



**BOSTON EDISON**

25 Braintree Hill Office Park  
Braintree, Massachusetts 02184

**E. J. Wagner**  
Vice President  
Nuclear Engineering

February 18, 1992  
BECO 5.92-023

NPDES Program Operations Section (WCP)  
Environmental Protection Agency  
P. O. Box 8127  
Boston, MA 02114

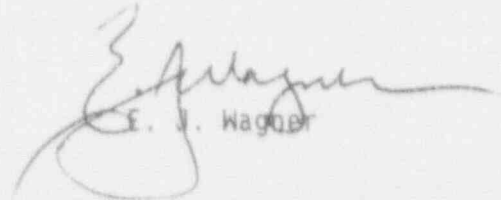
Massachusetts Division of Water Pollution Control  
Lakeville Hospital  
Lakeville, MA 02346

DISCHARGE MONITORING REPORT

Dear Sirs:

Enclosed is the Discharge Monitoring Report for Pilgrim Nuclear Power Station (PNPS), NPDES Permit Number MA0003557 (Federal) and Number 359 (State).

The period covered by this report is January 1992.



E. J. Wagner

RDA/cab/6438

Attachments: 1. Summary  
2. Discharge Monitoring Report

cc: U. S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

U. S. Nuclear Regulatory Commission  
Region I  
475 Allendale Road  
King of Prussia, PA 19406

Senior NRC Resident Inspector  
Pilgrim Nuclear Power Station

9202240332 920131  
PDR ADOCK 05000293  
R PDR

*Handwritten initials: JE25*

## SUMMARY

PILGRIM I DISCHARGE MONITORING REPORT

In accordance with the Federal Clean Water Act, as amended (33USC 1251 et seq: the "CWA"), and the Massachusetts Clean Water Act, as amended (M.G.L.; Chap. 21, 26-53), regarding effluent limitations, monitoring requirements and other conditions set forth in the Pilgrim NPDES Permit (Federal Permit Number MA0003557, and State Permit Number 359) parts I and II, the following information is submitted for the period January 1992.

I. Discharge Points Covered in this Report

<u>Discharge Point</u>	<u>Discharge Identification</u>
001	Condenser Cooling Water
002	Thermal Backwash for Biofouling Control
003	Intake Screen Wash
004, 005, 006, and 007	Yard Drains (April and September)
010	Service Cooling Water
011	Makeup Water and Demineralizer Waste Discharge

II. Summary and Notes of Discharge Report

- A. The flow at points 001 and 010 are calculated from system pump capacity and are equal to the total for all pumps in each system running at full capacity for a 24-hour period. The flow at point 011 is measured by noting sump levels before and after discharge. Flow at point 002 is a conservative figure obtained by calculating flow if backwashing took place for 24 hours. Flow at point 003 is calculated from system pump capacity and mean operating time.
- B. The temperatures at points 001 and 002 are measured by resistance temperature detectors (RTD's).
- C. Periodically, total residual chlorine (TRC) concentration in the service cooling water (010) exceeds Permit requirements (0.50 ppm daily average TRC and 1.00 ppm daily maximum TRC) prior to mixing with any other stream, primarily because of the number of service water pumps in operation. Chlorine injection levels are lowered as a corrective measure. The dilution provided by the PNPS circulating water flow keeps total residual chlorine concentrations discharged to Cape Cod Bay below the NPDES Permit limit of 0.1 ppm.

- D. For stormwater outfalls 004, 005, 006 and 007, Sigma 800 SL Portable Composite Samplers are utilized. The samplers are equipped with a "liquid level activator" that commences the sampling when the liquid reaches a predetermined level. This assures a sample is taken "within the first hour of the start of a significant storm event." The intake and collection assemblies of the samplers conform to U.S.EPA requirements for collecting oil and grease samples. No additional inputs to these stormwater outfalls occur downstream of the composite Samplers' sampling locations.
- E. Intake traveling water screens were operated without dechlorination pumps operating on January 5 (1).
- F. Sawdust was applied to seek and seal PNPS condenser leaks on January 7 (1,000 pounds), 8 (440 pounds), 13 (120 pounds), 20 (240 pounds), 21 (160 pounds), 25 (160 pounds), 29 (120 pounds) and 31 (120 pounds).
- G. The following boron and sodium nitrite discharges (ppm) occurred in January 1992 from discharge point #001. All discharges were below NPDES Permit limits prior to entering Cape Cod Bay.

