Jenkins,Ray

From: Ellinghaus, Matthew B. [mbellinghaus@co.hanover.va.us]
Sent: Thursday, July 24, 2008 1:53 PM
To: Jenkins,Ray
Subject: RE: Reissuance of Doswell WWTP VPDES Permit

Ray –

The three TRC results were conducted by Reed Labs during one of the WET tests. The results were 0.19 mg/l, 0.41 mg/l and 0.48 mg/l. We feel that these results are false positives caused by an interference with the DPD reagent. Please refer to the letter report submitted with the permit application from AWARE Environmental (Form 2C Attachment 2a) for additional information.

If you have any questions, please let me know.

Matt

Matthew Ellinghaus
Assistant Chief of Operations & Maintenance
Hanover Department of Public Utilities
P.O. Box 470
7516 County Complex Road
Hanover, VA 23069

(804) 365-6701 (phone)
(804) 365-6705 (fax)

From: Jenkins,Ray [mailto:rrjenkins@deq.virginia.gov]
Sent: Wednesday, July 23, 2008 3:18 PM
To: Ellinghaus, Matthew B.
Subject: Reissuance of Doswell WWTP VPDES Permit

Matt, can you send me the 3 total residual chlorine analyses that are summarized in Attachment 5 of your application? Do you consider these data to accurately reflect the discharge?

Thanks

Ray R. Jenkins, Jr.
Environmental Engineer Senior
Telephone: 804/527-5037
E-mail: rrjenkins@deq.virginia.gov
Fax: 804/527-5106

RECEIVED
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PRO

White Birch Paper™
BEAR ISLAND L.L.C. DIVISION
10026 OLD RIDGE ROAD, ASHLAND VIRGINIA 23005
804-227-4000 Fax: 804-227-4014

July 8, 2008

Mr. Ray R. Jenkins, Jr.
Virginia Department of Environmental Quality
Piedmont Regional Office
4949-A Cox Road
Glen Allen, Virginia 23060

Dear Mr. Jenkins:

The purpose of this letter is to certify that we do not use any zinc hydrosulfite or chlorophenolic biocides here at the White Birch Paper, Bear Island Division newsprint mill. We do not use or store any of the above mentioned chemicals at our facility.

Please contact me at (804) 227-4043 if you have any questions or need any additional information.

Thanks,

Jeffrey Miller
Senior Process Engineer
White Birch Paper Bear Island LLC Division

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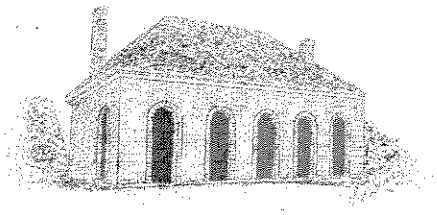

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HANOVER COUNTY

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DEPARTMENT OF PUBLIC UTILITIES
FRANK W. HARKSEN, JR., DIRECTOR
P. O. BOX 470
HANOVER, VA 23069-0470
PHONE: (804) 365-6019
FAX: (804) 365-6245
WEB SITE: www.co.hanover.va.us

RECEIVED
MAR 0 3 2008
PRO

February 29, 2008

Mr. Ray R. Jenkins, Jr.
DEQ Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060

RE: VPDES Permit Re-issuance Application for the Doswell Wastewater Treatment Plant (VA0029521)

Dear Mr. Jenkins:

In response to your e-mail (1/24/08) questions requesting clarification for the above referenced permit and our subsequent telephone conversation, please incorporate this additional information into the permit file. I have addressed each of your questions below and provided corrected pages and additional data as needed.

Form 2A

1. Has the metals data mentioned in cover letter dated 11-13-07 been submitted?
   - *The additional metals data has been collected and analyzed and is included with this packet.*

2. Data not provided for hexavalent chromium (required QL of 9.2 µg/L), chloride, and hydrogen sulfide.
   - *Samples were collected and analyzed for hexavalent chromium, chloride and sulfides with the required pollutant scans. This data was inadvertently left off the supplementary data sheets included with the permit application. Please see the attached pollutant scan data sheets for this information.*

3. Are metals data expressed as total recoverable or dissolved?

- *In general, all metals data is expressed as dissolved. However there are some parameters that were analyzed as total recoverable. Please see the attached pollutant scan and metals data sheets for this information.*

4. Please provide lab sheets for the pollutant scans.
   - *These data sheets are included with this supplemental information packet.*

5. Questions A.9. d and e do not appear to have been correctly answered.
   - *After our conversation, this information was reviewed and has been updated as discussed. Please see the enclosed corrected application page and incorporate into the permit application file as needed.*

6. Is the reported cyanide concentration of 18.8 µg/L additional data collected since the modification of the permit in September 2006 to remove cyanide? Is it the only additional data since September 2006?
   - *The reported cyanide information included the data provided for the modification and additional data collected by the required pollutant scans. Please see the attached pollutant scan data sheets for this information.*

7. Part F was marked "not applicable". Does that mean there are no significant industrial users?
   - *Correct, there are currently no significant industrial users discharging to the Doswell Wastewater Treatment Plant.*

Form 2C

1. The production figures for Bear Island in Part III.C are the same as reported in August 1999. Are those production figures still accurate?
   - *Yes, Bear Island confirmed the application information prior to submission.*

2. In Part V.A, provide maximum 30 day values for BOD, TSS, ammonia, and flow.
   - *These values have been calculated and included on an updated page for Form 2C Part V.A.*

3. In Part. V. B, sulfate, surfactants, aluminum, barium, iron, and manganese are reported as "believed absent". Concentrations were reported for those pollutants however, in the August 1999 permit renewal application. Please reconcile these discrepancies.
   - *Additional review of data provided by Bear Island shows these pollutants are "believed present". The information for all parameters except surfactants was originally included as Form 2C, Attachment 2a, but the data had not been transferred to the application pages. Please see the updated page for Form 2C Part V.B for corrections. Surfactant data was not available at the time the application was submitted. Please see the attached data sheet for surfactant results.*

4. In Part V.C., if a pollutant was detected in Outfall 001 it is shown as "believed present" with a triple asterisk. The triple asterisk refers to Outfall 001 data.

