Cardno MM&A
Shaping the Future

June 28, 2013

Cardno MM&A

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Mr. Tim Morrison
Virginia Department of Transportation
P.O. Box 6570
Portsmouth, Virginia 23703

Re: VPDES Permit Renewal
VDOT I-664 Monitor Merrimac Memorial Bridge Tunnel
Newport News, Virginia
VPDES Permit No. VA0080179
MM&A Project No. VHAMP275

Dear Mr. Morrison:

Cardno MM&A prepared this application to renew the existing Virginia Pollutant Discharge Elimination System (VPDES) permit for the I-664 Monitor Merrimac Memorial Bridge Tunnel. Attached to this letter are Application Form 1 (**Attachment I**), Application Form 2C (**Attachment II**), Application Form 2F (**Attachment III**), VPDES Permit Application Addendum (**Attachment IV**), Figures (**Attachment V**), laboratory results (**Attachment VI**) and supporting documentation (**Attachment VII**). In addition, the permit maintenance fee information is provided in **Attachment VIII** along with the Authorization to Bill for Public Notice Form in **Attachment IX**. Please sign the forms and submit to the DEQ for review. If you have any questions or require additional information, please do not hesitate to call our office.

Sincerely,

Joshua P. Shrader

Joshua P Shrader
Project Scientist

James T. Martin

James T. Martin, Jr., A
Senior Scientist

ATTACHMENT

I

APPLICATION FORM 1

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Please print or type in the unshaded areas only.

Form Approved. OMB No. 2040-0086.

FORM 1 GENERAL

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER: F D

LABEL ITEMS

I. EPA I.D. NUMBER

III. FACILITY NAME

V. FACILITY MAILING ADDRESS

VI. FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of **bold-faced terms.**

SPECIFIC QUESTIONS	Mark "X" YES	NO	FORM ATTACHED	SPECIFIC QUESTIONS	Mark "X" YES	NO	FORM ATTACHED
A. Is this facility a **publicly owned treatment works** which results in a **discharge to waters of the U.S.**? (FORM 2A)		X		B. Does or will this facility *(either existing or proposed)* include a **concentrated animal feeding operation** or **aquatic animal production facility** which results in a **discharge to waters of the U.S.**? (FORM 2B)		X	
	16	17	18		19	20	21
C. Is this a facility which currently results in **discharges to waters of the U.S.** other than those described in A or B above? (FORM 2C)	X			D. Is this a proposed facility *(other than those described in A or B above)* which will result in a **discharge to waters of the U.S.**? (FORM 2D)		X	
	22	23	24		25	26	27
E. Does or will this facility treat, store, or dispose of **hazardous wastes**? (FORM 3)		X		F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
	28	29	30		31	32	33
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
	34	35	36		37	38	39
I. Is this facility a proposed **stationary source** which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X		J. Is this facility a proposed **stationary source** which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area**? (FORM 5)		X	
	40	41	42		43	44	45

III. NAME OF FACILITY

C 1 SKIP Monitor Merrimac Memorial Bridge Tunnel

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*: C 2 Morrison, Tim Facility, MGR

B. PHONE *(area code & no.)*: (757) 247-8044

V. FACILTY MAILING ADDRESS

A. STREET OR P.O. BOX: C 3 PO Box 6570

B. CITY OR TOWN: C 4 Portsmouth

C. STATE: VA

D. ZIP CODE: 23703

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER: C 5 Interstate 664

B. COUNTY NAME: City of Newport News

C. CITY OR TOWN: C 8 City of Newport News

D. STATE: VA

E. ZIP CODE: 23607

F. COUNTY CODE *(if known)*:

CONTINUED FROM THE FRONT

VII. SIC CODES *(4-digit, in order of priority)*

A. FIRST	B. SECOND
7 4785 *(specify)*	7 *(specify)*
C. THIRD	**D. FOURTH**
7 *(specify)*	7 *(specify)*

VIII. OPERATOR INFORMATION

A. NAME: Virginia Department of Transportation

B. Is the name listed in Item VIII-A also the owner? ☑ YES ☐ NO

C. STATUS OF OPERATOR *(Enter the appropriate letter into the answer box: if "Other," specify.)*

F = FEDERAL
S = STATE
P = PRIVATE
M = PUBLIC *(other than federal or state)*
O = OTHER *(specify)*

S *(specify)*

D. PHONE *(area code & no.)*: A (757) 247-8044

E. STREET OR P.O. BOX: PO Box 6570

F. CITY OR TOWN: Portsmouth

G. STATE: VA

H. ZIP CODE: 23703

IX. INDIAN LAND

Is the facility located on Indian lands? ☐ YES ☑ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES *(Discharges to Surface Water)*	N	VA0080179	
B. UIC *(Underground Injection of Fluids)*	U		
C. RCRA *(Hazardous Wastes)*	R		
D. PSD *(Air Emissions from Proposed Sources)*	P		
E. OTHER *(specify)*	9		*(specify)*
E. OTHER *(specify)*	9		*(specify)*

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers, and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS *(provide a brief description)*

This facility is an Interstate Bridge Tunnel. It contains two permitted VPDES outfalls for stormwater run-off and tunnel wash water. Outfall 001 exists on the north island whereas Outfall 002 exists on the south island. A third outfall (003) is on the south island to discharge excess run-off from evaporation ponds associated with salt storage buildings and loading pads across the VDOT Hampton Roads District. The current permit (VA0080179) expires in January 2014.

XIII. CERTIFICATION *(see instructions)*

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the 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.

A. NAME & OFFICIAL TITLE *(type or print)*	B. SIGNATURE	C. DATE SIGNED
Tim Morrison Maintenance Operations Manager		7-9-13

COMMENTS FOR OFFICIAL USE ONLY

C

ATTACHMENT

II

APPLICATION FORM 2C

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EPA I.D. NUMBER (*copy from Item 1 of Form 1*)

Form Approved.
OMB No. 2040-0086.
Approval expires 3-31-98.

Please print or type in the unshaded areas only.

FORM **2C** NPDES

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER
EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURE OPERATIONS
Consolidated Permits Program

I. OUTFALL LOCATION

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. OUTFALL NUMBER (*list*)	B. LATITUDE			C. LONGITUDE			D. RECEIVING WATER (*name*)
	1. DEG.	2. MIN.	3. SEC.	1. DEG.	2. MIN.	3. SEC.	
001	36	57	45N	076	24	45W	Hampton Roads (James River)
002	36	57	20N	076	24	00W	Hampton Roads (James River)
003	36	56	50N	076	24	20W	Hampton Roads (James River)

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (*e.g., for certain mining activities*), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

1. OUTFALL NO. (*list*)	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT		
	a. OPERATION (*list*)	b. AVERAGE FLOW (*include units*)	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1	
001	Storm water run-off with only Outfall 002 receiving tunnel washing	.179 MGD	Sedimentation	1	U
			Discharge to surface water	4	A
002	Storm water run-off with only Outfall 002 receiving tunnel washing	.0951 MGD	Sedimentation	1	U
			Discharge to surface water	4	A
003	The operation contributing flow originates from stormwater runoff from the loading pad at VDOT road salt storage locations. Each salt storage building contains a lined / paved / bermed loading pad in which the granular road salt is loaded by heavy equipment(such as a rubber tire loader) onto dump trucks. Rainwater that falls within the loading pad is diverted either through a lined ditch or dropinlet and subsurface pipe to a lined/paved evaporation pond (referred to as a salt pond) or into underground storage tanks. On occasion, these salt ponds and tanks across VDOT's Hampton Roads District fill and necessitate pumping to avoid an overflow. It is this excess water that VDOT proposes to pump into a tanker truck, transport to the MMMBT and discharge as outfall 003.	The average flow is seasonal in that the winter months would generate higher volumes, because of the following: less evaporation occurs in the winter and all salt pond run-off is diverted to the salt ponds and tanks in the winter. Some sites have diverter valves in non-winter months to divert water away from the salt ponds once the pads have been cleaned and are not in use.	The proposed treatment is a two stage physical process. The first treatment process is sedimentation in which any suspended sediment in the run-off from the loading pad settles to the bottom of the lined salt pond or tank. During removal of the water, the pump will draw water from just below the water's surface through a screened intake. The second treatment process is screening of pumped water through a bag filter system prior to entry into the tanker truck. The system will contain a vertical housing with an upper inlet internal screen frame, replaceable bag filters (10 to 100 micron) and a lower outlet.	1 1	U T

OFFICIAL USE ONLY (*effluent guidelines sub-categories*)

CONTINUED FROM THE FRONT

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?

☑ YES (*complete the following table*) ☐ NO (*go to Section III*)

1. OUTFALL NUMBER (*list*)	2. OPERATION(s) CONTRIBUTING FLOW (*list*)	3. FREQUENCY a. DAYS PER WEEK (*specify average*)	3. FREQUENCY b. MONTHS PER YEAR (*specify average*)	4. FLOW A. FLOW RATE (*in mgd*) 1. LONG TERM AVERAGE	4. FLOW A. FLOW RATE 2. MAXIMUM DAILY	4. FLOW B. TOTAL VOLUME (*specify with units*) 1. LONG TERM AVERAGE	4. FLOW B. TOTAL VOLUME 2. MAXIMUM DAILY	4. FLOW C. DURATION (*in days*)
001	Rainfall with only Outfall 002 receiving tunnel washing	4 days per mo.	4	0.01mgd	0.01mgd	9,600 gal/day	9,600 gal/day	16
002	Rainfall with only Outfall 002 receiving tunnel washing	4 days per mo.	4	0.01mgd	0.01mgd	9,600 gal/day	9,600 gal/day	16
003	Discharging of pumped run-off from road salt loading pads from 22 facilities across the VDOT Hampton Roads District.	4	5	0.026	0.048	2.094 million gallons per year	0.048 mgd	80

III. PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

☐ YES (*complete Item III-B*) ☑ NO (*go to Section IV*)

B. Are the limitations in the applicable effluent guideline expressed in terms of production (*or other measure of operation*)?

☐ YES (*complete Item III-C*) ☑ NO (*go to Section IV*)

C. If you answered "yes" to Item III-B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

1. AVERAGE DAILY PRODUCTION a. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. (*specify*)	2. AFFECTED OUTFALLS (*list outfall numbers*)
Not Applicable			

IV. IMPROVEMENTS

A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operations of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

☐ YES (*complete the following table*) ☑ NO (*go to Item IV-B*)

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS a. NO.	2. AFFECTED OUTFALLS b. SOURCE OF DISCHARGE	3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE a. REQUIRED	4. FINAL COMPLIANCE DATE b. PROJECTED
Not Applicable					

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs (*or other environmental projects which may affect your discharges*) you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction.

☐ MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED

 CONTINUE ON PAGE 3

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)

CONTINUED FROM PAGE 2

V. INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding – Complete one set of tables for each outfall – Annotate the outfall number in the space provided.
NOTE: Tables V-A, V-B, and V-C are included on separate sheets numbered V-1 through V-9.

D. Use the space below to list any of the pollutants listed in Table 2c-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
No pollutant known, and no reason to believe may be discharged. MSDS for tunnel cleaner is provided in Attachment VII. In addition for outfall 003 the intake water is rainwater run-off onto loading pads at road salt storage locations. A Material Safety Data Sheet (MSDS) is provided in Attachment VII.			

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Item V-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☐ YES (*list all such pollutants below*) ☑ NO (*go to Item VI-B*)

Not Applicable

CONTINUED FROM THE FRONT

VII. BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☐ YES (*identify the test(s) and describe their purposes below*) ☑ NO (*go to Section VIII*)

Not Applicable

VIII. CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

☐ YES (*list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below*) ☑ NO (*go to Section IX*)

A. NAME	B. ADDRESS	C. TELEPHONE (*area code & no.*)	D. POLLUTANTS ANALYZED (*list*)
No pollutants were listed in Item V. Testing was performed by Air, Water & Soil Laboratories, Inc.	2109 A N Hamilton St. Richmond, VA 23230	(804) 358-8295	See Attachment VI for laboratory results.

IX. 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, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. NAME & OFFICIAL TITLE (*type or print*)	B. PHONE NO. (*area code & no.*)
Tim Morrison, maintenance operations manager	757-592-7202
C. SIGNATURE	**D. DATE SIGNED**
Tim Morr	7-9-13

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (*use the same format*) instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)

V. INTAKE AND EFFLUENT CHARACTERISTICS (*continued from page 3 of Form 2-C*)

OUTFALL NO. 001

PART A –You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (*if available*) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (*if available*) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	3. UNITS (*specify if blank*) a. CONCEN-TRATION	b. MASS	4. INTAKE (*optional*) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
a. Biochemical Oxygen Demand (*BOD*)	3.8						1	MG/L				
b. Chemical Oxygen Demand (*COD*)	49.8						1	MG/L				
c. Total Organic Carbon (*TOC*)	2.9						1	MG/L				
d. Total Suspended Solids (*TSS*)	7.7						1	MG/L				
e. Ammonia (*as N*)	0.64						1	MG/L				
f. Flow	VALUE 0.179		VALUE		VALUE		0	MGD		VALUE		
g. Temperature (*winter*)	VALUE 5		VALUE		VALUE		0	°C		VALUE		
h. Temperature (*summer*)	VALUE 24		VALUE		VALUE		0	°C		VALUE		
i. pH	MINIMUM 7.5	MAXIMUM	MINIMUM	MAXIMUM			1	STANDARD UNITS				

PART B – Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (*if available*)	2. MARK "X" a. BELIEVED PRESENT	b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (*if available*) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (*if available*) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCEN-TRATION	b. MASS	5. INTAKE (*optional*) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
a. Bromide (24959-67-9)		X												
b. Chlorine, Total Residual		X												
c. Color		X												
d. Fecal Coliform		X												
e. Fluoride (16984-48-8)		X												
f. Nitrate-Nitrite (as N)	X		0.54						1	MG/L				1

CONTINUE ON REVERSE

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. (*if available*)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
g. Nitrogen, Total Organic (*as N*)	X		0.82						1	MG/L				
h. Oil and Grease		X							1	MG/L				
i. Phosphorus (as P), Total (7723-14-0)	X		0.23						1	MG/L				
j. Radioactivity														
(1) Alpha, Total		X												
(2) Beta, Total		X												
(3) Radium, Total		X												
(4) Radium 226, Total		X												
k. Sulfate (*as SO_4*) (14808-79-8)		X												
l. Sulfide (*as S*)		X												
m. Sulfite (*as SO_3*) (14265-45-3)		X												
n. Surfactants		X												
o. Aluminum, Total (7429-90-5)		X												
p. Barium, Total (7440-39-3)		X												
q. Boron, Total (7440-42-8)		X												
r. Cobalt, Total (7440-48-4)		X												
s. Iron, Total (7439-89-6)		X												
t. Magnesium, Total (7439-95-4)		X												
u. Molybdenum, Total (7439-98-7)		X												
v. Manganese, Total (7439-96-5)		X												
w. Tin, Total (7440-31-5)		X												
x. Titanium, Total (7440-32-6)		X												

 CONTINUE ON PAGE V-3

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)	OUTFALL NUMBER
	001

CONTINUED FROM PAGE 3 OF FORM 2-C

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (*secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions*), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (*all 7 pages*) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (*if available*) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (*if available*) (2) MASS	c. LONG TERM AVRG. VALUE (*if available*) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (*if available*) (2) MASS	d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)			X												
2M. Arsenic, Total (7440-38-2)			X												
3M. Beryllium, Total (7440-41-7)			X							–					
4M. Cadmium, Total (7440-43-9)			X												
5M. Chromium, Total (7440-47-3)			X												
6M. Copper, Total (7440-50-8)		X		0.0071						1	MG/L				
7M. Lead, Total (7439-92-1)			X												
8M. Mercury, Total (7439-97-6)			X												
9M. Nickel, Total (7440-02-0)			X												
10M. Selenium, Total (7782-49-2)			X												
11M. Silver, Total (7440-22-4)			X												
12M. Thallium, Total (7440-28-0)			X												
13M. Zinc, Total (7440-66-6)		X		0.670						1	MG/L				
14M. Cyanide, Total (57-12-5)			X												
15M. Phenols, Total			X												
DIOXIN															
2,3,7,8-Tetra-chlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS											

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)			X												
2V. Acrylonitrile (107-13-1)			X												
3V. Benzene (71-43-2)			X												
4V. Bis (*Chloro-methyl*) Ether (542-88-1)			X												
5V. Bromoform (75-25-2)			X												
6V. Carbon Tetrachloride (56-23-5)			X												
7V. Chlorobenzene (108-90-7)			X												
8V. Chlorodi-bromomethane (124-48-1)			X												
9V. Chloroethane (75-00-3)			X												
10V. 2-Chloro-ethylvinyl Ether (110-75-8)			X												
11V. Chloroform (67-66-3)			X												
12V. Dichloro-bromomethane (75-27-4)			X												
13V. Dichloro-difluoromethane (75-71-8)			X												
14V. 1,1-Dichloro-ethane (75-34-3)			X												
15V. 1,2-Dichloro-ethane (107-06-2)			X												
16V. 1,1-Dichloro-ethylene (75-35-4)			X												
17V. 1,2-Dichloro-propane (78-87-5)			X												
18V. 1,3-Dichloro-propylene (542-75-6)			X												
19V. Ethylbenzene (100-41-4)			X												
20V. Methyl Bromide (74-83-9)			X												
21V. Methyl Chloride (74-87-3)			X												

 CONTINUE ON PAGE V-5

CONTINUED FROM PAGE V-4

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS (*continued*)															
22V. Methylene Chloride (75-09-2)			X												
23V. 1,1,2,2-Tetrachloroethane (79-34-5)			X												
24V. Tetrachloro-ethylene (127-18-4)			X												
25V. Toluene (108-88-3)			X												
26V. 1,2-Trans-Dichloroethylene (156-60-5)			X												
27V. 1,1,1-Trichloro-ethane (71-55-6)			X												
28V. 1,1,2-Trichloro-ethane (79-00-5)			X												
29V Trichloro-ethylene (79-01-6)			X												
30V. Trichloro-fluoromethane (75-69-4)			X												
31V. Vinyl Chloride (75-01-4)			X												
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)			X												
2A. 2,4-Dichloro-phenol (120-83-2)			X												
3A. 2,4-Dimethyl-phenol (105-67-9)			X												
4A. 4,6-Dinitro-O-Cresol (534-52-1)			X												
5A. 2,4-Dinitro-phenol (51-28-5)			X												
6A. 2-Nitrophenol (88-75-5)			X												
7A. 4-Nitrophenol (100-02-7)			X												
8A. P-Chloro-M-Cresol (59-50-7)			X												
9A. Pentachloro-phenol (87-86-5)			X												
10A. Phenol (108-95-2)			X												
11A. 2,4,6-Trichloro-phenol (88-05-2)			X												

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)			X												
2B. Acenaphtylene (208-96-8)			X												
3B. Anthracene (120-12-7)			X												
4B. Benzidine (92-87-5)			X												
5B. Benzo (*a*) Anthracene (56-55-3)			X												
6B. Benzo (*a*) Pyrene (50-32-8)			X												
7B. 3,4-Benzo-fluoranthene (205-99-2)			X												
8B. Benzo (*ghi*) Perylene (191-24-2)			X												
9B. Benzo (*k*) Fluoranthene (207-08-9)			X												
10B. Bis (*2-Chloro-ethoxy*) Methane (111-91-1)			X												
11B. Bis (*2-Chloro-ethyl*) Ether (111-44-4)			X												
12B. Bis (*2-Chloroisopropyl*) Ether (102-80-1)			X												
13B. Bis (*2-Ethyl-hexyl*) Phthalate (117-81-7)			X												
14B. 4-Bromophenyl Phenyl Ether (101-55-3)			X												
15B. Butyl Benzyl Phthalate (85-68-7)			X												
16B. 2-Chloro-naphthalene (91-58-7)			X												
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)			X												
18B. Chrysene (218-01-9)			X												
19B. Dibenzo (*a,h*) Anthracene (53-70-3)			X												
20B. 1,2-Dichloro-benzene (95-50-1)			X												
21B. 1,3-Di-chloro-benzene (541-73-1)			X												