<u>Date Discharged</u>	<u>Gallons Discharged</u>	<u>Concentration Before Discharge</u>	<u>Concentration Discharged</u>
------------------------	---------------------------	---------------------------------------	---------------------------------

Boron

1/11	10,020	<1.00	<0.001
1/17	12,024	<1.00	<0.001
1/27	12,692	<1.00	<0.001
1/29	15,678	<1.00	<0.001

Sodium Nitrite

1/11	10,020	<20.00	<0.030
1/17	12,024	<20.00	<0.030
1/27	12,692	<20.00	<0.030
1/29	15,678	<20.00	<0.030

- H. By letter dated January 7, 1992 the U.S.EPA approved the use of specific automated sampling equipment in PNPS stormwater sampling, as required by the NPDES Permit (BECO Letter 5.92.005). See Item II.D. above for reference.
- I. As endorsed previously in 1991, the PNPS Plant Manager (presently Mr. E. S. Kraft) is designated as the authorized agent to sign PNPS Discharge Monitoring Report (DMR) Forms for Boston Edison Company.

ATTACHMENT 2 TO BECO LETTER 5.92-023

DISCHARGE MONITORING REPORT

MAJOR Form Approved  
EPA FORM 357 (1-78) USE PREVIOUS EDITIONS  
F - FINAL Approval expires 6-30-91.  
CONDENSER COOLING WATER

MAJORITY DISCHARGE I-1 \*\*\*  
NOTE: Read instructions before completing this form.

MAJORITY DISCHARGE I-1 \*\*\*  
NOTE: Read instructions before completing this form.

MAJORITY DISCHARGE I-1 \*\*\*  
NOTE: Read instructions before completing this form.

MAJORITY DISCHARGE I-1 \*\*\*  
NOTE: Read instructions before completing this form.

MAJORITY DISCHARGE I-1 \*\*\*  
NOTE: Read instructions before completing this form.

MAJORITY DISCHARGE I-1 \*\*\*  
NOTE: Read instructions before completing this form.

PARAMETER (32-37)	AVERAGE (46-53)		QUANTITY OR LOADING (54-61)		MINIMUM (62-69)		AVERAGE (70-77)		MAXIMUM (78-85)		UNITS (86-93)	NO. OF ANALYSES (94-99)	FREQUENCY OF ANALYSES (100-105)	SAMPLE TYPE (106-111)
	MEASUREMENT	PERMIT REQUIREMENT	MEASUREMENT	PERMIT REQUIREMENT	MEASUREMENT	PERMIT REQUIREMENT	MEASUREMENT	PERMIT REQUIREMENT						
TEMPERATURE WATER	67.5	67.5	0.1	0.1	0.03	0.03	0.03	0.03	0.03	0.03	DEG.F	0	99/99	RC
0-6 FAHRENHEIT	102	102	0.1	0.1	0.03	0.03	0.03	0.03	0.03	0.03	DEG.F	0	CONTINUED	RC
0.011 1 0 0	0.02	0.02	0.01	0.01	0.03	0.03	0.03	0.03	0.03	0.03	MG/L	0	WH/DS	GR
EFFLUENT GROSS VALUE	441.3	441.3	446.4	446.4	510.0	510.0	510.0	510.0	510.0	510.0	MGD	0	99/99	ES
OXIDANTS TOTAL	447.0	447.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	MGD	0	99/99	CA
RESIDUAL	447.0	447.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	MGD	0	99/99	CA
X4046 1 0 0	447.0	447.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	MGD	0	99/99	CA
EFFLUENT GROSS VALUE	447.0	447.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	MGD	0	99/99	CA
FLOW IN CONDUIT OR	447.0	447.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	MGD	0	99/99	CA
THRU TREATMENT PLANT	447.0	447.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	MGD	0	99/99	CA
SUC50 1 0 0	447.0	447.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	MGD	0	99/99	CA
EFFLUENT GROSS VALUE	447.0	447.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	510.0	MGD	0	99/99	CA
TEMP. DIFF. BETWEEN	31.1	31.1	32	32	32	32	32	32	32	32	DEG.F	0	99/99	CA
INTAKE AND DISCHARGE	31.1	31.1	32	32	32	32	32	32	32	32	DEG.F	0	99/99	CA
61576 1 0 0	31.1	31.1	32	32	32	32	32	32	32	32	DEG.F	0	99/99	CA
EFFLUENT GROSS VALUE	31.1	31.1	32	32	32	32	32	32	32	32	DEG.F	0	99/99	CA