Given that convention, copper should have been marked "believed present" with a triple asterisk.

- *Correct, please see updated page for Form 2C Part V.C.*

I'm curious why a complete scan was not done for the Bear Island effluent.

- *A complete scan was not conducted on Outfall 201 due to the three required scans for Outfall 001. This additional testing appeared redundant and was therefore not conducted.*

If you have any questions please give me a call at (804) 365-6701 or e-mail at mbellinghaus@co.hanover.va.us.

Sincerely,

Matthew Ellinghaus
Assistant Chief of Operations & Maintenance

Enc: Corrected VA0029521 permit application pages
Pollutant scan data sheets
Additional metals testing data sheets
Surfactant testing data sheet

FACILITY NAME AND PERMIT NUMBER:
VA0029521

Form Approved 1/14/99
OMB Number 2040-0086

WASTEWATER DISCHARGES:

If you answered "yes" to question A.8.a, complete questions A.9 through A.12 **once for each outfall** (including bypass points) through which effluent is discharged. Do not include information on combined sewer overflows in this section. **If you answered "no" to question A.8.a**, go to Part B, "Additional Application Information for Applicants with a Design Flow Greater than or Equal to 0.1 mgd."

A.9. Description of Outfall.

a. Outfall number 001

b. Location
Doswell (City or town, if applicable) — 23047 (Zip Code)
Hanover County (County) — Virginia (State)
37 deg. 49 min. 30 sec. (Latitude) — 77 deg. 25 min. 37 sec. (Longitude)

c. Distance from shore (if applicable) 0 ft.

d. Depth below surface (if applicable) 0 ft.

e. Average daily flow rate 0.281 mgd

f. Does this outfall have either an intermittent or a periodic discharge? ____ Yes ✓ No (go to A.9.g.)

If yes, provide the following information:

Number of times per year discharge occurs: ____

Average duration of each discharge: ____

Average flow per discharge: ____ mgd

Months in which discharge occurs: ____

g. Is outfall equipped with a diffuser? ____ Yes ✓ No

A.10. Description of Receiving Waters.

a. Name of receiving water North Anna River

b. Name of watershed (if known) York River Basin

United States Soil Conservation Service 14-digit watershed code (if known): unknown

c. Name of State Management/River Basin (if known): York River Basin

United States Geological Survey 8-digit hydrologic cataloging unit code (if known): unknown

d. Critical low flow of receiving stream (if applicable):
acute 42 cfs chronic 43 cfs

e. Total hardness of receiving stream at critical low flow (if applicable): 19.3 mg/l of $CaCO_3$

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*): VA0029521

V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)* [redacted] OUTFALL NO. 201

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. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (*if available*) (1) CONCENTRATION	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (2) MASS	2. EFFLUENT c. LONG TERM AVRG. VALUE (*if available*) (1) CONCENTRATION	2. EFFLUENT c. LONG TERM AVRG. VALUE (2) MASS	2. EFFLUENT d. NO. OF ANALYSES	3. UNITS (*specify if blank*) a. CONCEN-TRATION	3. UNITS b. MASS	4. INTAKE (*optional*) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	4. INTAKE a. LONG TERM AVERAGE VALUE (2) MASS	4. INTAKE b. NO. OF ANALYSES
a. Biochemical Oxygen Demand (*BOD*)	24.4	387.9	22.5	3,764	7.7	122.4	260	mg/l	kg/d			
b. Chemical Oxygen Demand (*COD*)	116	1,844					1	mg/l	kg/d			
c. Total Organic Carbon (*TOC*)	52.0	826.6					1	mg/l	kg/d			
d. Total Suspended Solids (*TSS*)	75.2	1195.5	51.3	815.5	17.9	284.6	156	mg/l	kg/d			
e. Ammonia (*as N*)	3.0	48.5	3.2	50.9	0.8	12.93	12	mg/l	kg/d			
f. Flow	VALUE 6.472		VALUE 4.472		VALUE 4.132		365	mgd		VALUE		
g. Temperature (*winter*)	VALUE ***		VALUE		VALUE ***			°C		VALUE		
h. Temperature (*summer*)	VALUE ***		VALUE		VALUE ***			°C		VALUE		
i. pH	MINIMUM ***	MAXIMUM ***	MINIMUM	MAXIMUM			***	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	2. MARK "X" b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	3. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (*if available*) (1) CONCENTRATION	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (2) MASS	3. EFFLUENT c. LONG TERM AVRG. VALUE (*if available*) (1) CONCENTRATION	3. EFFLUENT c. LONG TERM AVRG. VALUE (2) MASS	3. EFFLUENT d. NO. OF ANALYSES	4. UNITS a. CONCEN-TRATION	4. UNITS b. MASS	5. INTAKE (*optional*) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE b. NO. OF ANALYSES
a. Bromide (24959-67-9)		X												
b. Chlorine, Total Residual		X												
c. Color	X		235	N/A					1	mg/l	N/A			
d. Fecal Coliform		X												
e. Fluoride (16984-48-8)		X												
f. Nitrate-Nitrite (as *N*)	X		***				***							