 CONTINUE ON PAGE V-7

CONTINUED FROM PAGE V-6

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (*continued*)															
22B. 1,4-Dichloro-benzene (106-46-7)			X												
23B. 3,3-Dichloro-benzidine (91-94-1)			X												
24B. Diethyl Phthalate (84-66-2)			X												
25B. Dimethyl Phthalate (131-11-3)			X												
26B. Di-N-Butyl Phthalate (84-74-2)			X												
27B. 2,4-Dinitro-toluene (121-14-2)			X												
28B. 2,6-Dinitro-toluene (606-20-2)			X												
29B. Di-N-Octyl Phthalate (117-84-0)			X												
30B. 1,2-Diphenyl-hydrazine (*as Azo-benzene*) (122-66-7)			X												
31B. Fluoranthene (206-44-0)			X												
32B. Fluorene (86-73-7)			X												
33B. Hexachloro-benzene (118-74-1)			X												
34B. Hexachloro-butadiene (87-68-3)			X												
35B. Hexachloro-cyclopentadiene (77-47-4)			X												
36B Hexachloro-ethane (67-72-1)			X												
37B. Indeno (*1,2,3-cd*) Pyrene (193-39-5)			X												
38B. Isophorone (78-59-1)			X												
39B. Naphthalene (91-20-3)			X												
40B. Nitrobenzene (98-95-3)			X												
41B. N-Nitro-sodimethylamine (62-75-9)			X												
42B. N-Nitrosodi-N-Propylamine (621-64-7)			X												

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (*continued*)															
43B. N-Nitro-sodiphenylamine (86-30-6)			X												
44B. Phenanthrene (85-01-8)			X												
45B. Pyrene (129-00-0)			X												
46B. 1,2,4-Tri-chlorobenzene (120-82-1)			X												
GC/MS FRACTION – PESTICIDES															
1P. Aldrin (309-00-2)			X												
2P. α-BHC (319-84-6)			X												
3P. β-BHC (319-85-7)			X												
4P. γ-BHC (58-89-9)			X												
5P. δ-BHC (319-86-8)			X												
6P. Chlordane (57-74-9)			X												
7P. 4,4'-DDT (50-29-3)			X												
8P. 4,4'-DDE (72-55-9)			X												
9P. 4,4'-DDD (72-54-8)			X												
10P. Dieldrin (60-57-1)			X												
11P. α-Enosulfan (115-29-7)			X												
12P. β-Endosulfan (115-29-7)			X												
13P. Endosulfan Sulfate (1031-07-8)			X												
14P. Endrin (72-20-8)			X												
15P. Endrin Aldehyde (7421-93-4)			X												
16P. Heptachlor (76-44-8)			X												

 CONTINUE ON PAGE V-9

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)	OUTFALL NUMBER
	001

CONTINUED FROM PAGE V-8

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – PESTICIDES (*continued*)															
17P. Heptachlor Epoxide (1024-57-3)			X												
18P. PCB-1242 (53469-21-9)			X												
19P. PCB-1254 (11097-69-1)			X												
20P. PCB-1221 (11104-28-2)			X												
21P. PCB-1232 (11141-16-5)			X												
22P. PCB-1248 (12672-29-6)			X												
23P. PCB-1260 (11096-82-5)			X												
24P. PCB-1016 (12674-11-2)			X												
25P. Toxaphene (8001-35-2)			X												

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (*use the same format*) instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)

V. INTAKE AND EFFLUENT CHARACTERISTICS (*continued from page 3 of Form 2-C*)

OUTFALL NO. 002

PART A –You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (*if available*) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (2) MASS	c. LONG TERM AVRG. VALUE (*if available*) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (2) MASS	d. NO. OF ANALYSES	3. UNITS (*specify if blank*) a. CONCENTRATION	b. MASS	4. INTAKE (*optional*) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
a. Biochemical Oxygen Demand (*BOD*)	5.1						1	MG/L				
b. Chemical Oxygen Demand (*COD*)	263						1	MG/L				
c. Total Organic Carbon (*TOC*)	6.2						1	MG/L				
d. Total Suspended Solids (*TSS*)	16.8						2	MG/L				
e. Ammonia (*as N*)	0.74						1	MG/L				
f. Flow	VALUE 0.951		VALUE		VALUE		0	MGD		VALUE		
g. Temperature (*winter*)	VALUE 5		VALUE		VALUE		0	°C		VALUE		
h. Temperature (*summer*)	VALUE 24		VALUE		VALUE		0	°C		VALUE		
i. pH	MINIMUM 7.7	MAXIMUM	MINIMUM	MAXIMUM			1	STANDARD UNITS				

PART B – Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (*if available*)	2. MARK "X" a. BELIEVED PRESENT	b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (*if available*) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (2) MASS	c. LONG TERM AVRG. VALUE (*if available*) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (*optional*) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
a. Bromide (24959-67-9)		X												
b. Chlorine, Total Residual		X												
c. Color		X												
d. Fecal Coliform		X												
e. Fluoride (16984-48-8)		X												
f. Nitrate-Nitrite (*as N*)	X		0.22						1	MG/L				

CONTINUE ON REVERSE

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. (*if available*)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
g. Nitrogen, Total Organic (*as N*)	X		0.31						1	MG/L				
h. Oil and Grease		X							1	MG/L				
i. Phosphorus (as P), Total (7723-14-0)	X		0.31						1	MG/L				
j. Radioactivity														
(1) Alpha, Total		X												
(2) Beta, Total		X												
(3) Radium, Total		X												
(4) Radium 226, Total		X												
k. Sulfate (*as SO_4*) (14808-79-8)		X												
l. Sulfide (*as S*)		X												
m. Sulfite (*as SO_3*) (14265-45-3)		X												
n. Surfactants		X												
o. Aluminum, Total (7429-90-5)		X												
p. Barium, Total (7440-39-3)		X												
q. Boron, Total (7440-42-8)		X												
r. Cobalt, Total (7440-48-4)		X												
s. Iron, Total (7439-89-6)		X												
t. Magnesium, Total (7439-95-4)		X												
u. Molybdenum, Total (7439-98-7)		X												
v. Manganese, Total (7439-96-5)		X												
w. Tin, Total (7440-31-5)		X												
x. Titanium, Total (7440-32-6)		X												

 CONTINUE ON PAGE V-3

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)	OUTFALL NUMBER
	002

CONTINUED FROM PAGE 3 OF FORM 2-C

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (*secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions*), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (*all 7 pages*) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (*if available*) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (*if available*) (2) MASS	c. LONG TERM AVRG. VALUE (*if available*) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (*if available*) (2) MASS	d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)			X												
2M. Arsenic, Total (7440-38-2)			X												
3M. Beryllium, Total (7440-41-7)			X												
4M. Cadmium, Total (7440-43-9)			X												
5M. Chromium, Total (7440-47-3)			X												
6M. Copper, Total (7440-50-8)		X		0.0050						1	MG/L				
7M. Lead, Total (7439-92-1)			X												
8M. Mercury, Total (7439-97-6)			X												
9M. Nickel, Total (7440-02-0)			X												
10M. Selenium, Total (7782-49-2)			X												
11M. Silver, Total (7440-22-4)			X												
12M. Thallium, Total (7440-28-0)			X												
13M. Zinc, Total (7440-66-6)		X		0.253						1	MG/L				
14M. Cyanide, Total (57-12-5)			X												
15M. Phenols, Total			X												
DIOXIN															
2,3,7,8-Tetra-chlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS											

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)			X												
2V. Acrylonitrile (107-13-1)			X												
3V. Benzene (71-43-2)			X												
4V. Bis (*Chloro-methyl*) Ether (542-88-1)			X												
5V. Bromoform (75-25-2)			X												
6V. Carbon Tetrachloride (56-23-5)			X												
7V. Chlorobenzene (108-90-7)			X												
8V. Chlorodi-bromomethane (124-48-1)			X												
9V. Chloroethane (75-00-3)			X												
10V. 2-Chloro-ethylvinyl Ether (110-75-8)			X												
11V. Chloroform (67-66-3)			X												
12V. Dichloro-bromomethane (75-27-4)			X												
13V. Dichloro-difluoromethane (75-71-8)			X												
14V. 1,1-Dichloro-ethane (75-34-3)			X												
15V. 1,2-Dichloro-ethane (107-06-2)			X												
16V. 1,1-Dichloro-ethylene (75-35-4)			X												
17V. 1,2-Dichloro-propane (78-87-5)			X												
18V. 1,3-Dichloro-propylene (542-75-6)			X												
19V. Ethylbenzene (100-41-4)			X												
20V. Methyl Bromide (74-83-9)			X												
21V. Methyl Chloride (74-87-3)			X												

 CONTINUE ON PAGE V-5

CONTINUED FROM PAGE V-4

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVRG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS (continued)															
22V. Methylene Chloride (75-09-2)			X												
23V. 1,1,2,2-Tetrachloroethane (79-34-5)			X												
24V. Tetrachloro-ethylene (127-18-4)			X												
25V. Toluene (108-88-3)			X												
26V. 1,2-Trans-Dichloroethylene (156-60-5)			X												
27V. 1,1,1-Trichloro-ethane (71-55-6)			X												
28V. 1,1,2-Trichloro-ethane (79-00-5)			X												
29V Trichloro-ethylene (79-01-6)			X												
30V. Trichloro-fluoromethane (75-69-4)			X												
31V. Vinyl Chloride (75-01-4)			X												
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)			X												
2A. 2,4-Dichloro-phenol (120-83-2)			X												
3A. 2,4-Dimethyl-phenol (105-67-9)			X												
4A. 4,6-Dinitro-O-Cresol (534-52-1)			X												
5A. 2,4-Dinitro-phenol (51-28-5)			X												
6A. 2-Nitrophenol (88-75-5)			X												
7A. 4-Nitrophenol (100-02-7)			X												
8A. P-Chloro-M-Cresol (59-50-7)			X												
9A. Pentachloro-phenol (87-86-5)			X												
10A. Phenol (108-95-2)			X												
11A. 2,4,6-Trichloro-phenol (88-05-2)			X												

 CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION -- BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)			X												
2B. Acenaphtylene (208-96-8)			X												
3B. Anthracene (120-12-7)			X												
4B. Benzidine (92-87-5)			X												
5B. Benzo (*a*) Anthracene (56-55-3)			X												
6B. Benzo (*a*) Pyrene (50-32-8)			X												
7B. 3,4-Benzo-fluoranthene (205-99-2)			X												
8B. Benzo (*ghi*) Perylene (191-24-2)			X												
9B. Benzo (*k*) Fluoranthene (207-08-9)			X												
10B. Bis (*2-Chloro-ethoxy*) Methane (111-91-1)			X												
11B. Bis (*2-Chloro-ethyl*) Ether (111-44-4)			X												
12B. Bis (*2-Chloroisopropyl*) Ether (102-80-1)			X												
13B. Bis (*2-Ethyl-hexyl*) Phthalate (117-81-7)			X												
14B. 4-Bromophenyl Phenyl Ether (101-55-3)			X												
15B. Butyl Benzyl Phthalate (85-68-7)			X												
16B. 2-Chloro-naphthalene (91-58-7)			X												
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)			X												
18B. Chrysene (218-01-9)			X												
19B. Dibenzo (*a,h*) Anthracene (53-70-3)			X												
20B. 1,2-Dichloro-benzene (95-50-1)			X												
21B. 1,3-Di-chloro-benzene (541-73-1)			X												

 CONTINUE ON PAGE V-7

CONTINUED FROM PAGE V-6

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (*continued*)															
22B. 1,4-Dichloro-benzene (106-46-7)			X												
23B. 3,3-Dichloro-benzidine (91-94-1)			X												
24B. Diethyl Phthalate (84-66-2)			X												
25B. Dimethyl Phthalate (131-11-3)			X												
26B. Di-N-Butyl Phthalate (84-74-2)			X												
27B. 2,4-Dinitro-toluene (121-14-2)			X												
28B. 2,6-Dinitro-toluene (606-20-2)			X												
29B. Di-N-Octyl Phthalate (117-84-0)			X												
30B. 1,2-Diphenyl-hydrazine (as *Azo-benzene*) (122-66-7)			X												
31B. Fluoranthene (206-44-0)			X												
32B. Fluorene (86-73-7)			X												
33B. Hexachloro-benzene (118-74-1)			X												
34B. Hexachloro-butadiene (87-68-3)			X												
35B. Hexachloro-cyclopentadiene (77-47-4)			X												
36B Hexachloro-ethane (67-72-1)			X												
37B. Indeno (*1,2,3-cd*) Pyrene (193-39-5)			X												
38B. Isophorone (78-59-1)			X												
39B. Naphthalene (91-20-3)			X												
40B. Nitrobenzene (98-95-3)			X												
41B. N-Nitro-sodimethylamine (62-75-9)			X												
42B. N-Nitrosodi-N-Propylamine (621-64-7)			X												

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (*continued*)															
43B. N-Nitro-sodiphenylamine (86-30-6)			X												
44B. Phenanthrene (85-01-8)			X												
45B. Pyrene (129-00-0)			X												
46B. 1,2,4-Tri-chlorobenzene (120-82-1)			X												
GC/MS FRACTION – PESTICIDES															
1P. Aldrin (309-00-2)			X												
2P. α-BHC (319-84-6)			X												
3P. β-BHC (319-85-7)			X												
4P. γ-BHC (58-89-9)			X												
5P. δ-BHC (319-86-8)			X												
6P. Chlordane (57-74-9)			X												
7P. 4,4'-DDT (50-29-3)			X												
8P. 4,4'-DDE (72-55-9)			X												
9P. 4,4'-DDD (72-54-8)			X												
10P. Dieldrin (60-57-1)			X												
11P. α-Enosulfan (115-29-7)			X												
12P. β-Endosulfan (115-29-7)			X												
13P. Endosulfan Sulfate (1031-07-8)			X												
14P. Endrin (72-20-8)			X												
15P. Endrin Aldehyde (7421-93-4)			X												
16P. Heptachlor (76-44-8)			X												

 CONTINUE ON PAGE V-9

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)	OUTFALL NUMBER
	002

CONTINUED FROM PAGE V-8

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – PESTICIDES (*continued*)															
17P. Heptachlor Epoxide (1024-57-3)			X												
18P. PCB-1242 (53469-21-9)			X												
19P. PCB-1254 (11097-69-1)			X												
20P. PCB-1221 (11104-28-2)			X												
21P. PCB-1232 (11141-16-5)			X												
22P. PCB-1248 (12672-29-6)			X												
23P. PCB-1260 (11096-82-5)			X												
24P. PCB-1016 (12674-11-2)			X												
25P. Toxaphene (8001-35-2)			X												

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (*use the same format*) instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)

V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)*

OUTFALL NO. 003

PART A –You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (*if available*) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (*if available*) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	3. UNITS (*specify if blank*) a. CONCEN-TRATION	b. MASS	4. INTAKE (*optional*) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
a. Biochemical Oxygen Demand (*BOD*)	3.0						2	MG/L				
b. Chemical Oxygen Demand (*COD*)	153						2	MG/L				
c. Total Organic Carbon (*TOC*)	7.4						2	MG/L				
d. Total Suspended Solids (*TSS*)	1.2						2	MG/L				
e. Ammonia (*as N*)	0.74						2	MG/L				
f. Flow	VALUE Not Applicable		VALUE		VALUE		0			VALUE		
g. Temperature (*winter*)	VALUE 5		VALUE		VALUE		0	°C		VALUE		
h. Temperature (*summer*)	VALUE 24		VALUE		VALUE		0	°C		VALUE		
i. pH	MINIMUM 7.8	MAXIMUM	MINIMUM	MAXIMUM			1	STANDARD UNITS				

PART B – Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (*if available*)	2. MARK "X" a. BELIEVED PRESENT	b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (*if available*) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (*if available*) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCEN-TRATION	b. MASS	5. INTAKE (*optional*) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
a. Bromide (24959-67-9)		X												
b. Chlorine, Total Residual		X												
c. Color		X												
d. Fecal Coliform		X												
e. Fluoride (16984-48-8)		X												
f. Nitrate-Nitrite (*as N*)	X		0.12						1	MG/L				

 CONTINUE ON REVERSE

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. (*if available*)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
g. Nitrogen, Total Organic (*as N*)		X							1	MG/L				
h. Oil and Grease		X							1	MG/L				
i. Phosphorus (as P), Total (7723-14-0)	X		0.07						1	MG/L				
j. Radioactivity														
(1) Alpha, Total		X												
(2) Beta, Total		X												
(3) Radium, Total		X												
(4) Radium 226, Total		X												
k. Sulfate (*as* SO_4) (14808-79-8)		X												
l. Sulfide (*as S*)		X												
m. Sulfite (*as* SO_3) (14265-45-3)		X												
n. Surfactants		X												
o. Aluminum, Total (7429-90-5)		X												
p. Barium, Total (7440-39-3)		X												
q. Boron, Total (7440-42-8)		X												
r. Cobalt, Total (7440-48-4)		X												
s. Iron, Total (7439-89-6)		X												
t. Magnesium, Total (7439-95-4)		X												
u. Molybdenum, Total (7439-98-7)		X												
v. Manganese, Total (7439-96-5)		X												
w. Tin, Total (7440-31-5)		X												
x. Titanium, Total (7440-32-6)		X												

CONTINUE ON PAGE V-3

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)	OUTFALL NUMBER
	003

CONTINUED FROM PAGE 3 OF FORM 2-C

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (*secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions*), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (*all 7 pages*) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)			X												
2M. Arsenic, Total (7440-38-2)			X												
3M. Beryllium, Total (7440-41-7)			X												
4M. Cadmium, Total (7440-43-9)			X												
5M. Chromium, Total (7440-47-3)			X												
6M. Copper, Total (7440-50-8)		X		0.0081						1	MG/L				
7M. Lead, Total (7439-92-1)			X												
8M. Mercury, Total (7439-97-6)			X												
9M. Nickel, Total (7440-02-0)			X												
10M. Selenium, Total (7782-49-2)			X												
11M. Silver, Total (7440-22-4)			X												
12M. Thallium, Total (7440-28-0)			X												
13M. Zinc, Total (7440-66-6)		X		0.0477						1	MG/L				
14M. Cyanide, Total (57-12-5)			X												
15M. Phenols, Total			X												
DIOXIN															
2,3,7,8-Tetra-chlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS											

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Accrolein (107-02-8)			X												
2V. Acrylonitrile (107-13-1)			X												
3V. Benzene (71-43-2)			X												
4V. Bis (*Chloro-methyl*) Ether (542-88-1)			X												
5V. Bromoform (75-25-2)			X												
6V. Carbon Tetrachloride (56-23-5)			X												
7V. Chlorobenzene (108-90-7)			X												
8V. Chlorodi-bromomethane (124-48-1)			X												
9V. Chloroethane (75-00-3)			X												
10V. 2-Chloro-ethylvinyl Ether (110-75-8)			X												
11V. Chloroform (67-66-3)			X												
12V. Dichloro-bromomethane (75-27-4)			X												
13V. Dichloro-difluoromethane (75-71-8)			X												
14V. 1,1-Dichloro-ethane (75-34-3)			X												
15V. 1,2-Dichloro-ethane (107-06-2)			X												
16V. 1,1-Dichloro-ethylene (75-35-4)			X												
17V. 1,2-Dichloro-propane (78-87-5)			X												
18V. 1,3-Dichloro-propylene (542-75-6)			X												
19V. Ethylbenzene (100-41-4)			X												
20V. Methyl Bromide (74-83-9)			X												
21V. Methyl Chloride (74-87-3)			X												

