



TETRA TECH EC, INC.

January 26, 2010

File #: 2282-0096-10-0005

Mr. Steven Scharf
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Action, Bureau A
625 Broadway
Albany, NY 12233-7015

**SUBJECT: US NAVY CONTRACT NO. N62472-99-D-0032
CONTRACT TASK ORDER NO. 96
GM-38 GROUNDWATER REMEDIATION AT NWIRP BETHPAGE, NY
MONTHLY REPORT NO. 4 ON GROUNDWATER AND AIR DISCHARGE
FOR DER SITE # 1-01-001**

Dear Mr. Scharf:

In accordance with groundwater treatment system operational requirements for DER Site # 1-01-001, Tetra Tech EC, Inc. (TtEC) on behalf of the United State Department of the Navy provides this monthly report of the groundwater and air discharge results for the GM-38 system. The enclosed data is for the fourth month of treatment system operations from December 5, 2009 thru January 1, 2010. Continuous plant operations began on September 14, 2009. The SPDES discharge criteria and air permit equivalent permit with application are also included for your reference as Attachments 2 and 3, respectively.

Please do not hesitate contact me with any questions at office phone # 215-702-4099 or via email stavros.patselas@ttratech.com .

Sincerely,

A handwritten signature in black ink, appearing to read 'S. Patselas', is written over a white background.

TtEC Project Manager

Attachments:

- Attachment 1 – Groundwater and Air Sampling Results for Month # 4 of Operations
- Attachment 2 - NYSDEC memorandum dated June 6, 2008 with Effluent Limitations and Monitoring Requirements
- Attachment 3 – NYSDEC letter dated July 24, 2009 for Air Permit Equivalent Approval



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cc: Jean Occidental, NYSDEC Division of Water
William Spitz, NYSDEC – Region 1 Water Engineer
Gerard Ennis, Nassau County Department of Public Works
Richard Pfaender, Town of Oyster Bay
Lora Fly, Navy Mid-Atlantic RPM
GM-38 Project Site File
CTO 96 File

ATTACHMENT 1

**Navy GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Monthly Report**

SPDES Parameters	Daily Maximum	Units	Week 1		Week 2		Week 3		Week 4	
			Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent
Process Stream			Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent
Week Ending Date			12/11/09		12/18/09		12/25/09		1/1/10	
Sampling Date			12/09/09		12/16/09		12/23/09		12/30/09	
Average Flow Rate	1100	GPM		757		748		776		756
Total Flow		gallons		7,630,560		7,539,840		7,822,080		7,620,480
pH (range)	5.5 – 8.5	SU	5.2	6.7	5.1	6.6-6.7	5.1 – 5.2	6.6	5.1	6.6 - 6.7
1,1-Dichloroethane	5	µg/l	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.6	µg/l	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	µg/l	ND	ND	ND	ND	ND	ND	ND	ND
cis 1,2-Dichloroethene	5	µg/l	140	ND	130	0.14 J	130	0.615 J	140	0.61 J
trans 1,2-Dichloroethene	5	µg/l	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	µg/l	150	ND	140	ND	130	0.30 J	140	ND
1,1,1-Trichloroethane	5	µg/l	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	µg/l	560	ND	570	ND	610	0.455 J	660	ND
Vinyl chloride	2	µg/l	34 J	ND	28 J	ND	24 J	ND	27 J	ND
Mercury	0.25	µg/l	ND	ND	ND	ND	ND	ND	ND	ND

J – Estimated result less than reporting limit.

ND – Not detected

NR – Not recorded

**Navy GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Monthly Report**

DAR Parameters	SGC	Units	Week 1		Week 2		Week 3		Week 4	
			Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent
Process Stream										
Week Ending Date			12/11/09		12/18/09		12/25/09		1/1/10	
Sampling Date			12/10/09		12/14/09		12/21/09		12/28/09	
Average Flow Rate		CFM		8,737		8,705		8,843		8,779
Total Flow		ft ³		88,068,960		87,746,400		89,137,440		88,492,320
Total Flow		M ³		2,493,882		2,484,748		2,524,139		2,505,871
Trichloroethene	14000	µg/m ³	6600	16	4800	5.2	7100	4.1	8900	10
Tetrachloroethene	1000	µg/m ³	2200	6	1500	ND	1800	ND	2200	ND
Vinyl Chloride	180000	µg/m ³	220	22	170	15	240	31	330	33
trans 1,2-Dichloroethene	-	µg/m ³	ND	ND	ND	ND	ND	ND	19	ND
cis 1,2-Dichloroethene		µg/m ³	1500	3.8	1000	ND	1400	ND	1600	ND
1,2-Dichloroethane	-	µg/m ³	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	37000	µg/m ³	ND	ND	ND	ND	ND	ND	ND	ND
Xylene	4300	µg/m ³	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	-	µg/m ³	ND	ND	ND	ND	ND	ND	ND	ND

ND – Not detected

SGC – Short-term Guideline Concentration

**Navy GM-38 Area Groundwater Remediation
Groundwater Treatment Plant
Naval Weapons Industrial Reserve Plant - Bethpage, NY
Monthly Report**

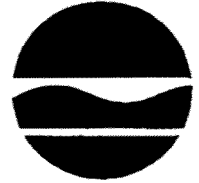
DAR Parameters	Discharge Limit	Units	Week 1	Week 2	Week 3	Week 4
Controlled Emissions from Exhaust Stack						
Week Ending Date			12/11/09	12/18/09	12/25/09	1/1/10
Sampling Date			12/10/09	12/14/09	12/21/09	12/28/09
Average Flow Rate		CFM	8,737	8,705	8,843	8,779
Total Flow		ft ³	88,068,960	87,746,400	89,137,440	88,492,320
Total Flow		m ³	2,493,882	2,484,748	2,524,139	2,505,871
Trichloroethene	0.09	lb/hr	0.000523	0.000170	0.000136	0.000329
Tetrachloroethene	0.02	lb/hr	0.000196	0.0	0.0	0.0
Vinyl Chloride	0.01	lb/hr	0.000720	0.000489	0.001027	0.001085
1,2-Dichloroethene	0.03	lb/hr	0.000124	0.0	0.0	0.0
1,2-Dichloroethane	BRT	lb/hr	0.0	0.0	0.0	0.0
Toluene	BRT	lb/hr	0.0	0.0	0.0	0.0
Xylene	BRT	lb/hr	0.0	0.0	0.0	0.0
1,1,2-Trichloroethane	BRT	lb/hr	0.0	0.0	0.0	0.0

