ram Group, LLC for the site referenced above, the U.S.
Environmental Protection Agency (EPA) hereby authorizes you, as the named Operator,
to discharge in accordance with the provisions of the RGP at that site. Your authorization
number is listed above.

The checklist enclosed with this RGP authorization indicates the pollutants which you are
required to monitor. Also indicated on the checklist are the effluent limits, test methods
and minimum levels (MLs) for each pollutant. Please note that the checklist does not
represent the complete requirements of the RGP. Operators must comply with all of the
applicable requirements of this permit, including influent and effluent monitoring,
narrative water quality standards, record keeping, and reporting requirements, found in
Parts I and II, and Appendices I – VIII of the RGP. See EPA's website for the complete
RGP and other information at: <http://www.epa.gov/region1/npdes/mass.html#dgp>.

Please note the enclosed checklist includes parameters that exceeded Appendix III limits.
The checklist also includes other parameters for which your laboratory reports indicated
there was insufficient sensitivity to detect these parameters at the minimum levels
established in Appendix VI of the RGP.

Also, please note that the metals included on the checklist are dilution dependent
pollutants and subject to limitations based on a dilution factor range (DFR). With the
absence of dilution to wetlands, EPA determined that the DFR for each parameter is in

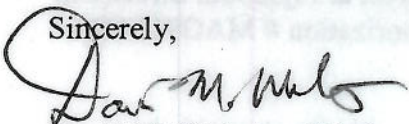
the one and five (1-5) range. (See the RGP Appendix IV for Massachusetts facilities)
Therefore, the limits for copper of 5.2ug/L, nickel of 29ug/L, zinc of 66.6ug/L and iron of 1,000ug/L, are required to achieve permit compliance at your site.

Finally, please note the checklist of pollutants attached to this authorization is subject to a recertification if the operations at the site result in a discharge lasting longer than six months. A recertification can be submitted to EPA within six (6) to twelve (12) months of operations in accordance with the 2010 RGP regulations.

This general permit and authorization to discharge will expire on September 9, 2015. You have reported that the termination date for this project is unknown. If for any reason the discharge terminates sooner you are required to submit a Notice of Termination (NOT) to the attention of the contact person indicated below within 30 days of project completion.

Thank you in advance for your cooperation in this matter. Please contact Victor Alvarez at 617-918-1572 or Alvarez.Victor@epa.gov, if you have any questions.

Sincerely,



David M. Webster, Chief
Industrial Permits Branch

Enclosure

cc: Kathleen Keohane, MassDEP

**2010 Remediation General Permit
Summary of Monitoring Parameters^[1]**

NPDES Authorization Number:		MAG910488 – Reissuance
Date Authorization Issued:	April, 2011	
Facility/Site Name:	North Carver Landfill	
Facility/Site Address:	Off Green Street at Plymouth Street (Old Route 44), North Carver, MA 02330, Plymouth County	
	Email address of owner: Richard.lafond@carvermas.org	
Legal Name of Operator:	Norfolk Ram Group, LLC	
Operator contact name, title, and Address:	Mark S. Barlett, P.E., President, One Roberts Road, Plymouth MA 02360	
	Email: mbarlett@norfolkram.com	
Estimated Date of Completion:	Unknown	
Category and Sub-Category:	Category II. Non Petroleum Site Remediation. Subcategory B. VOC Sites with Additional Contamination	
Receiving Water:	Wetland to Muddy Pond Brook	

Monitoring & Limits are applicable if checked. All samples are to be collected as grab samples

	<u>Parameter</u>	<u>Effluent Limit/Method#/ML</u> (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
✓	1. Total Suspended Solids (TSS)	30 milligrams/liter (mg/L) **, 50 mg/L for hydrostatic testing **, Me#60.2/ML5ug/L
✓	2. Total Residual Chlorine (TRC) ¹	Freshwater = 11 ug/L ** Saltwater = 7.5 ug/L **/ Me#330.5/ML 20ug/L
✓	3. Total Petroleum Hydrocarbons (TPH)	5.0 mg/L/ Me# 1664A/ML 5.0mg/L
	4. Cyanide (CN) ^{2, 3}	Freshwater = 5.2 ug/l ** Saltwater = 1.0 ug/L **/ Me#335.4/ML 10ug/L
	5. Benzene (B)	5ug/L /50.0 ug/L for hydrostatic testing only/ Me#8260C/ML 2 ug/L
	6. Toluene (T)	(limited as ug/L total BTEX)/ Me#8260C/ ML 2ug/L
	7. Ethylbenzene (E)	(limited as ug/L total BTEX) Me#8260C/ ML 2ug/L
	8. (m,p,o) Xylenes (X)	(limited as ug/L total BTEX) Me#8260C/ ML 2ug/L
	9. Total Benzene, Toluene, Ethyl Benzene, and Xylenes (BTEX) ⁴	100 ug/L/ Me#8260C/ ML 2ug/L

	<u>Parameter</u>	<u>Effluent Limit/Method#/ML</u> (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
	10. Ethylene Dibromide (EDB) (1,2- Dibromoethane)	0.05 ug/l/ Me#8260C/ ML 10ug/L
✓	11. Methyl-tert-Butyl Ether (MtBE)	70.0 ug/l/Me#8260C/ML 10ug/L
✓	12.tert-Butyl Alcohol (TBA) (TertiaryButanol)	Monitor Only(ug/L)/Me#8260C/ML 10ug/L
	13. tert-Amyl Methyl Ether (TAME)	Monitor Only(ug/L)/Me#8260C/ML 10ug/L
	14. Naphthalene ⁵	20 ug/L /Me#8260C/ML 2ug/L
	15. Carbon Tetrachloride	4.4 ug/L /Me#8260C/ ML 5ug/L
	16. 1,2 Dichlorobenzene (o-DCB)	600 ug/L /Me#8260C/ ML 5ug/L
	17. 1,3 Dichlorobenzene (m-DCB)	320 ug/L /Me#8260C/ ML 5ug/L
	18. 1,4 Dichlorobenzene (p-DCB)	5.0 ug/L /Me#8260C/ ML 5ug/L
	18a. Total dichlorobenzene	763 ug/L - NH only /Me#8260C/ ML 5ug/L
	19. 1,1 Dichloroethane (DCA)	70 ug/L /Me#8260C/ ML 5ug/L
	20. 1,2 Dichloroethane (DCA)	5.0 ug/L /Me#8260C/ ML 5ug/L
	21. 1,1 Dichloroethene (DCE)	3.2 ug/L/Me#8260C/ ML 5ug/L
✓	22. cis-1,2 Dichloroethene (DCE)	70 ug/L/Me#8260C/ ML 5ug/L
	23. Methylene Chloride	4.6 ug/L/Me#8260C/ ML 5ug/L
✓	24. Tetrachloroethene (PCE)	5.0 ug/L/Me#8260C/ ML 5ug/L
	25. 1,1,1 Trichloro-ethane (TCA)	200 ug/L/Me#8260C/ ML 5ug/L
	26. 1,1,2 Trichloro-ethane (TCA)	5.0 ug/L /Me#8260C/ ML 5ug/L
✓	27. Trichloroethene (TCE)	5.0 ug/L /Me#8260C/ ML 5ug/L
✓	28. Vinyl Chloride (Chloroethene)	2.0 ug/L /Me#8260C/ ML 5ug/L
	29. Acetone	Monitor Only(ug/L)/Me#8260C/ML 50ug/L
✓	30. 1,4 Dioxane	Monitor Only /Me#1624C/ML 50ug/L
	31. Total Phenols	300 ug/L Me#420.1&420.2/ML 2 ug/L/ Me# 420.4 /ML 50ug/L
	32. Pentachlorophenol (PCP)	1.0 ug/L /Me#8270D/ML 5ug/L,Me#604 &625/ML 10ug/L
✓	33. Total Phthalates (Phthalate esters) ⁶	3.0 ug/L ** /Me#8270D/ML 5ug/L, Me#606/ML 10ug/L& Me#625/ML 5ug/L
	34. Bis (2-Ethylhexyl) Phthalate [Di- (ethylhexyl) Phthalate]	6.0 ug/L /Me#8270D/ML 5ug/L,Me#606/ML 10ug/L & Me#625/ML 5ug/L
	35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)	10.0 ug/L
	a. Benzo(a) Anthracene ⁷	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L