 CONTINUE ON PAGE V-5

CONTINUED FROM PAGE V-4

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS (*continued*)															
22V. Methylene Chloride (75-09-2)			X												
23V. 1,1,2,2-Tetrachloroethane (79-34-5)			X												
24V. Tetrachloro-ethylene (127-18-4)			X												
25V. Toluene (108-88-3)			X												
26V. 1,2-Trans-Dichloroethylene (156-60-5)			X												
27V. 1,1,1-Trichloro-ethane (71-55-6)			X												
28V. 1,1,2-Trichloro-ethane (79-00-5)			X												
29V Trichloro-ethylene (79-01-6)			X												
30V. Trichloro-fluoromethane (75-69-4)			X												
31V. Vinyl Chloride (75-01-4)			X												
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)			X												
2A. 2,4-Dichloro-phenol (120-83-2)			X												
3A. 2,4-Dimethyl-phenol (105-67-9)			X												
4A. 4,6-Dinitro-O-Cresol (534-52-1)			X												
5A. 2,4-Dinitro-phenol (51-28-5)			X												
6A. 2-Nitrophenol (88-75-5)			X												
7A. 4-Nitrophenol (100-02-7)			X												
8A. P-Chloro-M-Cresol (59-50-7)			X												
9A. Pentachloro-phenol (87-86-5)			X												
10A. Phenol (108-95-2)			X												
11A. 2,4,6-Trichloro-phenol (88-05-2)			X												

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)			X												
2B. Acenaphtylene (208-96-8)			X												
3B. Anthracene (120-12-7)			X												
4B. Benzidine (92-87-5)			X												
5B. Benzo (*a*) Anthracene (56-55-3)			X												
6B. Benzo (*a*) Pyrene (50-32-8)			X												
7B. 3,4-Benzo-fluoranthene (205-99-2)			X												
8B. Benzo (*ghi*) Perylene (191-24-2)			X												
9B. Benzo (*k*) Fluoranthene (207-08-9)			X												
10B. Bis (2-*Chloro-ethoxy*) Methane (111-91-1)			X												
11B. Bis (2-*Chloro-ethyl*) Ether (111-44-4)			X												
12B. Bis (2-*Chloroisopropyl*) Ether (102-80-1)			X												
13B. Bis (2-*Ethyl-hexyl*) Phthalate (117-81-7)			X												
14B. 4-Bromophenyl Phenyl Ether (101-55-3)			X												
15B. Butyl Benzyl Phthalate (85-68-7)			X												
16B. 2-Chloro-naphthalene (91-58-7)			X												
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)			X												
18B. Chrysene (218-01-9)			X												
19B. Dibenzo (*a,h*) Anthracene (53-70-3)			X												
20B. 1,2-Dichloro-benzene (95-50-1)			X												
21B. 1,3-Di-chloro-benzene (541-73-1)			X												

CONTINUE ON PAGE V-7

CONTINUED FROM PAGE V-6

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (*continued*)															
22B. 1,4-Dichloro-benzene (106-46-7)			X												
23B. 3,3-Dichloro-benzidine (91-94-1)			X												
24B. Diethyl Phthalate (84-66-2)			X												
25B. Dimethyl Phthalate (131-11-3)			X												
26B. Di-N-Butyl Phthalate (84-74-2)			X												
27B. 2,4-Dinitro-toluene (121-14-2)			X												
28B. 2,6-Dinitro-toluene (606-20-2)			X												
29B. Di-N-Octyl Phthalate (117-84-0)			X												
30B. 1,2-Diphenyl-hydrazine (as *Azo-benzene*) (122-66-7)			X												
31B. Fluoranthene (206-44-0)			X												
32B. Fluorene (86-73-7)			X												
33B. Hexachloro-benzene (118-74-1)			X												
34B. Hexachloro-butadiene (87-68-3)			X												
35B. Hexachloro-cyclopentadiene (77-47-4)			X												
36B Hexachloro-ethane (67-72-1)			X												
37B. Indeno (1,2,3-*cd*) Pyrene (193-39-5)			X												
38B. Isophorone (78-59-1)			X												
39B. Naphthalene (91-20-3)			X												
40B. Nitrobenzene (98-95-3)			X												
41B. N-Nitro-sodimethylamine (62-75-9)			X												
42B. N-Nitrosodi-N-Propylamine (621-64-7)			X												

 CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (*continued*)															
43B. N-Nitro-sodiphenylamine (86-30-6)			X												
44B. Phenanthrene (85-01-8)			X												
45B. Pyrene (129-00-0)			X												
46B. 1,2,4-Tri-chlorobenzene (120-82-1)			X												
GC/MS FRACTION – PESTICIDES															
1P. Aldrin (309-00-2)			X												
2P. α-BHC (319-84-6)			X												
3P. β-BHC (319-85-7)			X												
4P. γ-BHC (58-89-9)			X												
5P. δ-BHC (319-86-8)			X												
6P. Chlordane (57-74-9)			X												
7P. 4,4'-DDT (50-29-3)			X												
8P. 4,4'-DDE (72-55-9)			X												
9P. 4,4'-DDD (72-54-8)			X												
10P. Dieldrin (60-57-1)			X												
11P. α-Enosulfan (115-29-7)			X												
12P. β-Endosulfan (115-29-7)			X												
13P. Endosulfan Sulfate (1031-07-8)			X												
14P. Endrin (72-20-8)			X												
15P. Endrin Aldehyde (7421-93-4)			X												
16P. Heptachlor (76-44-8)			X												

CONTINUE ON PAGE V-9

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)	OUTFALL NUMBER
	003

CONTINUED FROM PAGE V-8

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – PESTICIDES (*continued*)															
17P. Heptachlor Epoxide (1024-57-3)			X												
18P. PCB-1242 (53469-21-9)			X												
19P. PCB-1254 (11097-69-1)			X												
20P. PCB-1221 (11104-28-2)			X												
21P. PCB-1232 (11141-16-5)			X												
22P. PCB-1248 (12672-29-6)			X												
23P. PCB-1260 (11096-82-5)			X												
24P. PCB-1016 (12674-11-2)			X												
25P. Toxaphene (8001-35-2)			X												

ATTACHMENT

III

APPLICATION FORM 2F

Cardno®
Shaping the Future

EPA ID Number (*copy from Item 1 of Form 1*)

Form Approved. OMB No. 2040-0086
Approval expires 5-31-92

Please print or type in the unshaded areas only.

FORM 2F NPDES

EPA

U.S. Environmental Protection Agency
Washington, DC 20460

Application for Permit to Discharge Storm Water Discharges Associated with Industrial Activity

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 28.6 hours per application, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate, any other aspect of this collection of information, or suggestions for improving this form, including suggestions which may increase or reduce this burden to: Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460, or Director, Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

I. Outfall Location

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. Outfall Number (*list*)	B. Latitude			C. Longitude			D. Receiving Water (*name*)
001	36	57	45	76	24	45	Hampton Roads (James River)
002	36	57	20	76	24	00	Hampton Roads (James River)
003	36	56	50	76	24	20	Hampton Roads (James River)

II. Improvements

A. Are you now required by any Federal, State, or local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

1. Identification of Conditions, Agreements, Etc.	2. Affected Outfalls		3. Brief Description of Project	4. Final Compliance Date	
	number	source of discharge		a. req.	b. proj.
No					

B. You may attach additional sheets describing any additional water pollution (or other environmental projects which may affect your discharges) you now have under way or which you plan. Indicate whether each program is now under way or planned, and indicate your actual or planned schedules for construction.

III. Site Drainage Map

Attach a site map showing topography (or indicating the outline of drainage areas served by the outfalls(s) covered in the application if a topographic map is unavailable) depicting the facility including: each of its intake and discharge structures; the drainage area of each storm water outfall; paved areas and buildings within the drainage area of each storm water outfall, each known past or present areas used for outdoor storage of disposal of significant materials, each existing structural control measure to reduce pollutants in storm water runoff, materials loading and access areas, areas where pesticides, herbicides, soil conditioners and fertilizers are applied; each of its hazardous waste treatment, storage or disposal units (including each area not required to have a RCRA permit which is used for accumulating hazardous waste under 40 CFR 262.34); each well where fluids from the facility are injected underground; springs, and other surface water bodies which received storm water discharges from the facility.

Continue on Page 2

Continued from the Front

IV. Narrative Description of Pollutant Sources

A. For each outfall, provide an estimate of the area (include units) of impervious surfaces (including paved areas and building roofs) drained to the outfall, and an estimate of the total surface area drained by the outfall.

Outfall Number	Area of Impervious Surface (provide units)	Total Area Drained (provide units)	Outfall Number	Area of Impervious Surface (provide units)	Total Area Drained (provide units)
001	132,000 sq. ft.	132,000 sq. ft.			
002	132,000 sq. ft.	132,000 sq. ft.			
003	250 sq. ft.	250 sq. ft.			

B. Provide a narrative description of significant materials that are currently or in the past three years have been treated, stored or disposed in a manner to allow exposure to storm water; method of treatment, storage, or disposal; past and present materials management practices employed to minimize contact by these materials with storm water runoff; materials loading and access areas, and the location, manner, and frequency in which pesticides, herbicides, soil conditioners, and fertilizers are applied.

No significant materials treated, stored or disposed to allow exposure to storm water.

C. For each outfall, provide the location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of the treatment the storm water receives, including the schedule and type of maintenance for control and treatment measures and the ultimate disposal of any solid or fluid wastes other than by discharge.

Outfall Number	Treatment	List Codes from Table 2F-1
001	Gravel sedimentation in grit wells	1-M
002	Gravel sedimentation in grit wells	1-M
003	The proposed treatment is a two stage physical process. The first treatment process is sedimentation in which any suspended sediment in the run-off from the loading pad settles to the bottom of the lined salt pond or tank. During removal of the water, the pump will draw water from just below the water's surface through a screened intake. The second treatment process is screening of pumped water through a bag filter system prior to entry into the tanker truck. The system will contain a vertical housing with an upper inlet internal screen frame, replaceable bag filters (10 to 100 micron) and a lower outlet.	1-M 1-V

V. Nonstormwater Discharges

A. I certify under penalty of law hat the outfall(s) covered by this application have been tested or evaluated for the presence of nonstormwater discharges, and that all nonstormwater discharged from these outfall(s) are identified in either an accompanying Form 2C or From 2E application for the outfall.

Name and Official Title (*type or print*)	Signature	Date Signed
	Tim Mann	7-9-13

B. Provide a description of the method used, the date of any testing, and the onsite drainage points that were directly observed during a test.

Not Applicable

VI. Significant Leaks or Spills

Provide existing information regarding the history of significant leaks or spills of toxic or hazardous pollutants at the facility in the last three years, including the approximate date and location of the spill or leak, and the type and amount of material released.

None reported

Continue on Page 3

EPA ID Number *(copy from Item 1 of Form 1)*

Continued from Page 2

VII. Discharge Information

A, B, C, & D: See instructions before proceeding. Complete one set of tables for each outfall. Annotate the outfall number in the space provided. Table VII-A, VII-B, VII-C are included on separate sheets numbers VII-1 and VII-2.

E. Potential discharges not covered by analysis – is any toxic pollutant listed in table 2F-2, 2F-3, or 2F-4, a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☐ Yes *(list all such pollutants below)* ☑ No *(go to Section IX)*

Not Applicable

VIII. Biological Toxicity Testing Data

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☐ Yes *(list all such pollutants below)* ☑ No *(go to Section IX)*

Not Applicable

IX. Contract Analysis Information

Were any of the analyses reported in Item VII performed by a contract laboratory or consulting firm?

☑ Yes *(list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)* ☐ No *(go to Section X)*

A. Name	B. Address	C. Area Code & Phone No.	D. Pollutants Analyzed
Air, Water & Soil Laboratories	2109 A N Hamilton St Richmond VA 23230	(804) 358-8295	See Attachment VI for laboratory results

X. 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, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. Name & Official Title *(Type Or Print)*	B. Area Code and Phone No.
Tim Morrison, maintenance operations manager	757-592-7202
C. Signature	**D. Date Signed**
Tim Morrison	7-9-13

Outfall 001

EPA ID Number (*copy from Item 1 of Form 1*)

Form Approved. OMB No. 2040-0086
Approval expires 5-31-92

VII. Discharge Information *(Continued from page 3 of Form 2F)*

Part A – You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number *(if available)*	Maximum Values *(include units)*		Average Values *(include units)*		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
Oil and Grease	<5 mg/L	N/A			1	
Biological Oxygen Demand (BOD5)	3.8 mg/L				1	
Chemical Oxygen Demand (COD)	49.8 mg/L				1	
Total Suspended Solids (TSS)	7.7 mg/L				1	
Total Nitrogen	1.46 mg/L				1	
Total Phosphorus	0.23 mg/L				1	
pH	Minimum 7.7	Maximum	Minimum	Maximum	1	

Part B – List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number *(if available)*	Maximum Values *(include units)*		Average Values *(include units)*		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
TSS	7.7 mg/L				1	
TPH	<0.6 mg/L				1	
PH	7.7				1	
Disolved Copper	0.0071 mg/L				1	
Dissolved Zinc	0.670 mg/L				1	

Continued from the Front

Part C - List each pollutant shown in Table 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
Nitrate-Ni	0.54 mg/L				1	
Oil/Grease	<5 mg/L				1	
Phosphorus	0.23 mg/L				1	
Copper	0.0071 mg/L				1	
Zinc	0.670 mg/L				1	

Part D – Provide data for the storm event(s) which resulted in the maximum values for the flow weighted composite sample.

1. Date of Storm Event	2. Duration of Storm Event (in minutes)	3. Total rainfall during storm event (in inches)	4. Number of hours between beginning of storm measured and end of previous measurable rain event	5. Maximum flow rate during rain event (gallons/minute or specify units)	6. Total flow from rain event (gallons or specify units)
Sample date 5/8/13 and 6/4/13					

7. Provide a description of the method of flow measurement or estimate.

Sample obtained from collection tank connected to stormwater drainage piping.

Outfall 002

EPA ID Number (*copy from Item 1 of Form 1*)

Form Approved. OMB No. 2040-0086
Approval expires 5-31-92

VII. Discharge information *(Continued from page 3 of Form 2F)*

Part A – You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number *(if available)*	Maximum Values *(include units)*		Average Values *(include units)*		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
Oil and Grease	<5 mg/L	N/A			1	
Biological Oxygen Demand (BOD5)	5.1 mg/L				1	
Chemical Oxygen Demand (COD)	263 mg/L				1	
Total Suspended Solids (TSS)	16.8 mg/L				1	
Total Nitrogen	1.05 mg/L				1	
Total Phosphorus	0.31 mg/L				1	
pH	Minimum 7.7	Maximum	Minimum	Maximum	1	

Part B – List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number *(if available)*	Maximum Values *(include units)*		Average Values *(include units)*		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
TSS	16.8 mg/L				1	
TPH	0.5 mg/L				1	
PH	7.7				1	
Disolved Copper	0.0050 mg/L				1	
Dissolved Zinc	0.253 mg/L				1	

Continue on Reverse

Continued from the Front

Part C - List each pollutant shown in Table 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number *(if available)*	Maximum Values *(include units)*		Average Values *(include units)*		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
Nitrate-Ni	0.22 mg/L				1	
Oil/Grease	<5 mg/L				1	
Phosphorus	0.31 mg/L				1	
Copper	0.0050 mg/L				1	
Zinc	0.253 mg/L				1	

Part D – Provide data for the storm event(s) which resulted in the maximum values for the flow weighted composite sample.

1. Date of Storm Event	2. Duration of Storm Event *(in minutes)*	3. Total rainfall during storm event *(in inches)*	4. Number of hours between beginning of storm measured and end of previous measurable rain event	5. Maximum flow rate during rain event *(gallons/minute or specify units)*	6. Total flow from rain event *(gallons or specify units)*
Sample date 5/8/13 and 6/4/13					

7. Provide a description of the method of flow measurement or estimate.

Sample obtained from collection tank connected to stormwater drainage piping.

Outfall 003

EPA ID Number (*copy from Item 1 of Form 1*)

Form Approved. OMB No. 2040-0086
Approval expires 5-31-92

VII. Discharge information *(Continued from page 3 of Form 2F)*

Part A – You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number *(if available)*	Maximum Values *(include units)*		Average Values *(include units)*		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
Oil and Grease	<5 mg/L	N/A			1	
Biological Oxygen Demand (BOD5)	3.0 mg/L				1	
Chemical Oxygen Demand (COD)	153 mg/L				1	
Total Suspended Solids (TSS)	1.2 mg/L				1	
Total Nitrogen	<0.5 mg/L				1	
Total Phosphorus	0.07 mg/L				1	
pH	Minimum 7.8	Maximum	Minimum	Maximum	1	

Part B – List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number *(if available)*	Maximum Values *(include units)*		Average Values *(include units)*		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
TSS	1.2 mg/L				1	
TPH	0.1 mg/L				1	
PH	7.8				1	
Dis Copper	0.0081 mg/L				1	
Dissolved Zinc	0.0477 mg/L				1	

Continue on Reverse

Continued from the Front

Part C - List each pollutant shown in Table 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
Nitrate-Ni	0.12 mg/L					
Oil/Grease	<5 mg/L					
Phosphorus	0.07 mg/L					
Copper	0.0081 mg/L					
Zinc	0.0477 mg/L					

Part D – Provide data for the storm event(s) which resulted in the maximum values for the flow weighted composite sample.

1. Date of Storm Event	2. Duration of Storm Event (in minutes)	3. Total rainfall during storm event (in inches)	4. Number of hours between beginning of storm measured and end of previous measurable rain event	5. Maximum flow rate during rain event (gallons/minute or specify units)	6. Total flow from rain event (gallons or specify units)
5/8/13 and 6/4/13					

7. Provide a description of the method of flow measurement or estimate.

Sample obtained from an example saltwater evaporation pond at the Smithfield AHQ.

ATTACHMENT IV

VPDES PERMIT APPLICATION

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VPDES Permit Application Addendum

1. **Entity to whom the permit is to be issued:** Virginia Department of Transportation

Who will be legally responsible for the wastewater treatment facilities and compliance with the permit? This may or may not be the facility or property owner.

2. **Is this facility located within city or town boundaries?** Yes ☒ No ☐ Newport News

3. **Provide the tax map parcel number for the land where the discharge is located.** N/A James River see figures

4. **For the facility to be covered by this permit, how many acres will be disturbed during the next five years due to new construction activities?** N/A

5. **What is the design average effluent flow of this facility?** See Form 2C MGD

For industrial facilities, provide the max. 30-day average production level, include units:

N/A

In addition to the design flow or production level, should the permit be written with limits for any other discharge flow tiers or production levels? Yes ☐ No ☒

If "Yes", please identify the other flow tiers (in MGD) or production levels:

Please consider the following questions for both the flow tiers and the production levels (if applicable): Do you plan to expand operations during the next five years? Is your facility's design flow considerably greater than your current flow?