*** See EPA Form 2A and Form 2C Attachment 2 for additional data as represented in outfall 001

*** See EPA Form 2A for data as represented in outfall 001

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		***				***							
h. Oil and Grease		X												
i. Phosphorus (as P), Total (7723-14-0)	X		***				***							
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		1,100	17,000				1	mg/l	kg/d				
l. Sulfide (as S)		X												
m. Sulfite (as SO_3) (14265-45-3)		X												
n. Surfactants	X		0.26	4.13				1	mg/l	kg/d				
o. Aluminum, Total (7429-90-5)		X	<1.0	<15.9				1	mg/l	kg/d				
p. Barium, Total (7440-39-3)	X		<4.0	<63.6				1	mg/l	kg/d				
q. Boron, Total (7440-42-8)		X												
r. Cobalt, Total (7440-48-4)		X												
s. Iron, Total (7439-89-6)	X		0.23	3.6				1	mg/l	kg/d				
t. Magnesium, Total (7439-95-4)		X												
u. Molybdenum, Total (7439-98-7)		X												
v. Manganese, Total (7439-96-5)	X		0.47	7.5				1	mg/l	kg/d				
w. Tin, Total (7440-31-5)		X												
x. Titanium, Total (7440-32-6)		X												

CONTINUE ON PAGE V-3

*** See EPA Form 2A for data as represented in outfall 001

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)	OUTFALL NUMBER
VA0029521	201

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		***	***										
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		***	***										
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

HRSD
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King William
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Middlesex
York

March 19, 2007

Barbara Mitchell
Public Utilities
Doswell WWTP
P.O. Box 470
Hanover, VA 23069

MAR 2 - 2007

RE: 2A PERMIT APPLICATION

Dear Barbara:

Enclosed are the analytical results, analytical QA report and chain of custody record for the February 28, 2007 sampling event.

The field crew noted the sampling site was covered with snails and leeches. Snails and leeches were also in the FNE sample collected. Based on our 03/02/07 telephone conversation, the collected sample is considered representative.

The field blanks collected in association with the sampling event were within acceptable limits for the analytes of concern.

Should you have any questions, please feel free to contact me at (757) 460-4247.

Sincerely,

C.M. Reno
for

Dan Barker
Environmental Scientist

DLB/cmr

Enclosures

cc: David VanGelder, Hanover WWTP Manager

HRSD
P. O. BOX 5911, VIRGINIA BEACH, VIRGINIA 23471-0911 • (757) 460-2261 FAX (757) 460-6586

ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP - 2A Permit Application
Customer Sample ID: Field Blank
Project Code: HAN_DO
Sample Point: FB
Sample Date: 02/28/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Total Recoverable Metals							
Arsenic	EPA 200.7	ug/L	<60	60	SWILLI	03/15/07	12:33
Chromium	EPA 200.7	ug/L	<10	10	SWILLI	03/15/07	12:33
Dissolved Metals							
Antimony	EPA 200.7	ug/L	<100	100	SWILLI	03/15/07	13:01
Arsenic	EPA 200.7	ug/L	<60	60	SWILLI	03/15/07	13:01
Beryllium	EPA 200.7	ug/L	<2	2	SWILLI	03/15/07	13:01
Cadmium	EPA 200.8	ug/L	<0.50	0.50	SWILLI	03/14/07	13:22
Chromium	EPA 200.7	ug/L	<10	10	SWILLI	03/15/07	13:01
Copper	EPA 200.7	ug/L	<5	5	SWILLI	03/15/07	13:01
Lead	EPA 200.7	ug/L	<20	20	SWILLI	03/15/07	13:01
Mercury	EPA 245.2	ug/L	<0.1	0.1	SLABOC	03/04/07	09:08
Nickel	EPA 200.7	ug/L	<10	10	SWILLI	03/15/07	13:01
Selenium	EPA 200.8	ug/L	<2	2	SWILLI	03/14/07	13:22
Silver	EPA 200.7	ug/L	<5	5	SWILLI	03/14/07	11:38
Thallium	EPA 200.7	ug/L	<40	40	SWILLI	03/13/07	11:52
Zinc	EPA 200.7	ug/L	<20	20	SWILLI	03/15/07	13:01
Calcium	EPA 200.7	ug/L	43	40	SWILLI	03/13/07	11:52
Volatiles							
Acrolein	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
Acrylonitrile	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
Benzene	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
Bromoform	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
Carbon Tetrachloride	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
Chlorobenzene	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
Chlorodibromomethane	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
Chloroethane	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
2-Chloroethylvinylether	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
Chloroform	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
Dichlorobromomethane	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
1,1 Dichloroethane	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
1,2-Dichloroethane	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50

