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NAVSTA NEWPORT RI
5090.3a

DEPARTMENT OF THE NAVY
NAVAL EDUCATION AND TRAINING CENTER
NEWPORT, RHODE ISLAND 02841-5000

IN REPLY REFER TO
5090
Ser 066/40E

26 APR 1993

Mr. Roy Anderson
Director of Utilities
City of Newport
Water Pollution Control Department
250 Connell Highway
Newport, RI 02841

Dear Mr. Anderson:

We are submitting the enclosed Industrial User Permit Application, under the cover of TRC Environmental Corporation, for your approval. TRC is the Navy's engineering consultant contracted to design a groundwater treatment system at Tank Farm 5.

As shown in the application package, groundwater will be pumped from extraction wells at Tank Farm 5, treated and, ultimately, discharged to Newport's Water Pollution Control Facility This work is an essential part of the ongoing remedial investigation being conducted at this site to clean-up groundwater contaminated with fuel oil.

We would appreciate your assistance in expediting the review and approval of this application because a permit must be in place before this work is put out to bid on June 1, 1993, as planned. If you have any questions, please contact David Dorocz at 841-3735.

Sincerely,

W.H. RIGBY
CAPT, CEC, USN
Director for Public Works
By direction of the Commander

Enclosure:
(1) TRC ltr of April 22, 1993

Copy to:
NORTHDIVNAVFACENGCOM Philadelphia PA (Code 182 Franco LaGreca)
NORTHDIVNAVFACENGCOM Philadelphia PA (Code 181 Brian Helland)

TRC
Environmental Solutions through Technology

TRC Environmental Corporation
5 Waterside Crossing
Windsor, CT 06095
☎ (203) 289-8631 Fax (203) 298-6399

April 22, 1993

Capt. W.H. Rigby
Environmental Protection Branch
Code 40E
Public Works Department
Naval Education and Training Center
1 Simon Petri Drive
Newport, RI 02841

RE: Newport POTW Industrial User Permit Application for
Interim Remedial Action - Groundwater Treatment at Tank Farm 5
TRC Project No. 12773-Q41-01

Dear Capt. Rigby:

Enclosed please find the completed Industrial User Permit Application and supporting information to discharge wastewater from Tank Farm 5 to the Newport POTW.

TRC has designed the proposed treatment system for contaminated groundwater at Tank Farm 5. Effluent from the proposed treatment system will flow by gravity to the existing sanitary sewer in the area of the Fire Fighting Training Center for eventual discharge to the Newport POTW.

The following is submitted in support of the permit application:

1.0 Purpose
2.0 Description
3.0 Flow Quantity and Duration
4.0 Treatment System Process Summary
5.0 Operation and Maintenance Plan
6.0 Spill Prevention and Control
7.0 Treated Water Effluent Monitoring
8.0 Point of Sewer Connection
9.0 Newport POTW Industrial User Permit Application

Please call me if you request further information.

Very truly yours,

TRC ENVIRONMENTAL CORPORATION

Ronald J. Nault

Ronald J. Nault, P.E.

RJN/wpc

NEWPORT POTW
INDUSTRIAL USER PERMIT APPLICATION PACKAGE
FOR
INTERIM REMEDIAL ACTION
GROUNDWATER TREATMENT AT TANK FARM 5
NETC, NEWPORT, RHODE ISLAND

CONTRACT NO. N62472-86-D-1282

APRIL 1993

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1.0 PURPOSE

The purpose of the proposed connection, which will ultimately result in treated groundwater being discharged to the Newport POTW, is to clean-up fuel oil-contaminated groundwater surrounding the underground storage tanks at Tank Farm 5. Tank Farm 5 is located at the Naval Education and Training Center (NETC) in Newport, Rhode Island (see Figure 1).

2.0 DESCRIPTION

Groundwater in the area of Tank Farm 5 that contains contaminants exceeding the Safe Drinking Water Act maximum levels will be extracted and pumped to a central location for treatment. Inorganic and organic contaminant concentrations will be reduced in the treatment process to levels below the Newport POTW discharge limitations. The treated groundwater will flow by gravity to the existing sanitary sewer system installed for the Fire Fighting Training Facility (see Drawing C-2).

3.0 FLOW QUANTITY AND DURATION

The treatment system will be designed with a capacity of 50 gallons per minute (gpm) or 72,000 gallons per day (gpd). The groundwater extraction rate will be less than the treatment capacity and occur for an undetermined period of time until drinking water standards have been met.