	<u>Parameter</u>	<u>Effluent Limit/Method#/ML</u> (All Effluent Limits are shown as Daily Maximum Limit, unless denoted by a **, in that case it will be a Monthly Average Limit)
	b. Benzo(a) Pyrene ⁷	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	c. Benzo(b)Fluoranthene ⁷	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	d. Benzo(k)Fluoranthene ⁷	0.0038 ug/L /Me#8270D/ ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	e. Chrysene ⁷	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	f. Dibenzo(a,h)anthracene ⁷	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	g. Indeno(1,2,3-cd) Pyrene ⁷	0.0038 ug/L /Me#8270D/ML 5ug/L, Me#610/ML 5ug/L& Me#625/ML 5ug/L
	36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)	100 ug/L
	h. Acenaphthene	X/Me#8270D/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	i. Acenaphthylene	X/Me#8270D/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	j. Anthracene	X/Me#8270D/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	k. Benzo(ghi) Perylene	X/Me#8270D/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	l. Fluoranthene	X/Me#8270D/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	m. Fluorene	X/Me#8270D/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	n. Naphthalene ⁵	20 ug/L / Me#8270/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	o. Phenanthrene	X/Me#8270D/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	p. Pyrene	X/Me#8270D/ML 5ug/L, Me#610/ML 5ug/L & Me#625/ML 5ug/L
	37. Total Polychlorinated Biphenyls (PCBs) ^{8,9}	0.000064 ug/L/Me# 608/ ML 0.5 ug/L
✓	38. Chloride	Monitor only/Me# 300.0/ ML 0.1ug/L

	<u>Metal parameter</u>	<u>Total Recoverable Metal Limit @ H¹⁰ = 50 mg/l CaCO3 for discharges in Massachusetts (ug/l)</u> 11/12	<u>Minimum level=ML</u>
	39. Antimony	Freshwater 5.6/ML 10	
	40. Arsenic **	10ug/L/ML20	

	Metal parameter	Total Recoverable Metal Limit @ H¹⁰ = 50 mg/l CaCO₃ for discharges in Massachusetts (ug/l) 11/12		Minimum level=ML	
		Freshwater			
	41. Cadmium **	0.2ug/L/ML10			
	42. Chromium III (trivalent) **	48.8ug/L/ML15			
	43. Chromium VI (hexavalent) **	11.4ug/L/ML10			
✓	44. Copper **	5.2ug/L/ML15			
	45. Lead **	1.3ug/L/ML20			
	46. Mercury **	0.9ug/L/ML0.2			
✓	47. Nickel **	29ug/L/ML20			
	48. Selenium **	5ug/L/ML20			
	49. Silver	1.2ug/L/ML10			
✓	50. Zinc **	66.6ug/L/ML15			
✓	51. Iron	1,000ug/L/ML 20			

	Other Parameters	Limit
✓	52. Instantaneous Flow	Site specific in CFS
✓	53. Total Flow	Site specific in CFS
✓	54. pH Range for Class A & Class B Waters in MA	6.5-8.3; 1/Month/Grab ¹³
	55. pH Range for Class SA & Class SB Waters in MA	6.5-8.3; 1/Month/Grab ¹³
	56. pH Range for Class B Waters in NH	6.5-8; 1/Month/Grab ¹³
	57. Daily maximum temperature - Warm water fisheries	83°F; 1/Month/Grab ¹⁴
	58. Daily maximum temperature - Cold water fisheries	68°F; 1/Month/Grab ¹⁴
	59. Maximum Change in Temperature in MA - Any Class A water body	1.5°F; 1/Month/Grab ¹⁴
	60. Maximum Change in Temperature in MA - Any Class B water body- Warm Water	5°F; 1/Month/Grab ¹⁴
	61. Maximum Change in Temperature in MA - Any Class B water body - Cold water and Lakes/Ponds	3°F; 1/Month/Grab ¹⁴
	62. Maximum Change in Temperature in MA - Any Class SA water body - Coastal	1.5°F; 1/Month/Grab ¹⁴
	63. Maximum Change in Temperature in MA - Any Class SB water body - July to September	1.5°F; 1/Month/Grab ¹⁴
	64. Maximum Change in Temperature in MA -Any Class SB water body - October to June	4°F; 1/Month/Grab ¹⁴

Footnotes:

¹ Although the maximum values for TRC are 11ug/l and 7.5 ug/l for freshwater, and saltwater respectively, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., Method 330.5, 20 ug/l).

² Limits for cyanide are based on EPA's water quality criteria expressed as micrograms per liter. There is currently no EPA approved test method for free cyanide. Therefore, total cyanide must be reported.

³ Although the maximum values for cyanide are 5.2 ug/l and 1.0 ug/l for freshwater and saltwater, respectively, the compliance limits are equal to the minimum level (ML) of the Method 335.4 as listed in Appendix VI (i.e., 10 ug/l).

⁴ BTEX = sum of Benzene, Toluene, Ethylbenzene, and total Xylenes.

⁵ Naphthalene can be reported as both a purgeable (VOC) and extractable (SVOC) organic compound. If both VOC and SVOC are analyzed, the highest value must be used unless the QC criteria for one of the analyses is not met. In such cases, the value from the analysis meeting the QC criteria must be used.

⁶ The sum of individual phthalate compounds (not including the #34, Bis (2-Ethylhexyl) Phthalate). The compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI.

Total values calculated for reporting on NOIs and discharge monitoring reports shall be calculated by adding the measured concentration of each constituent. If the measurement of a constituent is less than the ML, the permittee shall use a value of zero for that constituent. For each test, the permittee shall also attach the raw data for each constituent to the discharge monitoring report, including the minimum level and minimum detection level for the analysis.

⁷ Although the maximum value for the individual PAH compounds is 0.0038 ug/l, the compliance limits are equal to the minimum level (ML) of the test method used as listed in Appendix VI.

⁸ In the November 2002 WQC, EPA has revised the definition of Total PCBs for aquatic life as total PCBs is the sum of all homologue, all isomer, all congener, or all "Oroclor analyses." Total values calculated for reporting on NOIs and discharge monitoring reports shall be calculated by adding the measured concentration of each constituent. If the measure of a constituent is less than the ML, the permittee shall use a value of zero for that constituent. For each test, the permittee shall also attach the raw data for each constituent to the discharge monitoring report, including the minimum level and minimum detection level for the analysis.

⁹ Although the maximum value for total PCBs is 0.000064 ug/l, the compliance limit is equal to the minimum level (ML) of the test method used as listed in Appendix VI (i.e., 0.5 ug/l for Method 608 or 0.00005 ug/l when Method 1668a is approved).

¹⁰ Hardness. Cadmium, Chromium III, Copper, Lead, Nickel, Silver, and Zinc are Hardness Dependent.

¹¹ For a Dilution Factor (DF) from 1 to 5, metals limits are calculated using DF times the base limit for the metal. See Appendix IV. For example, iron limits are calculated using $DF \times 1,000 \text{ ug/L}$ (the iron base limit). Therefore DF is 1.5, the iron limit will be 1,500 ug/L; DF 2, then iron limit = $1,000 \times 2 = 2,000 \text{ ug/L}$, etc. not to exceed the DF=5.

¹² Minimum Level (ML) is the lowest level at which the analytical system gives a recognizable signal and acceptable calibration point for the analyte. The ML represents the lowest concentration at which an analyte can be measured with a known level of confidence. The ML is calculated by multiplying the laboratory-determined method detection limit by 3.18 (see 40 CFR Part 136, Appendix B).

¹³ pH sampling for compliance with permit limits may be performed using field methods as provided for in EPA test Method 150.1.