BRT – Below reporting thresholds

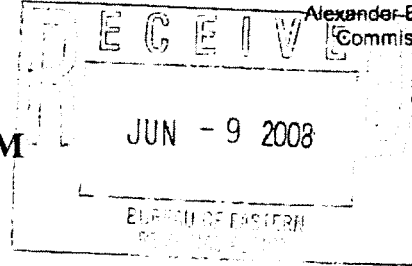
ATTACHMENT 2

**New York State Department of Environmental Conservation
Division of Water**

Bureau of Water Permits, 4th Floor
625 Broadway, Albany, New York 12233-3505
Phone: (518) 402-8111 • FAX: (518) 402-9029
Website: www.dec.state.ny.us



Alexander B. Grannis
Commissioner



MEMORANDUM

TO: Steven Scharf, DER
FROM: Jean Occidental, DOW, Bureau of Water Permits JO
SUBJECT: Naval Weapons Industrial Reserve Plant (NWIRP); DER Site # 1-01-001
DRAINAGE BASIN: na
DATE: June 6, 2008

In response to your request and the permittee's SPDES Permit Equivalent Application dated April 27, 2008, attached is the effluent criteria for the above noted groundwater remediation discharge.

The Division of Water does not have any regulatory authority over a discharge from a State, PRP, or Federal Superfund Site. The Division of Environmental Remediation will be responsible for ensuring compliance with the attached effluent criteria and approval of all engineering submissions. Additional Condition (1) identifies the contact to send all effluent results, engineering submissions, and modification requests. The Regional Water Engineer should be kept apprised of the status of these discharges and, in accordance with the attached criteria, receive a copy of the effluent results for informational purposes.

If you have any questions, please call me at (518) 402-8116.

Attachment

cc: (w/att) RWE, Region 1
C. Webber
BWP Permit Coordinator

Naval Weapons Industrial Reserve Plant

DER site # 1-01-001

Page 1 of 2

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning: April 1, 2009and lasting until: April 1, 2014

the discharges from the treatment facility to Groundwater shall be limited and monitored by the operator as specified below:

Outfall and Parameters	Limitations		Units	Minimum Monitoring Requirements	
	Daily Avg.	Daily Max.		Measurement Frequency	Sample Type
Treated Groundwater Remediation Discharge from: Recovery Wells 1, 2, and 3					
Flow	Monitor	1100	GPM	Continuous	Recorder
pH (range)	5.5 - 8.5		SU	Weekly	Grab
1,1-Dichloroethane	NA	5	µg/l	Monthly ¹	Grab
1,2-Dichloroethane	NA	0.6	µg/l	Monthly ¹	Grab
1,1-Dichloroethene	NA	5	µg/l	Monthly ¹	Grab
cis-1,2-Dichloroethene	NA	5	µg/l	Monthly ¹	Grab
trans-1,2-Dichloroethene	NA	5	µg/l	Monthly ¹	Grab
Tetrachloroethene	NA	5	µg/l	Monthly ¹	Grab
1,1,1-Trichloroethane	NA	5	µg/l	Monthly ¹	Grab
Trichloroethene	NA	5	µg/l	Monthly ¹	Grab
Vinyl chloride	NA	2	µg/l	Monthly ¹	Grab
Mercury	NA	0.25	µg/l	Monthly ¹	Grab

Footnotes:

- (1) The minimum measurement frequency shall be monthly following a period of 24 consecutive weekly sampling events showing no exceedances of the stated discharge limitations.

Naval Weapons Industrial Reserve Plant

DER site # 1-01-001

Page 1 of 2

Additional Conditions:

- (1) Discharge is not authorized until such time as an engineering submission showing the method of treatment is approved by the Department. The discharge rate may not exceed the effective or design treatment system capacity. All monitoring data, engineering submissions and modification requests must be submitted to:

Steven Scharf
Division of Environmental Remediation
NYSDEC, 625 Broadway
Albany, NY 12233-7015
Phone: (518) 402-9620

With a copy sent to:

Regional Water Engineer
NYSDEC - Region 1
Building 40, SUNY Campus
Stony Brook, New York 11790-2356
Phone: (631) 444-0354

- (2) Only site generated wastewater is authorized for treatment and discharge.
- (3) Authorization to discharge is valid only for the period noted above but may be renewed if appropriate. A request for renewal must be received 6 months prior to the expiration date to allow for a review of monitoring data and reassessment of monitoring requirements.
- (4) Any use of corrosion/scale inhibitors, biocidal-type compounds, or other water treatment chemicals used in the treatment process must be approved by the department prior to use.
- (5) This discharge and administration of this discharge must comply with the substantive requirements of 6NYCRR Part 750.

ATTACHMENT 3

New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Remedial Action A
625 Broadway, 11th Floor
Albany, New York 12233-7015
Phone: (518) 402-9625 • Fax: (518) 402-9022
Website: www.dec.state.ny.us



Alexander P.
Grannis
Commissioner

July 24, 2009

Lora Fly, Project Manager
Naval Facilities Engineering Command-Midlant
9742 Maryland Avenue
Norfolk, VA 23511-3095

RE: Naval Weapons Industrial Research Plant(NWIRP)
Site-Bethpage, NYSDEC No. 1-30-003B.
Grumman Aerospace Site, NYSDEC Site No. 1-30-003A

Dear Ms. Fly:

Tetra Tech FW, on behalf of the Department of the Navy (Navy), has submitted the enclosed New York State Department of Environmental Conservation (NYSDEC) Division of Air Resources (DAR) Air Permit Application as a permit equivalent. This DAR Air permit equivalent is for the air stripper discharge at the GM 38 Area groundwater remediation system, Near Broadway and North Herman Avenue in Bethpage, NY. The NYSDEC Division of Environmental Remediation (DER) has reviewed the permit equivalent and, by means of this letter approves the GM 38 Area remedy air discharge for immediate operation.

The GM 38 Area remedial system utilizes the best available control technology (BACT) with activated carbon followed by potassium permanganate impregnated zeolite resin. The air discharge will be periodically monitored at start up and will be added for routine monitoring in the operation, maintenance and monitoring (OMM) plan, to be submitted shortly for Departmental review.