Notes

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

HRSD
P. O. BOX 5911, VIRGINIA BEACH, VIRGINIA 23471-0911 • (757) 460-2261 FAX (757) 460-6586

ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP - 2A Permit Application
Customer Sample ID: Field Blank
Project Code: HAN_DO
Sample Point: FB
Sample Date: 02/28/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Volatiles							
trans 1,2 Dichloroethylene	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
1,1 Dichloroethylene	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
1,2-Dichloropropane	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
1,3-Dichloropropylene[2]	EPA 624	ug/L	<20.0	20.0	RPRICE	03/01/07	13:50
Ethylbenzene	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
Methyl bromide	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
Methyl chloride	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
Methylene chloride	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
1,1,2,2-Tetrachloroethane	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
Tetrachloroethylene	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
Toluene	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
1,1,1-Trichloroethane	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
1,1,2-Trichloroethane	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
Trichlorethylene	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
Vinyl chloride	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	13:50
Acid Extractable Compounds							
p-Chloro-m-cresol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
2-Chlorophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
2,4-Dichlorophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
2,4-Dimethylphenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
4,6-Dinitro-o-cresol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
2,4-Dinitrophenol	EPA 625	ug/L	<20.0	20.0	SLOPEZ	03/05/07	21:19
2-Nitrophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
4-Nitrophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Pentachlorophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Phenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
2,4,6-Trichlorophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Base Neutral Compounds							
Acenaphthene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Acenaphthylene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Anthracene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Benzidine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Benzo(a)anthracene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Benzo(a)pyrene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
3,4 Benzo fluoranthene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Benzo(k)fluoranthene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19

Notes

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

[2] *1,3-Dichloropropylene is the total of cis-1,3-Dichloropropylene and trans-1,3-Dichloropropylene.*

HRSD
P. O. BOX 5911, VIRGINIA BEACH, VIRGINIA 23471-0911 • (757) 460-2261 FAX (757) 460-6586

ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP - 2A Permit Application
Customer Sample ID: Field Blank
Project Code: HAN_DO
Sample Point: FB
Sample Date: 02/28/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Base Neutral Compounds							
Benzo(ghi)perylene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Bis(2-chloroethoxy)methane	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Bis(2-chloroethyl)ether	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Bis(2-chloroisopropyl)ether	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Bis (2-ethylhexyl) phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
4-Bromophenylphenyl ether	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Butyl benzyl phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
2-Chloronaphthalene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
4-Chlorophenylphenyl ether	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Chrysene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Dibenz(a,h)anthracene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Di-n-butyl phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Di-n-octyl phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
1,2 Dichlorobenzene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
1,3 Dichlorobenzene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
1,4 Dichlorobenzene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
3,3-Dichlorobenzidine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Diethyl phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Dimethyl phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
2,4-Dinitrotoluene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
2,6-Dinitrotoluene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
1,2-Diphenylhydrazine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Fluoranthene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Fluorene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Hexachlorobenzene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Hexachlorobutadiene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Hexachlorocyclopentadiene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Hexachloroethane	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Indeno(1,2,3-cd)pyrene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Isophorone	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Naphthalene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Nitrobenzene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
n-Nitrosodi-n-propylamine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
n-Nitrosodi-methylamine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
n-Nitrosodi-phenylamine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Phenanthrene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
Pyrene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19
1,2,4-Trichlorobenzene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	21:19

Notes
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Authorization: PR Lee **Date:** 031907

HRSD
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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP - 2A Permit Application
Customer Sample ID: Final Effluent
Project Code: HAN_DO
Sample Point: FNE
Sample Date: 02/28/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Autochemistry							
Ammonia (as N)	EPA 350.1	ug/L	<0.20	0.20	LREED	03/14/07	13:40
Cyanide	EPA 335.3	ug/L	11	10	GMCCAR	03/07/07	16:35
Hardness	SM 2340B	mg eq $CaCO_3$/L	586	0.1	SWILLI	03/15/07	12:45
Nitrate-Nitrite	EPA 353.2	mg/L	0.44	0.20	VJOHNS	03/01/07	11:11
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	4.35	0.50	GMCCAR	03/02/07	12:11
Total Phosphorous	EPA 365.1	mg/L	0.82	0.20	GMCCAR	03/01/07	14:42
Total Dissolved Solids	SM 2540C	mg/L	1990	1	CDUNCA	03/03/07	13:28
Oil and Grease	EPA 413.1	mg/L	<5.0	5.0	RMORGA	03/08/07	07:20
Total Phenol	EPA 420.2	ug/L	<50	50	AMOORE	03/08/07	10:40
Total Recoverable Metals							
Arsenic	EPA 200.7	ug/L	<60	60	SWILLI	03/15/07	12:45
Chromium	EPA 200.7	ug/L	<10	10	SWILLI	03/15/07	12:45
Dissolved Metals							
Antimony	EPA 200.7	ug/L	<100	100	SWILLI	03/15/07	13:05
Arsenic	EPA 200.7	ug/L	<60	60	SWILLI	03/15/07	13:05
Beryllium	EPA 200.7	ug/L	<2	2	SWILLI	03/15/07	13:05
Cadmium	EPA 200.8	ug/L	<0.50	0.50	SWILLI	03/14/07	13:27
Chromium	EPA 200.7	ug/L	<10	10	SWILLI	03/15/07	13:05
Copper	EPA 200.7	ug/L	6	5	SWILLI	03/15/07	13:05
Lead	EPA 200.7	ug/L	<20	20	SWILLI	03/15/07	13:05
Mercury	EPA 245.2	ug/L	<0.1	0.1	SLABOC	03/04/07	08:53
Nickel	EPA 200.7	ug/L	<10	10	SWILLI	03/15/07	13:05
Selenium	EPA 200.8	ug/L	<2	2	SWILLI	03/14/07	13:27
Silver	EPA 200.7	ug/L	<5	5	SWILLI	03/14/07	11:41
Thallium	EPA 200.7	ug/L	<40	40	SWILLI	03/13/07	12:14
Zinc	EPA 200.7	ug/L	108	20	SWILLI	03/15/07	13:05
Volatiles							
Acrolein	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
Acrylonitrile	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
Benzene	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
Bromoform	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
Carbon Tetrachloride	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
Chlorobenzene	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
Chlorodibromomethane	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
Chloroethane	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
2-Chloroethylvinylether	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
Chloroform	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
Dichlorobromomethane	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
1,1 Dichloroethane	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
1,2-Dichloroethane	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11