¹⁴ Temperature sampling per Method 170.1



NORFOLK•RAM
ENGINEERING SOLUTIONS
FOR THE ENVIRONMENT

December 8, 2010

Via Electronic (puleo.shelly@epa.gov) & Overnight Mail

U.S. Environmental Protection Agency
5 Post Office Square, Suite 100
Mail Code OEP06-4
Boston, Massachusetts 02109-3912
Attn: Remediation General Permit NOI Processing

**Re: Re-Application for Coverage under the 2010 Remediation General Permit
North Carver Landfill Groundwater Treatment
Response Action Remediation System
Off Green Street at Route 44
North Carver, Massachusetts
DEP RTN 4-0000268
Authorization #MAG910448
Norfolk Ref. No. 656.6.1**

To the Agency:

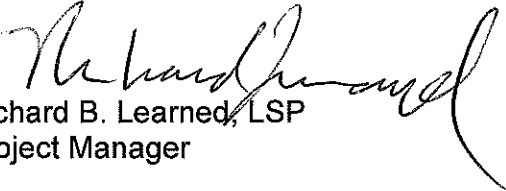
On behalf of the Town of Carver, Massachusetts, Norfolk Ram Group, LLC (Norfolk) has prepared this *Notice of Intent (NOI) for Remediation General Permit (RGP)* for the North Carver Landfill Groundwater Treatment Response Action Remediation System (GWTS) attached in Attachment A. The NOI was prepared consistent with Appendix V of the U.S. Environmental Protection Agency's (EPA) *Remediation General Permit Under the National Pollutant Discharge Elimination System (NPDES) for Discharges in Massachusetts, Massachusetts General Permit, Permit No. MAG910000*. The Town of Carver owns and operates this treatment system for which a NOI was authorized in March 2010 for the discharge of treated groundwater. The NOI replaced an original NPDES temporary permit exclusion letter under which historical discharges have been permitted. The Town requests authorization for continued discharge under the provisions of the 2010 RGP.

Pursuant to Section B(1)(a) of Appendix V, since the GWTS is subject to 310 CMR 40.0000, the Massachusetts Contingency Plan (MCP), there is no requirement to submit state application form BWPWM12 to the Massachusetts Department of Environmental Protection (DEP). However, a copy of the NOI will be provided to the DEP.

Norfolk has attached a Locus Map, Wetlands Map and Treatment System Schematic as Figures 1, 2 and 3, respectively in Attachment B. Copies of applicable Material Safety Data Sheets (MSDS) are also provided in Attachment B.

If you have any questions or comments concerning this NOI, please contact Richard Learned or Mark Bartlett at (508) 747-7900, extensions 151 and 131, respectively.

Very truly yours,
Norfolk Ram Group, LLC


Richard B. Learned, LSP
Project Manager


Mark S. Bartlett, P.E.
President

N:\Projects\656 Carver Board of Selectmen\656.6 pe lsp\EPA_RGP_Changes &
Response_2010\RGP_2010\NOI_RGP_EPA.doc

Attachments

cc: Mr. Richard LaFond, Carver Town Manager
Massachusetts Department of Environmental Protection (MADEP), Division of Watershed
Management (627 Main Street, 2nd floor Worcester, MA 01608), Attn. Robert Kubit
MADEP Southeast Regional Office, Attn., Gerard Martin
Brian V. Moran, P.E., LSP, Norfolk Ram Group, LLC

APPENDIX A

NOTICE OF INTENT FOR REMEDIATION GENERAL PERMIT

B. Suggested Form for Notice of Intent (NOI) for the Remediation General Permit

1. General facility/site information. Please provide the following information about the site:

a) Name of facility/site :		NORTH CARVER LANDFILL		Facility/site mailing address:	
Location of facility/site :		Facility SIC code(s):		Street:	
Longitude:	41D55	4953		OFF GREEN STREET AT PLYMOUTH STREET (aka OLD RTE 44)	
Latitude:	70D47			NORTH CARVER, MA	
b) Name of facility/site owner :		Town:		County:	
		NORTH CARVER		PLYMOUTH	
Email address of facility/site owner:		State:		Zip:	
richard.lafond@carverma.org		MA		02330	
Telephone no. of facility/site owner :					
		508 866-3400			
Fax no. of facility/site owner :					
		508 866-4213			
Address of owner (if different from site):					
Street:		108 MAIN STREET			
Town:		CARVER		PLYMOUTH	
State:		MA		County:	
Zip:		02330		PLYMOUTH	
c) Legal name of operator :		Operator telephone no:			
		508 747-7900			
NORFOLK RAM GROUP, LLC		Operator fax no.:		Operator email:	
		508 747 3658		mbartlett@norfolkram.com	
Operator contact name and title:		MARK S. BARTLETT, P.E., PRESIDENT			
Address of operator (if different from owner):		Street:			
		ONE ROBERTS ROAD			
Town:		PLYMOUTH		County:	
State:		MA		PLYMOUTH	
Zip:		02360			

d) Check Y for "yes" or N for "no" for the following: 1. Has a prior NPDES permit exclusion been granted for the discharge? Y ☒ N ☐ if Y, number: 2. Has a prior NPDES application (Form 1 & 2C) ever been filed for the discharge? Y ☐ N ☒ if Y, date and tracking #: 3. Is the discharge a "new discharge" as defined by 40 CFR 122.2? Y ☐ N ☒ 4. For sites in Massachusetts, is the discharge covered under the Massachusetts Contingency Plan (MCP) and exempt from state permitting? Y ☒ N ☐	e) Is site/facility subject to any State permitting, license, or other action which is causing the generation of discharge? Y ☒ N ☐ If Y, please list: 1. site identification # assigned by the state of NH or MA: 2. permit or license # assigned: 3. state agency contact information: name, location, and telephone number: MA DEPARTMENT OF ENVIRONMENTAL PROTECTION BWSC, 20 RIVERSIDE DRIVE LAKEVILLE, MA 02346 (508) 946-2700
f) Is the site/facility covered by any other EPA permit, including: 1. Multi-Sector General Permit? Y ☐ N ☒ if Y, number: 2. Final Dewatering General Permit? Y ☐ N ☒ if Y, number: 3. EPA Construction General Permit? Y ☐ N ☒ if Y, number: 4. Individual NPDES permit? Y ☐ N ☒ if Y, number: 5. any other water quality related individual or general permit? Y ☐ N ☒ if Y, number:	g) Is the site/facility located within or does it discharge to an Area of Critical Environmental Concern (ACEC)? Y ☐ N ☒
h) Based on the facility/site information and any historical sampling data, identify the sub-category into which the potential discharge falls.	
Activity Category	Activity Sub-Category A. Gasoline Only Sites ☐ B. Fuel Oils and Other Oil Sites (including Residential Non-Business Remediation Discharges) ☐ C. Petroleum Sites with Additional Contamination ☐ A. Volatile Organic Compound (VOC) Only Sites ☐ B. VOC Sites with Additional Contamination ☒ C. Primarily Heavy Metal Sites ☐ A. General Urban Fill Sites ☐ B. Known Contaminated Sites ☐
I - Petroleum Related Site Remediation	II - Non Petroleum Site Remediation
III - Contaminated Construction Dewatering	

IV - Miscellaneous Related Discharges	A. Aquifer Pump Testing to Evaluate Formerly Contaminated Sites ☐ B. Well Development/Rehabilitation at Contaminated/Formely Contaminated Sites ☐ C. Hydrostatic Testing of Pipelines and Tanks ☐ D. Long-Term Remediation of Contaminated Sumps and Dikes ☐ E. Short-term Contaminated Dredging Drain Back Waters (if not covered by 401/404 permit) ☐
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2. Discharge information. Please provide information about the discharge, (attaching additional sheets as necessary) including:

a) Describe the discharge activities for which the owner/applicant is seeking coverage: DISCHARGE OF TREATED GROUNDWATER FROM AN AIR STRIPPER REMEDIATION SYSTEM TO A SURFACE WATER BODY. THIS WORK IS BEING CONDUCTED AS AN IMMEDIATE RESPONSE ACTION PER 310 CMR 40.0000 AND PER AN ADMINISTRATIVE CONSENT ORDER FROM THE MADEP.																	
b) Provide the following information about each discharge:																	
1) Number of discharge points: <u>1</u>	2) What is the maximum and average flow rate of discharge (in cubic feet per second, ft³/s)? Max. flow <u>0.12</u> Is maximum flow a design value? Y ☒ N ☐ ESTIMATE Average flow (include units) <u>0.07 ft³/s</u> Is average flow a design value or estimate? ESTIMATE																
3) Latitude and longitude of each discharge within 100 feet: <table border="1"> <tr> <td>pt.1: lat <u>41D55</u></td> <td><u>long 70D47</u></td> <td>pt.2: lat <u>long</u></td> <td><u>long</u></td> </tr> <tr> <td>pt.3: lat <u>long</u></td> <td><u>long</u></td> <td>pt.4: lat <u>long</u></td> <td><u>long</u></td> </tr> <tr> <td>pt.5: lat <u>long</u></td> <td><u>long</u></td> <td>pt.6: lat <u>long</u></td> <td><u>long</u></td> </tr> <tr> <td>pt.7: lat <u>long</u></td> <td><u>long</u></td> <td>pt.8: lat <u>long</u></td> <td><u>long</u></td> </tr> </table>	pt.1: lat <u>41D55</u>	<u>long 70D47</u>	pt.2: lat <u>long</u>	<u>long</u>	pt.3: lat <u>long</u>	<u>long</u>	pt.4: lat <u>long</u>	<u>long</u>	pt.5: lat <u>long</u>	<u>long</u>	pt.6: lat <u>long</u>	<u>long</u>	pt.7: lat <u>long</u>	<u>long</u>	pt.8: lat <u>long</u>	<u>long</u>	5) Is the discharge intermittent ☐ or seasonal ☐ ? Is discharge ongoing? Y ☒ N ☐
pt.1: lat <u>41D55</u>	<u>long 70D47</u>	pt.2: lat <u>long</u>	<u>long</u>														
pt.3: lat <u>long</u>	<u>long</u>	pt.4: lat <u>long</u>	<u>long</u>														
pt.5: lat <u>long</u>	<u>long</u>	pt.6: lat <u>long</u>	<u>long</u>														
pt.7: lat <u>long</u>	<u>long</u>	pt.8: lat <u>long</u>	<u>long</u>														
4) If hydrostatic testing, total volume of the discharge (gals): 	c) Expected dates of discharge (mm/dd/yy): start <u>Feb 22, 1994</u> end <u>Unknown</u>																
d) Please attach a line drawing or flow schematic showing water flow through the facility including: 1. sources of intake water. 2. contributing flow from the operation. 3. treatment units. and 4. discharge points and receiving waters(s). SEE FIGURE 3																	