4.0 TREATMENT SYSTEM PROCESS SUMMARY

Testing of the groundwater quality shows that inorganic compounds (metals) and volatile organic contaminants must be reduced as a pretreatment step prior to discharge to the Newport POTW. (See Appendix A for raw water quality data). A treatment system has been selected consisting of a flocculator/ clarifier and pressure media filter to precipitate and remove inorganics

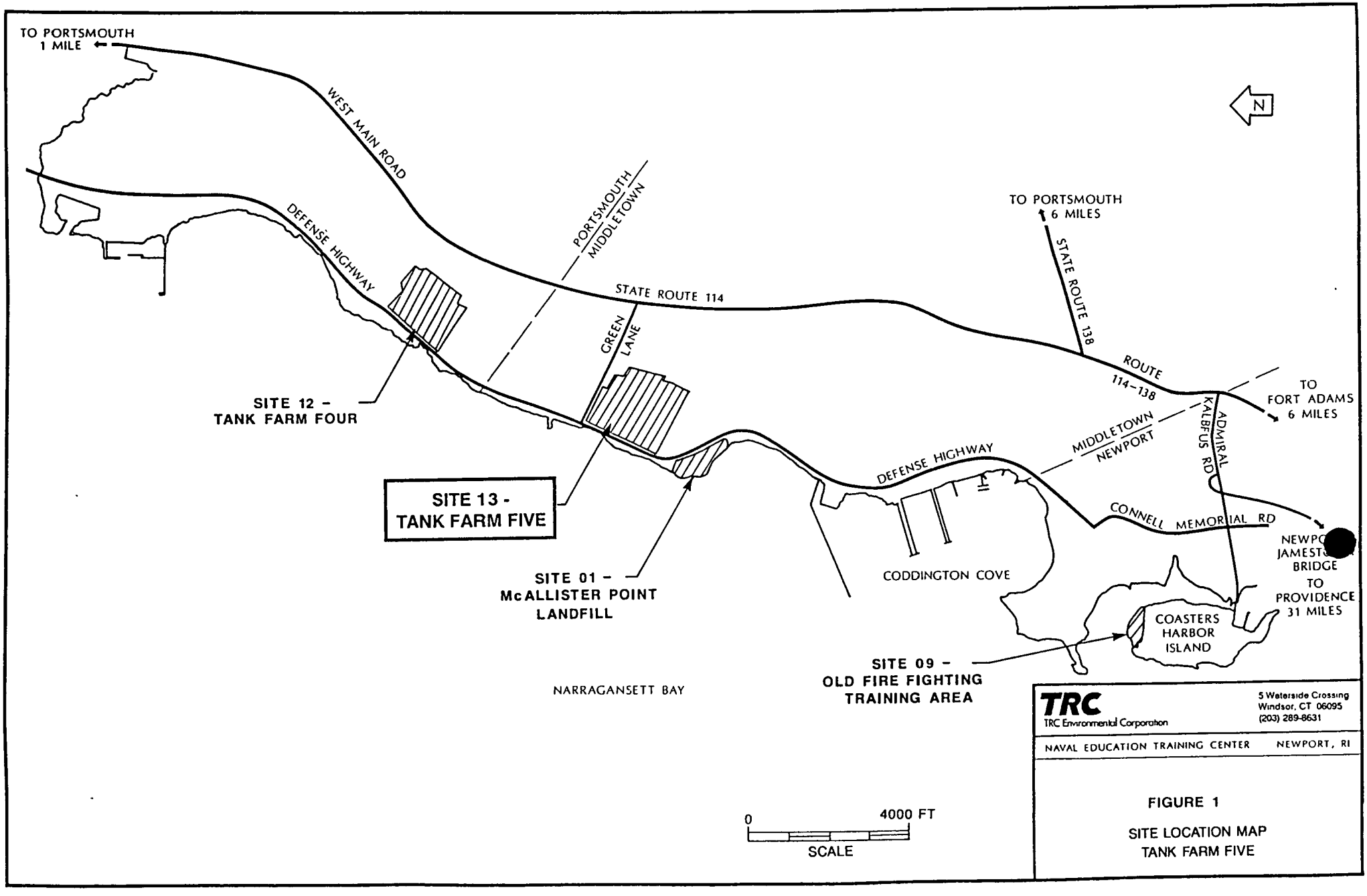


FIGURE 1

SITE LOCATION MAP
TANK FARM FIVE

coupled with an ultraviolet light/oxidation chamber and granular activated carbon adsorption units to remove organics.