Notes

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

HRSD
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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP - 2A Permit Application
Customer Sample ID: Final Effluent
Project Code: HAN_DO
Sample Point: FNE
Sample Date: 02/28/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Volatiles							
trans 1,2 Dichloroethylene	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
1,1 Dichloroethylene	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
1,2-Dichloropropane	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
1,3-Dichloropropylene[2]	EPA 624	ug/L	<20.0	20.0	RPRICE	03/01/07	15:11
Ethylbenzene	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
Methyl bromide	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
Methyl chloride	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
Methylene chloride	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
1,1,2,2-Tetrachloroethane	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
Tetrachloroethylene	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
Toluene	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
1,1,1-Trichloroethane	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
1,1,2-Trichloroethane	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
Trichlorethylene	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
Vinyl chloride	EPA 624	ug/L	<10.0	10.0	RPRICE	03/01/07	15:11
Acid Extractable Compounds							
p-Chloro-m-cresol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
2-Chlorophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
2,4-Dichlorophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
2,4-Dimethylphenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
4,6-Dinitro-o-cresol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
2,4-Dinitrophenol	EPA 625	ug/L	<20.0	20.0	SLOPEZ	03/05/07	23:06
2-Nitrophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
4-Nitrophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Pentachlorophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Phenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
2,4,6-Trichlorophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Base Neutral Compounds							
Acenaphthene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Acenaphthylene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Anthracene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Benzidine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Benzo(a)anthracene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Benzo(a)pyrene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
3,4 Benzo fluoranthene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Benzo(k)fluoranthene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06

Notes

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

[2] *1,3-Dichloropropylene is the total of cis-1,3-Dichloropropylene and trans-1,3-Dichloropropylene.*

HRSD
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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP - 2A Permit Application
Customer Sample ID: Final Effluent
Project Code: HAN_DO
Sample Point: FNE
Sample Date: 02/28/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Base Neutral Compounds							
Benzo(ghi)perylene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Bis(2-chloroethoxy)methane	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Bis(2-chloroethyl)ether	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Bis(2-chloroisopropyl)ether	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Bis (2-ethylhexyl) phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
4-Bromophenylphenyl ether	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Butyl benzyl phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
2-Chloronaphthalene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
4-Chlorophenylphenyl ether	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Chrysene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Dibenz(a,h)anthracene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Di-n-butyl phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Di-n-octyl phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
1,2 Dichlorobenzene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
1,3 Dichlorobenzene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
1,4 Dichlorobenzene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
3,3-Dichlorobenzidine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Diethyl phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Dimethyl phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
2,4-Dinitrotoluene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
2,6-Dinitrotoluene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
1,2-Diphenylhydrazine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Fluoranthene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Fluorene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Hexachlorobenzene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Hexachlorobutadiene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Hexachlorocyclopentadiene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Hexachloroethane	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Indeno(1,2,3-cd)pyrene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Isophorone	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Naphthalene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Nitrobenzene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
n-Nitrosodi-n-propylamine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
n-Nitrosodi-methylamine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
n-Nitrosodi-phenylamine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Phenanthrene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
Pyrene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06
1,2,4-Trichlorobenzene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	03/05/07	23:06

Notes

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Authorization: PRhu **Date:** 03 19 07

QUALITY ASSURANCE REPORT
Level 1

Project: Hanover County - Doswell WWTP - 2A Permit Application
Customer Sample ID: Final Effluent
Project Code: HAN_DO
Sample Point: FB;FNE
Sample Date: 02/28/07

Analytical Run Information	Sb	As	Be	Cd	Cr	Cu	Pb	Hg	Ni	Se	Ag	Tl	Zn
Method	200.7	200.7	200.7	200.8	200.7	200.7	200.7	245.2	200.7	200.8	200.8	200.7	200.7
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Method Detection Limit (MDL)	20	20	0.9	0.010	1	1.0	8	0.03	3	0.02	1.9	11	5
Report Limit (RL)	100	60	2	0.5	10	5	20	0.2	10	2	5.0	40	20
Average LRB	<20	<20	<0.9	<0.010	<1	<1.0	<8	<0.03	<3	<0.02	<1.9	19*	<5

Total Recoverable Metals		As			Cr								
Sample ID: HAN_DO FNE TR													
Matrix Spike Conc.		120			20								
MS Percent Recovery		93%			100%								
MSD Percent Recovery		94%			100%								
MS/MSD RPD		<1			<1								

Dissolved Metals	Sb		Be	Cd	Cr	Cu	Pb	Hg	Ni	Se	Ag	Tl	Zn
Sample ID: HAN_DO FNE DS													
Matrix Spike Conc.	200	120	10	2.0	20	50.0	60	1.0	50	10.0	10.0	100	100
MS Percent Recovery	100%	91%	90%	88%	92%	107%	79%	98%	94%	96%	106%	83%	85%
MSD Percent Recovery	98%	82%	91%	93%	93%	109%	84%	97%	98%	100%	107%	92%	85%
MS/MSD RPD	2	7	1	5	<1	1	5	<1	4	5	<1	10	<1

LRB - Laboratory Reagent Blank
MS - Matrix Spike
MSD - Matrix Spike Duplicate
RPD - Relative Percent Difference
*Report Limit is lowest concentration at which quantitation is demonstrated. Values below Report Limit should not be used for compliance determinations due to a high degree of uncertainty.