3. Contaminant information.

a) Based on the sub-category selected (see Appendix III), indicate whether each listed chemical is **believed present** or **believed absent** in the potential discharge. Attach additional sheets as needed.

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
1. Total Suspended Solids (TSS)		☐	☒	8	grab	SM 2540 D	5000	12000	1965		
2. Total Residual Chlorine (TRC)		☐	☒	8	grab	SM 4500 Cl G	10	30	4.9		
3. Total Petroleum Hydrocarbons (TPH)		☐	☒	8	grab	EPA 8015		700	114		
4. Cyanide (CN)	57125	☒	☐	8	grab	EPA 9012A		20	3.3		
5. Benzene (B)	71432	☒	☐	8	grab	EPA 8260B	2	1	0.16		
6. Toluene (T)	108883	☒	☐	8	grab	EPA 8260B	2				
7. Ethylbenzene (E)	100414	☒	☐	8	grab	EPA 8260B	2				
8. (m,p,o) Xylenes (X)	108883; 106423; 95476; 1330207	☒	☐	8	grab	EPA 8260B	4				
9. Total BTEX ²	n/a	☒	☐	8	grab	EPA 8260B	2	1	0.16		
10. Ethylene Dibromide (EDB) (1,2-Dibromoethane) ³	106934	☒	☐	1							
11. Methyl-tert-Butyl Ether (MTBE)	1634044	☐	☒	8	grab	EPA 8260B	10	3	0.49		
12. tert-Butyl Alcohol (TBA) (Tertiary-Butanol)	75650	☒	☐	1							

* Numbering system is provided to allow cross-referencing to Effluent Limits and Monitoring Requirements by Sub-Category included in Appendix III, as well as the Test Methods and Minimum Levels associated with each parameter provided in Appendix VI.

² BTEX = Sum of Benzene, Toluene, Ethylbenzene, total Xylenes.

³ EDB is a groundwater contaminant at fuel spill and pesticide application sites in New England.

<u>Parameter *</u>	<u>CAS Number</u>	<u>Believed Absent</u>	<u>Believed Present</u>	<u># of Samples</u>	<u>Sample Type (e.g., grab)</u>	<u>Analytical Method Used (method #)</u>	<u>Minimum Level (ML) of Test Method</u>	<u>Maximum daily value</u>		<u>Average daily value</u>	
								<u>concentration (ug/l)</u>	<u>mass (kg)</u>	<u>concentration (ug/l)</u>	<u>mass (kg)</u>
13. tert-Amyl Methyl Ether (TAME)	9940508	☒	☐	1							
14. Naphthalene	91203	☒	☐	1							
15. Carbon Tetrachloride	56235	☒	☐	8	grab	EPA 8260B	5				
16. 1,2 Dichlorobenzene (o-DCB)	95501	☒	☐	1	grab	EPA 8260B	5				
17. 1,3 Dichlorobenzene (m-DCB)	541731	☒	☐	1	grab	EPA 8260B	5				
18. 1,4 Dichlorobenzene (p-DCB)	106467	☒	☐	1	grab	EPA 8260B	5				
18a. Total dichlorobenzene		☒	☐	1							
19. 1,1 Dichloroethane (DCA)	75343	☒	☐	8	grab	EPA 8260B	5				
20. 1,2 Dichloroethane (DCA)	107062	☒	☐	8	grab	EPA 8260B	5				
21. 1,1 Dichloroethene (DCE)	75354	☒	☐	8	grab	EPA 8260B	5				
22. cis-1,2 Dichloroethene (DCE)	156592	☐	☒	8	grab	EPA 8260	5	20	3.3		
23. Methylene Chloride	75092	☒	☐	8	grab	EPA 8260	5				
24. Tetrachloroethene (PCE)	127184	☐	☒	8	grab	EPA 8260	5	5	0.82		
25. 1,1,1 Trichloro-ethane (TCA)	71556	☒	☐	8	grab	EPA 8260	5				
26. 1,1,2 Trichloro-ethane (TCA)	79005	☒	☐	8	grab	EPA 8260	5				
27. Trichloroethene (TCE)	79016	☐	☒	8	grab	EPA 8260	5	2	0.33		

<u>Parameter *</u>	<u>CAS Number</u>	<u>Believed Absent</u>	<u>Believed Present</u>	<u># of Samples</u>	<u>Sample Type (e.g., grab)</u>	<u>Analytical Method Used (method #)</u>	<u>Minimum Level (ML) of Test Method</u>	<u>Maximum daily value</u>		<u>Average daily value</u>	
								<u>concentration (ug/l)</u>	<u>mass (kg)</u>	<u>concentration (ug/l)</u>	<u>mass (kg)</u>
28. Vinyl Chloride (Chloroethene)	75014	☐	☒	8	grab	EPA 8260B	5	11	1.8		
29. Acetone	67641	☒	☐	8	grab	EPA 8260B	50				
30. 1,4 Dioxane	123911	☒	☐	1							
31. Total Phenols	108952	☒	☐	1							
32. Pentachlorophenol (PCP)	87865	☒	☐	1							
33. Total Phthalates (Phthalate esters) ⁴		☒	☐	1							
34. Bis (2-Ethylhexyl) Phthalate [Di-(ethylhexyl) Phthalate]	117817	☒	☐	1							
35. Total Group I Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐	1							
a. Benzo(a) Anthracene	56553	☒	☐	1							
b. Benzo(a) Pyrene	50328	☒	☐	1							
c. Benzo(b)Fluoranthene	205992	☒	☐	1							
d. Benzo(k)Fluoranthene	207089	☒	☐	1							
e. Chrysene	21801	☒	☐	1							
f. Dibenzo(a,h)anthracene	53703	☒	☐	1							
g. Indeno(1,2,3-cd) Pyrene	193395	☒	☐	1							
36. Total Group II Polycyclic Aromatic Hydrocarbons (PAH)		☒	☐	1							

⁴ The sum of individual phthalate compounds.