Figure 2 shows a process block flow diagram of the major treatment units and the various points of chemical adjustment, pumps and surge tanks required. Drawing M-1 shows the treatment equipment layout contained in a central building. The predicted water quality effluent from the treatment system is shown in Appendix A.

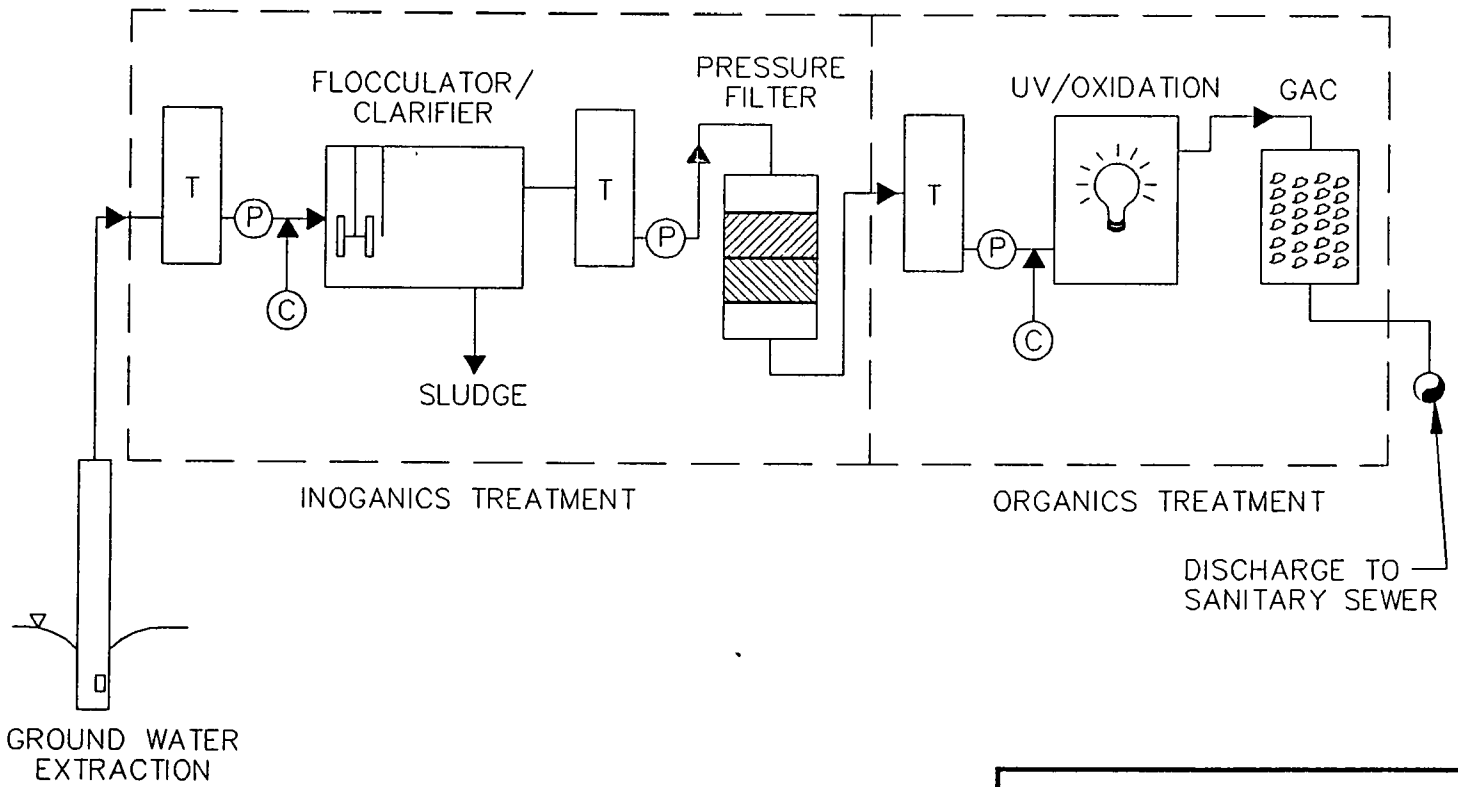
5.0 OPERATION AND MAINTENANCE PLAN

The treatment system will require an operator to monitor and adjust the equipment but will be equipped with complete sensors, instrumentation and controls for automated operation as well as emergency shut-down. All equipment will be provided with high level or failure sensors that will be interlocked to shut down the other processes and minimize system by-pass or accidental release. A detailed Operation and Maintenance Plan will be developed for the groundwater extraction and treatment system. The plan will include the following:

- Standard Operating Procedures
- Equipment Description and Maintenance
- Discharge Permit Requirements
- Monitoring and Reporting Procedures
- Emergency Operating Procedures
- Spill Response and Reporting
- Safety Procedures and Equipment

6.0 SPILL PREVENTION AND CONTROL

The treatment building will be constructed with a floor drain system to collect any spills of process water or treatment chemicals. The floor drains will be recycled to the influent of the treatment system. A detailed Spill Prevention and Control Plan will be developed for the treatment system.



KEY

T = SURGE TANK

P = PUMP

C = CHEMICAL FEED POINT

GAC = GRANULAR ACTIVATED CARBON

TRC
TRC Environmental Corporation
5 Waterside Crossing
Windsor, CT 06095
(203) 289-8631

NAVAL EDUCATION AND TRAINING CENTER — NEWPORT RHODE ISLAND

SITE 13 - TANK FARM FIVE

FIGURE 2.

TREATMENT PROCESS BLOCK FLOW DIAGRAM

Date: 3/93 | Drawing No. 12773-Q41-01

7.0 TREATED WATER EFFLUENT MONITORING

It is proposed that the following constituents will be sampled and submitted to a RIDEM-certified laboratory for EPA-approved analysis:

Parameter	Frequency	Parameter	Frequency
Cadmium	Monthly	Sulfides	Monthly
Chromium (trivalent)	Monthly	Sulfates	Monthly
Chromium (hexavalent)	Monthly	Floating Oil	Monthly
Copper	Monthly	Fluoride	Monthly
Gold	Monthly	Mercuric Chloride	Monthly
Lead	Monthly	Phenols	Monthly
Nickel	Monthly	Total Toxic Organics	Monthly
Silver	Monthly	Suspended Solids	Monthly
Tin	Monthly	BOD	Monthly
Zinc	Monthly	pH	Monthly
Cyanides			

The proposed monitoring location is the sampling port at the end of the treatment system inside the new treatment building. The proposed Newport POTW discharge limitations are shown in Appendix A.

8.0 POINT OF SEWER CONNECTION

Treated water will flow by gravity in an 8" sanitary sewer to the existing sewer adjacent to the Fire Fighting Training Facility (see Drawing C-2). From this point of entry into the NETC sewer system, sewage will flow by gravity and in pumped force mains southerly along Defense Highway to eventual discharge to the Newport POTW.

9.0 NEWPORT POTW INDUSTRIAL USER PERMIT APPLICATION

The completed permit application is contained in Appendix B according to the Newport POTW guidelines.

APPENDIX A

RAW WATER QUALITY, PREDICTED TREATMENT PLANT EFFLUENT AND PROPOSED NEWPORT POTW DISCHARGE LIMITATIONS

APPENDIX A

The following table lists the predicted average raw water quality from the groundwater extraction wells, the predicted effluent water quality from the treatment system that will be discharged to the sanitary sewer and the proposed limitations for discharge to the Newport POTW.

TABLE 1

Contaminant	Average Predicted Groundwater Concentrations	Predicted Effluent from Treatment Plant	Proposed Newport POTW Discharge Limits
Inorganics (mg/l)			
Aluminum	26	<5.0	5.0
Arsenic	0.02	0.02	2.0
Barium	0.05	0.05	2.0
Beryllium	--	--	2.0
Cadmium	--	--	0.8
Chromium	0.06	0.06	3.0
Cobalt	0.10	0.10	2.0
Copper	0.05	0.05	1.0
Lead	0.04	0.04	0.1
Mercury	0.001	0.001	0.5
Nickel	0.07	0.07	3.0
Selenium	--	--	2.0
Silver	0.02	0.02	3.0
Vanadium	0.04	0.04	2.0
Zinc	0.24	0.24	1.2
Total Suspended Solids	400	30	285
BOD	2	2	230
pH	6.2	6	5.5-10.0

TABLE 1

(Continued)