Validated By Sandra Wile

Date 031607

CENTRAL ENVIRONMENTAL LAB.
1432 AIR RAIL AVENUE
VIRGINIA BEACH, VA 23455
TEL: 757-460-4214
FAX: 757-460-6586

SAMPLE CHAIN OF CUSTODY

PROJECT NAME/CODE: Hanover Co. - Doswell WWTP - 2A Permit Application

ANALYSES REQUIRED & NUMBER OF CONTAINERS

CUSTOMER SAMPLE ID	HRSD Use Only: PROJECT CODE	HRSD Use Only: SAMPLE POINT	DATE	TIME	SAMPLED BY	Circle One: MATRIX	Circle One: SAMPLE TYPE	DS Clean Metals (55)	TR Clean Metals (5)	EPA 625 (9)	EPA 624 (10)	Nutrients Presvd (7)	Nutrients Unpresvd (17)	Ammonia (7)	TDS (52)	Cyanide (4)	Oil & Grease (8)	Total Phenol (3)	HRSD Use Only: Pres'v* Checked	HRSD Use Only: CONT. COUNT
Field Blank	HAN_DO	FB	2/28/2007	1104	MW	L S	B C G	1	1	3									✓	5
Field Blank	HAN_DO	FB	2/28/2007	1000	MW	L S	B C G				4								✓	4
Final Effluent	HAN_DO	FNE	2/28/2007	1104	MW	L S	B C G	1	1	5		1	1	1	1				✓	11
Final Effluent	HAN_DO	FNE	2/28/2007	1010	MW	L S	B C G				* 10								✓	10
Final Effluent	HAN_DO	FNE	2/28/2007	1017	MW	L S	B C G									1			✓	1
Final Effluent	HAN_DO	FNE	2/28/2007	1030	MW	L S	B C G										2		✓	2
Final Effluent	HAN_DO	FNE	2/28/2007	1018	MW	L S	B C G											1	✓	1
						L S	B C G													
						L S	B C G													
						L S	B C G													
						L S	B C G													
						L S	B C G													
						L S	B C G													
						L S	B C G													

Relinquished by / Signature	Date/Time 022807 / 1510	COMMENTS
Received by / Signature	Date/Time 2/28/07 1510	* Air bubble in 1
Relinquished by / Signature	Date/Time	VOA
Received by / Signature	Date/Time	CH/LL 2/28/07
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	

*Preservatives

*Hg, Metals	(pH<2 - HNO_3)
*Clean Metals	(pH<2-HNO_3,check in section)
*O&G	(pH<2 - HCl, check in section) & store ≤4°C or on ice
*CN	(pH>12 - NaOH) & store ≤4°C or on ice
*Sulfide	(pH>9 - NaOH) & store ≤4°C or on ice
*COD,NOx, NH_3	(pH<2 - H_2SO_4) & store ≤4°C or on ice
*TKN.TP, Phenols	(pH<2 - H_2SO_4) & store ≤4°C or on ice
*BOD, TSS, Turbidity, Micro	Store ≤4° C or on ice
*Organics, Surfactant, Sulfate	Store ≤4° C or on ice

All sample(s) meet proper *pres requirements unless noted. Yes ✓ No _____ By CH/LL

Sample Type: B=Batch, C=Composite, G=Grab
Matrix: L= Liquid , S = Solid

NOTE: ALL APPLICABLE INFORMATION MUST BE COMPLETED PRIOR TO ACCEPTANCE.

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June 14, 2007

Barbara Mitchell
Public Utilities
Doswell WWTP
P.O. Box 470
Hanover, VA 23069

RE: 2A PERMIT APPLICATION

Dear Barbara:

Enclosed are the analytical results, analytical QA report, field sheet and chain of custody record for the May 23, 2007 sampling event.

The field blanks collected in association with the sampling event were within acceptable limits for the analytes of concern.

Should you have any questions, please feel free to contact me at (757) 460-4247.

Sincerely,

C.M. Reno
for

Dan Barker
Environmental Scientist

DLB/cmr

Enclosures

cc: David VanGelder, Hanover WWTP Manager

HRSD

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP - 2A Permit Application
Customer Sample ID: Field Blank
Project Code: HAN_DO
Sample Point: FB
Sample Date: 05/23/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Total Recoverable Metals							
Arsenic	EPA 200.7	ug/L	<60	60	SWILLI	06/04/07	15:47
Chromium	EPA 200.7	ug/L	<10	10	SWILLI	06/04/07	15:47
Dissolved Metals							
Antimony	EPA 200.7	ug/L	<100	100	SWILLI	06/04/07	15:53
Arsenic	EPA 200.7	ug/L	<60	60	SWILLI	06/04/07	15:53
Beryllium	EPA 200.7	ug/L	<2	2	SWILLI	06/04/07	15:53
Cadmium	EPA 200.8	ug/L	<0.50	0.50	CBATO	06/01/07	11:07
Chromium	EPA 200.7	ug/L	<10	10	SWILLI	06/04/07	15:53
Copper	EPA 200.7	ug/L	<5	5	SWILLI	06/04/07	15:53
Lead	EPA 200.7	ug/L	<20	20	SWILLI	06/04/07	15:53
Mercury	EPA 245.1	ug/L	<0.1	0.1	SLABOC	06/03/07	08:56
Nickel	EPA 200.7	ug/L	<10	10	SWILLI	06/04/07	15:53
Selenium	EPA 200.8	ug/L	<2	2	CBATO	06/01/07	11:07
Silver	EPA 200.7	ug/L	<5	5	SWILLI	06/04/07	15:53
Thallium	EPA 200.7	ug/L	<40	40	SWILLI	06/04/07	15:53
Zinc	EPA 200.7	ug/L	<20	20	SWILLI	06/04/07	15:53
Volatiles							
Acrolein	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
Acrylonitrile	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
Benzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
Bromoform	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
Carbon Tetrachloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
Chlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
Chlorodibromomethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
Chloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
2-Chloroethylvinylether	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
Chloroform	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
Dichlorobromomethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
1,1 Dichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
1,2-Dichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55