<u>Parameter *</u>	<u>CAS Number</u>	<u>Believed Absent</u>	<u>Believed Present</u>	<u># of Samples</u>	<u>Sample Type (e.g., grab)</u>	<u>Analytical Method Used (method #)</u>	<u>Minimum Level (ML) of Test Method</u>	<u>Maximum daily value</u>		<u>Average daily value</u>	
								<u>concentration (ug/l)</u>	<u>mass (kg)</u>	<u>concentration (ug/l)</u>	<u>mass (kg)</u>
h. Acenaphthene	83329	☒	☐	1							
i. Acenaphthylene	208968	☒	☐	1							
j. Anthracene	120127	☒	☐	1							
k. Benzo(ghi) Perylene	191242	☒	☐	1							
l. Fluoranthene	206440	☒	☐	1							
m. Fluorene	86737	☒	☐	1							
n. Naphthalene	91203	☒	☐	1							
o. Phenanthrene	85018	☒	☐	1							
p. Pyrene	129000	☒	☐	1							
37. Total Polychlorinated Biphenyls (PCBs)	85687; 84742; 117840; 84662; 131113; 117817.	☒	☐	1							
	38. Chloride	☐	☒	8	grab	EPA 9056		41000	6714		
	39. Antimony	☒	☐	1							
	40. Arsenic	☒	☐	1	grab	EPA 200.8	1				
41. Cadmium	7440439	☒	☐	1		EPA 200.7	10				
42. Chromium III (trivalent)	16065831	☒	☐	1		EPA 200.7	15				
43. Chromium VI (hexavalent)	18540299	☒	☐	1		EPA 200.7	15				
44. Copper	7440508	☒	☐	8	grab	EPA 6010B	15	43	7.0		
45. Lead	7439921	☒	☐	1	grab	EPA 200.8	0.2				
46. Mercury	7439976	☒	☐	1	grab	EPA 245.1	0.2				
47. Nickel	7440020	☒	☐	1	grab	EPA 200.7	20				
48. Selenium	7782492	☒	☐	1	grab	EPA 200.8	2				
49. Silver	7440224	☒	☐	1	grab	EPA 200.7	10				
50. Zinc	7440666	☐	☒	1	grab	EPA 200.7	15	60	9.8		
51. Iron	7439896	☐	☒	1	grab	EPA 6010B	20	400	66		
Other (describe):		☐	☐								

Parameter *	CAS Number	Believed Absent	Believed Present	# of Samples	Sample Type (e.g., grab)	Analytical Method Used (method #)	Minimum Level (ML) of Test Method	Maximum daily value		Average daily value	
								concentration (ug/l)	mass (kg)	concentration (ug/l)	mass (kg)
		☐	☐								
		☐	☐								

b) For discharges where **metals** are believed present, please fill out the following (attach results of any calculations):

<i>Step 1:</i> Do any of the metals in the influent exceed the effluent limits in Appendix III (i.e., the limits set at zero dilution)? Y ☐ N ☒	If yes, which metals?
<i>Step 2:</i> For any metals which exceed the Appendix III limits, calculate the dilution factor (DF) using the formula in Part I.A.3.c (step 2) of the NOI instructions or as determined by the State prior to the submission of this NOI. What is the dilution factor for applicable metals? Metal: DF: Metal: DF: Metal: DF: Metal: DF: Etc.	Look up the limit calculated at the corresponding dilution factor in Appendix IV. Do any of the metals in the influent have the potential to exceed the corresponding effluent limits in Appendix IV (i.e., is the influent concentration above the limit set at the calculated dilution factor)? Y ☐ N ☒ If Y, list which metals:

4. Treatment system information. Please describe the treatment system using separate sheets as necessary, including:

a) A description of the treatment system, including a schematic of the proposed or existing treatment system: The treatment system consists of five 6-inch recovery wells oriented in a line perpendicular to groundwater flow. The wells span 210 feet, are approximately 30 feet deep and screened over the bottom 25 feet. Extracted groundwater is piped from each well to a manifold inside a concrete building, through a bag filter and into a 1,000-gal equalization tank. From the tank, the water is pumped to the top of an air stripper tower filled with 50 cubic feet of plastic media. A blower forces air up through the media as the water cascades down stripping volatile compounds which are off-gassed into the atmosphere. The treated water is discharged to a surface water body.													
b) Identify each applicable treatment unit (check all that apply):	<table border="1"> <tr> <td>Frac. tank ☐</td> <td>Air stripper ☒</td> <td>Oil/water separator ☐</td> <td>Equalization tanks ☒</td> <td>Bag filter ☒</td> <td>GAC filter ☐</td> </tr> <tr> <td>Chlorination ☒</td> <td>De-chlorination ☐</td> <td colspan="4">Other (please describe): Chlorine tablets are maintained in each of the recovery wells to reduce iron fouling.</td> </tr> </table>	Frac. tank ☐	Air stripper ☒	Oil/water separator ☐	Equalization tanks ☒	Bag filter ☒	GAC filter ☐	Chlorination ☒	De-chlorination ☐	Other (please describe): Chlorine tablets are maintained in each of the recovery wells to reduce iron fouling.			
Frac. tank ☐	Air stripper ☒	Oil/water separator ☐	Equalization tanks ☒	Bag filter ☒	GAC filter ☐								
Chlorination ☒	De-chlorination ☐	Other (please describe): Chlorine tablets are maintained in each of the recovery wells to reduce iron fouling.											

c) Proposed **average** and **maximum flow rates** (gallons per minute) for the discharge and the **design flow rate(s)** (gallons per minute) of the treatment system:
Average flow rate of discharge gpm Maximum flow rate of treatment system gpm
Design flow rate of treatment system gpm

d) A description of chemical additives being used or planned to be used (attach MSDS sheets):

Chlorine tablets are maintained in each of the recovery wells to reduce iron fouling; and
1:1 phosphorus sequestering agent are added to influent to reduce iron fouling.

5. Receiving surface water(s). Please provide information about the receiving water(s), using separate sheets as necessary:

a) Identify the discharge pathway:	Direct to receiving water ☐	Within facility (sewer) ☐	Storm drain ☐	Wetlands ☒	Other (describe): WETLAND DITCH
b) Provide a narrative description of the discharge pathway, including the name(s) of the receiving waters: Discharge from the air stripper tower is directly into a wetland ditch which flows west approximately 250 feet and converges with Muddy Pond Brook.					
c) Attach a detailed map(s) indicating the site location and location of the outfall to the receiving water: 1. For multiple discharges, number the discharges sequentially. 2. For indirect discharges, indicate the location of the discharge to the indirect conveyance and the discharge to surface water The map should also include the location and distance to the nearest sanitary sewer as well as the locus of nearby sensitive receptors (based on USGS topographical mapping), such as surface waters, drinking water supplies, and wetland areas.					
d) Provide the state water quality classification of the receiving water B					
e) Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 0.276 cfs Please attach any calculation sheets used to support stream flow and dilution calculations.					
f) Is the receiving water a listed 303(d) water quality impaired or limited water? Y ☐ N ☒ If yes, for which pollutant(s)? Is there a final TMDL? Y ☐ N ☒ If yes, for which pollutant(s)?					

6. ESA and NHPA Eligibility.

Please provide the following information according to requirements of Permit Parts I.A.4 and I.A.5 Appendices II and VII.

- a) Using the instructions in Appendix VII and information on Appendix II, under which criterion listed in Part I.C are you eligible for coverage under this general permit?
A ☐ B ☐ C ☐ D ☐ E ☐ F ☐
- b) If you selected Criterion D or F, has consultation with the federal services been completed? Y ☐ N ☐ Underway ☐
- c) If consultation with U.S. Fish and Wildlife Service and/or NOAA Fisheries Service was completed, was a written concurrence finding that the discharge is “not likely to adversely affect” listed species or critical habitat received? Y ☐ N ☐
- d) Attach documentation of ESA eligibility as described in the NOI instructions and required by Appendix VII, Part I.C, Step 4.
- e) Using the instructions in Appendix VII, under which criterion listed in Part II.C are you eligible for coverage under this general permit?
1 ☐ 2 ☐ 3 ☐
- f) If Criterion 3 was selected, attach all written correspondence with the State or Tribal historic preservation officers, including any terms and conditions that outline measures the applicant must follow to mitigate or prevent adverse effects due to activities regulated by the RGP.

7. Supplemental information.

Please provide any supplemental information. Attach any analytical data used to support the application. Attach any certification(s) required by the general permit.

No streamflow data is available for the discharge wetland ditch or Muddy Pond Brook. Norfolk estimated a 7Q10 for the Muddy Pond Brook based upon the 7Q10 for the Winnetuxet River as reported by the USGS in WRIR 84-4283. The watershed for the brook was estimated to be 32.5 million square feet (1.165 square miles). An average volume of 0.153 million gallons per day per square mile was calculated for the Winnetuxet River subbasin from data published in the USGS report HA-460. Using these data, the estimated 7Q10 for the Muddy Pond Brook is 0.276 cubic feet per second as indicated in 5e above.