Contaminant	Average Predicted Groundwater Concentrations	Predicted Effluent from Treatment Plant	Proposed Newport POTW Discharge Limits
Total Toxic Organics (µg/l)			
Vinyl Chloride	<1	<1	--
Methylene Chloride	18	<14	--
Acetone	15	<10	--
1,1-Dichloroethane	17	<10	--
1,2-Dichloroethene	60	<1	--
Chloroform	<1	<1	--
1,1,1-Trichloroethane	107	<75	--
Trichloroethene	75	<1	--
Tetrachloroethene	28	<1	--
Benzene	12	<1	--
Toluene	11	<1	--
Ethylbenzene	29	<2	--
Xylenes	147	<10	--
Naphthalene	16	<1	--
2-methylnaphthalene	58	<1	--
Total Toxic Organics	700	150	2,000
Other Organics			
Di-n-Butylphthalate	8	<1	--
Butylbenzylphthalate	2	<1	--
Bis(2-Ethylhexyl)Phthalate	53	<5	--

APPENDIX B

NEWPORT POTW INDUSTRIAL USER PERMIT APPLICATION

INDUSTRIAL USER PERMIT APPLICATION

GENERAL INFORMATION

_____Existing Discharge ___X____Proposed Discharge

1. Company name: Naval Education and Training Center

2. Mailing address: Public Works Department
   Building 1
   Newport, RI Zip Code 02841-5000

3. Premise address: Tank Farm 5
   Adjacent to Defense Highway
   NETC Zip Code 02841

4. Person to whom permit should be mailed:

   Name: David Dorocz Title: Environmental Supervisor

5. Person to contact concerning the information provided herein:

   Name: David Dorocz / Carl Stopper, P.E. Title: Environmental Supervisor / Project Manager

PRODUCT OR SERVICE INFORMATION

7. Indicate Principal Products manufactured and/or service activity at premises address. Indicate current production as percentage of plant capacity.

   Abandoned Tank Farm - former storage of fuel and waste oils

8. Indicate applicable Standard Industrial (SIC) Code(s) for all processes (if known):

   N/A Treatment of contaminated ground water

9. List Raw Materials. Include all liquids which are used or stored in bulk or in containers which have a capacity of greater than 5 gallons.

Raw Materials	Quantity Used Per Year
Treatment Chemicals	
Polyelectrolyte & Coagulant	300 gal (est.)
Sodium Hydroxide	6 00 gal (est.)
Hydrogen Peroxide	6,000 gal (est.)
Sulfuric Acid	600 gal (est.)

PLANT OPERATIONAL CHARACTERISTICS

10. Shift Information:

a. Average number of employees per shift:

1st ___1___ 2nd ___--___ 3rd ___--___

b. Shift start times:

1st __7:00 a.m.__ 2nd ___--___ 3rd ___--___

c. Shifts normally worked each day:

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
1st	7:00 am 4:00 pm	7:00 am 4:00 pm	7:00 am 4:00 pm	7:00 am 4:00 pm	7:00 am 4:00 pm	7:00 am 4:00 pm	7:00 am 4:00 pm
2nd	_____	(Base security personnel only)				_____	_____
3rd	_____	(Base security personnel only)				_____	_____

11. Is production subject to seasonal variation?

a. If yes:

Month(s) of peak production: April, May, June

Process(es) involved: Ground water extraction and treatment

Maximum number of employees/shift:

1st ___2___ 2nd _____ 3rd _____

No. days worked/week: ___7___

12. Does operation shut down for vacation, maintenance or other reasons?

Yes ___X___ No _____

a. If yes, indicate period when shutdown occurs: Emergency failure of treatment system

13. Are major processes batch or continuous?

Description of Process	Continuous	Batch (Give frequency)
Ground water extraction system	X	
Treatment system		Every 2,000 gallons 36 time per day (est.)

WATER CONSUMPTION AND WASTEWATER INFORMATION

14. List raw water source (percent):

		Quantity (gal per day) Average	Maximum
a. Public Water Supply:	Yes	300	1200
b. Private Water Supply:			

15. Describe any raw water treatment processes utilized:

N/A

16. List water consumption in plant:

a. Cooling water _____ gallons per day

b. Boiler feed _____ gallons per day

c. Process water (Treated ground water) 72,000 gallons per day

d. Sanitary system 200 gallons per day

e. Contained in product _____ gallons per day

f. Other Wash down 100 gallons per day

g. Total 72,300 gallons per day

17. List average volume of discharge or water lost to:

a. City or Town sewer 72,300 gallons per day

b. Natural outlet _____ gallons per day

c. Waste hauler _____ gallons per day

d. Evaporation _____ gallons per day

e. Contained in product _____ gallons per day

f. Total 72,300 gallons per day

18. Describe any water recycling or material reclaiming process utilized:

N/A

19. Is discharge to sewer: Intermittent X Steady _____

20. List average water usage for each process shown in Item 8

Process	Average Water Consumption (gallons per day)
a. N/A	
b.	
c.	
d.	