Notes

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP - 2A Permit Application
Customer Sample ID: Field Blank
Project Code: HAN_DO
Sample Point: FB
Sample Date: 05/23/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Volatiles							
trans 1,2 Dichloroethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
1,1 Dichloroethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
1,2-Dichloropropane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
1,3-Dichloropropylene[2]	EPA 624	ug/L	<20.0	20.0	SLOPEZ	05/29/07	14:55
Ethylbenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
Methyl bromide	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
Methyl chloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
Methylene chloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
1,1,2,2-Tetrachloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
Tetrachloroethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
Toluene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
1,1,1-Trichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
1,1,2-Trichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
Trichlorethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
Vinyl chloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
1,2 Dichlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
1,3 Dichlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
1,4 Dichlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	14:55
Acid Extractable Compounds							
p-Chloro-m-cresol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
2-Chlorophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
2,4-Dichlorophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
2,4-Dimethylphenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
4,6-Dinitro-o-cresol	EPA 625	ug/L	<20.0	20.0	SLOPEZ	05/25/07	14:11
2,4-Dinitrophenol	EPA 625	ug/L	<20.0	20.0	SLOPEZ	05/25/07	14:11
2-Nitrophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
4-Nitrophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Pentachlorophenol	EPA 625	ug/L	<20.0	20.0	SLOPEZ	05/25/07	14:11
Phenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
2,4,6-Trichlorophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Base Neutral Compounds							
Acenaphthene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Acenaphthylene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Anthracene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Benzidine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	06/06/07	13:45
Benzo(a)anthracene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Benzo(a)pyrene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
3,4 Benzo fluoranthene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Benzo(k)fluoranthene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11

Notes

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

[2] *1,3-Dichloropropylene is the total of cis-1,3-Dichloropropylene and trans-1,3-Dichloropropylene.*

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP - 2A Permit Application
Customer Sample ID: Field Blank
Project Code: HAN_DO
Sample Point: FB
Sample Date: 05/23/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Base Neutral Compounds							
Benzo(ghi)perylene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Bis(2-chloroethoxy)methane	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Bis(2-chloroethyl)ether	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Bis(2-chloroisopropyl)ether	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Bis (2-ethylhexyl) phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
4-Bromophenylphenyl ether	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Butyl benzyl phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
2-Chloronaphthalene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
4-Chlorophenylphenyl ether	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Chrysene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Dibenz(a,h)anthracene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Di-n-butyl phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Di-n-octyl phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
3,3-Dichlorobenzidine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Diethyl phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Dimethyl phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
2,4-Dinitrotoluene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
2,6-Dinitrotoluene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
1,2-Diphenylhydrazine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Fluoranthene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Fluorene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Hexachlorobenzene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Hexachlorobutadiene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Hexachlorocyclopentadiene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Hexachloroethane	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Indeno(1,2,3-cd)pyrene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Isophorone	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Naphthalene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Nitrobenzene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
n-Nitrosodi-n-propylamine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
n-Nitrosodi-methylamine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
n-Nitrosodi-phenylamine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Phenanthrene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
Pyrene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11
1,2,4-Trichlorobenzene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	14:11

Notes
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Authorization: PR Lee **Date:** 06/14/07

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP - 2A Permit Application
Customer Sample ID: Final Effluent
Project Code: HAN_DO
Sample Point: FNE
Sample Date: 05/23/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Autochemistry							
Ammonia (as N)	EPA 350.1	ug/L	<0.20	0.20	LREED	05/25/07	10:56
Cyanide	EPA 335.3	ug/L	10	10	AMOORE	05/30/07	10:58
Hardness	SM 2340B	mg eq $CaCO_3$/L	581	0.1	SWILLI	06/05/07	09:16
Nitrate-Nitrite	EPA 353.2	mg/L	0.64	0.20	AMOORE	05/25/07	12:46
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	2.14	0.50	VJOHNS	05/30/07	16:02
Total Phosphorous	EPA 365.1	mg/L	1.00	0.20	LREED	05/29/07	14:59
Total Dissolved Solids	SM 2540C	mg/L	2120	1	CDUNCA	05/26/07	14:55
Oil and Grease	EPA 413.1	mg/L	<5.0	5.0	RMORGA	05/29/07	07:02
Total Phenol	EPA 420.2	ug/L	<50	50	AMOORE	06/07/07	14:10
Total Recoverable Metals							
Arsenic	EPA 200.7	ug/L	<60	60	SWILLI	06/04/07	15:57
Chromium	EPA 200.7	ug/L	<10	10	SWILLI	06/04/07	15:57
Dissolved Metals							
Antimony	EPA 200.7	ug/L	<100	100	SWILLI	06/04/07	16:19
Arsenic	EPA 200.7	ug/L	<60	60	SWILLI	06/04/07	16:19
Beryllium	EPA 200.7	ug/L	<2	2	SWILLI	06/04/07	16:19
Cadmium	EPA 200.8	ug/L	<0.50	0.50	CBATO	06/01/07	11:11
Chromium	EPA 200.7	ug/L	<10	10	SWILLI	06/04/07	16:19
Copper	EPA 200.7	ug/L	<5	5	SWILLI	06/04/07	16:19
Lead	EPA 200.7	ug/L	<20	20	SWILLI	06/04/07	16:19
Mercury	EPA 245.1	ug/L	<0.1	0.1	SLABOC	06/03/07	08:59
Nickel	EPA 200.7	ug/L	<10	10	SWILLI	06/04/07	16:19
Selenium	EPA 200.8	ug/L	<2	2	CBATO	06/01/07	11:11
Silver	EPA 200.7	ug/L	<5	5	SWILLI	06/04/07	16:19
Thallium	EPA 200.7	ug/L	<40	40	SWILLI	06/04/07	16:19
Zinc	EPA 200.7	ug/L	101	20	SWILLI	06/04/07	16:19
Volatiles							
Acrolein	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
Acrylonitrile	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
Benzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
Bromoform	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
Carbon Tetrachloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
Chlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
Chlorodibromomethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
Chloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
2-Chloroethylvinylether	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
Chloroform	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
Dichlorobromomethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
1,1 Dichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
1,2-Dichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56