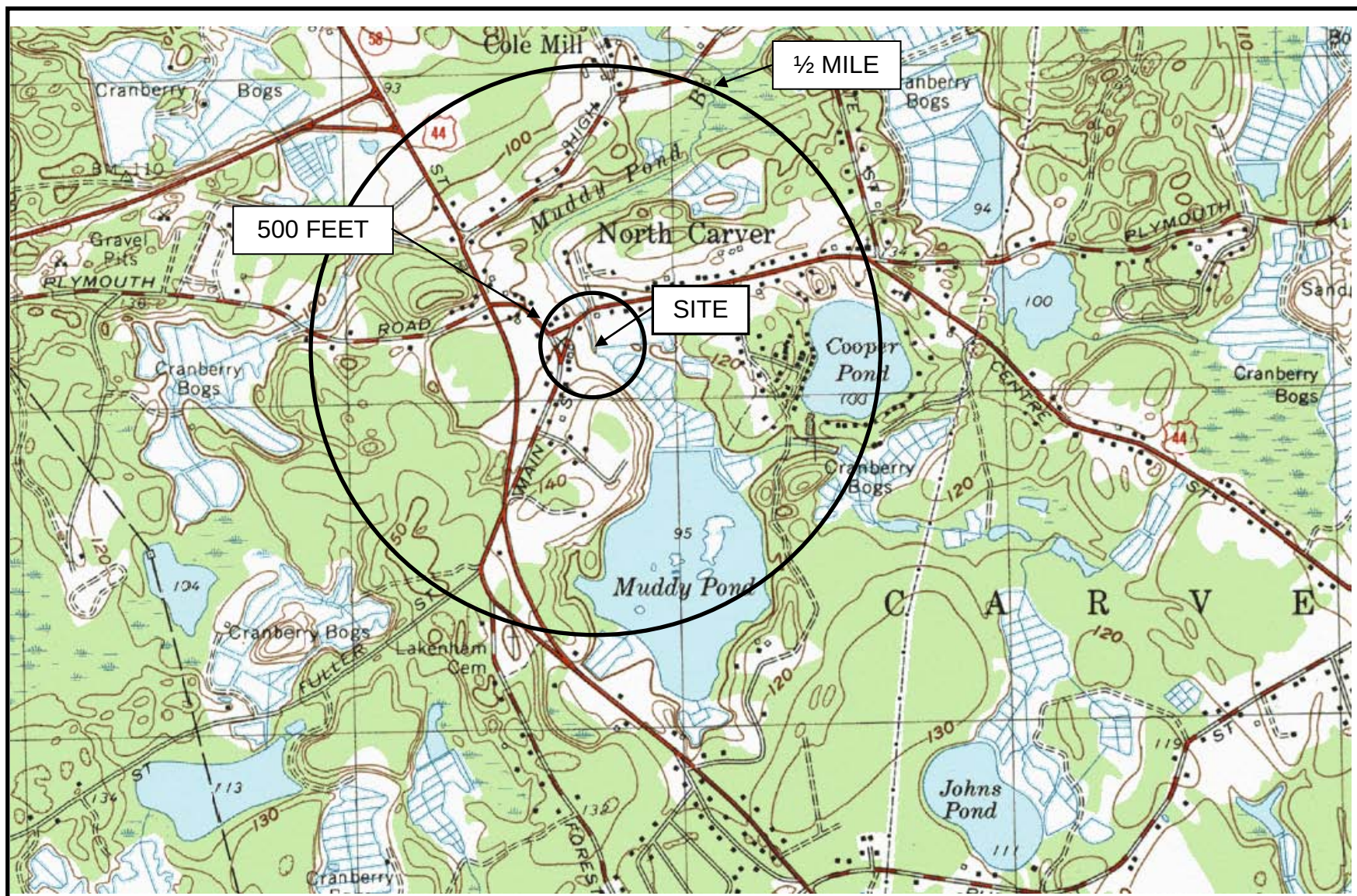
8. Signature Requirements: The Notice of Intent must be signed by the operator in accordance with the signatory requirements of 40 CFR Section 122.22, including the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility/Site Name:	NORTH CARVER LANDFILL GROUNDWATER TREATMENT RESPONSE ACTION REMEDIATION SYSTEM
Operator signature:	<i>Richard Lafond</i> , Rep. Norfolk Ram Group,
Printed Name & Title:	RICHARD LAFOND, TOWN ADMINISTRATOR
Date:	12-9-2010

APPENDIX B

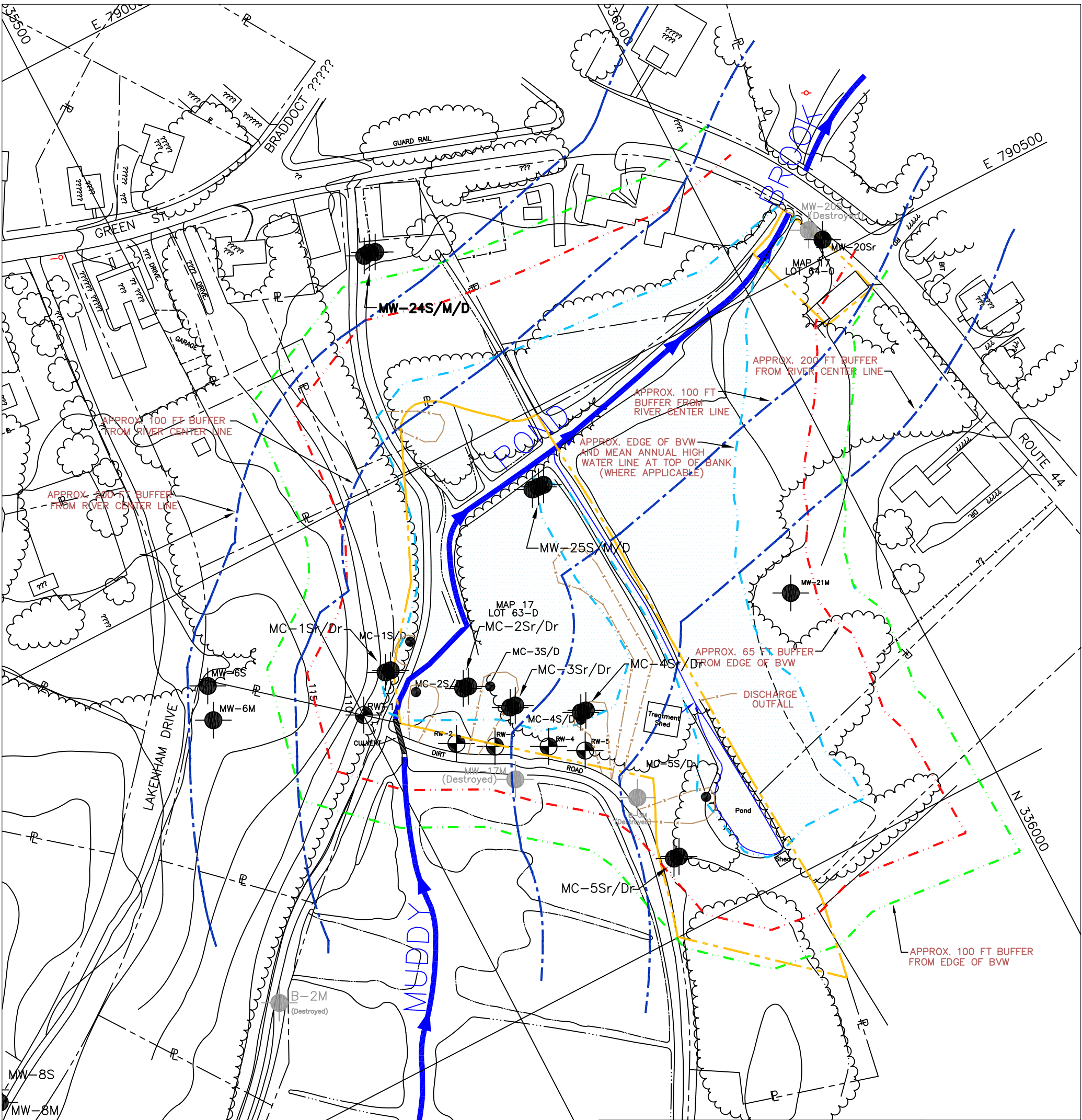
FIGURES AND MSDS



NORFOLK·RAM
ENGINEERING SOLUTIONS
FOR THE ENVIRONMENT



Figure 1
Site Locus Map
North Carver Landfill Treatment System
North Carver, Massachusetts
Source: USGS Topographic, Plympton Quad, 1977
Scale: 1" = 25,000' Contour Interval = 10 feet



LEGEND

- DESTROYED MW
- MW-4M EXISTING MW LOCATION
- MC-4S/D EXISTING SMALL DIAMETER MW LOCATION
- RW-5 EXISTING RECOVERY WELL
- APPROX. EFFECTED PROPERTY BOUNDARY
- EDGE OF BORDERING VEGETATED WETLAND (BVW) AND MEAN ANNUAL HIGH WATER MARK AT TOP OF BANK (WHERE APPLICABLE)
- 65 FOOT BVW BUFFER
- 100 FOOT BVW BUFFER
- 100 AND 200 FOOT RIVERFRONT AREAS AS INDICATED ON PLAN



**NORFOLK
RAM GROUP**
ENGINEERING THE ENVIRONMENT

ONE ROBERTS ROAD
PLYMOUTH MA, 02360

TITLE:

FIGURE 2
WETLANDS MAP

PREPARED FOR:

TOWN OF CARVER
CARVER, MASSACHUSETTS

CADD FILE: N:\NRG\CAD\656.5\WETLAND.DWG

SOURCE:

WEHRAN ENVIROTECH
SITE MAP
AND
2002 SURVEY DATA FROM
SNB LAND SURVEYORS

CHECKED BY: R.B.L.