6. **Nature of operations generating wastewater:**

See Form 2C

0 % of flow from domestic connections/sources

Number of private residences to be served by the treatment works: _____

0 % of flow from non-domestic connections/sources

7. **Mode of discharge:** ☐ Continuous ☒ Intermittent ☐ Seasonal

Describe frequency and duration of intermittent or seasonal discharges:

See Form 2C

8. **Identify the characteristics of the receiving stream at the point just above the facility's discharge point:**

X Permanent stream, never dry

___ Intermittent stream, usually flowing, sometimes dry

___ Ephemeral stream, wet-weather flow, often dry

___ Effluent-dependent stream, usually or always dry without effluent flow

___ Lake or pond at or below the discharge point

___ Other: _____

9. **Approval Date(s):**

O & M Manual 3/13/13 **Sludge/Solids Management Plan** 3/13/13

Have there been any changes in your operations or procedures since the above approval dates? Yes ☐ No ☒

ATTACHMENT V

FIGURES

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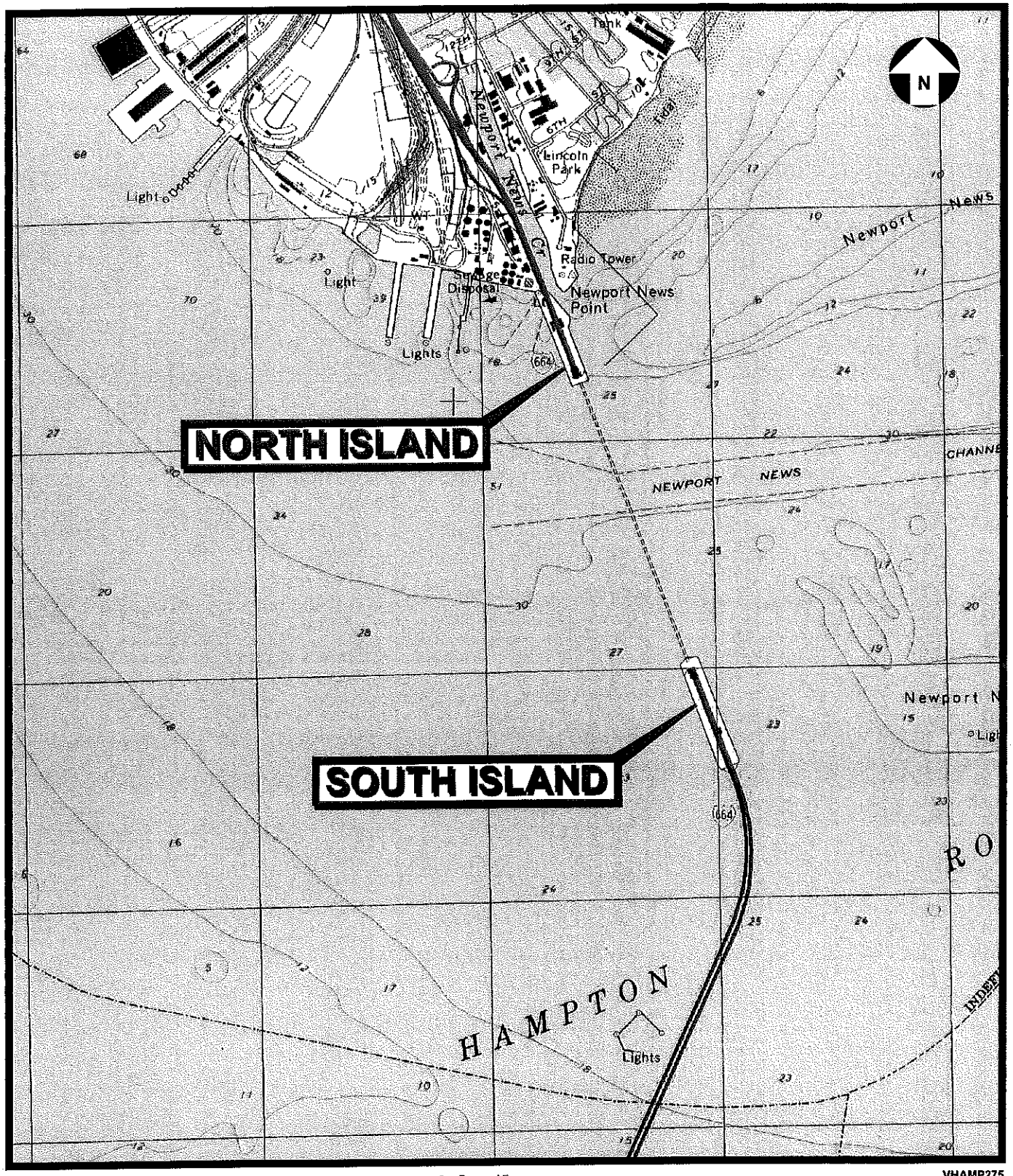

USGS 7.5' NEWPORT NEWS S., VA QUADRANGLE - 1994
CONTOUR INTERVAL=5'

VHAMP275
06/21/2013

Prepared For:

VPDES Permit Renewal
Newport News, Virginia

2,000' 0 2,000'

SCALE 1:24,000

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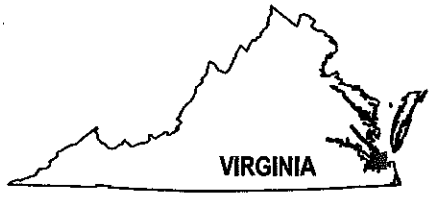
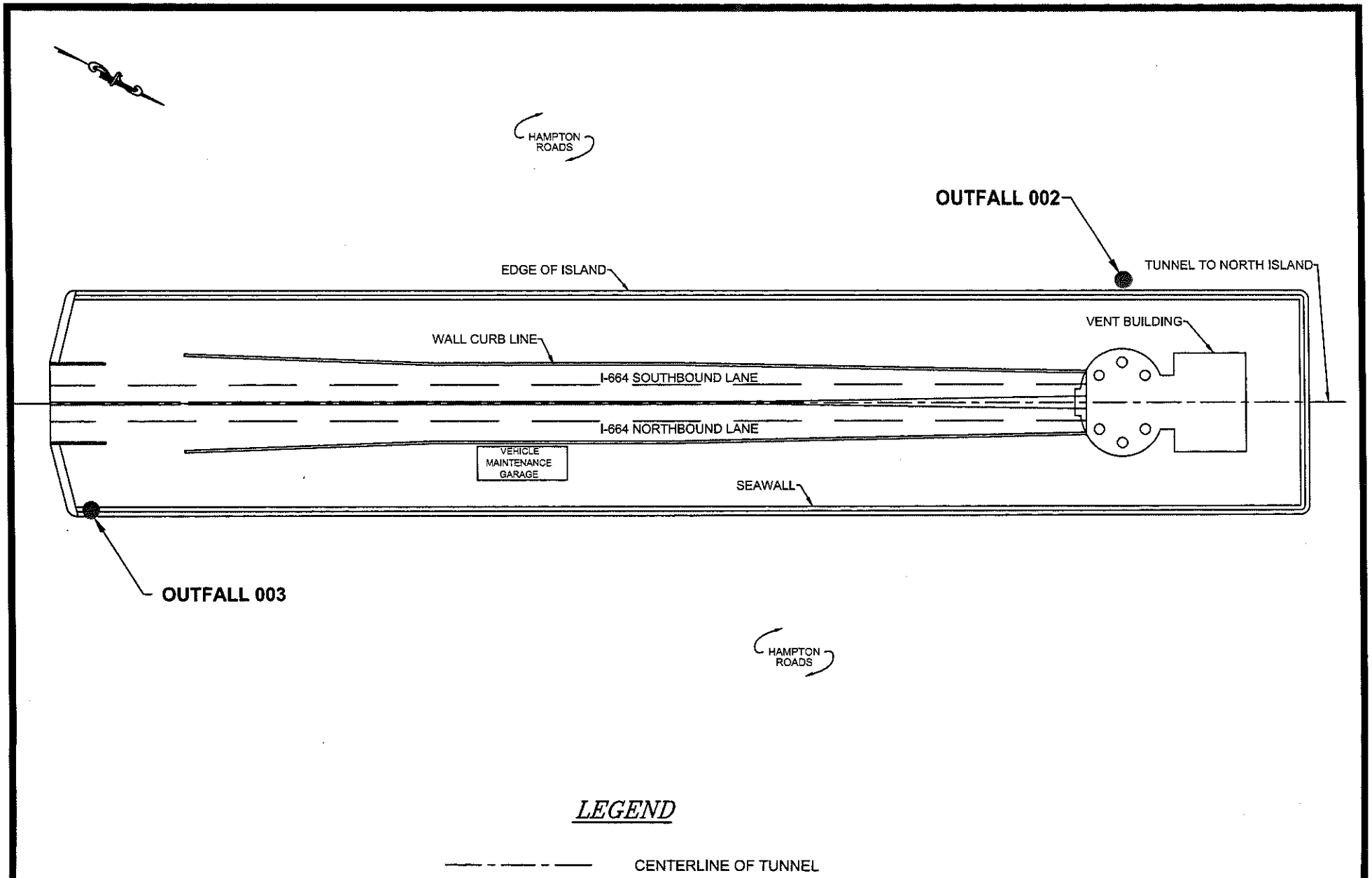
ASHLAND, VA.

Figure 1 - Vicinity





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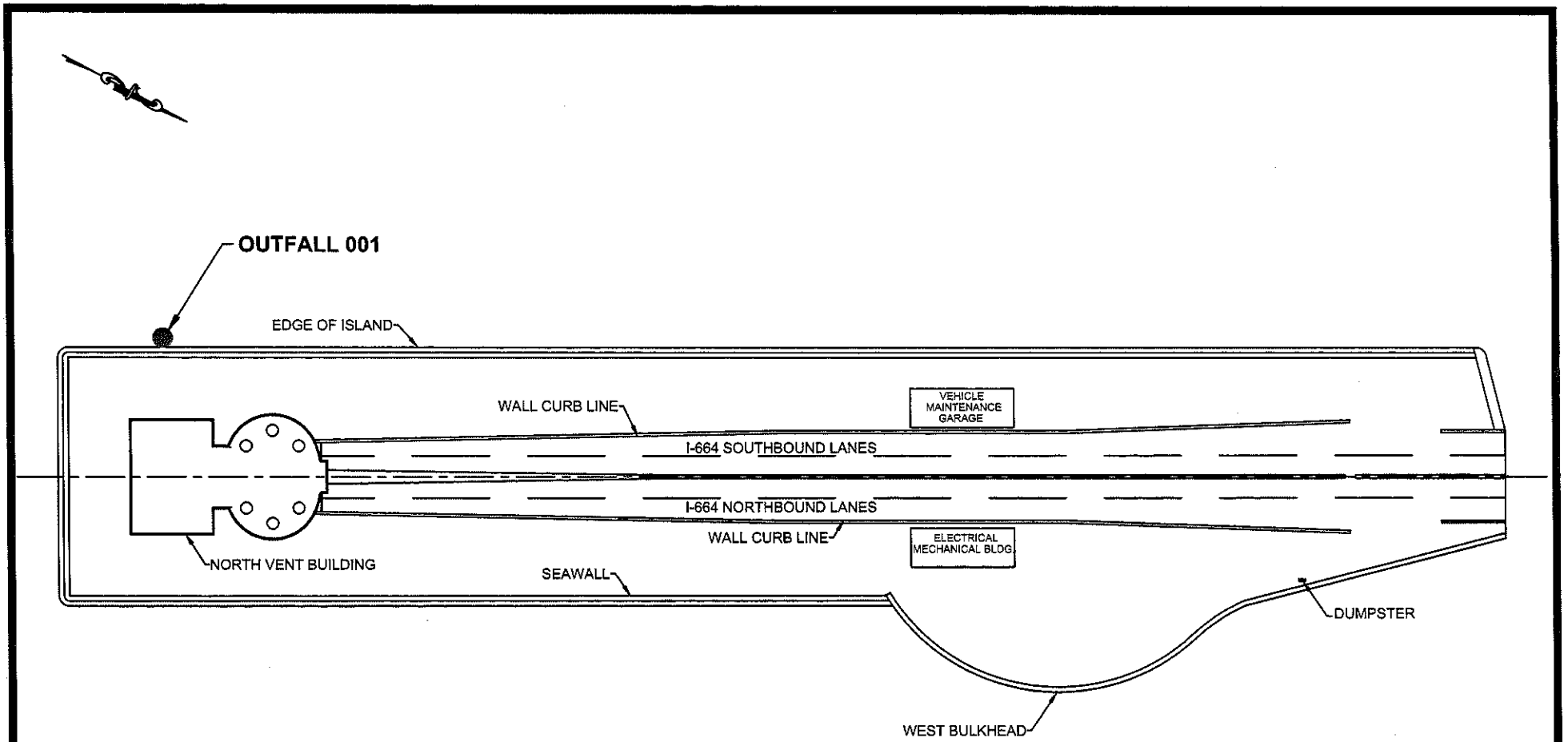
Ashland, VA, USA

Drawn:	DES
Checked:	JTM
Date:	06/21/2013
Scale:	NTS
Project No.:	VHAMP275
File No.	VHAMP275.dwg

VDOT

MONITOR MERRIMAC MEMORIAL BRIDGE TUNNEL
NEWPORT NEWS, VIRGINIA

Figure 2
General Site Map
Showing South Island



LEGEND

CENTERLINE OF TUNNEL

Cardno MM&A
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Ashland, VA, USA

Drawn:	DES
Checked:	JTM
Date:	06/21/2013
Scale:	NTS
Project No.:	VHAMP275
File No.	VHAMP275.dwg

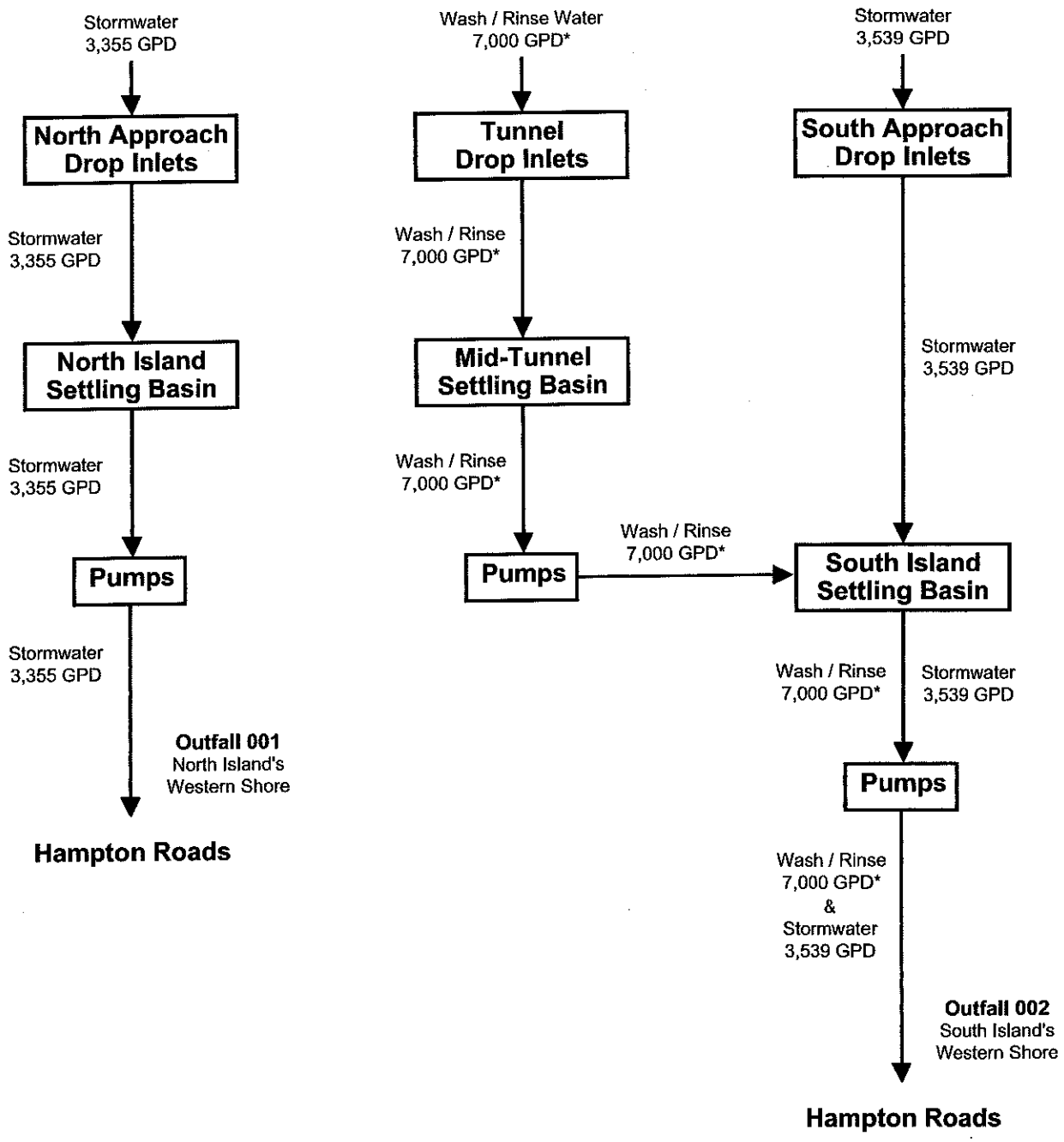
VDOT

MONITOR MERRIMAC MEMORIAL BRIDGE TUNNEL
NEWPORT NEWS, VIRGINIA

Figure 3
General Site Map
Showing North Island

Figure 4

I-664 Monitor-Merrimac Memorial Bridge Tunnel Outfalls 001 and 002 Effluent Flow Charts



*Intermittent Activity

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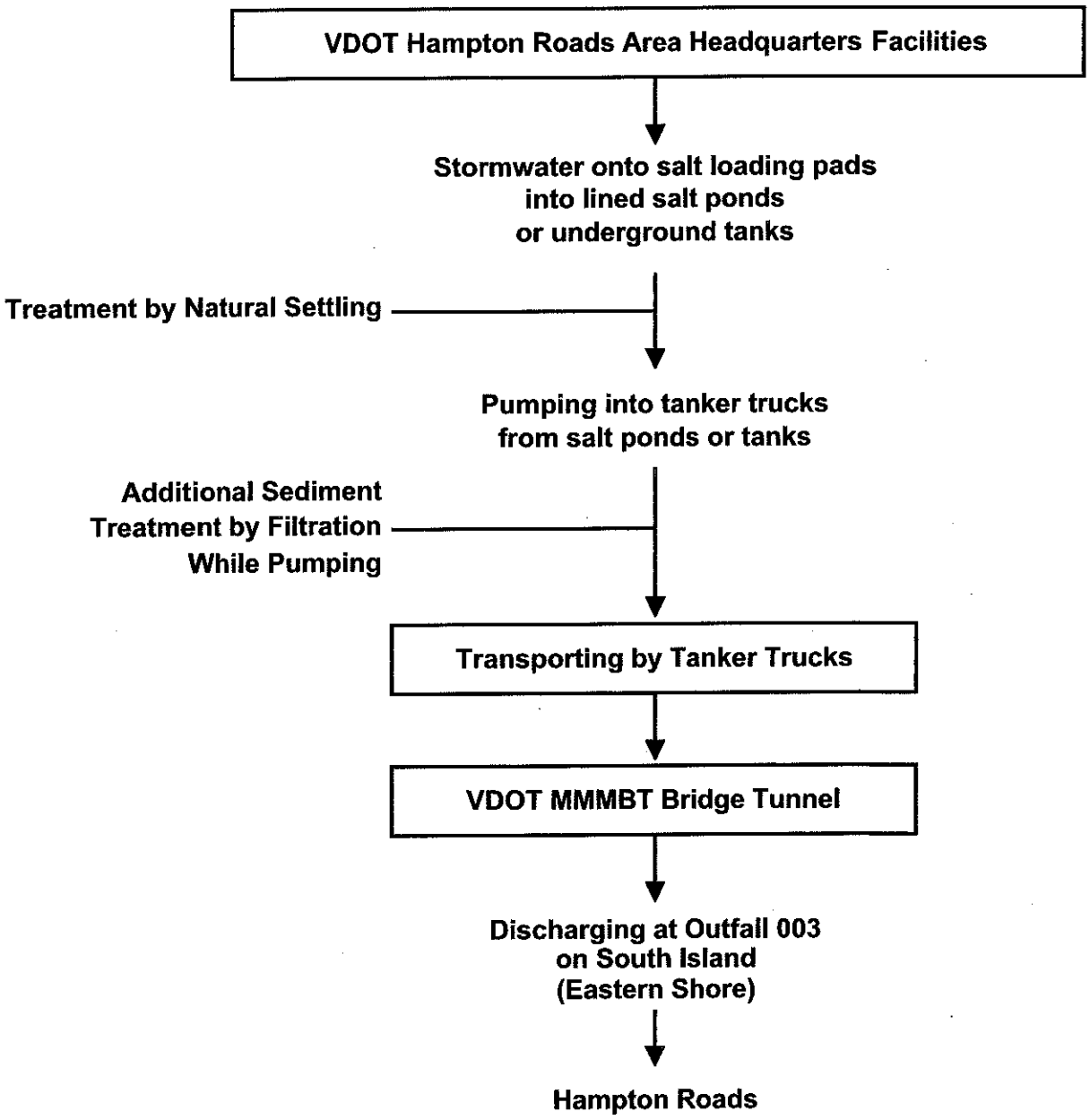
Figure 5