If you have any questions, please contact me at your earliest convenience at (518)402-9620.

Sincerely,

Steven M. Scharf, P.E.
Project Engineer
Division of Environmental Remediation
Bureau of Remedial Action A

Enclosure
ec/w/enc:

J. Swartwout/S. Scharf/File
W. Parish, Region 1 NYSDEC
A. J. Shah, region 1 NYSDEC
S. Patselos, Tetra Tech FW
J. Cofman, Northrop Grumman]

docs: Region 1, Nassau, Oyster Bay (T): Grumman Aerospace 130003A-OU2-OMM and NWIRP Bethpage 130003B-OU2-OMM

New York State Department of Environmental Conservation Air Permit Application



DEC ID									
-									

APPLICATION ID									
-								/	

OFFICE USE ONLY									

Section I - Certification

Title V 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 directly responsible for gathering the information [required pursuant to 6 NYCRR 201-6.3(d)] I believe the information is, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.	
Responsible Official	Title
Signature	Date ____ / ____ / ____

State Facility Certification	
I certify that this facility will be operated in conformance with all provisions of existing regulations.	
Responsible Official	Title
Signature	Date ____ / ____ / ____

Section II - Identification Information

Title V Facility Permit <u>N/A</u>	<input type="checkbox"/> New	<input type="checkbox"/> Significant Modification	<input type="checkbox"/> Administrative Amendment	State Facility Permit <u>N/A</u>	<input type="checkbox"/> New	<input type="checkbox"/> Modification
<input type="checkbox"/> Renewal	<input type="checkbox"/> Minor Modification	General Permit Title: _____		General Permit Title: _____		
<input checked="" type="checkbox"/> Application involves construction of new facility			<input type="checkbox"/> Application involves construction of new emission unit(s)			

Owner/Firm			
Name <u>US Navy/NAVFAC Midlant</u>			
Street Address <u>9742 Maryland Ave, Bldg Z-144</u>			
City <u>Norfolk</u>	State <u>VA</u>	Country <u>US</u>	Zip <u>23511-3095</u>
Owner Classification <input checked="" type="checkbox"/> Federal		<input type="checkbox"/> State <input type="checkbox"/> Municipal	
<input type="checkbox"/> Corporation/Partnership		<input type="checkbox"/> Individual	
Taxpayer ID [] [] [] [] [] [] [] [] [] []			
Facility			<input type="checkbox"/> Confidential
Name <u>Naval Weapons Industrial Reserve Plant (NWIRP) GM-38 Area</u>			
Location Address <u>Bethpage</u>			
<input type="checkbox"/> City / <input checked="" type="checkbox"/> Town / <input type="checkbox"/> Village <u>Oyster Bay, New York</u>			Zip <u>11714</u>
Project Description			<input type="checkbox"/> Continuation Sheet(s)
<u>Air stripping of groundwater to remove VOCs</u>			

Owner/Firm Contact Mailing Address			
Name (Last, First, Middle Initial) <u>Fly, Lora</u>		Phone No. (757)444-0781	
Affiliation <u>Department of the Navy</u>		Title <u>Remedial PM</u>	
Street Address <u>9742 Maryland Ave. Bldg Z-144</u>		Fax No. ()	
City <u>Norfolk</u>	State <u>VA</u>	Country <u>US</u>	Zip <u>23511-3095</u>
Facility Contact Mailing Address			
Name (Last, First, Middle Initial) <u>Same</u>		Phone No. ()	
Affiliation		Title	
Street Address		Fax No. ()	
City	State	Country	Zip

New York State Department of Environmental Conservation
Air Permit Application



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Section III - Facility Information

Classification					
<input type="checkbox"/> Hospital	<input type="checkbox"/> Residential	<input type="checkbox"/> Educational/Institutional	<input type="checkbox"/> Commercial	<input checked="" type="checkbox"/> Industrial	<input type="checkbox"/> Utility

Affected States (Title V Only) N/A					
<input type="checkbox"/> Vermont	<input type="checkbox"/> Massachusetts	<input type="checkbox"/> Rhode Island	<input type="checkbox"/> Pennsylvania	Tribal Land: _____	
<input type="checkbox"/> New Hampshire	<input type="checkbox"/> Connecticut	<input type="checkbox"/> New Jersey	<input type="checkbox"/> Ohio	Tribal Land: _____	

SIC Codes									
9999									

Facility Description		<input type="checkbox"/> Continuation Sheet(s)
Groundwater Remediation by Air Stripping followed by Vapor-Phase GAC for emission control		

Compliance Statements (Title V Only) N/A	
<p>I certify that as of the date of this application the facility is in compliance with all applicable requirements: <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>If one or more emission units at the facility are not in compliance with all applicable requirements at the time of signing this application (the 'NO' box must be checked), the noncomplying units must be identified in the "Compliance Plan" block on page 8 of this form along with the compliance plan information required. For all emission units at this facility that are operating <u>in compliance</u> with all applicable requirements complete the following:</p> <ul style="list-style-type: none"> <input type="checkbox"/> This facility will continue to be operated and maintained in such a manner as to assure compliance for the duration of the permit, except those units referenced in the compliance plan portion of Section IV of this application. <input type="checkbox"/> For all emission units, subject to any applicable requirements that will become effective during the term of the permit, this facility will meet all such requirements on a timely basis. <input type="checkbox"/> Compliance certification reports will be submitted at least once a year. Each report will certify compliance status with respect to each requirement, and the method used to determine the status. 	