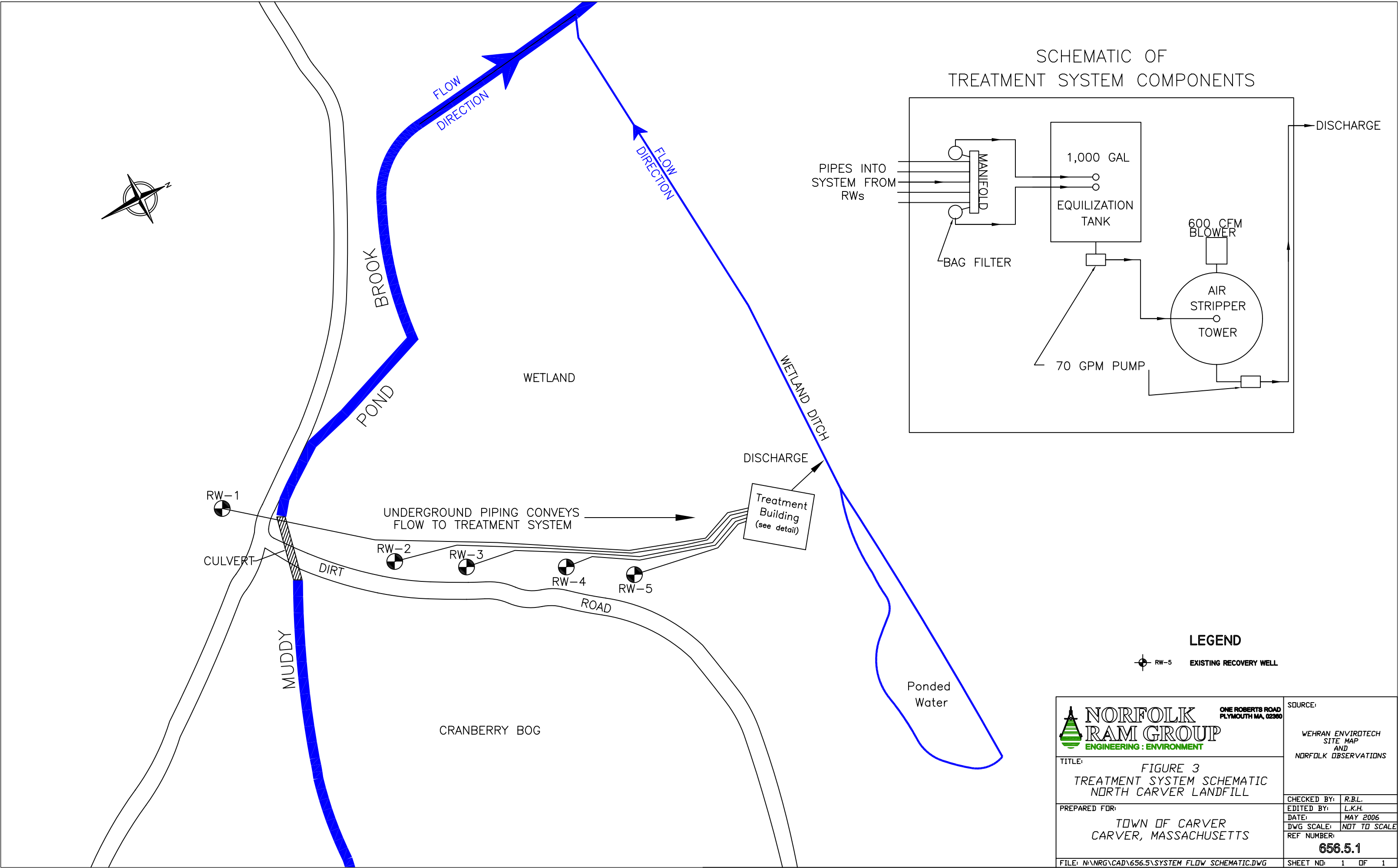
EDITED BY: L.K.H.

DATE: Feb 2003

DWG SCALE: 1" = 100'

RAM REF NUMBER:
656.5.2

SHEET NO: 1 OF 1



LEGEND

RW-5 EXISTING RECOVERY WELL



**NORFOLK
RAM GROUP**
ENGINEERING : ENVIRONMENT

ONE ROBERTS ROAD
PLYMOUTH MA, 02360

SOURCE:

WEHRAN ENVIROTECH
SITE MAP
AND
NORFOLK OBSERVATIONS

TITLE:
FIGURE 3
TREATMENT SYSTEM SCHEMATIC
NORTH CARVER LANDFILL

PREPARED FOR:
TOWN OF CARVER
CARVER, MASSACHUSETTS

FILE: N:\NRG\CAD\656.5\SYSTEM FLOW SCHEMATIC.DWG

CHECKED BY:	R.B.L.
EDITED BY:	L.K.H.
DATE:	MAY 2006
DWG SCALE:	NOT TO SCALE
REF NUMBER:	656.5.1

SHEET NO: 1 OF 1

AQUA MAG[®] blended phosphate**MATERIAL SAFETY DATA SHEET**

Information: 815-223-1500

Emergency: 800-435-6856

CHEMTREC: 800-424-9300

I. IDENTIFICATION

PRODUCT NAME:	AQUA MAG [®]	REVISION DATE:	30 October 2003
CHEMICAL NAME:	Blended Phosphate	FORMULA:	Proprietary
SYNONYMS:	Ortho/Polyphosphate Blend	PACKING GROUP:	NA
D.O.T. HAZARD CLASS:	Non-Hazardous	UN NO.	NA
D.O.T. SHIPPING NAME:	Not Regulated	CAS NO.	NA
		CAS NAME	NA

II. PHYSICAL DATA

PHYSICAL STATE: Clear liquid	SPECIFIC GRAVITY: 1.37	pH: 5.2
BOILING POINT, °C: > 100°C (212° F)	SOLUBILITY IN WATER: Soluble in all proportions.	
FREEZING POINT, °C: < 3°C (38° F)	VOLATILES VOLUME %: NA	
VAPOR PRESSURE AT 20° C/mm Hg: NA	EVAPORATION RATE: NA	

III. HAZARDOUS COMPONENTS

MATERIAL	PEL	TLV	CAS.NO.	%
Monosodium Phosphate	No Data	No Data	7558-80-7	5-15%
Sodium Acid Pyrophosphate	No Data	No Data	7758-16-9	1-10%
Other non-hazardous ingredients	No Data	No Data	No Data	80-90%
This product contains no toxic chemicals subject to the reporting requirements of Section 313 - Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.				
All the components in this product are generally considered to be safe and none could be classified as hazardous according to the WHMIS system.				
CARCINOGENICITY:	Not listed by NTP, IARC, or OSHA			

IV. FIRE AND EXPLOSIVE HAZARD DATA

FLAMMABILITY:	Non-flammable.
NORMAL EXTINGUISHING AGENT:	Suitable for surrounding materials.
SPECIAL FIRE FIGHTING PROCEDURES:	Not Applicable.
USUAL FIRE AND EXPLOSION HAZARDS:	None known.

V. REACTIVITY DATA

STABILITY:	Stable	CONDITIONS TO AVOID:	Heat and freezing.
INCOMPATIBILITY (materials to avoid):	No specific data.		
HAZARDOUS COMBUSTION / DECOMPOSITION PRODUCTS:	May liberate oxides of sodium or phosphorus if involved in fire.		