I-664 Monitor-Merrimac Memorial Bridge Tunnel Outfall 003 Effluent Flow Chart



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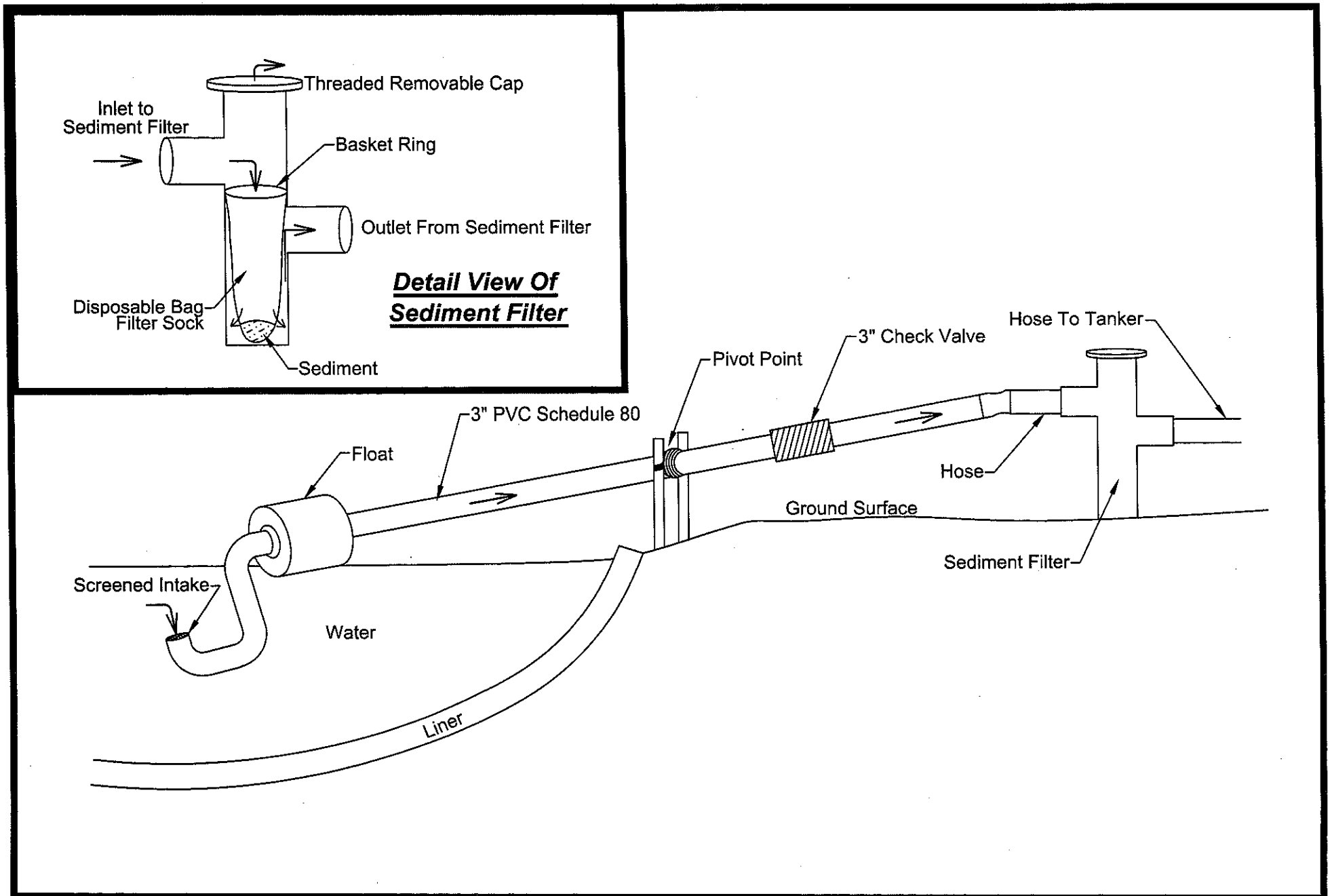

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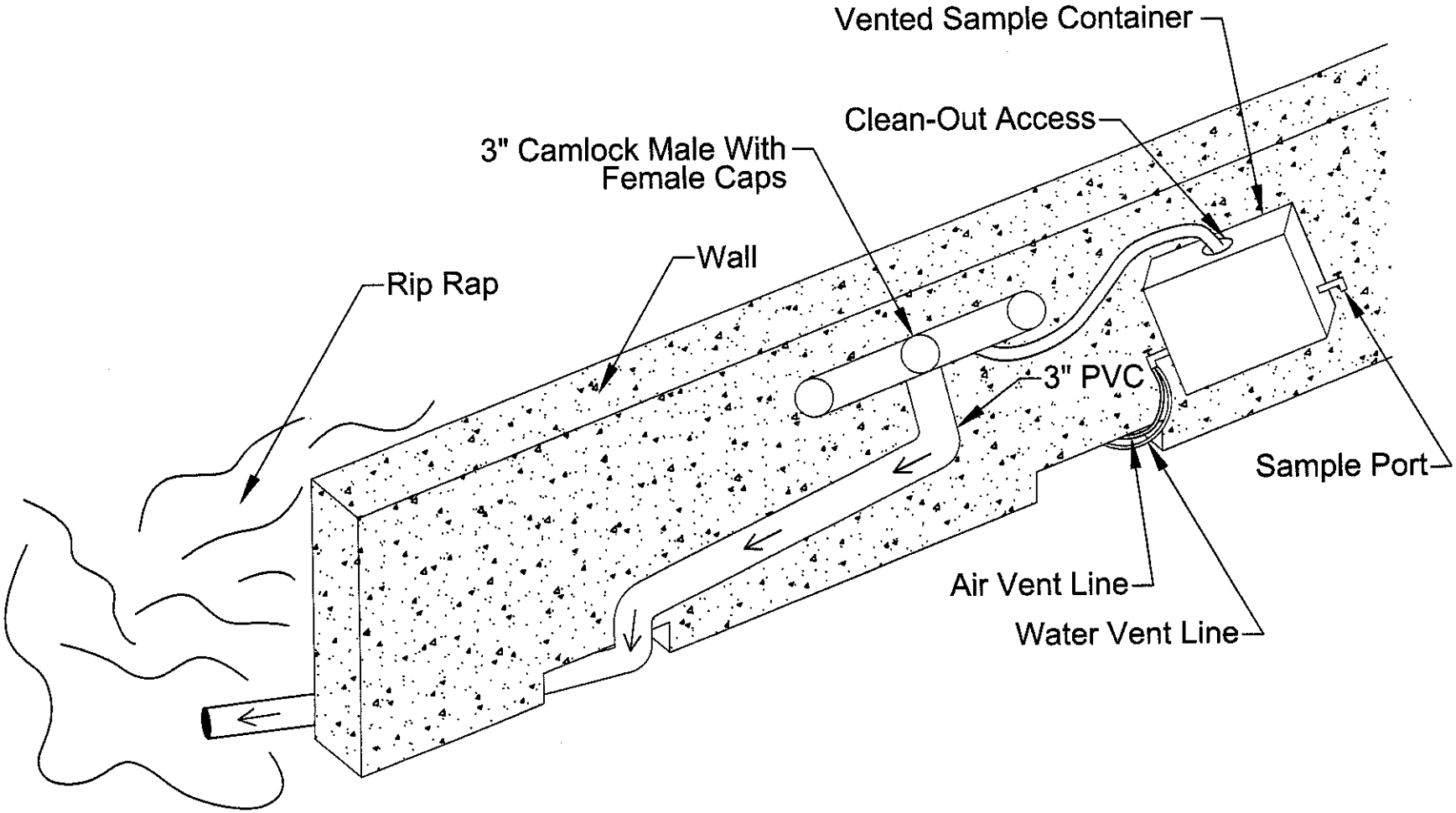
Checked:	JTM
Date:	06/21/2013
Scale:	NTS
Project No.:	VHAMP275
File No.	VHAMP275.dwg

VDOT

MONITOR MERRIMAC MEMORIAL BRIDGE TUNNEL
NEWPORT NEWS, VIRGINIA

Figure 6
Pond Water Intake



Cardno MM&A
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Ashland, VA, USA

Drawn:	JE
Checked:	JTM
Date:	06/21/2013
Scale:	NTS
Project No.:	VHAMP275
File No.	VHAMP275.dwg

VDOT

MONITOR MERRIMAC MEMORIAL BRIDGE TUNNEL
NEWPORT NEWS, VIRGINIA

VMMT

Figure 7

MMMBT Discharge
Outfall 003

ATTACHMENT VI

LABORATORY RESULTS

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AIR WATER SOIL LABORATORIES, INC.

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Certificate of Analysis

Final Report

Laboratory Order ID 13E0144

Client Name:	Cardno MM&A-Ashland 10988 Richardson Road Ashland, VA 23005	Date Received:	May 8, 2013 14:10
		Date Issued:	May 16, 2013 12:02
		Project Number:	VHAMP267
Submitted To:	James Martin	Purchase Order:	
Client Site I.D.:	VPDES-MMMBT		

Enclosed are the results of analyses for samples received by the laboratory on 05/08/2013 14:10. If you have any questions concerning this report, please feel free to contact the laboratory.

Sincerely,

Ted Soyars

Ted Soyars
Laboratory Manager

End Notes:

The test results listed in this report relate only to the samples submitted to the laboratory and as received by the Laboratory.

Unless otherwise noted, the test results for solid materials are calculated on a wet weight basis. Analyses for pH, dissolved oxygen, temperature, residual chlorine and sulfite that are performed in the laboratory do not meet NELAC requirements due to extremely short holding times. These analyses should be performed in the field. The results of field analyses performed by the Sampler included in the Certificate of Analysis are done so at the client's request and are not included in the laboratory's fields of certification nor have they been audited for adherence to a reference method or procedure.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise specified. For a complete list of the Laboratory's NELAC certified parameters please contact customer service.

This report shall not be reproduced except in full without the expressed and written approval of an authorized representative of Air Water & Soil Laboratories, Inc.

ACCREDITED IN ACCORDANCE WITH
Commonwealth of Virginia, DCLS
Accreditation # 460021

CERTIFIED SWaM Small, Women and Minority-Owned
Supplier Diversity Strengthens the Commonwealth
by the Virginia Department of Minority Business Enterprise

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Submitted To:	James Martin	Project Number:	VHAMP267
Client Site I.D.:	VPDES-MMMBT	Purchase Order:	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MMBT001	13E0144-01	Waste Water	05/08/2013 09:36	05/08/2013 14:10
MMBT002	13E0144-02	Waste Water	05/08/2013 09:55	05/08/2013 14:10
MMBT003	13E0144-03	Waste Water	05/08/2013 10:20	05/08/2013 14:10

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Client Site I.D.:	VPDES-MMMBT	Purchase Order:	

Analytical Results

Sample I.D. MMBT001 **Laboratory Sample ID:** 13E0144-01

Date/Time Sampled: 05/08/2013 09:36

Parameter	Method	Result	Qual	Reporting Limit	Sample Prep Date/Time	Analysis Date/Time	Analyst
Metals (Dissolved) by EPA 200 Series Methods							
Copper	EPA200.9/R2.2	**0.0071 mg/L**		0.0030	05/10/2013 14:05	05/13/2013 12:33	CGT
Zinc	EPA200.7/R4.4	**0.670 mg/L**		0.0100	05/10/2013 14:05	05/13/2013 14:25	JPV
Volatile Petroleum Hydrocarbons by GC							
TPH-Volatiles (GRO)	SW8015C	<0.1 mg/L		0.1	05/14/2013 13:15	05/14/2013 13:15	DMB
Semivolatile Petroleum Hydrocarbons by GC							
TPH-Semi-Volatiles (DRO)	SW8015C	<0.5 mg/L		0.5	05/13/2013 14:13	05/13/2013 18:42	JHV
Surrogate: Pentacosane	*79.5 %*	*40-160*			05/13/2013 14:13	05/13/2013 18:42	JHV
Wet Chemistry Analysis							
TSS	SM18/2540D	**7.7 mg/L**		1.0	05/14/2013 09:30	05/14/2013 09:30	RAC

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Client Site I.D.:	VPDES-MMMBT	Purchase Order:	

Analytical Results

Sample I.D. MMBT002 **Laboratory Sample ID:** 13E0144-02

Date/Time Sampled: 05/08/2013 09:55

Parameter	Method	Result	Qual	Reporting Limit	Sample Prep Date/Time	Analysis Date/Time	Analyst
Metals (Dissolved) by EPA 200 Series Methods							
Copper	EPA200.9/R2.2	**0.0050 mg/L**		0.0030	05/10/2013 14:05	05/13/2013 12:38	CGT
Zinc	EPA200.7/R4.4	**0.253 mg/L**		0.0100	05/10/2013 14:05	05/13/2013 14:29	JPV
Volatile Petroleum Hydrocarbons by GC							
TPH-Volatiles (GRO)	SW8015C	<0.1 mg/L		0.1	05/14/2013 13:37	05/14/2013 13:37	DMB
Semivolatile Petroleum Hydrocarbons by GC							
TPH-Semi-Volatiles (DRO)	SW8015C	0.5 mg/L		0.5	05/13/2013 14:13	05/13/2013 19:09	JHV
Surrogate: Pentacosane	*80.1 %*	*40-160*			05/13/2013 14:13	05/13/2013 19:09	JHV
Wet Chemistry Analysis							
TSS	SM18/2540D	**16.8 mg/L**		1.0	05/14/2013 09:30	05/14/2013 09:30	RAC

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Client Site I.D.:	VPDES-MMMBT	Purchase Order:	

Analytical Results

Sample I.D. MMBT003 **Laboratory Sample ID:** 13E0144-03

Date/Time Sampled: 05/08/2013 10:20

Parameter	Method	Result	Qual	Reporting Limit	Sample Prep Date/Time	Analysis Date/Time	Analyst
Metals (Dissolved) by EPA 200 Series Methods							
Copper	EPA200.9/R2.2	**0.0081 mg/L**		0.0030	05/10/2013 14:05	05/13/2013 12:43	CGT
Zinc	EPA200.7/R4.4	**0.0477 mg/L**		0.0100	05/10/2013 14:05	05/13/2013 14:32	JPV
Volatile Petroleum Hydrocarbons by GC							
TPH-Volatiles (GRO)	SW8015C	**0.1 mg/L**		0.1	05/14/2013 14:00	05/14/2013 14:00	DMB
Semivolatile Petroleum Hydrocarbons by GC							
TPH-Semi-Volatiles (DRO)	SW8015C	<0.5 mg/L		0.5	05/13/2013 14:13	05/13/2013 19:35	JHV
Surrogate: Pentacosane	*76.0 %*	*40-160*			05/13/2013 14:13	05/13/2013 19:35	JHV
Wet Chemistry Analysis							
TDS	SM18/2540C	**4640 mg/L**		10	05/13/2013 09:55	05/13/2013 09:55	HWT
TSS	SM18/2540D	**1.2 mg/L**		1.0	05/14/2013 09:30	05/14/2013 09:30	RAC

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Client Site I.D.:	VPDES-MMMBT	Purchase Order:	

Summary of Analytical QC Batches

QC Batch ID	Method	Sample List
BWE0236	EPA200.7/R4.4	13E0144-01,13E0144-02,13E0144-03
BWE0237	EPA200.9/R2.2	13E0144-01,13E0144-02,13E0144-03
BWE0244	SM18/2540C	13E0144-03
BWE0250	SW8015C	13E0144-01,13E0144-02,13E0144-03
BWE0275	SW8015C	13E0144-01,13E0144-02,13E0144-03
BWE0297	SM18/2540D	13E0144-01,13E0144-02,13E0144-03

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Client Site I.D.:	VPDES-MMMBT	Purchase Order:	

Metals (Dissolved) by EPA 200 Series Methods - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BWE0236 - EPA200.2/R2.8										
Blank (BWE0236-BLK1)				Prepared: 05/10/2013 Analyzed: 05/13/2013						
Zinc	<0.0100 mg/L	0.0100	mg/L							
LCS (BWE0236-BS1)				Prepared: 05/10/2013 Analyzed: 05/13/2013						
Zinc	0.538 mg/L	0.0100	mg/L	0.500		108	80-120			
LCS Dup (BWE0236-BSD1)				Prepared: 05/10/2013 Analyzed: 05/13/2013						
Zinc	0.539 mg/L	0.0100	mg/L	0.500		108	80-120	0.187	20	
Matrix Spike (BWE0236-MS1)		**Source: 13E0129-15**		Prepared: 05/10/2013 Analyzed: 05/13/2013						
Zinc	0.551 mg/L	0.0100	mg/L	0.500	<0.0100 mg/L	110	75-125			
Matrix Spike (BWE0236-MS2)		**Source: 13E0144-03**		Prepared: 05/10/2013 Analyzed: 05/13/2013						
Zinc	0.598 mg/L	0.0100	mg/L	0.500	0.0477 mg/L	110	75-125			
Matrix Spike Dup (BWE0236-MSD1)		**Source: 13E0129-15**		Prepared: 05/10/2013 Analyzed: 05/13/2013						
Zinc	0.541 mg/L	0.0100	mg/L	0.500	<0.0100 mg/L	108	75-125	1.75	20	
Matrix Spike Dup (BWE0236-MSD2)		**Source: 13E0144-03**		Prepared: 05/10/2013 Analyzed: 05/13/2013						
Zinc	0.606 mg/L	0.0100	mg/L	0.500	0.0477 mg/L	112	75-125	1.34	20	
Batch BWE0237 - EPA200.9/R2.2										
Blank (BWE0237-BLK1)				Prepared: 05/10/2013 Analyzed: 05/13/2013						
Copper	<0.0030 mg/L	0.0030	mg/L							
LCS (BWE0237-BS1)				Prepared: 05/10/2013 Analyzed: 05/13/2013						
Copper	0.0207 mg/L	0.0030	mg/L	0.0200		103	85-115			

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Client Site I.D.:	VPDES-MMMBT	Purchase Order:	

Metals (Dissolved) by EPA 200 Series Methods - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BWE0237 - EPA200.9/R2.2										
LCS Dup (BWE0237-BSD1)				Prepared: 05/10/2013 Analyzed: 05/13/2013						
Copper	0.0209 mg/L	0.0030	mg/L	0.0200		104	85-115	0.903	20	
Matrix Spike (BWE0237-MS1)		**Source: 13E0144-03**		Prepared: 05/10/2013 Analyzed: 05/13/2013						
Copper	0.0268 mg/L	0.0030	mg/L	0.0200	0.0081 mg/L	93.3	70-130			
Matrix Spike Dup (BWE0237-MSD1)		**Source: 13E0144-03**		Prepared: 05/10/2013 Analyzed: 05/13/2013						
Copper	0.0283 mg/L	0.0030	mg/L	0.0200	0.0081 mg/L	101	70-130	5.67	20	

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Volatile Petroleum Hydrocarbons by GC - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BWE0275 - SW5030B										
Blank (BWE0275-BLK1)				Prepared & Analyzed: 05/14/2013						
TPH-Volatiles (GRO)	<0.1 mg/L	0.1	mg/L							
Surrogate: 2,5-Dibromotoluene [2C]	*100*		ug/L	*100*		*100*	*80-120*			
LCS (BWE0275-BS1)				Prepared & Analyzed: 05/14/2013						
TPH-Volatiles (GRO)	1.0 mg/L	0.1	mg/L	1.00		103	70-130			
Surrogate: 2,5-Dibromotoluene [2C]	*94.0*		ug/L	*100*		*94.0*	*80-120*			
LCS Dup (BWE0275-BSD1)				Prepared & Analyzed: 05/14/2013						
TPH-Volatiles (GRO)	1.0 mg/L	0.1	mg/L	1.00		101	70-130	1.59	20	
Surrogate: 2,5-Dibromotoluene [2C]	*99.7*		ug/L	*100*		*99.7*	*80-120*			
Matrix Spike (BWE0275-MS1)		**Source: 13E0086-01**		Prepared & Analyzed: 05/14/2013						
TPH-Volatiles (GRO)	1.0 mg/L	0.1	mg/L	1.00	<0.1 mg/L	100	70-130			
Surrogate: 2,5-Dibromotoluene [2C]	*94.0*		ug/L	*100*		*94.0*	*80-120*			
Matrix Spike Dup (BWE0275-MSD1)		**Source: 13E0086-01**		Prepared & Analyzed: 05/14/2013						
TPH-Volatiles (GRO)	1.0 mg/L	0.1	mg/L	1.00	<0.1 mg/L	102	70-130	1.14	20	
Surrogate: 2,5-Dibromotoluene [2C]	*93.2*		ug/L	*100*		*93.2*	*80-120*			