Facility Applicable Federal Requirements N/A										<input type="checkbox"/> Continuation Sheet(s)
Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause	
	CERCLA	all substantive requirements								

Facility State Only Requirements										<input type="checkbox"/> Continuation Sheet(s)
Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause	

New York State Department of Environmental Conservation
Air Permit Application



DEC ID									
-						-			

Section III - Facility Information (continued)

Facility Compliance Certification										N/A										<input type="checkbox"/> Continuation Sheet(s)																			
Rule Citation																																							
Title		Type		Part		Sub Part		Section		Sub Division		Paragraph		Sub Paragraph		Clause		Sub Clause																					
<input type="checkbox"/> Applicable Federal Requirement										<input type="checkbox"/> Capping										CAS No.										Contaminant Name									
<input type="checkbox"/> State Only Requirement																																							
Monitoring Information																																							
<input type="checkbox"/> Ambient Air Monitoring										<input type="checkbox"/> Work Practice Involving Specific Operations										<input type="checkbox"/> Record Keeping/Maintenance Procedures																			
Description																																							
Work Practice										Process Material										Reference Test Method																			
Type		Code		Description																																			
Limit										Limit Units																													
Upper					Lower					Code					Description																								
Averaging Method										Monitoring Frequency										Reporting Requirements																			
Code		Description								Code		Description								Code		Description																	

Facility Emissions Summary					<input type="checkbox"/> Continuation Sheet(s)				
CAS No.	Contaminant Name	PTE		Actual (lbs/yr)					
		(lbs/yr)	Range Code						
NY075 - 00 - 5	PM-10								
NY075 - 00 - 0	PARTICULATES								
7446 - 09 - 5	SULFUR DIOXIDE								
NY210 - 00 - 0	OXIDES OF NITROGEN								
630 - 08 - 0	CARBON MONOXIDE								
7439 - 92 - 1	LEAD								
NY998 - 00 - 0	VOC	117							
NY100 - 00 - 0	HAP	110							
0079 - 01 - 6	Trichloroethylene	99							
00075 - 01 - 4	Vinyl Chloride	3.7							
00540 - 59 - 0	1,2-Dichloroethylene	7.3							
-	-								
-	-								

New York State Department of Environmental Conservation
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Section IV - Emission Unit Information

Emission Unit Description										<input type="checkbox"/> Continuation Sheet(s)
EMISSION UNIT	0	-	0	0	E	U	1			
Air Stripper AS-1 for groundwater remediation, provided with activated carbon for emission control.										
The emission point is stack 00ST-1. The 2-stage VGAC is followed by a 3rd vessel containing a potassium permanganate zeolite media for increased VC capacity.										

Building					<input type="checkbox"/> Continuation Sheet(s)	
Building	Building Name			Length (ft)	Width (ft)	Orientation
BLDG-1	Treatment Plant			75	75	0

Emission Point							<input type="checkbox"/> Continuation Sheet(s)
EMISSION PT.	00ST1						
Ground Elev. (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section		
90	40	15	36	80	Length (in)	Width (in)	
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal	
19	8020			BLDG-1	50		
EMISSION PT.							
Ground Elev. (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section		
					Length (in)	Width (in)	
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal	

Emission Source/Control								<input type="checkbox"/> Continuation Sheet(s)
Emission Source		Date of Construction	Date of Operation	Date of Removal	Control Type		Manufacturer's Name/Model No.	
ID	Type				Code	Description		
AS-1	I				048	Granular Act. Carbon	Air Stripping Column	
Design Capacity	Design Capacity Units			Waste Feed		Waste Type		
	Code	Description		Code	Description	Code	Description	
Emission Source		Date of Construction	Date of Operation	Date of Removal	Control Type		Manufacturer's Name/Model No.	
ID	Type				Code	Description		
Design Capacity	Design Capacity Units			Waste Feed		Waste Type		
	Code	Description		Code	Description	Code	Description	

New York State Department of Environmental Conservation
Air Permit Application



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-									

Section IV - Emission Unit Information (continued)

Process Information										<input type="checkbox"/> Continuation Sheet(s)	
EMISSION UNIT 0 - 00 E U 1								PROCESS		PR 1	
Description											
The remedial system is air stripping, using a packed column at a groundwater flow rate of 1,100 gpm (plus 100 gpm recycle, for a total of 1,200 gpm). Vapor phase treatment includes the use of 3 vessels, a 2-stage GAC unit, followed by a 3rd vessel containing a potassium permanganate impregnated zeolite for increased VC capacity. Prior to entering the vapor-phase GAC adsorption system, the humidity of the air stripper exhaust is reduced to approximately 50 percent or less to optimize the efficiency of the vapor-phase GAC.											
Air Stripper AS-1: Existing. Type: Vertical, Cylindrical Construction: Aluminum											
Packing: 25-foot Jaeger Tripack. Dimensions: 10.0 ft. Dia x 47 ft. H											
Source Classification Code (SCC)		Total Thruput		Thruput Quantity Units							
		Quantity/Hr	Quantity/Yr	Code	Description						
<input type="checkbox"/> Confidential <input checked="" type="checkbox"/> Operating at Maximum Capacity <input type="checkbox"/> Activity with Insignificant Emissions		Operating Schedule		Building		Floor/Location					
		Hrs/Day	Days/Yr								
		24	365	BLDG-1		Main					
Emission Source/Control Identifier(s)											
AS-1											
EMISSION UNIT -								PROCESS			
Description											
Source Classification Code (SCC)		Total Thruput		Thruput Quantity Units							
		Quantity/Hr	Quantity/Yr	Code	Description						
<input type="checkbox"/> Confidential <input type="checkbox"/> Operating at Maximum Capacity <input type="checkbox"/> Activity with Insignificant Emissions		Operating Schedule		Building		Floor/Location					
		Hrs/Day	Days/Yr								
Emission Source/Control Identifier(s)											

New York State Department of Environmental Conservation
Air Permit Application



DEC ID									
-									

Section IV - Emission Unit Information (continued)

Emission Unit	Emission Point	Process	Emission Source	Emission Unit Applicable Federal Requirements										<input type="checkbox"/> Continuation Sheet(s)	
				Title	Type	Part	Sub Part	Section	Sub Division	Parag.	Sub Parag.	Clause	Sub Clause		
-															
-															
-															
-															

Emission Unit	Emission Point	Process	Emission Source	Emission Unit State Only Requirements										<input type="checkbox"/> Continuation Sheet(s)	
				Title	Type	Part	Sub Part	Section	Sub Division	Parag.	Sub Parag.	Clause	Sub Clause		
-															
-															
-															
-															