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER: *E.S. KRAFT*  
PLANT MANAGER

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER: *William M. Esch*  
OFFICER OR AUTHORIZED AGENT

TELEPHONE: 8100  
508 747-8000

DATE: 10 2

AREA CODE: 508  
NUMBER: 747-8000

YEAR: 92  
MO: 10  
DAY: 2

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here):

PH SHALL NOT VARY MORE THAN 0.5 PH STANDARD UNITS FROM INTAKE WATER. SEE PERMIT PAGE 5 PARAGRAPHS 85N FO  
P. 800N AND 800IM NITRATE REPORTING REQUIREMENTS. ATTACH ALL RELATED REPORTS TO THIS FORM. A BARRIER  
EPA Form 357 (1-78) USE PREVIOUS EDITIONS may be used. THERMAL TREATMENT OF DISCHARGE CANAL AT ALL TIMES.

00353/911231-1539

PAGE 1 OF 1

MAJOR Form Approved  
(SUBR 5 )OMB No. 2040-0004  
F - FINAL Approval expires 6-30-91.  
THERMAL BACKWASH

MA0003557 PERMIT NUMBER  
002.1 DISCHARGE NUMBER

MONITORING PERIOD  
YEAR MO DAY YEAR MO DAY  
FROM 92 01 01 TO 92 01 31  
(20-21) (22-23) (24-25) (26-27) (28-29) (30-31)

MA 02360  
FACILITY PLYMOUTH  
LOCATION  
ALIN: F.S. KRAFT, PLANT MANAGER

PARAMETER (32-37)	QUANTITY OR LOADING (46-53)			QUALITY OR CONCENTRATION (34-61)			NO. EX (42-43)	FREQUENCY OF ANALYSIS (54-63)	SAMPLE TYPE (55-70)
	AVERAGE (46-53)	MAXIMUM (46-53)	UNITS (46-53)	MINIMUM (46-53)	AVERAGE (46-53)	MAXIMUM (46-53)			
TEMPERATURE WATER	*****	*****	( )	*****	*****	*****	0	9999	RC
DEG. FAHRENHEIT	*****	*****	( )	*****	*****	*****	0	CONTINUOUS	
DO 11 1 0 3	*****	*****	*****	*****	*****	*****	0	WHOS	ES
EFFLUENT GROSS VALUE	*****	18.6	( 03 )	*****	*****	*****	0	WHEN DISCH	
FLOW IN CONDUIT OR THRU TREATMENT PLANT	*****	25.0	MGD	*****	*****	*****	0		
EFFLUENT GROSS VALUE	*****	*****	*****	*****	*****	*****	0		
SAMPLE MEASUREMENT									
PERMIT REQUIREMENT									
SAMPLE MEASUREMENT									
PERMIT REQUIREMENT									
SAMPLE MEASUREMENT									
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SAMPLE MEASUREMENT									
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SAMPLE MEASUREMENT									
PERMIT REQUIREMENT									
SAMPLE MEASUREMENT									
PERMIT REQUIREMENT									

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  
E.S. KRAFT  
PLANT MANAGER

TYPED OR PRINTED

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER  
*E.S. Kraft*

TELEPHONE NUMBER  
508 747-8000

DATE  
92 2 10

COMMENT AND DESCRIPTION OF ANY VIOLATIONS (Reference all attachments here)  
THE PH SHALL NOT VARY MORE THAN 0.5 STANDARD UNITS FROM THAT OF THE INTAKE WATER. FLOW RATE IS TO BE ESTIMATED AS IF BACKFLUSHING TOOK PLACE FOR 24 CONTINUOUS HOURS. SEE PERMIT PAGE 8 FOR CONDITIONS REGARDING THE

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if different)

NAME BOSTON ED #1 PILGRIM PLANT  
 ADDRESS ROCKY HILL ROAD  
RFO #1  
PLYMOUTH MA 02360

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
 DISCHARGE MONITORING REPORT (DMR)

(2-16) MA0003557 PERMIT NUMBER  
 (17-19) 003 A DISCHARGE NUMBER

MAJOR Form Approved.  
 (SUBR 5) OMB No. 2040-0004.  
 F - FINAL Approval expires 6-30-91.  
 INTAKE SCREEN WASH

FACILITY  
 LOCATION

MONITORING PERIOD  
 FROM YEAR 92 MO 01 DAY 01 TO YEAR 92 MO 01 DAY 31  
 (20-21) (22-23) (24-25) (26-27) (28-29) (30-31)

\*\*\* NO DISCHARGE !!! \*\*\*  
 NOTE: Read instructions before completing this form.