21. Are there any proposed changes or expansion which would alter your present water usage or wastewater discharge?

Yes X No

a. If yes, please list and explain these changes:

Expansion of treatment plant, if necessary

SEWER CONNECTION AND DISCHARGE INFORMATION

22. List and provide descriptive location of sewer connection or discharge points for plant sewer outlets, size and flow (attach and refer to map):

Sewer extension from existing system at Fire Fighting Training Facility

Sewer size (inches) 8

Average flow (gallons/day) 72,300

23. Is a Spill Prevention Control and Countermeasure Plan prepared for the facility

Yes No X

24. Describe what treatment is currently given to waste discharge (attach extra sheet if necessary): See attached

inorganic and organic contaminants pretreatment

25. State any known characteristics (i.e. pH, oil and grease, BOD and suspended solids, etc. of wastewater from each process listed in item 8 above (attach copy of wastewater analysis if available)

Process	Wastewater Characteristics
a. Ground water extraction	See Appendix A
b.	
c.	
d.	

26. Please indicate by placing an "X" in the appropriate box by each listed chemical whether it is "suspected to be present" or "known to be present" in your wastewater discharges.

CONFIDENTIALITY

All requests for confidentiality of information will be honored to the extent possible. To request that information provided to the City of Newport be kept confidential, please provide a signed request along with this application asking that such confidentiality be provided.

AUTHORIZED AGENT(S)

Name and Title Captain William H. Rigby, Director of Public Works

Address NETC, Newport, RI 02841-5000

Telephone Number (401) 841-3735

Name and Title _____

Address _____

Telephone Number _____

An authorized agent or authorized company representative is a person who is a principal executive officer or other corporate officer with signatory powers as per the company's by-law or per a vote of the directors if the company is a corporation; a general partner or proprietor if the company is a partnership or sole proprietorship respectively; or a duly authorized representative of individual designated above if such representative is responsible for the overall operation of the facility and has the authority to sign contracts, permits, permit applications, monitoring results and other documents in the company's name and otherwise bind the company. Please complete and submit appropriate certification form.

The City of Newport will not accept documents signed by persons other than the company's authorized agent(s) or authorized representative(s).

TABLE 1

PRIORITY POLLUTANTS

Please indicate the chemical compounds "suspected to be present" or "known to be present" in your industrial wastewater discharges.

ITEM NO.	CHEMICAL COMPOUND	KNOWN TO BE PRESENT	SUSPECTED TO BE PRESENT
1.	acenaphthene		
2.	acrolein		
3.	acrylonitrile		
4.	benzene	X	
5.	benzidine		
6.	carbon tetrachloride (tetrachloromethane)		
7.	chlorobenzene		
8.	1,2,4-trichlorobenzene		
9.	hexachlorobenzene		
10.	1,2-dichloroethane		
11.	1,1,1-trichloroethane	X	
12.	hexachloroethane		
13.	1,1-dichloroethane	X	
14.	1,1,2-trichloroethane		
15.	1,1,2,2-tetrachloroethane		
16.	chloroethane		
17.	bis(2-chloroethyl) ether		
18.	2-chloroethyl vinyl ether		
19.	2-chloronapthalene		
20.	2,4,6-trichlorophenol		
21.	4-chloro-3-methylphenol		
22.	chloroform (trichloromethane)	X	
23.	2-chlorophenol		
24.	1,2-dichlorobenzene		
25.	1,3-dichlorobenzene		
26.	1,4-dichlorobenzene		
27.	3,3-dichlorobenzidine		
28.	1,1-dichloroethylene		
29.	1,2-trans-dichloroethylene		
30.	2,4-dichlorophenol		
31.	1,2-dichloropropane		
32.	1,3-dichloropropene (cis and trans isomers)		
33.	2,4-dimethylphenol		
34.	2,4-dinitrotoluene		
35.	2,6-dinitrotoluene		
36.	1,2-diphenylhydrazine		