Emission Unit Compliance Certification											<input type="checkbox"/> Continuation Sheet(s)
Rule Citation											
Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause		
6	NYCRR	212									
<input checked="" type="checkbox"/> Applicable Federal Requirement				<input type="checkbox"/> State Only Requirement				<input type="checkbox"/> Capping			
Emission Unit	Emission Point	Process	Emission Source	CAS No.			Contaminant Name				
0-00EU1	00ST1	PR1	AS-1	00079 - 01 - 6			Trichloroethylene				
Monitoring Information											
<input type="checkbox"/> Continuous Emission Monitoring				<input type="checkbox"/> Monitoring of Process or Control Device Parameters as Surrogate							
<input checked="" type="checkbox"/> Intermittent Emission Testing				<input type="checkbox"/> Work Practice Involving Specific Operations							
<input type="checkbox"/> Ambient Air Monitoring				<input type="checkbox"/> Record Keeping/Maintenance Procedures							
Description											
Monthly grab samples analyzed for VOCs from the vapor phase treatment system influent, effluent and two intermediate locations.											
Work Practice		Process Material					Reference Test Method				
Type	Code	Description									
Parameter		Manufacturer Name/Model No.									
Code	Description										
23	Concentration										
Limit			Limit Units								
Upper	Lower	Code	Description								
3,125		255	micrograms per cubic meter								
Averaging Method			Monitoring Frequency			Reporting Requirements					
Code	Description	Code	Description	Code	Description						
01	Instantaneous	05	Monthly	10	Upon Request						

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-									

Section IV - Emission Unit Information (continued)

Determination of Non-Applicability (Title V Only) N/A <input type="checkbox"/> Continuation Sheet(s)										
Rule Citation										
Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause	
Emission Unit		Emission Point		Process	Emission Source		<input type="checkbox"/> Applicable Federal Requirement <input type="checkbox"/> State Only Requirement			
Description										
Rule Citation										
Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause	
Emission Unit		Emission Point		Process	Emission Source		<input type="checkbox"/> Applicable Federal Requirement <input type="checkbox"/> State Only Requirement			
Description										
Process Emissions Summary <input type="checkbox"/> Continuation Sheet(s)										
EMISSION UNIT	0 - 0 0 E U 1						PROCESS	P	R	1
CAS No.	Contaminant Name			% Thruput	% Capture	% Control	ERP (lbs/hr)	ERP How Determined		
0079 - 01 - 6	Trichloroethylene					95	1.87	02		
PTE			Standard Units	PTE How Determined		Actual				
(lbs/hr)	(lbs/yr)	(standard units)				(lbs/hr)	(lbs/yr)			
0.09	99			02						
EMISSION UNIT	0 - 0 0 E U 1						PROCESS	P	R	1
CAS No.	Contaminant Name			% Thruput	% Capture	% Control	ERP (lbs/hr)	ERP How Determined		
00075 - 01 - 4	Vinyl Chloride					95	0.17	03		
PTE			Standard Units	PTE How Determined		Actual				
(lbs/hr)	(lbs/yr)	(standard units)				(lbs/hr)	(lbs/yr)			
0.01	3.7			02						
EMISSION UNIT	0 - 0 0 E U 1						PROCESS	P	R	1
CAS No.	Contaminant Name			% Thruput	% Capture	% Control	ERP (lbs/hr)	ERP How Determined		
000540 - 59 - 0	1,2-Dichloroethylene					95	0.6	02		
PTE			Standard Units	PTE How Determined		Actual				
(lbs/hr)	(lbs/yr)	(standard units)				(lbs/hr)	(lbs/yr)			
0.03	7.3			02						

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Section IV - Emission Unit Information (continued)

EMISSION UNIT		Emission Unit Emissions Summary				<input type="checkbox"/> Continuation Sheet(s)
0	-	0	0	E	U	1
CAS No.		Contaminant Name				
00107- 06 - 2		1,2-Dichloroethane				
ERP (lbs/yr)	PTE Emissions		Actual			
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)		
13.4	Below Reporting Threshold		BRT			
CAS No.		Contaminant Name				
00108 - 88 - 3		Toluene				
ERP (lbs/yr)	PTE Emissions		Actual			
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)		
72.7	BRT		BRT			
CAS No.		Contaminant Name				
01330- 20 - 7		Xylene				
ERP (lbs/yr)	PTE Emissions		Actual			
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)		
77.1	BRT		BRT			
CAS No.		Contaminant Name				
-		1,1,2-Trichloroethane				
ERP (lbs/yr)	PTE Emissions		Actual			
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)		
	BRT		BRT			

Compliance Plan													<input type="checkbox"/> Continuation Sheet(s)
For any emission units which are <u>not in compliance</u> at the time of permit application, the applicant shall complete the following													
Consent Order			Certified progress reports are to be submitted every 6 months beginning ____ / ____ / ____										
Emission Unit	Process	Emission Source	Applicable Federal Requirement										
			Title	Type	Part	Sub Part	Section	Sub Division	Parag.	Sub Parag.	Clause	Sub Clause	
Remedial Measure / Intermediate Milestones											R/I	Date Scheduled	

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-											

Section IV - Emission Unit Information (continued)

Request for Emission Reduction Credits										<input type="checkbox"/> Continuation Sheet(s)	
EMISSION UNIT -											
Emission Reduction Description											
Contaminant Emission Reduction Data											
Baseline Period ____ / ____ / ____ to ____ / ____ / ____						Reduction					
						Date		Method			
						/ /					
CAS No.			Contaminant Name			ERC (lbs/yr)					
						Netting			Offset		
-											
-											
-											
Facility to Use Future Reduction											
Name						APPLICATION ID					
						- / -					
Location Address											
<input type="checkbox"/> City / <input type="checkbox"/> Town / <input type="checkbox"/> Village						State			Zip		

Use of Emission Reduction Credits										<input type="checkbox"/> Continuation Sheet(s)	
EMISSION UNIT -											
Proposed Project Description											
Contaminant Emissions Increase Data											
CAS No.			Contaminant Name			PEP (lbs/yr)					
-											
Statement of Compliance											
<input type="checkbox"/> All facilities under the ownership of this "ownership/firm" are operating in compliance with all applicable requirements and state regulations including any compliance certification requirements under Section 114(a)(3) of the Clean Air Act Amendments of 1990, or are meeting the schedule of a consent order.											
Source of Emission Reduction Credit - Facility											
Name						PERMIT ID					
						- / -					
Location Address											
<input type="checkbox"/> City / <input type="checkbox"/> Town / <input type="checkbox"/> Village						State			Zip		
Emission Unit		CAS No.		Contaminant Name		ERC (lbs/yr)					
						Netting			Offset		
-		-									
-		-									
-		-									