ATTN: E.S. KRAFT, PLANT MANAGER

PARAMETER (32-37)	SAMPLE MEASUREMENT	QUANTITY OR LOADING (46-53)			QUALITY OR CONCENTRATION (54-61)				NO. EX. (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
FLOW IN CONDUIT OR THRU TREATMENT PLANT SDGSD 1 0 0 EFFLUENT GROSS VALUE	<u>0.393</u>	<u>1.974</u>	<u>(03)</u>	<u>MGD</u>	<u>*****</u>	<u>*****2</u>	<u>*****</u>	<u>( )</u>	<u>0</u>	<u>01/01</u>	<u>ES</u>
	PERMIT REQUIREMENT	<u>2.0</u>	<u>2.0</u>		<u>*****</u>	<u>*****</u>	<u>*****</u>	<u>****</u>		<u>DAILY</u>	<u>ESTIMA</u>
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  
E.S. KRAFT  
PLANT MANAGER  
 TYPED OR PRINTED

CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION I BELIEVE THE SUBMITTED INFORMATION IS TRUE ACCURATE AND COMPLETE I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT SEE 18 USC § 1001 AND 33 USC § 1319. Penalties under these statutes may include fines up to \$10,000 and/or maximum imprisonment of between 6 months and 3 years.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT  
[Signature]  
 ESU

TELEPHONE  
508 747 8000  
 DATE  
2 10 92

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)  
 THE TEMPERATURE OF THIS DISCHARGE SHALL AT NO TIME EXCEED THE TEMPERATURE OF THE INTAKE WATER.  
 ALL FISH SHELLFISH AND OTHER ORGANISMS COLLECTED OR TRAPPED ON INTAKE SCREEN SHOULD BE RETURNED TO WATER  
 BY HAND OR BY SUFFICIENTLY DISTANT FROM INTAKE STRUCTURES TO PREVENT REIMPINGEMENT.

NAME/ADDRESS (include  
 name/location if different)  
**BOSTON ED #1 PILGRIM PLANT**  
**ROCKY HILL ROAD**  
**RFD #1**  
**PLYMOUTH MA 02360**  
 FACILITY  
 LOCATION

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
 DISCHARGE MONITORING REPORT (DMR)

(12-16) (17-19)  
**MA0003557** (PERMIT NUMBER)  
**010 A** (DISCHARGE NUMBER)

MAJOR Form Approved  
 (SUPER S) OMB No. 2040-0004  
 F - FINAL Approval expires 6-30-91.  
 PLANT SERVICE COOLING WATER

MONITORING PERIOD  
 FROM YEAR 92 MO 01 DAY 01 TO YEAR 92 MO 01 DAY 31  
 (20-31) (22-23) (24-25) (26-27) (28-29) (30-31)

\*\*\* NO DISCHARGE \*\*\*  
 NOTE: Read instructions before completing this form.

ATTN: E.S. KRAFT, PLANT MANAGER

PARAMETER (32-37)	SAMPLE MEASUREMENT	QUANTITY OR LOADING (46-52)			QUALITY OR CONCENTRATION (54-61)			NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-65)	SAMPLE TYPE (69-70)
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM			
OXIDANTS, TOTAL RESIDUAL	SAMPLE MEASUREMENT	*****	*****	( )	*****	0.26	0.53	( 19 )	09/99	RC
34044 1 0 0	PERMIT REQUIREMENT	*****	*****	***	*****	0.5	1.0			CONTINUED RECORDS
EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT	5.78	*****	( 03 )	*****	*****	*****	( )	09/99	ES
FLOW, IN CONDUIT OR THRU TREATMENT PLAN	PERMIT REQUIREMENT	19.4	*****	MGD	*****	*****	*****	****		CONTINUED ESTIMATE
50050 1 0 0	SAMPLE MEASUREMENT	*****	*****	MGD	*****	*****	*****	****		*****
EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	*****	*****	MGD	*****	*****	*****	****		*****
	SAMPLE MEASUREMENT									
	PERMIT REQUIREMENT									
	SAMPLE MEASUREMENT									
	PERMIT REQUIREMENT									
	SAMPLE MEASUREMENT									
	PERMIT REQUIREMENT									
	SAMPLE MEASUREMENT									
	PERMIT REQUIREMENT									