**Responsible Care[®]**
Good Chemistry at Work**CARUS CHEMICAL COMPANY**

DIVISION OF CARUS CORPORATION

continued

PRODUCT NAME: AQUA MAQ®

VI. HEALTH HAZARD DATA

ACUTE EFFECTS OF EXPOSURE	
INGESTION:	May cause irritation to mouth and throat, or nausea and vomiting.
SKIN CONTACT:	May cause skin irritation.
INHALATION:	May cause irritation to the respiratory tract.
EYE CONTACT:	May cause eye injury.
CHRONIC EFFECTS OF EXPOSURE:	No specific information.
OTHER HEALTH DATA:	No specific information. Maximum use level per NSF Standard 60: 23mg/L

EMERGENCY AND FIRST AID PROCEDURES

INGESTION:	Burning of mouth area may be reduced or eliminated through continued rinsing with water. Do not induce vomiting. Drink large quantities of water. Consult a physician.
SKIN:	Flush exposed area with water. Rinse thoroughly. Consult a physician.
INHALATION:	Remove to fresh air. Consult a physician.
EYES:	Flush eyes with copious amounts of water for at least 15 minutes. Consult a physician.

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:	Contain all spills. Absorb with inert media and dispose of properly. Flush area with large amounts of water.
WASTE DISPOSAL METHOD:	Disposal of all materials shall be in full and strict compliance with all federal, state, and local regulations pertaining to phosphates.

VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:	Approved NIOSH/MSHA mist respirator.		
PROTECTIVE GLOVES:	Chemical resistant.	EYE PROTECTION:	Chemical safety goggles.
VENTILATION:	Well ventilated area.	SPECIAL EQUIPMENT:	Impervious apron, eyewash fountain, safety shower.

IX. SPECIAL PRECAUTIONS

HANDLING AND STORAGE:	Store in cool, dry place. Protect container from physical damage.
OTHER:	None known.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation (CPR, Canada) and the MSDS contains all of the information required by the CPR.	
Chithambarathanu Pillai (S.O.F.)	
	
Division of Carus Corporation 311 Fifth Street PO Box 599 Peru, IL 61354 Tel (815) 223-1500 Fax (815) 224-6697	
The information contained herein is accurate to the best of our knowledge. However, data, safety standards and government regulations are subject to change, and the conditions of handling, use or misuse of the product are beyond our control. Carus Chemical Company makes no warranty, either express or implied, including any warranties of merchantability and fitness for a particular purpose. Carus also disclaims all liability for reliance on the completeness or confirming accuracy of any information included herein. Users should satisfy themselves that they are aware of all current data relevant to their particular users.	
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2770 - 24 Avenue N.E.
Calgary, Alberta, T1Y 6V7

Tel.: (403) 250-2494
Fax.: (403) 250-8767

TABEX®

Material Safety Data Sheet

Section I - Identification

CHLORINATING TABLETS

MANUFACTURER / SUPPLIER:

CL MARKETING INC.

2770 - 24 Avenue N.E.,
Calgary, Alberta, T1Y 6V7

Phone: (403) 250-2494

Toll Free Order Line: 1-800-661-8179

EMERGENCY PHONE (CANUTEC): 613 - 996 - 6666

Chemical Name: Trichloro-s-triazine-trione

Product Use: Sanitizer to control bacteria and algae in swimming pool water.

<u>Hazard Rating</u>	<u>Designation</u>	
4 Extreme	Health	2
3 High	Fire	0
2 Moderate	Reactivity	1
1 Slight	Personal Protection	D
0 None		

Section II - Hazardous Ingredients

<u>Material</u>	<u>% By Weight</u>	<u>CAS Nr</u>	<u>Exposure Limits</u>	<u>LD₅₀ (Oral-Rat)</u>
Trichloro-s-triazinetriane	99-100	87-90-1	6375 ppm	10.000 mg/Kg

Section III - Physical Data

Appearance	White tablets.
Boiling Point	Decompose at 225°C
Freezing Point	N/A
Odor	N/A
pH (1%)	2,3
Specific Gravity (Water = 1)	2.09
Vapor Density (Air = 1)	N/A
Vapor Pressure (mm Hg)	N/A
Evaporation Rate	N/A
Water Solubility	1g / 100 ml
% Volatile	N/A
Coefficient water/oil distribution	N/A
Odor Threshold	N/A

Section IV - Fire And Explosion Data

Flash Point (°C , Test Method):	None
Auto-Ignition Temperature:	None
Flammable Limits In Air: (g/l):	LFL: None UFL: None
Extinguishing Media:	Dry Chemical (Sodium Bicarbonate), Foam, CO ₂ , Water
Special Fire Fighting Procedure:	Fight fires from a safe distance. DO NOT approach container because of danger of rupturing. Use water spray to cool containers exposed to fire.
Personal Protective Equipment:	Wear self-contained breathing apparatus (pressure-demand MSHA/NIOSH approved or equivalent) and full protective gear.
Conditions of flammability:	N/A
Hazardous combustion products:	N/A
Explosion Data:	N/A
Sensitivity Impact:	N/A
Sensitivity to static discharge:	N/A
Mechanical Impact:	N/A

Section V - Health Hazard Information Of Product**Routes of Exposure and Acute Effects.**

Inhalation:	May cause irritations.
Skin Contact:	May cause irritations.
Skin Absorption:	May cause irritations.
Eye Contact:	May cause stinging or burning.
Ingestion:	Poison. See a physician immediately.

Chronic Exposure.

Irritancy of product:	Irritating
Sensitizing Capacity:	N/A
Mutagenic effect:	N/A
Teratogenic effect:	N/A
Carcinogenic effect:	N/A
Reproductive toxicity:	N/A
Synergistic products:	N/A

Emergency and First Aid Procedure.

Eyes:	In case of contact, immediately flush eyes of plenty of water for at least 15 minutes. Call a physician immediately.
Skin:	In case of contact, remove contaminated clothing and flush skin thoroughly with soap and water. Wash clothing before reusing.
Inhalation:	If inhaled, remove to area of fresh air. If irritation persists, call a physician.
Ingestion:	If swallowed, call a physician immediately.

Section VI - Reactivity Data

Conditions Contributing to Instability:	This product is stable under normal conditions.
Incompatibility:	Avoid especially contact with oxidizing agents, excessive heat and strong alkaline products.
Decomposition Products:	Carbon Oxides (CO ₂ , CO), Nitrogene, Trichloroamine
Reactivity:	In contact with oxidizing agents, open flame, sparks or ignition sources, strong alkaline products, sodium and calcium hypochlorite, oil and grease.

Section VII - Spill Or Leak Procedures**Steps To Be Taken If Material Is Released Or Spilled**

Cleanup personnel must wear proper protective equipment.
That is rubber gloves, face shield, safety goggles, safety shoes and protective clothing.
Never collect the spilled product in containers to be reused.
Neutralize with sodium thiosulfate and thoroughly wash area with water.

Waste Disposal Method.

Dispose according to Local, Provincial and Federal by-laws.

Section VIII - Special Protection Information.**Ventilation requirements**

Local ventilation absolutely necessary.

Specific Personal Protective Information.

Skin Protection: Chemical resistant gloves and other body protection (rubber apron, boots, body covering clothes) to minimize skin contact.
Eye Protection: Chemical splash goggles and/or face shield.
Respiratory protection: Use an approved self-contained breathing apparatus (MSHA/NIOSH or equivalent).
Other: Eye wash station and safety shower in area.
Do not wear contact lens when working with this compound.

Section IX - Special Precaution.**Precaution To Be Taken In Handling.**

Avoid inhalation of dust.
Avoid eye or skin contact. Do not take internally. Wash clothing before reuse.
Practice good personal hygiene.

Proper Storage, Handling and Disposal Requirements..

Store in tightly closed containers in a cool, dry, well-ventilated area.
Keep away from incompatible materials (oxidizing agents).
NO SMOKING in areas of storage, handling or use.

Section X - Transport And Regulatory Information.

TDG DESIGNATION:	Trichloroisocyanuric acid, dry.
UN NUMBER:	2468
TDG CLASSIFICATION:	5.1
WHMIS CLASSIFICATION:	Scheduled under the Pest Control Product Act
PACKING GROUP	II

Material Safety Data Sheet:

Prepared By: R. Ioanin
Verified By: G. Radu

Date Issued: 11/11/04

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