DEC ID									
-									

Supporting Documentation

- P.E. Certification (form attached)
- List of Exempt Activities (form attached)
- Plot Plan
- Methods Used to Determine Compliance (form attached)
- Calculations
- Air Quality Model (____ / ____ / ____)
- Confidentiality Justification
- Ambient Air Monitoring Plan (____ / ____ / ____)
- Stack Test Protocols/Reports (____ / ____ / ____)
- Continuous Emissions Monitoring Plans/QA/QC (____ / ____ / ____)
- MACT Demonstration (____ / ____ / ____)
- Operational Flexibility: Description of Alternative Operating Scenarios and Protocols
- Title IV: Application/Registration
- ERC Quantification (form attached)
- Use of ERC(s) (form attached)
- Baseline Period Demonstration
- Analysis of Contemporaneous Emission Increase/Decrease
- LAER Demonstration (____ / ____ / ____)
- BACT Demonstration (____ / ____ / ____)
- Other Document(s): _____ (____ / ____ / ____)
 _____ (____ / ____ / ____)
 _____ (____ / ____ / ____)
 _____ (____ / ____ / ____)
 _____ (____ / ____ / ____)
 _____ (____ / ____ / ____)
 _____ (____ / ____ / ____)
 _____ (____ / ____ / ____)
 _____ (____ / ____ / ____)
 _____ (____ / ____ / ____)
 _____ (____ / ____ / ____)
 _____ (____ / ____ / ____)

ATTACHMENT 1 Emission Estimate

Feed Water Flow 1,100 gpm: max or normal
 250 m³/hr
 Water Flow Including Recycle 1,200 gpm: max or normal
 273 m³/hr
 Air Flow 8,000 cfm
 13,592 m³/hr
 A:W vol ratio 50

EXAMPLE EMISSION CALC: Vinyl Chloride
 4.8 ug/L x 1000 L/m³ x 250 m³ water/13,623 m³ air = 88 ug/m³

Name	CAS Number	Toxicity: H/M/L ²	VOC ³	HAP ⁴	GW Conc. ¹			Effluent Conc ¹			Uncontrolled Stripper Exhaust			Max ug/m ³	Avg ug/m ³
					Max ug/L	Avg ug/L	3	Max ug/L	Avg ug/L	3.0	Max lb/day	Avg lb/day	0.04		
1,1,1-Trichloroethane (Methyl Chloroform)	00071-55-6	L	No	Yes	3	3.0	0.04	0.00	0.00	0.00	2.08E-04	2.08E-04	55	55	
1,1,2-Trichloroethane	00079-00-5	M	Yes	Yes	3.5	0.3	0.05	0.00	0.00	0.00	2.43E-04	2.08E-05	64	6	
1,1-Dichloroethane	00075-34-3	L	Yes	Yes	4	0.7	0.05	0.01	0.00	0.00	2.77E-04	4.85E-05	74	13	
1,2-Dichloroethane	00107-06-2	M	Yes	Yes	3	1.0	0.04	0.01	0.00	0.00	1.87E-04	6.24E-05	55	18	
1,1-Dichloroethylene (Vinylidene Chloride)	00075-35-4	M	Yes	Yes	9	1.6	0.12	0.02	0.00	0.00	6.24E-04	1.11E-04	165	29	
1,2-Dichloroethylene	00540-59-0	M	Yes	No	1,100	31.5	14.51	0.42	0.60	0.02	7.62E-02	2.18E-03	20,219	579	
Benzene	00071-43-2	H	Yes	Yes	4	0.1	0.05	0.00	0.00	0.00	2.77E-04	6.94E-06	74	2	
Carbon Tetrachloride	00056-23-5	H	Yes	Yes	4	0.1	0.05	0.00	0.00	0.00	2.77E-04	6.94E-06	74	2	
Chlorobenzene (Monochlorobenzene)	00108-90-7	M	Yes	Yes	1	0.1	0.01	0.00	0.00	0.00	6.94E-05	6.94E-06	18	2	
Chloroform	00067-66-3	M	Yes	Yes	2	0.8	0.03	0.01	0.00	0.00	1.39E-04	5.55E-05	37	15	
Methyl Tert Butyl Ether	01634-04-4	M	Yes	Yes	2	0.1	0.03	0.00	0.00	0.00	1.39E-04	6.94E-06	37	2	
Tetrachloroethylene	00127-18-4	M	Yes	Yes	900	33.8	11.88	0.45	0.49	0.02	6.24E-02	2.34E-03	16,543	621	
Toluene	00108-88-3	L	Yes	Yes	15	0.7	0.20	0.01	0.01	0.00	1.04E-03	4.85E-05	276	13	
Trichloroethylene	00079-01-6	M	Yes	Yes	3,400	411.5	44.86	5.43	1.87	0.23	2.35E-01	2.85E-02	62,494	7,564	
Vinyl chloride	00075-01-4	H	Yes	Yes	300	4.8	3.96	0.06	0.17	0.00	2.08E-02	3.33E-04	5,514	88	
Xylenes	01330-20-7	M	Yes	Yes	16	0.2	0.21	0.00	0.01	0.00	1.11E-03	1.39E-05	294	4	
Total VOCs					5,764	487.3	76.05	6.43	3.17	0.27					
Total HAPs					4,667	458.8	61.57	6.05	2.57	0.25					
											Total Uncontrolled VOC	2,347 lb/yr			
											Total Uncontrolled HAP	2,209 lb/yr			

1. Source: "GM-38 Groundwater Remedy Analysis Report", February 2003
 2. Source: DAR-1 AGC/SGC Tables, NYSDEC Division of Air Resources, Air Toxics Section, September 10, 2007.
 3. Source: 6 NYCRR Part 200.1(cg)
 4. Source: 6 NYCRR Part 200.1(ag)

ATTACHMENT 1 Emission Estimate

Feed Water Flow 1,100 gpm: max or normal
 250 m³/hr
 Water Flow Including Recycle 1,200 gpm: max or normal
 273 m³/hr
 Air Flow 8,000 cfm
 13,592 m³/hr
 A/W vol ratio 50