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  
**E.S. KRAFT**  
**PLANT MANAGER**  
 TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION I BELIEVE THE SUBMITTED INFORMATION IS TRUE ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT SEE 18 USC § 1001 AND 33 USC § 1319. (Penalties under these statutes may include fines up to \$100,000 and/or maximum imprisonment of between 6 months and 5 years.)

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT  
*E.S. Kraft*

TELEPHONE DATE  
 508 747 8100 92 2 10  
 AREA CODE NUMBER YEAR MO DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)  
 CONTINUOUS CHLORINATION OF SERVICE WATER SYSTEM MAY BE USED FOR MACROINVERTEBRATE CONTROL. FLOW RATE SHALL BE ESTIMATED FROM PUMP CAPACITY CURVES AND OPERATIONAL HOURS.



PERMITTEE NAME, ADDRESS (Include Facility Name, Location if different)  
 BOSTON-EP-#1 PILGRIM PLANT  
 ADDRESS ROCKY HILL ROAD  
 RFD-#1  
 RLYMOUTH MA 02360

MAJOR Form Approved (SUBR 5) OMB No. 2040-0004  
 F - FINAL Approval expires 6-30-91.  
 MAKE UP WATER AND DEMINERALIZE

\*\*\* NO DISCHARGE \*\*\*  
 NOTE: Read instructions before completing this form.

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGE MONITORING REPORT (DMR)  
 (2-19) (1-18)  
 MA0003557 PERMIT NUMBER  
 Q11 A DISCHARGE NUMBER

MONITORING PERIOD  
 FROM 92 01 01 TO 92 01 31  
 (20-21) (22-23) (24-25) (26-27) (28-29) (30-31)  
 (19-20) (21-22) (23-24) (25-26) (27-28) (29-30) (31-31)

PARAMETER (52-37)	AVERAGE (46-53)		MAXIMUM (54-61)		MINIMUM (58-65)		AVERAGE (46-53)		MAXIMUM (54-61)		MINIMUM (58-65)		UNITS (19)	NO. EX. ANALYSES (64-68)	FREQUENCY ANALYSES (69-70)	SAMPLE TYPE (69-70)			
	(48-51)	(49-52)	(50-53)	(51-54)	(52-55)	(53-56)	(54-57)	(55-58)	(56-59)	(57-60)	(61-64)	(65-68)							
SOLIDS TOTAL SUSPENDED	*****	*****	*****	*****	*****	*****	4.4	10.8	*****	*****	*****	*****	(19) MG/L	0	0/BA	GR			
EFFLUENT GROSS VALUE	*****	*****	*****	*****	*****	*****	39	100	*****	*****	*****	*****	MG/L	0	DNCEI BATCH	FRAB			
FLOW IN CONDUIT OR THRU TREATMENT PLANT	0.0004	0.0005	0.0005	0.0005	0.0005	0.0005	*****	*****	*****	*****	*****	*****	( )	0	WH/DS	ES			
EFFLUENT GROSS VALUE	0.015	0.08	0.08	0.08	0.08	0.08	*****	*****	*****	*****	*****	*****	*****	0	WHEN DISCH	ESTINA			
SAMPLE MEASUREMENT																			
PERMIT REQUIREMENT																			
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PERMIT REQUIREMENT																			
SAMPLE MEASUREMENT																			
PERMIT REQUIREMENT																			
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER E.S. KRAFT PLANT MANAGER TYPED OR PRINTED																TELEPHONE 508 747 8000		DATE 2 10	
COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attached files) SEE PAGE 5 OF PERMIT PARAGRAPH N FOR SODIUM NITRATE REPORTING REQUIREMENTS. ATTACH ALL RELATED REPORTS TO THIS FORM																OFFICER OR AUTHORIZED AGENT Signature: [Signature]		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER AREA CODE NUMBER 508 747 8000	