TABLE 1 (cont'd)

ITEM NO.	CHEMICAL COMPOUND	KNOWN TO BE PRESENT	SUSPECTED TO BE PRESENT
37.	ethylbenzene	X	
38.	fluoranthene		
39.	4-chlorophenyl phenyl ether		
40.	4-bromophenyl phenyl ether		
41.	bis(2-chloroisopropyl) ether		
42.	bis(2-chloroethoxy) methane		
43.	methylene chloride (dichloromethane)	X	
44.	methyl chloride (chloromethane)		
45.	methyl bromide (bromomethane)		
46.	bromoform (tribromomethane)		
47.	dichlorobromomethane		
48.	chlorodibromomethane		
49.	hexachlorobutadiene		
50.	hexachlorocyclopentadiene		
51.	isophorone		
52.	naphthalene	X	
53.	nitrobenzene		
54.	2-nitrophenol		
55.	4-nitrophenol		
56.	2,4-dinitrophenol		
57.	4,6-dinitro-2-methylphenol		
58.	N-nitrosodimethylamine		
59.	N-nitrosodiphenylamine		
60.	N-nitrosodi-n-propylamine		
61.	pentachlorophenol		
62.	phenol		
63.	bis-(2-ethylhexyl) phthalate	X	
64.	butyl benzyl phthalate	X	
65.	di-n-butyl phthalate	X	
66.	di-n-octyl phthalate		
67.	diethyl phthalate		
68.	dimethyl phthalate		
69.	benzo(a)anthracene (1,2-benzanthrancene)		
70.	benzo(a)pyrene (3,4-benzopyrene)		
71.	3,4-benzofluoranthene		
72.	benzo(k)fluoranthene(11,12-benzofluoranthene		
73.	chrysene		
74.	acenaphthylene		
75.	anthracene		
76.	benzo(ghi)perylene (1,12-benzoperylene)		
77.	fluorene		
78.	phenanthrene		

TABLE 1 (cont'd.)

ITEM NO.	CHEMICAL COMPOUND	KNOWN TO BE PRESENT	SUSPECTED TO BE PRESENT
79.	dibenzo(ah)anthracene (1,2,5,6-dibenzathracene)		
80.	indeno(1,2,3-cd)pyrene (2,3-o-phenylenepyrene)		
81.	pyrene		
82.	tetrachloroethylene	X	
83.	toluene	X	
84.	trichloroethylene	X	
85.	vinyl chloride (chloroethylene)	X	
86.	aldrin		
87.	dieldrin		
88.	chlordane (technical mixture and metabolites)		
89.	4,4' -DDT		
90.	4,4' -DDE (p,p' -DDE)		
91.	4,4' -DDD (p,p' -TDE)		
92.	a-endosulfan-Alpha		
93.	b-endossulfan-Beta		
94.	endosulfan sulfate		
95.	endrin		
96.	endrin aldehyde		
97.	heptachlor		
98.	heptachlor epoxide		
99.	a-BHC-Alpha		
100.	b-BHC-Beta		
101.	g-BHC (lindane) Gamma		
102.	d-BHC-Delta		
103.	PCB-1242 (Arochlor 1242)		
104.	PCB-1254 (Arochlor 1254)		
105.	PCB-1221 (Arochlor 1221)		
106.	PCB-1232 (Arochlor 1232)		
107.	PCB-1248 (Arochlor 1248)		
108.	PCB-1260 (Arochlor 1260)		
109.	PCB-1016 (Arochlor 1016)		
110.	toxaphene		
111.	antimony and compounds (total)		
112.	arsenic and compounds (total)	X	
113.	asbestos (fibrous)		
114.	beryllium and compounds (total)		
115.	cadmium and compounds (total)		
116.	chromium and compounds (total)	X	
117.	copper and compounds (total)	X	

TABLE 1 (cont'd.)

ITEM NO.	CHEMICAL COMPOUND	KNOWN TO BE PRESENT	SUSPECTED TO BE PRESENT
118.	cyanides (total)		
119.	lead and compounds (total)	X	
120.	mercury and compounds (total)	X	
121.	nickel and compounds (total)	X	
122.	selenium and compounds (total)		
123.	silver and compounds (total)	X	
124.	thallium and compounds (total)		
125.	zinc and compounds (total)	X	
126.	2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)		