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Client Site I.D.:	VPDES-MMMBT	Purchase Order:	

Semivolatile Petroleum Hydrocarbons by GC - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BWE0250 - SW3510C										
Blank (BWE0250-BLK1)				Prepared & Analyzed: 05/13/2013						
TPH-Semi-Volatiles (DRO)	<0.5 mg/L	0.5	mg/L							
Surrogate: Pentacosane	*0.216*		mg/L	*0.250*		*86.6*	*40-160*			
LCS (BWE0250-BS1)				Prepared & Analyzed: 05/13/2013						
TPH-Semi-Volatiles (DRO)	4.7 mg/L	0.5	mg/L	5.00		94.1	40-160			
Surrogate: Pentacosane	*0.246*		mg/L	*0.250*		*98.5*	*40-160*			
LCS Dup (BWE0250-BSD1)				Prepared & Analyzed: 05/13/2013						
TPH-Semi-Volatiles (DRO)	4.1 mg/L	0.5	mg/L	5.00		82.7	40-160	12.9	20	
Surrogate: Pentacosane	*0.211*		mg/L	*0.250*		*84.5*	*40-160*			
Matrix Spike (BWE0250-MS1)		**Source: 13E0193-01**		Prepared: 05/13/2013 Analyzed: 05/14/2013						
TPH-Semi-Volatiles (DRO)	81.7 mg/L	5.0	mg/L	5.00	103 mg/L	-433	40-160			M
Surrogate: Pentacosane	*0.151*		mg/L	*0.250*		*60.6*	*40-160*			
Matrix Spike Dup (BWE0250-MSD1)		**Source: 13E0193-01**		Prepared: 05/13/2013 Analyzed: 05/14/2013						
TPH-Semi-Volatiles (DRO)	73.2 mg/L	5.0	mg/L	5.00	103 mg/L	-602	40-160	10.9	20	M
Surrogate: Pentacosane	*0.144*		mg/L	*0.250*		*57.7*	*40-160*			

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Wet Chemistry Analysis - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BWE0244 - No Prep Wet Chem										
Blank (BWE0244-BLK1)				Prepared & Analyzed: 05/13/2013						
TDS	<10 mg/L	10	mg/L							
LCS (BWE0244-BS1)				Prepared & Analyzed: 05/13/2013						
TDS	103 mg/L	10	mg/L	100		103	80-120			
LCS Dup (BWE0244-BSD1)				Prepared & Analyzed: 05/13/2013						
TDS	107 mg/L	10	mg/L	100		107	80-120	3.81	20	
Duplicate (BWE0244-DUP1)		Source: 13E0144-03		Prepared & Analyzed: 05/13/2013						
TDS	4650 mg/L	10	mg/L		4640 mg/L			0.129	20	
Batch BWE0297 - No Prep Wet Chem										
Blank (BWE0297-BLK1)				Prepared & Analyzed: 05/14/2013						
TSS	<1.0 mg/L	1.0	mg/L							
LCS (BWE0297-BS1)				Prepared & Analyzed: 05/14/2013						
TSS	92.0 mg/L		mg/L	100		92.0	80-120			
LCS Dup (BWE0297-BSD1)				Prepared & Analyzed: 05/14/2013						
TSS	94.0 mg/L		mg/L	100		94.0	80-120	2.15	10	
Duplicate (BWE0297-DUP1)		Source: 13E0103-22		Prepared & Analyzed: 05/14/2013						
TSS	229 mg/L	1.0	mg/L		232 mg/L			1.30	10	

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Certificate of Analysis

Final Report

Laboratory Order ID 13E0144

Client Name:	Cardno MM&A-Ashland 10988 Richardson Road Ashland VA, 23005	Date Received: Date Issued:	May 8, 2013 14:10 May 16, 2013 12:02
Submitted To:	James Martin	Project Number:	VHAMP267
Client Site I.D.:	VPDES-MMMBT	Purchase Order:	

Certified Analyses included in this Report

Analyte	Certifications
EPA200.7/R4.4 in Non-Potable Water	
Zinc	VELAP,NC
EPA200.9/R2.2 in Non-Potable Water	
Copper	VELAP,NC
SM18/2540C in Non-Potable Water	
TDS	VELAP
SM18/2540D in Non-Potable Water	
TSS	VELAP,NC
SW8015C in Non-Potable Water	
TPH-Semi-Volatiles (DRO)	VELAP,NC,WVDEP
TPH-Volatiles (GRO)	VELAP,NC,WVDEP

Code	Description	Number	Expires
MdDOE	Maryland DE Drinking Water	341	12/31/2013
NC	North Carolina DENR	495	12/13/2013
VELAP	NELAC-Virginia	460021	06/15/2013
WVDEP	West Virginia DEP	350	11/01/2013

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Client Site I.D.:	VPDES-MMMBT	Purchase Order:	

Qualifiers and Definitions

M	Matrix spike recovery is outside established acceptance limits
RPD	Relative Percent Difference
Qual	Qualifers
-RE	Denotes sample was re-analyzed

CHAIN OF CUSTODY

Cardno MM&A

10988 Richardson Road, Ashland, VA 23005 / TEL: (804) 798-6525 • FAX: (804) 798-5907

Sample Collection Information

Client: **VDOT**

Project: **VPDES - MMMBT Tunnels - May 2013**

Project No. **VHAMP267**

Sampler: David Sabean

Sampler Signature:

Date of Shipment: 5/8/13

Ship. Method: On Ice

Analysis Requested

Turnaround Requirements

X Regular

Rush

Sample Log and Analysis Request

Sample ID	Date	Time	Matrix	Grab/Comp.	Number of Containers	TSS/2540D	TPH-DRO/8015C	TPH-GRO/8015C	Dissolved Zn/200.7	Dissolved Cu/200.9	TDS/2540C	Field pH / Time / Temp
MMBT001	5/8/13	0936	Water	Grab	5	X	X	X	X	X		7.5/0937/63
MMBT002	"	0955	Water	Grab	5	X	X	X	X	X		7.7/0956/63
MMBT003	"	1020	Water	Grab	6	X	X	X	X	X	X	7.8/1021/62

MMA **13E0144**

VDOT200

Recd: 05/08/2013 Due: 05/15/2013

v130325002

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time	Condition:
	5/8/13			
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Condition:
			5/8/13 1410	Cooler Temp 5.1 °C

NOTES: All samples preserved on ice to <6°C. Container Preservatives: TPH=HCL; Metals=HNO_3 to pH < 2 SU

Dissolved Metal Samples Field Filtered within 5-minutes of sample collection.

Field pH meter "Oakton pHTestr 30" w/automatic temp. compensation; Calibrated using pH solutions of 4, 7, and 10.

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Certificate of Analysis

Final Report

Laboratory Order ID 13F0082

Client Name:	Cardno MM&A-Ashland 10988 Richardson Road Ashland, VA 23005	Date Received:	June 5, 2013 15:25
		Date Issued:	June 12, 2013 17:11
		Project Number:	VHAMP275
Submitted To:	James Martin	Purchase Order:	
Client Site I.D.:	VPDES-MMMBT Tunnels - June 2013		

Enclosed are the results of analyses for samples received by the laboratory on 06/05/2013 15:25. If you have any questions concerning this report, please feel free to contact the laboratory.

Sincerely,

Ted Soyars

Ted Soyars
Laboratory Manager

End Notes:

The test results listed in this report relate only to the samples submitted to the laboratory and as received by the Laboratory.

Unless otherwise noted, the test results for solid materials are calculated on a wet weight basis. Analyses for pH, dissolved oxygen, temperature, residual chlorine and sulfite that are performed in the laboratory do not meet NELAC requirements due to extremely short holding times. These analyses should be performed in the field. The results of field analyses performed by the Sampler included in the Certificate of Analysis are done so at the client's request and are not included in the laboratory's fields of certification nor have they been audited for adherence to a reference method or procedure.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise specified. For a complete list of the Laboratory's NELAC certified parameters please contact customer service.

This report shall not be reproduced except in full without the expressed and written approval of an authorized representative of Air Water & Soil Laboratories, Inc.

ACCREDITED IN ACCORDANCE WITH
Commonwealth of Virginia, DCLS
Accreditation # 460021

CERTIFIED SWaM Small, Women and Minority-Owned
Supplier Diversity Strengthens the Commonwealth
by the Virginia Department of Minority Business Enterprise

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Client Name:	Cardno MM&A-Ashland 10988 Richardson Road Ashland VA, 23005	Date Received: Date Issued:	June 5, 2013 15:25 June 12, 2013 17:11
Submitted To:	James Martin	Project Number:	VHAMP275
Client Site I.D.:	VPDES-MMMBT Tunnels - June 2013	Purchase Order:	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MMBT001	13F0082-01	Waste Water	06/04/2013 11:22	06/05/2013 15:25
MMBT002	13F0082-02	Waste Water	06/04/2013 11:45	06/05/2013 15:25
MMBT003	13F0082-03	Waste Water	06/04/2013 12:15	06/05/2013 15:25

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Submitted To:	James Martin	Project Number:	VHAMP275
Client Site I.D.:	VPDES-MMMBT Tunnels - June 2013	Purchase Order:	

Analytical Results

Sample I.D. MMBT001 **Laboratory Sample ID:** 13F0082-01

Date/Time Sampled: 06/04/2013 11:22

Parameter	Method	Result	Qual	Reporting Limit	Sample Prep Date/Time	Analysis Date/Time	Analyst
Wet Chemistry Analysis							
Ammonia as N	EPA350.1/R2.0	**0.64 mg/L**		0.10	06/07/2013 13:14	06/07/2013 13:14	TLA
BOD	SM18/5210B	**3.8 mg/L**		2.0	06/05/2013 16:38	06/10/2013 13:32	RAC
COD	SM18/5220D	**49.8 mg/L**		10.0	06/10/2013 09:40	06/10/2013 09:40	RAC
Nitrate+Nitrite as N	SM18/4500-NO 3 F	**0.54 mg/L**		0.10	06/11/2013 12:43	06/11/2013 12:43	NMK
Oil and Grease	EPA1664A	<5.0 mg/L		5.0	06/12/2013 15:20	06/12/2013 15:20	NMK
Phosphorus as P	SM18/4500-P E	**0.23 mg/L**		0.01	06/11/2013 11:15	06/11/2013 11:15	RAC
TOC	SM18/5310C	**2.9 mg/L**		1.0	06/10/2013 10:40	06/10/2013 10:40	KEW

Analytical Results

Sample I.D. MMBT001 **Laboratory Sample ID:** 13F0082-01RE1

Date/Time Sampled: 06/04/2013 11:22

Parameter	Method	Result	Qual	Reporting Limit	Sample Prep Date/Time	Analysis Date/Time	Analyst
Wet Chemistry Analysis							
TKN as N	EPA351.2/R2.0	**1.46 mg/L**		0.50	06/10/2013 17:56	06/11/2013 12:48	TLA

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Client Site I.D.:	VPDES-MMMBT Tunnels - June 2013	Purchase Order:	

Analytical Results

Sample I.D. MMBT002 **Laboratory Sample ID:** 13F0082-02

Date/Time Sampled: 06/04/2013 11:45

Parameter	Method	Result	Qual	Reporting Limit	Sample Prep Date/Time	Analysis Date/Time	Analyst
Wet Chemistry Analysis							
Ammonia as N	EPA350.1/R2.0	**0.74 mg/L**		0.10	06/07/2013 13:16	06/07/2013 13:16	TLA
BOD	SM18/5210B	**5.1 mg/L**		2.0	06/05/2013 16:42	06/10/2013 13:32	RAC
COD	SM18/5220D	**263 mg/L**		10.0	06/10/2013 09:40	06/10/2013 09:40	RAC
Nitrate+Nitrite as N	SM18/4500-NO 3 F	**0.22 mg/L**		0.10	06/11/2013 12:52	06/11/2013 12:52	NMK
Oil and Grease	EPA1664A	<5.0 mg/L		5.0	06/12/2013 15:20	06/12/2013 15:20	NMK
Phosphorus as P	SM18/4500-P E	**0.31 mg/L**		0.01	06/11/2013 11:15	06/11/2013 11:15	RAC
TKN as N	EPA351.2/R2.0	**1.05 mg/L**		0.50	06/10/2013 17:56	06/11/2013 13:02	TLA
TOC	SM18/5310C	**6.2 mg/L**		1.0	06/10/2013 10:40	06/10/2013 10:40	KEW

Analytical Results

Sample I.D. MMBT003 **Laboratory Sample ID:** 13F0082-03

Date/Time Sampled: 06/04/2013 12:15

Parameter	Method	Result	Qual	Reporting Limit	Sample Prep Date/Time	Analysis Date/Time	Analyst
Ion Chromatography							
Chloride	EPA300.0/R2.1	**27100 mg/L**		10000	06/11/2013 14:05	06/11/2013 14:05	CL
Wet Chemistry Analysis							
BOD	SM18/5210B	**3.0 mg/L**		2.0	06/05/2013 16:46	06/10/2013 13:32	RAC
COD	SM18/5220D	**153 mg/L**		10.0	06/10/2013 09:40	06/10/2013 09:40	RAC
Nitrate+Nitrite as N	SM18/4500-NO 3 F	**0.12 mg/L**		0.10	06/11/2013 13:01	06/11/2013 13:01	NMK
Oil and Grease	EPA1664A	<5.0 mg/L		5.0	06/12/2013 15:20	06/12/2013 15:20	NMK
Phosphorus as P	SM18/4500-P E	**0.07 mg/L**		0.01	06/11/2013 11:15	06/11/2013 11:15	RAC
TKN as N	EPA351.2/R2.0	<0.50 mg/L		0.50	06/10/2013 17:56	06/11/2013 13:08	TLA
TOC	SM18/5310C	**7.4 mg/L**		1.0	06/10/2013 10:40	06/10/2013 10:40	KEW

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Client Name:	Cardno MM&A-Ashland 10988 Richardson Road Ashland VA, 23005	Date Received: Date Issued:	June 5, 2013 15:25 June 12, 2013 17:11
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Client Site I.D.:	VPDES-MMMBT Tunnels - June 2013	Purchase Order:	

Analytical Results

Sample I.D. MMBT003 **Laboratory Sample ID:** 13F0082-03RE1

Date/Time Sampled: 06/04/2013 12:15

Parameter	Method	Result	Qual	Reporting Limit	Sample Prep Date/Time	Analysis Date/Time	Analyst
Metals (Total) by EPA 200 Series Methods							
Sodium	EPA200.7/R4.4	**16300 mg/L**		200	06/06/2013 14:10	06/12/2013 15:01	JPV

Analytical Results

Sample I.D. MMBT003 **Laboratory Sample ID:** 13F0082-03RE3

Date/Time Sampled: 06/04/2013 12:15

Parameter	Method	Result	Qual	Reporting Limit	Sample Prep Date/Time	Analysis Date/Time	Analyst
Metals (Total) by EPA 200 Series Methods							
Calcium	EPA200.7/R4.4	**32.3 mg/L**		0.100	06/06/2013 14:10	06/07/2013 16:34	JPV
Magnesium	EPA200.7/R4.4	**2.55 mg/L**		0.0200	06/06/2013 14:10	06/07/2013 16:35	JPV

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Final Report

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Client Name:	Cardno MM&A-Ashland 10988 Richardson Road Ashland VA, 23005	Date Received: Date Issued:	June 5, 2013 15:25 June 12, 2013 17:11
Submitted To:	James Martin	Project Number:	VHAMP275
Client Site I.D.:	VPDES-MMMBT Tunnels - June 2013	Purchase Order:	

Summary of Analytical QC Batches

QC Batch ID	Method	Sample List
BWF0122	EPA200.7/R4.4	13F0082-03,13F0082-03RE1,13F0082-03RE2,13F0082-03RE3
BWF0134	EPA350.1/R2.0	13F0082-01,13F0082-02,13F0082-03
BWF0164	SM18/5310C	13F0082-01,13F0082-02,13F0082-03
BWF0174	SM18/5210B	13F0082-01,13F0082-02,13F0082-03
BWF0180	EPA351.2/R2.0	13F0082-01,13F0082-01RE1,13F0082-02,13F0082-02RE1,13F0082-03 ,13F0082-03RE1
BWF0184	SM18/5220D	13F0082-01,13F0082-02,13F0082-03
BWF0194	SM18/4500-NO3 F	13F0082-01,13F0082-01RE1,13F0082-02,13F0082-02RE1,13F0082-03 ,13F0082-03RE1
BWF0206	EPA300.0/R2.1	13F0082-03
BWF0225	EPA1664A	13F0082-01,13F0082-02,13F0082-03
BWF0239	SM18/4500-P E	13F0082-01,13F0082-02,13F0082-03

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Client Site I.D.:	VPDES-MMMBT Tunnels - June 2013	Purchase Order:	

Metals (Total) by EPA 200 Series Methods - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BWF0122 - EPA200.2/R2.8										
Blank (BWF0122-BLK1)				Prepared: 06/06/2013 Analyzed: 06/07/2013						
Calcium	<0.0500 mg/L	0.0500	mg/L							
Magnesium	<0.0100 mg/L	0.0100	mg/L							
Sodium	<0.20 mg/L	0.20	mg/L							
Blank (BWF0122-BLK3)				Prepared: 06/06/2013 Analyzed: 06/12/2013						
Sodium	<0.20 mg/L	0.20	mg/L							
LCS (BWF0122-BS1)				Prepared: 06/06/2013 Analyzed: 06/07/2013						
Calcium	0.495 mg/L	0.0500	mg/L	0.500		99.0	80-120			
Magnesium	0.499 mg/L	0.0100	mg/L	0.500		99.9	80-120			
LCS (BWF0122-BS3)				Prepared: 06/06/2013 Analyzed: 06/12/2013						
Sodium	5.29 mg/L	0.20	mg/L	5.00		106	80-120			
LCS Dup (BWF0122-BSD1)				Prepared: 06/06/2013 Analyzed: 06/07/2013						
Calcium	0.507 mg/L	0.0500	mg/L	0.500		101	80-120	2.46	20	
Magnesium	0.511 mg/L	0.0100	mg/L	0.500		102	80-120	2.23	20	
Sodium	<0.20 mg/L	0.20	mg/L	5.00			80-120		20	
LCS Dup (BWF0122-BSD3)				Prepared: 06/06/2013 Analyzed: 06/12/2013						
Sodium	5.28 mg/L	0.20	mg/L	5.00		106	80-120	0.256	20	
Matrix Spike (BWF0122-MS1)		**Source: 13F0082-03RE1**		Prepared: 06/06/2013 Analyzed: 06/07/2013						
Calcium	31.0 mg/L	0.0500	mg/L	0.500	29.6 mg/L	276	75-125			M, E
Magnesium	2.64 mg/L	0.0100	mg/L	0.500	2.22 mg/L	84.1	75-125			
Matrix Spike Dup (BWF0122-MSD1)		**Source: 13F0082-03RE1**		Prepared: 06/06/2013 Analyzed: 06/07/2013						
Calcium	30.1 mg/L	0.0500	mg/L	0.500	29.6 mg/L	104	75-125	2.81	20	E
Magnesium	2.59 mg/L	0.0100	mg/L	0.500	2.22 mg/L	74.8	75-125	1.79	20	M

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Client Name:	Cardno MM&A-Ashland 10988 Richardson Road Ashland VA, 23005	Date Received: Date Issued:	June 5, 2013 15:25 June 12, 2013 17:11
Submitted To:	James Martin	Project Number:	VHAMP275
Client Site I.D.:	VPDES-MMMBT Tunnels - June 2013	Purchase Order:	