Name	CAS Number	Toxicity: H/M/L ²	VOC ³	HAP ⁴	Control by GAC		Controlled Stripper		Exhlat	
					Max lb/day	Avg lb/day	Max gm/sec	Avg gm/sec	Max lb/day	Avg lb/day
1,1,1-Trichloroethane (Methyl Chloroform)	00071-55-6	L	No	Yes	0.00	0.00	1.04E-05	1.04E-05	0.00	0.00
1,1,2-Trichloroethane	00079-00-5	M	Yes	Yes	0.00	0.00	1.21E-05	1.04E-06	0.00	0.00
1,1-Dichloroethane	00075-34-3	L	Yes	Yes	0.00	0.00	1.39E-05	2.43E-06	0.00	0.00
1,2-Dichloroethane	00107-06-2	M	Yes	Yes	0.00	0.00	9.36E-06	3.12E-06	0.00	0.00
1,1-Dichloroethylene (Vinylidene Chloride)	00075-35-4	M	Yes	Yes	0.01	0.00	3.12E-05	5.55E-06	0.00	0.00
1,2-Dichloroethylene	00540-59-0	M	Yes	No	0.73	0.02	3.81E-03	1.09E-04	0.02	0.02
Benzene	00071-43-2	H	Yes	Yes	0.00	0.00	1.39E-05	3.47E-07	0.00	0.00
Carbon Tetrachloride	00056-23-5	H	Yes	Yes	0.00	0.00	1.39E-05	3.47E-07	0.00	0.00
Chlorobenzene (Monochlorobenzene)	00108-90-7	M	Yes	Yes	0.00	0.00	3.47E-06	3.47E-07	0.00	0.00
Chloroform	00067-66-3	M	Yes	Yes	0.00	0.00	6.94E-06	2.77E-06	0.00	0.00
Methyl Tert Butyl Ether	01634-04-4	M	Yes	Yes	0.00	0.00	6.94E-06	3.47E-07	0.00	0.00
Tetrachloroethylene	00127-18-4	M	Yes	Yes	0.59	0.02	3.12E-03	1.17E-04	0.02	0.02
Toluene	00108-88-3	L	Yes	Yes	0.01	0.00	5.20E-05	2.43E-06	0.00	0.00
Trichloroethylene	00079-01-6	M	Yes	Yes	2.24	0.27	1.18E-02	1.43E-03	0.27	0.27
Vinyl chloride	00075-01-4	H	Yes	Yes	0.20	0.00	1.04E-03	1.66E-05	0.00	0.00
Xylenes	01330-20-7	M	Yes	Yes	0.01	0.00	5.55E-05	6.94E-07	0.00	0.00
Total VOCs					3.80	0.32			3.80	0.32
Total HAPs					3.08	0.30			3.08	0.30
					Total Controlled VOC		117 lb/yr			
					Total Controlled HAP		110 lb/yr			

1. Source: "GM-38 Groundwater Remedy Analysis Report", February 2003
2. Source: DAR-1 AGC/SGC Tables, NYSDEC Division of Air Resources, Air Tox
3. Source: 6 NYCRR Part 200.1(cg)
4. Source: 6 NYCRR Part 200.1(ag)

**ATTACHMENT 2
AIR SCREENING ANALYSIS:
Short term**

BETHPAGE SCREENING ANALYSIS		SHORT-TERM GUIDELINE CONCENTRATIONS (SGCs)		1-Hour Impact	405.7	(ug/m ³)		
SHORT-TERM IMPACTS COMPARED TO SHORT-TERM GUIDELINE CONCENTRATIONS (SGCs)				Annual Impact	32.456	(ug/m ³)		
Pollutant	CAS Number	NYSDEC Guideline SGC (ug/m ³)	Estimated Emissions (g/s)		Predicted Short-term Impact (ug/m ³)		Maximum Percent of SGC	
			Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
1,1,1-Trichloroethane (Methyl Chloroform)	00071-55-6	68000.00	2.08E-04	1.04E-05	0.084	0.004	0.0%	0.0%
1,1,2-Trichloroethane	00079-00-5	-	2.43E-04	1.21E-05	0.098	0.005	-	-
1,1-Dichloroethane	00075-34-3	-	2.77E-04	1.39E-05	0.113	0.006	-	-
1,2-Dichloroethane	00107-06-2	-	1.87E-04	9.36E-06	0.076	0.004	-	-
1,1-Dichloroethylene (Vinylidene Chloride)	00075-35-4	-	6.24E-04	3.12E-05	0.253	0.013	-	-
1,2-Dichloroethylene	00540-59-0	-	7.62E-02	3.81E-03	30.915	1.546	-	-
Benzene	00071-43-2	1300.00	2.77E-04	1.39E-05	0.113	0.006	0.0%	0.0%
Carbon Tetrachloride	00056-23-5	1900.00	2.77E-04	1.39E-05	0.113	0.006	0.0%	0.0%
Chlorobenzene (Monochlorobenzene)	00108-90-7	-	6.94E-05	3.47E-06	0.028	0.001	-	-
Chloroform	00067-66-3	150.00	1.39E-04	6.94E-06	0.056	0.003	0.0%	0.0%
Methyl tert-Butyl Ether	01634-04-4	-	1.39E-04	6.94E-06	0.056	0.003	-	-
Tetrachloroethylene	00127-18-4	1000.00	6.24E-02	3.12E-03	25.298	1.265	2.5%	0.1%
Toluene	00108-88-3	37000.00	1.04E-03	5.20E-05	0.422	0.021	0.0%	0.0%
Trichloroethylene	00079-01-6	14000.00	2.35E-01	1.18E-02	95.541	4.777	0.7%	0.0%
Vinyl Chloride	00075-01-4	180000.00	2.08E-02	1.04E-03	8.441	0.422	0.0%	0.0%
Xylenes	01330-20-7	4300.00	1.11E-03	5.55E-05	0.450	0.023	0.0%	0.0%