Ion Chromatography - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BWF0206 - No Prep IC										
Matrix Spike (BWF0206-MS1)		**Source: 13F0113-02**		Prepared & Analyzed: 06/11/2013						
Chloride	41.8 mg/L	1.0	mg/L	25.0	16.5 mg/L	101	90-110			
Matrix Spike Dup (BWF0206-MSD1)		**Source: 13F0113-02**		Prepared & Analyzed: 06/11/2013						
Chloride	42.3 mg/L	1.0	mg/L	25.0	16.5 mg/L	103	90-110	1.09	20	

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Client Site I.D.:	VPDES-MMMBT Tunnels - June 2013	Purchase Order:	

Wet Chemistry Analysis - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BWF0134 - No Prep Wet Chem										
Blank (BWF0134-BLK1)				Prepared & Analyzed: 06/07/2013						
Ammonia as N	<0.10 mg/L	0.10	mg/L							
LCS (BWF0134-BS1)				Prepared & Analyzed: 06/07/2013						
Ammonia as N	1.99 mg/L	0.10	mg/L	2.00		99.6	90-110			
LCS Dup (BWF0134-BSD1)				Prepared & Analyzed: 06/07/2013						
Ammonia as N	2.00 mg/L	0.10	mg/L	2.00		99.8	90-110	0.301	20	
Matrix Spike (BWF0134-MS1)		Source: 13F0080-02		Prepared & Analyzed: 06/07/2013						
Ammonia as N	2.24 mg/L	0.10	mg/L	2.00	<0.10 mg/L	112	90-110			M
Matrix Spike Dup (BWF0134-MSD1)		Source: 13F0080-02		Prepared & Analyzed: 06/07/2013						
Ammonia as N	2.25 mg/L	0.10	mg/L	2.00	<0.10 mg/L	112	90-110	0.178	20	M
Batch BWF0164 - No Prep Halides										
Blank (BWF0164-BLK1)				Prepared & Analyzed: 06/10/2013						
TOC	<1.0 mg/L	1.0	mg/L							
LCS (BWF0164-BS1)				Prepared & Analyzed: 06/10/2013						
TOC	9.2 mg/L		mg/L	10.0		91.7	80-120			
LCS Dup (BWF0164-BSD1)				Prepared & Analyzed: 06/10/2013						
TOC	9.2 mg/L		mg/L	10.0		92.1	80-120	0.533	20	
Matrix Spike (BWF0164-MS1)		Source: 13F0082-01		Prepared & Analyzed: 06/10/2013						
TOC	8.0 mg/L	1.0	mg/L	10.5	2.9 mg/L	48.7	80-120			M

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Wet Chemistry Analysis - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BWF0164 - No Prep Halides										
Matrix Spike Dup (BWF0164-MSD1)		**Source: 13F0082-01**		Prepared & Analyzed: 06/10/2013						
TOC	14.5 mg/L	1.0	mg/L	10.5	2.9 mg/L	111	80-120	57.8	20	P
Batch BWF0174 - No Prep Wet Chem										
Blank (BWF0174-BLK1)				Prepared: 06/05/2013 Analyzed: 06/10/2013						
BOD	<2.0 mg/L	2.0	mg/L							
LCS (BWF0174-BS1)				Prepared: 06/05/2013 Analyzed: 06/10/2013						
BOD	175 mg/L	2.0	mg/L	198		88.4	84.6-115.4			
Duplicate (BWF0174-DUP1)		**Source: 13F0058-02**		Prepared: 06/05/2013 Analyzed: 06/10/2013						
BOD	3.9 mg/L	2.0	mg/L		3.9 mg/L			0.764	20	
Batch BWF0180 - No Prep Wet Chem										
Blank (BWF0180-BLK1)				Prepared: 06/10/2013 Analyzed: 06/11/2013						
TKN as N	<0.50 mg/L	0.50	mg/L							
LCS (BWF0180-BS1)				Prepared: 06/10/2013 Analyzed: 06/11/2013						
TKN as N	9.57 mg/L	0.50	mg/L	10.0		95.7	90-110			
LCS Dup (BWF0180-BSD1)				Prepared: 06/10/2013 Analyzed: 06/11/2013						
TKN as N	10.0 mg/L	0.50	mg/L	10.0		100	90-110	4.40	20	
Matrix Spike (BWF0180-MS1)		**Source: 13F0068-01**		Prepared: 06/10/2013 Analyzed: 06/11/2013						
TKN as N	10.4 mg/L	0.50	mg/L	10.0	0.98 mg/L	94.2	90-110			

AIR WATER & SOIL LABORATORIES, INC.

2109A North Hamilton Street ● Richmond, Virginia 23230 ● Tel: (804)-358-8295 Fax: (804)-358-8297

Certificate of Analysis

Final Report

Laboratory Order ID 13F0082

Client Name:	Cardno MM&A-Ashland 10988 Richardson Road Ashland VA, 23005	Date Received: Date Issued:	June 5, 2013 15:25 June 12, 2013 17:11
Submitted To:	James Martin	Project Number:	VHAMP275
Client Site I.D.:	VPDES-MMMBT Tunnels - June 2013	Purchase Order:	

Wet Chemistry Analysis - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BWF0180 - No Prep Wet Chem										
Matrix Spike Dup (BWF0180-MSD1)		**Source: 13F0068-01**		Prepared: 06/10/2013 Analyzed: 06/11/2013						
TKN as N	10.5 mg/L	0.50	mg/L	10.0	0.98 mg/L	95.1	90-110	0.814	20	
Batch BWF0184 - No Prep Wet Chem										
Blank (BWF0184-BLK1)				Prepared & Analyzed: 06/10/2013						
COD	<10.0 mg/L	10.0	mg/L							
LCS (BWF0184-BS1)				Prepared & Analyzed: 06/10/2013						
COD	49.0 mg/L	10.0	mg/L	50.0		98.0	80-120			
LCS Dup (BWF0184-BSD1)				Prepared & Analyzed: 06/10/2013						
COD	49.7 mg/L	10.0	mg/L	50.0		99.3	80-120	1.35	20	
Matrix Spike (BWF0184-MS1)		**Source: 13F0063-01**		Prepared & Analyzed: 06/10/2013						
COD	703 mg/L	10.0	mg/L	500	213 mg/L	98.0	70-130			
Matrix Spike Dup (BWF0184-MSD1)		**Source: 13F0063-01**		Prepared & Analyzed: 06/10/2013						
COD	697 mg/L	10.0	mg/L	500	213 mg/L	96.7	70-130	0.951	20	
Batch BWF0194 - No Prep Wet Chem										
Blank (BWF0194-BLK1)				Prepared & Analyzed: 06/11/2013						
Nitrate+Nitrite as N	<0.10 mg/L	0.10	mg/L							
LCS (BWF0194-BS1)				Prepared & Analyzed: 06/11/2013						
Nitrate+Nitrite as N	2.38 mg/L	0.10	mg/L	2.50		95.2	80-120			

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Wet Chemistry Analysis - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BWF0194 - No Prep Wet Chem										
LCS Dup (BWF0194-BSD1)				Prepared & Analyzed: 06/11/2013						
Nitrate+Nitrite as N	2.41 mg/L	0.10	mg/L	2.50		96.6	80-120	1.42	20	
Matrix Spike (BWF0194-MS1)		Source: 13F0156-01		Prepared & Analyzed: 06/11/2013						
Nitrate+Nitrite as N	6.50 mg/L	0.10	mg/L	5.00	1.47 mg/L	101	75-125			
Matrix Spike Dup (BWF0194-MSD1)		Source: 13F0156-01		Prepared & Analyzed: 06/11/2013						
Nitrate+Nitrite as N	6.56 mg/L	0.10	mg/L	5.00	1.47 mg/L	102	75-125	0.888	20	
Batch BWF0225 - No Prep Wet Chem										
Blank (BWF0225-BLK1)				Prepared & Analyzed: 06/12/2013						
Oil and Grease	<5.0 mg/L	5.0	mg/L							
LCS (BWF0225-BS1)				Prepared & Analyzed: 06/12/2013						
Oil and Grease	33.8 mg/L	5.0	mg/L	40.0		84.5	78-114			
LCS Dup (BWF0225-BSD1)				Prepared & Analyzed: 06/12/2013						
Oil and Grease	34.3 mg/L	5.0	mg/L	40.0		85.8	78-114	1.47	20	
Matrix Spike (BWF0225-MS1)		Source: 13F0072-01		Prepared & Analyzed: 06/12/2013						
Oil and Grease	42.0 mg/L	5.0	mg/L	42.6	<5.0 mg/L	98.7	78-114			
Batch BWF0239 - No Prep Wet Chem										
Blank (BWF0239-BLK1)				Prepared & Analyzed: 06/11/2013						
Phosphorus as P	<0.01 mg/L	0.01	mg/L							

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Wet Chemistry Analysis - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BWF0239 - No Prep Wet Chem										
LCS (BWF0239-BS1)				Prepared & Analyzed: 06/11/2013						
Phosphorus as P	0.49 mg/L	0.01	mg/L	0.500		97.9	80-120			
LCS Dup (BWF0239-BSD1)				Prepared & Analyzed: 06/11/2013						
Phosphorus as P	0.46 mg/L	0.01	mg/L	0.500		91.9	80-120	6.33	20	
Matrix Spike (BWF0239-MS1)		**Source: 13F0103-01**		Prepared & Analyzed: 06/11/2013						
Phosphorus as P	0.61 mg/L	0.01	mg/L	0.500	0.16 mg/L	90.0	70-130			
Matrix Spike Dup (BWF0239-MSD1)		**Source: 13F0103-01**		Prepared & Analyzed: 06/11/2013						
Phosphorus as P	0.61 mg/L	0.01	mg/L	0.500	0.16 mg/L	90.8	70-130	0.657	20	

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Certified Analyses included in this Report

Analyte	Certifications
EPA1664A in Non-Potable Water	
Oil and Grease	VELAP,NC
EPA200.7/R4.4 in Non-Potable Water	
Calcium	VELAP
Magnesium	VELAP
Sodium	VELAP
EPA300.0/R2.1 in Non-Potable Water	
Chloride	VELAP
EPA350.1/R2.0 in Non-Potable Water	
Ammonia as N	VELAP
EPA351.2/R2.0 in Non-Potable Water	
TKN as N	VELAP
SM18/4500-NO3 F in Non-Potable Water	
Nitrate+Nitrite as N	VELAP
SM18/4500-P E in Non-Potable Water	
Phosphorus as P	VELAP
SM18/5210B in Non-Potable Water	
BOD	VELAP
SM18/5220D in Non-Potable Water	
COD	VELAP,NC
SM18/5310C in Non-Potable Water	
TOC	VELAP

Code	Description	Number	Expires
MdDOE	Maryland DE Drinking Water	341	12/31/2013
NC	North Carolina DENR	495	12/13/2013
VELAP	NELAC-Virginia	460021	06/15/2013
WVDEP	West Virginia DEP	350	11/01/2013

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Qualifiers and Definitions

E	Estimated concentration, outside calibration range
M	Matrix spike recovery is outside established acceptance limits
P	Duplicate analysis does not meet the acceptance criteria for precision
RPD	Relative Percent Difference
Qual	Qualifers
-RE	Denotes sample was re-analyzed

CHAIN OF CUSTODY

Cardno MM&A

10988 Richardson Road, Ashland, VA 23005 / TEL: (804) 798-6525 • FAX: (804) 798-5907

Sample Collection Information

Client: **VDOT**	Project: **VPDES - MMMBT Tunnels - June 2013**	Proj. **#VHAMP275**
Sampler: James Martin		
Sampler Signature:	Date of Shipment: 06/5/2013	Ship. Method: On Ice

Turnaround Requirements

X Regular

Rush

Sample Log and Analysis Request

Analysis Requested

Sample ID	Date	Time	Matrix	Grab/Comp.	Number of Containers	Ammonia (as N)	BOD	COD	Nitrate + Nitrite as N	Oil & Grease	Phosphorous (Total	TKN	TOC	Chlorides	Sodium	Calcium	Magnesium
MMBT001	**6/4/2013**	**11:22**	**Water**	**Grab**	**9**	X	X	X	X	X	X	X	X				
MMBT002	**6/4/2013**	**11:45**	**Water**	**Grab**	**9**	X	X	X	X	X	X	X	X				
MMBT003	**6/4/2013**	**12:15**	**Water**	**Grab**	**11**	X	X	X	X	X	X	X	X	X	X	X	X

Relinquished by: *(Signature)*	Date/Time 6/5/13	Received by *(Signature)* 5 JUNE 2013 15:25	Date/Time	Condition:
Relinquished by: *(Signature)*	Date/Time	Received for Laboratory by: *(Signature)*	Date/Time	Condition: Cooler temp 3.9 °C

NOTES: All samples preserved on ice to <6°C. Container Preservatives: TPH=HCL; Metals=HNO_3 to pH < 2 SU

13F0082

Use VDOT200 VPDES pricing quote

MMA
VDOT200
Recd: 06/05/2013 Due: 06/12/2013

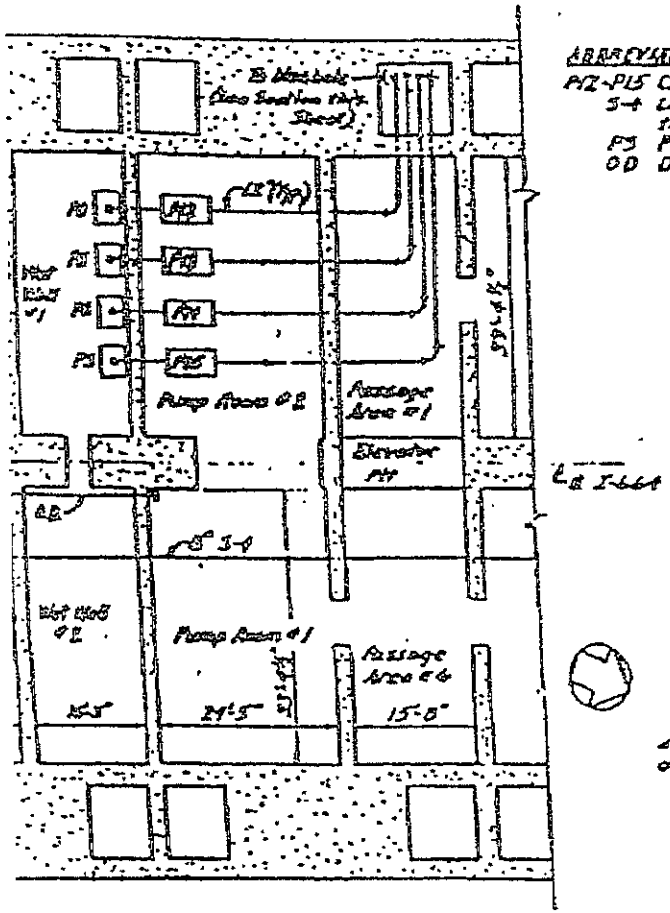
v130325002

ATTACHMENT

VII

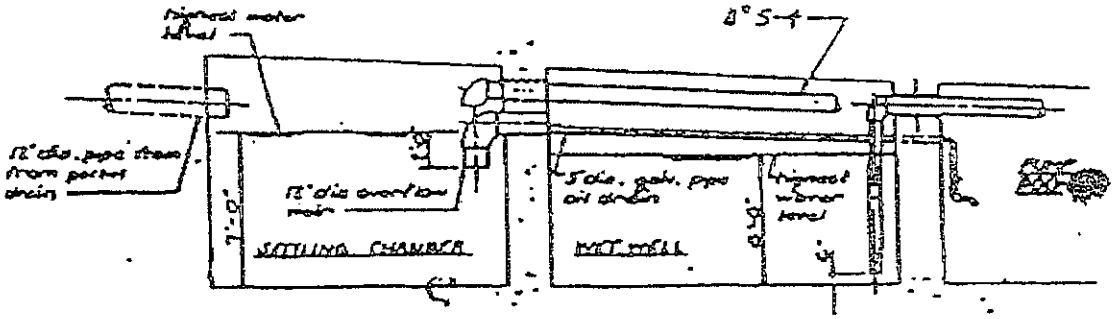
SUPPORTING DOCUMENTATION

Cardno®
Shaping the Future

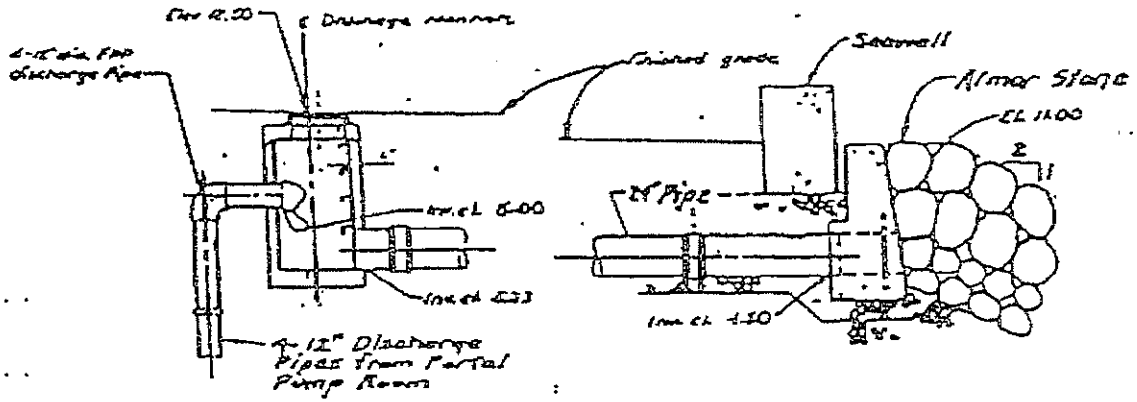


ABBREVIATIONS
P12-P15 Centrifugal Portal Pumps
S-4 Low Point Discharge Pipe to South Portal Only
PS Pump Suction Pipe
OD Oil Drain

ART PLAN-SOUTH VENT BUILDING
FOUNDATION LEVEL
(NORTH VENT BUILDING SIMILAR)