**ATTACHMENT 2
AIR SCREENING ANALYSIS:
Short term**

BETHPAGE SCREENING ANALYSIS		SHORT-TERM IMPACTS COMPARED TO SHORT-TERM GUIDELINE CONCENTRATIONS (SGCs)		1-Hour Impact		Annual Impact		
Pollutant	CAS Number	NYSDEC Guideline SGC (ug/m ³)	Estimated Emissions (g/s)		Predicted Short-term Impact (ug/m ³)		Maximum Percent of SGC	
			Uncontrolled	Controlled	Uncontrolled	Controlled	Uncontrolled	Controlled
1,1,1-Trichloroethane (Methyl Chloroform)	00071-55-6	68000.00	2.08E-04	1.04E-05	0.084	0.004	0.0%	0.0%
1,1,2-Trichloroethane	00079-00-5	-	2.43E-04	1.21E-05	0.098	0.005	-	-
1,1-Dichloroethane	00075-34-3	-	2.77E-04	1.39E-05	0.113	0.006	-	-
1,2-Dichloroethane	00107-06-2	-	1.87E-04	9.36E-06	0.076	0.004	-	-
1,1-Dichloroethylene (Vinylidene Chloride)	00075-35-4	-	6.24E-04	3.12E-05	0.253	0.013	-	-
1,2-Dichloroethylene	00540-59-0	-	7.62E-02	3.81E-03	30.915	1.546	-	-
Benzene	00071-43-2	1300.00	2.77E-04	1.39E-05	0.113	0.006	0.0%	0.0%
Carbon Tetrachloride	00056-23-5	1900.00	2.77E-04	1.39E-05	0.113	0.006	0.0%	0.0%
Chlorobenzene (Monochlorobenzene)	00108-90-7	-	6.94E-05	3.47E-06	0.028	0.001	-	-
Chloroform	00067-66-3	150.00	1.39E-04	6.94E-06	0.056	0.003	0.0%	0.0%
Methyl tert-Butyl Ether	01634-04-4	-	1.39E-04	6.94E-06	0.056	0.003	-	-
Tetrachloroethylene	00127-18-4	1000.00	6.24E-02	3.12E-03	25.298	1.265	2.5%	0.1%
Toluene	00108-88-3	37000.00	1.04E-03	5.20E-05	0.422	0.021	0.0%	0.0%
Trichloroethylene	00079-01-6	14000.00	2.35E-01	1.18E-02	95.541	4.777	0.7%	0.0%
Vinyl Chloride	00075-01-4	180000.00	2.08E-02	1.04E-03	8.441	0.422	0.0%	0.0%
Xylenes	01330-20-7	4300.00	1.11E-03	5.55E-05	0.450	0.023	0.0%	0.0%

03/16/09
11:26:15

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

Bethpage GM-38 Air Stripper Uncontrolled

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT
EMISSION RATE (G/S) = 1.00000
STACK HEIGHT (M) = 12.2000
STK INSIDE DIAM (M) = .9100
STK EXIT VELOCITY (M/S) = 5.7700
STK GAS EXIT TEMP (K) = 294.0000
AMBIENT AIR TEMP (K) = 293.0000
RECEPTOR HEIGHT (M) = .0000
URBAN/RURAL OPTION = URBAN
BUILDING HEIGHT (M) = 7.6000
MIN HORIZ BLDG DIM (M) = 22.9000
MAX HORIZ BLDG DIM (M) = 22.9000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = .040 M**4/S**3; MOM. FLUX = 6.869 M**4/S**2.

*** FULL METEOROLOGY ***

*** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
10.	.1323E-07	1	1.5	1.5	480.0	22.39	3.65	2.99	NO
100.	278.3	3	1.0	1.0	320.0	27.34	22.00	20.46	NO
200.	339.9	6	1.0	1.1	10000.0	20.81	21.31	14.25	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 10. M:

201.	339.9	6	1.0	1.1	10000.0	20.81	21.51	14.37	NO
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*** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 2. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
210.	405.7	6	1.0	1.1	10000.0	18.81	22.32	14.86	NO
300.	307.9	6	1.0	1.1	10000.0	18.81	31.28	20.08	NO
400.	219.2	6	1.0	1.1	10000.0	18.81	40.93	25.42	NO

500.	162.3	6	1.0	1.1	10000.0	18.81	50.27	30.34	NO
600.	125.2	6	1.0	1.1	10000.0	18.81	59.32	34.91	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 210. M:

210.	405.7	6	1.0	1.1	10000.0	18.81	22.32	14.86	NO
------	-------	---	-----	-----	---------	-------	-------	-------	----

 *** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 9. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
610.	133.2	6	1.0	1.1	10000.0	11.81	60.21	35.35	NO
700.	107.4	6	1.0	1.1	10000.0	11.81	68.10	39.19	NO
800.	87.22	6	1.0	1.1	10000.0	11.81	76.63	43.22	NO
900.	72.75	6	1.0	1.1	10000.0	11.81	84.93	47.03	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 610. M:

610.	133.2	6	1.0	1.1	10000.0	11.81	60.21	35.35	NO
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 *** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 11. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1000.	62.47	6	1.0	1.1	10000.0	9.81	93.00	50.66	NO
1100.	54.05	6	1.0	1.1	10000.0	9.81	100.86	54.11	NO
1200.	47.42	6	1.0	1.1	10000.0	9.81	108.53	57.42	NO
1300.	42.10	6	1.0	1.1	10000.0	9.81	116.01	60.60	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1000. M:

1000.	62.47	6	1.0	1.1	10000.0	9.81	93.00	50.66	NO
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DWASH= MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

 * SUMMARY OF TERRAIN HEIGHTS ENTERED FOR *
 * SIMPLE ELEVATED TERRAIN PROCEDURE *

TERRAIN HT (M)	DISTANCE RANGE (M)	
	MINIMUM	MAXIMUM
0.	10.	200.
2.	210.	600.
9.	610.	920.

11. 1000. 1300.

*** REGULATORY (Default) ***
PERFORMING CAVITY CALCULATIONS
WITH ORIGINAL SCREEN CAVITY MODEL
(BRODE, 1988)

*** CAVITY CALCULATION - 1 ***

CONC (UG/M**3) = .0000
CRIT WS @10M (M/S) = 99.99
CRIT WS @ HS (M/S) = 99.99
DILUTION WS (M/S) = 99.99
CAVITY HT (M) = 7.84
CAVITY LENGTH (M) = 22.86
ALONGWIND DIM (M) = 22.90

*** CAVITY CALCULATION - 2 ***

CONC (UG/M**3) = .0000
CRIT WS @10M (M/S) = 99.99
CRIT WS @ HS (M/S) = 99.99
DILUTION WS (M/S) = 99.99
CAVITY HT (M) = 7.84
CAVITY LENGTH (M) = 22.86