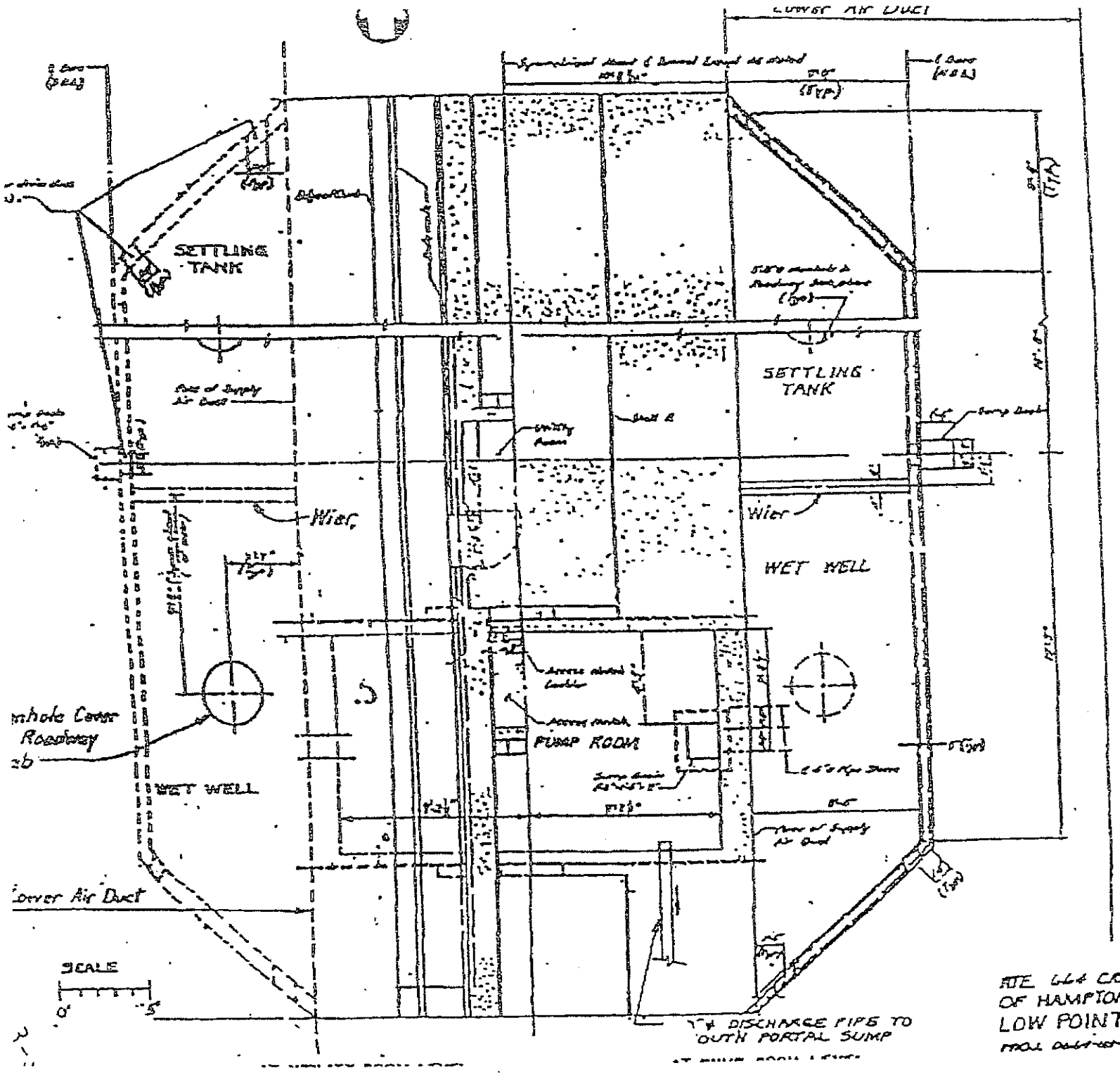


SECTION-SETTLING CHAMBER AND
WET WELL
NOT TO SCALE

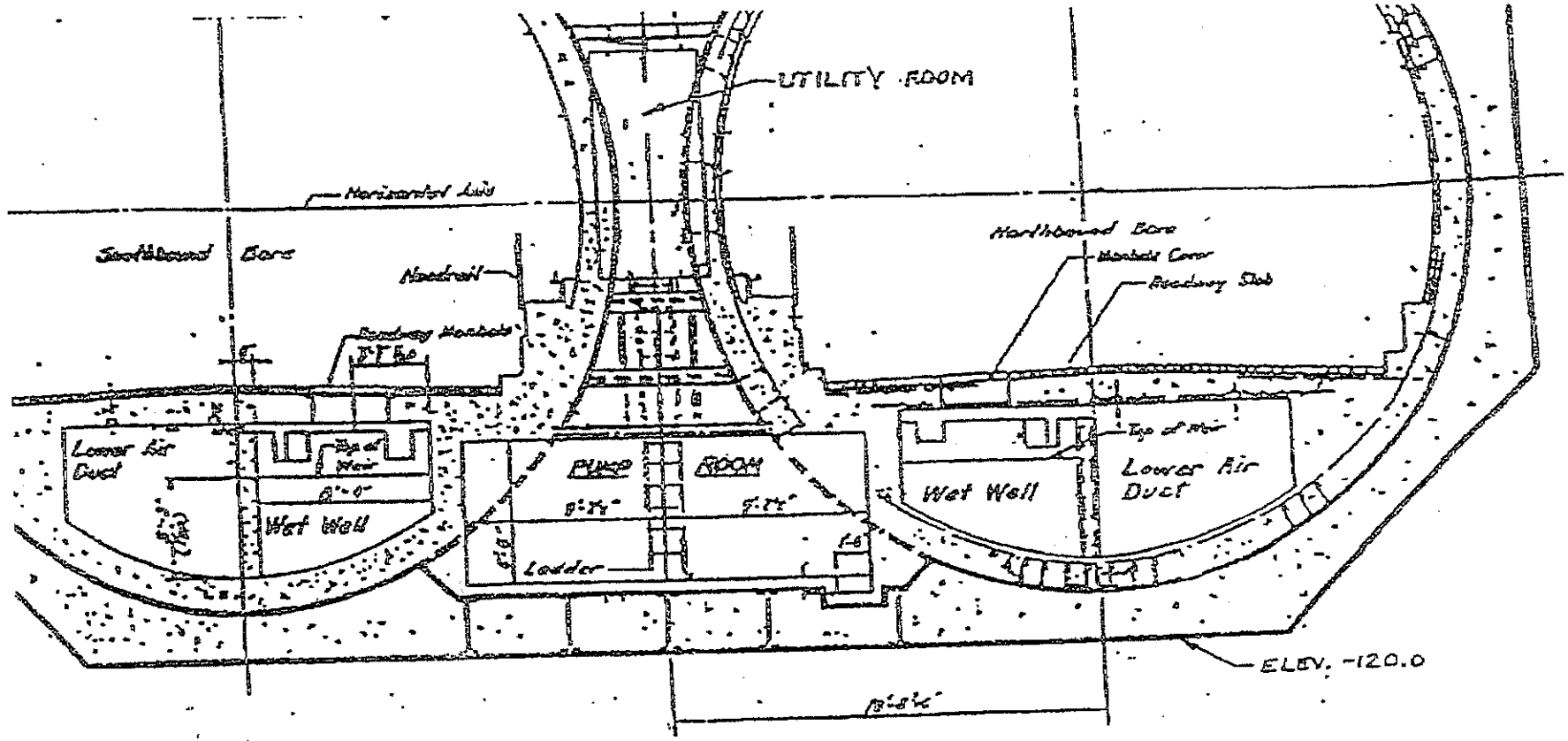


SECTION DRAINAGE MANHOLE
AND OUTFALL
NOT TO SCALE

RTE. 664 CROSSING
OF HAMPTON ROADS
PORTAL DRAINAGE
PROJ. 0664-1 -102



RTE 664 CROSSING OF HAMPTON ROADS
LOW POINT SUMP



SECTION
LOW POINT SUMP
NOT TO SCALE
(Pumps & Piping Not Shown)

RTE 664 CROSSING
OF HAMPTON ROADS
LOW POINT SUMP
PROJ. D664-[illegible]
CITY OF NEWPORT NEWS

3-5

KEN BARLOW CLEANING SYSTEMS
7818 CREEK BLUFF LANE
MECHANICSVILLE, VA 23111
PHONE: 703-919-3651

MATERIAL SAFETY DATA SHEET

CHEMICAL EMERGENCY CALL CHEMTREC 800 424-9300

1 PRODUCT INFORMATION

PRODUCT TRADE NAME **TUNNEL BRITE**

SYNONYMS None

DOT PROPER SHIPPING NAME Not Applicable

DOT HAZARD CLASSIFICATION Not Applicable

National Fire Protection Association (NFPA) Rating:

HEALTH 1 FLAMMABILITY 0 REACTIVITY 0

Hazardous Materials Identification System (HMIS) Rating

HEALTH 1 FLAMMABILITY 0 REACTIVITY 0

This Material Safety Data Sheet complies with 29 CFR 1910.1200 OSHA Communication Standard

2 HAZARDOUS INGREDIENTS

MATERIAL	CAS NO.	PERCENTAGE	HAZARD DATA
Proprietary Surfactant		< 5.0	PEL: N/A
Ethylene Diamine Tetra Acetic Acid		< 1.0	TLV: N/A

LISTED AS CARCINOGEN BY: IARC = NO NTP = NO OSHA = NO ACGIH NO

PEL = OSHA Permissible Exposure Limit
STEL = Short Term Exposure Limit

TLV = ACGIN Threshold Limit
TWA = Time Weighted Average

3 HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

ROUTES OF EXPOSURE

INHALATION

Overexposure to mist or spray may cause irritation of respiratory tract.

SKIN CONTACT

Possible mild transient skin irritation on prolonged contact.

SKIN ABSORPTION

Considered practically non-toxic

EYE CONTACT

May cause mild to moderate eye irritation.

INGESTION

Considered practically non-toxic

EFFECTS OF OVEREXPOSURE

ACUTE OVERDOSE

Skin, eye and respiratory tract irritation

CHRONIC OVEREXPOSURE

No data

4 FIRST AID MEASURES

EYES

Flush at once with large amounts of water for at least 15 minutes holding lids apart. Washing within one minute is essential to achieve maximum effectiveness. Get medical attention.

SKIN

Wash thoroughly with soap and water, remove contaminated clothing and footwear. Wash clothing before reuse. Get medical attention if irritation should develop.

INHALATION

Remove to fresh air

INGESTION

Do not induce vomiting. If vomiting should occur spontaneously, keep airway clear. Get medical attention. Never give anything by mouth to an unconscious person.

NOTES TO PHYSICIAN

None

5 FIRE FIGHTING MEASURES

FLASH POINT (Test method) >200°F

AUTOINGNITION TEMPERATURE Not available

FLAMMABLE LIMITS IN AIR, % By Volume

LOWER Not Available

UPPER Not Available

EXTINGUISHING MEDIA Carbon dioxide, foam, and ABC dry powder.

UNUSUAL FIRE OR EXPLOSION HAZARDS

None

SPECIAL FIRE FIGHTING PROCEDURES

Cool exposed containers with water spray. Self-contained breathing apparatus in confined areas.

6 ACCIDENTAL RELEASE MEASURES

Stop leaks. Clean up large spills with vacuum truck. Soak up small spills with absorbent material and place in labeled waste container for disposal. Wear adequate personal protective clothing and equipment.

7 HANDLING AND STORAGE

PRECAUTIONARY STATEMENTS

CAUTION!
MAY CAUSE IRRITATION.
Avoid contact with eyes, skin and clothing
Avoid breathing spray or mist
Wear chemical splash goggles, gloves and protective clothing when handling.
Use with adequate ventilation and employ respiratory protection where spray or mist may be generated.
Wash thoroughly after handling.
Do not take internally.
FOR INDUSTRIAL USE ONLY.

OTHER HANDLING AND STORAGE REQUIREMENTS

Always mix well before using. Product may congeal or stratify if cold. Warm to 122°F (50°C) and mix well before using.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

VENTILATION REQUIREMENTS Local exhaust ventilation recommended.

PERSONAL PROTECTIVE EQUIPMENT

EYE PROTECTION Chemical Splash goggles or face shield
SKIN PROTECTION Rubber or plastic gloves
RESPIRATORY PROTECTION None required under normal conditions of use. NIOSH/MSHA approved respirator if necessary. Follow manufacturer's recommendations.
OTHER EQUIPMENT Standard work clothing and work shoes.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE
Clear Liquid

SOLUBILITY IN WATER, % BY WEIGHT
Soluble

ODOR
No odor

pH
8.5 – 9.0

SPECIFIC GRAVITY (Water = 1)

BOILING POINT
Not Available

VAPOR PRESSURE
Not Available

FREEZING POINT
Not Available

VAPOR DENSITY

MELTING POINT
Not Applicable

EVAPORATION RATE (Butyl Acetate = 1)VISCOSITY
Not Available

DENSITY @ 20° c
Not Available

% VOLATILE BY WEIGHT
Not Applicable

10 STABILITY AND REACTIVITY

STABILITY
STABLE

CONDITIONS TO AVOID
Strong acids

INCOMPATIBLE MATERIALS
Acids

HAZARDOUS POLYMERIZATION
Will Not Occur

CONDITIONS TO AVOID
None

HAZARDOUS DECOMPOSITION PRODUCTS
Thermal decomposition after water evaporation may produce CO, CO2

11 TOXICOLOGICAL INFORMATION

Not Available

12 ECOLOGICAL INFORMATION

Not Available

13 DISPOSAL CONSIDERATIONS

Dispose of product in an approved chemical waste landfill or incinerate in accordance with applicable Federal, State and local regulations.

14 TRANSPORT INFORMATION

DOT PROPER SHIPPING NAME Not Applicable

15 REGULATORY INFORMATION

NOTICE: This product does not contain any ingredients subject to the reporting requirements of Section 313, Title III, Part 372

SARA Section 311/312: Not Applicable

TSCA: Components found in TSCA Inventory.

16 OTHER INFORMATION

PREPARED BY:
PRODUCT STEWARDSHIP MANAGER

DATE: July 15, 2005
LAST REVISED:

CHEMICAL EMERGENCY TELEPHONE (CHEMTREC) 1 - 800 424-9300

All information, recommendations, and suggestions appearing herein concerning our products based upon tests and data believed to be reliable. However, it is the user's responsibility to determine the safety, toxicity, and suitability for his own use of the product described herein. Since the actual use by others is beyond our control, no guarantee, expressed or implied, is made by KEN BARLOW CLEANING SYSTEMS as to the effects of such use; the results to be obtained or the safety and toxicity of the product nor does KEN BARLOW CLEANING SYSTEMS assume any liability arising out of use, by others, of the product referred to herein. The information herein is not to be construed as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations.

Material Safety Data Sheet

Calcium Chloride, Anhydrous, 95%, Irregular Granules

ACC# 95782

Section 1 - Chemical Product and Company Identification

MSDS Name: Calcium Chloride, Anhydrous, 95%, Irregular Granules
Catalog Numbers: AC219170010, AC219170025, AC219170250, AC219175000, AC300380000, AC300380010 AC300380010, AC300380025, AC300382500
Synonyms: Calpus; Caltac; Dowflake; Liquidow; Peladow; Snowmelt; Superflake Anhydrous.
Company Identification:
Acros Organics N.V.
One Reagent Lane
Fair Lawn, NJ 07410
For information in North America, call: 800-ACROS-01
For emergencies in the US, call CHEMTREC: 800-424-9300

RECEIVED
JUL 9 2007
ENVIRONMENTAL SECTION

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
10043-52-4	Calcium chloride	95%	233-140-8

Hazard Symbols: XI
Risk Phrases: 36

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white solid. May be harmful if swallowed. May cause severe respiratory and digestive tract irritation with possible burns. May cause severe eye and skin irritation with possible burns. May cause cardiac disturbances. Hygroscopic (absorbs moisture from the air). **Warning!**
Target Organs: Heart.

Potential Health Effects
Eye: Contact with eyes may cause severe irritation, and possible eye burns.
Skin: Contact with skin causes irritation and possible burns, especially if the skin is wet or moist.
Ingestion: May cause severe gastrointestinal tract irritation with nausea, vomiting and possible burns. May cause cardiac disturbances. May be harmful if swallowed. In very severe cases, seizures, rapid respiration, slow heartbeat, or death, may result.
Inhalation: May cause severe irritation of the upper respiratory tract with pain, burns, and inflammation.
Chronic: Effects may be delayed.

Section 4 - First Aid Measures

Andy

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin: Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.
Ingestion: Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.
Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation.
Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: Wear appropriate protective clothing to prevent contact with skin and eyes. Wear a self-contained breathing apparatus (SCBA) to prevent contact with thermal decomposition products.
Extinguishing Media: Use extinguishing media most appropriate for the surrounding fire.
Flash Point: Not applicable.
Autoignition Temperature: Not applicable.
Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 2; Flammability: 0; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Use with adequate ventilation. Minimize dust generation and accumulation. Keep container tightly closed. Do not get on skin or in eyes. Do not ingest or inhale. Wash clothing before reuse. Always use cool water when dissolving Calcium Chloride. Heat evolved is significant.
Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from moisture. Store below melting point.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Calcium chloride	none listed	none listed	none listed

OSHA Vacated PELs: Calcium chloride: No OSHA Vacated PELs are listed for this chemical.
Personal Protective Equipment
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear impervious gloves.
Clothing: Wear appropriate protective clothing to minimize contact with skin.
Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Section 9 - Physical and Chemical Properties

Physical State: Solid
Appearance: white
Odor: odorless
pH: Not available.
Vapor Pressure: Not available.
Vapor Density: Not available.
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: > 1600 deg C @ 760.00mm Hg
Freezing/Melting Point:782 deg C
Decomposition Temperature: Not available.
Solubility: freely soluble in alcohol
Specific Gravity/Density:2.1500g/cm3
Molecular Formula:$CaCl_2$
Molecular Weight:110.99

Section 10 - Stability and Reactivity

Chemical Stability: Stable.
Conditions to Avoid: Dust generation, excess heat, exposure to moist air or water.
Incompatibilities with Other Materials: Bromine trifluoride, 2-Furanpercarboxylic Acid, Solutions attack some metals..
Hazardous Decomposition Products: Hydrogen chloride, calcium oxide.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 10043-52-4: EV9800000
LD50/LC50:
CAS# 10043-52-4:
Oral, mouse: LD50 = 1940 mg/kg;

Oral, rabbit: LD50 = 1384 mg/kg;
Oral, rat: LD50 = 1 gm/kg;
Carcinogenicity:
CAS# 10043-52-4: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology: No information found.
Teratogenicity: No information found.
Reproductive Effects: No information found.
Neurotoxicity: No information found.
Mutagenicity: Mutagenic effects have occurred in experimental animals.
Other Studies: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	No information available.				No information available.
Hazard Class:					
UN Number:					
Packing Group:					

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 10043-52-4 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.
SARA

CERCLA Hazardous Substances and corresponding RQs
None of the chemicals in this material have an RQ.
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 10043-52-4: acute, chronic, reactive.
Section 313
No chemicals are reportable under Section 313.
Clean Air Act:
This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.
Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.
STATE
CAS# 10043-52-4 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols:
XI
Risk Phrases:
R 36 Irritating to eyes.

Safety Phrases:
S 22 Do not breathe dust.
S 24 Avoid contact with skin.

WGK (Water Danger/Protection)
CAS# 10043-52-4: 0
Canada - DSL/NDSL
CAS# 10043-52-4 is listed on Canada's DSL List.
Canada - WHMIS
This product has a WHMIS classification of D2B.
Canadian Ingredient Disclosure List
Exposure Limits

Section 16 - Additional Information

MSDS Creation Date: 6/29/1998
Revision #5 Date: 11/19/2001

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.

ATTACHMENT

VIII

PERMIT MAINTENANCE FEE

Cardno®
Shaping the Future

VPDES/VPA Permit Billing Information Form
for Annual Maintenance Fee

Facility Name: Monitor Merrimac Memorial Bridge Tunnel

Permit Number: VA0080179

Person / Organization to be billed: Virginia Department of Transportation

Billing Address: P. O. Box 6570

Portsmouth, VA 23703

Billing Contact Name: Maria York

Title:

Phone Number: 757-247-8049

E-Mail Address: maria.york@vdot.virginia.gov

ATTACHMENT IX

PUBLIC NOTICE FORM

Cardno®
Shaping the Future

AUTHORIZATION TO BILL APPLICANT FOR A PUBLIC NOTICE FOR VDOT MONITOR MERRIMAC MEMORIAL BR. TUNNEL, NEWPORT NEWS, VA RE: PERMIT NO. VA0080179

I hereby authorize the Department of Environmental Quality to have the cost of publishing a public notice billed to the Agent/Department shown below. The public notice will be published once a week for two consecutive weeks in the: **THE DAILY PRESS**

Agent/Department to be billed: Virginia Department of Transportation

Applicant's Address: P. O. Box 6570
Portsmouth, VA 23703

Agent's Telephone No: 757-247-8049

I AM ALSO AUTHORIZING THE DAILY PRESS TO <u>SEND THE AFFIDAVIT</u> TO:

DEQ TIDEWATER REGIONAL OFFICE
WATER PERMITS – ATTN: COLLEEN PORTER
5636 SOUTHERN BOULEVARD
VIRGINIA BEACH, VA 23462

Authorizing Agent/Date Signed: Maria York
Print Name/Date Signed

Authorizing Agent's Signature: maintenance operations manager
Signature

Authorizing Agent's E-Mail Address: maria.york@vdot.virginia.gov

RETURN COMPLETED FORM TO:

DEQ – Tidewater Regional Office
Water permits – Colleen Porter
5636 Southern Boulevard
Virginia Beach, VA 23462

Cc: **(DEQ ECM FILE)**