Notes

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP - 2A Permit Application
Customer Sample ID: Final Effluent
Project Code: HAN_DO
Sample Point: FNE
Sample Date: 05/23/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Volatiles							
trans 1,2 Dichloroethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
1,1 Dichloroethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
1,2-Dichloropropane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
1,3-Dichloropropylene[2]	EPA 624	ug/L	<20.0	20.0	SLOPEZ	05/29/07	18:56
Ethylbenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
Methyl bromide	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
Methyl chloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
Methylene chloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
1,1,2,2-Tetrachloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
Tetrachloroethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
Toluene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
1,1,1-Trichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
1,1,2-Trichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
Trichlorethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
Vinyl chloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
1,2 Dichlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
1,3 Dichlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
1,4 Dichlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	05/29/07	18:56
Acid Extractable Compounds							
p-Chloro-m-cresol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
2-Chlorophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
2,4-Dichlorophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
2,4-Dimethylphenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
4,6-Dinitro-o-cresol	EPA 625	ug/L	<20.0	20.0	SLOPEZ	05/25/07	16:29
2,4-Dinitrophenol	EPA 625	ug/L	<20.0	20.0	SLOPEZ	05/25/07	16:29
2-Nitrophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
4-Nitrophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Pentachlorophenol	EPA 625	ug/L	<20.0	20.0	SLOPEZ	05/25/07	16:29
Phenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
2,4,6-Trichlorophenol	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Base Neutral Compounds							
Acenaphthene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Acenaphthylene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Anthracene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Benzidine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	06/06/07	11:59
Benzo(a)anthracene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Benzo(a)pyrene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
3,4 Benzo fluoranthene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Benzo(k)fluoranthene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29

Notes

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

[2] *1,3-Dichloropropylene is the total of cis-1,3-Dichloropropylene and trans-1,3-Dichloropropylene.*

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP - 2A Permit Application
Customer Sample ID: Final Effluent
Project Code: HAN_DO
Sample Point: FNE
Sample Date: 05/23/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Base Neutral Compounds							
Benzo(ghi)perylene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Bis(2-chloroethoxy)methane	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Bis(2-chloroethyl)ether	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Bis(2-chloroisopropyl)ether	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Bis (2-ethylhexyl) phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
4-Bromophenylphenyl ether	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Butyl benzyl phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
2-Chloronaphthalene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
4-Chlorophenylphenyl ether	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Chrysene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Dibenz(a,h)anthracene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Di-n-butyl phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Di-n-octyl phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
3,3-Dichlorobenzidine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Diethyl phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Dimethyl phthalate	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
2,4-Dinitrotoluene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
2,6-Dinitrotoluene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
1,2-Diphenylhydrazine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Fluoranthene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Fluorene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Hexachlorobenzene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Hexachlorobutadiene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Hexachlorocyclopentadiene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Hexachloroethane	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Indeno(1,2,3-cd)pyrene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Isophorone	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Naphthalene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Nitrobenzene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
n-Nitrosodi-n-propylamine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
n-Nitrosodi-methylamine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
n-Nitrosodi-phenylamine	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Phenanthrene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
Pyrene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29
1,2,4-Trichlorobenzene	EPA 625	ug/L	<10.0	10.0	SLOPEZ	05/25/07	16:29

Notes
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Authorization: PR Lee **Date:** 061407

QUALITY ASSURANCE REPORT
Level 1

Project: Hanover County - Doswell WWTP - 2A Permit Application
Project Code: HAN_DO
Sample Point: FB; FNE
Sample Date: 05/23/07

Analytical Run Information	Sb	As	Be	Cd	Cr	Cu	Pb	Hg	Ni	Se	Ag	Tl	Zn
Method	200.7	200.7	200.7	200.8	200.7	200.7	200.7	245.2	200.7	200.8	200.8	200.7	200.7
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Method Detection Limit (MDL)	20	20	0.9	0.010	1	1.0	8	0.03	3	0.02	1.9	11	5
Report Limit (RL)	100	60	2	0.5	10	5	20	0.1	10	2	5.0	40	20
Average LRB	<20	<20	<0.9	0.010*	<1	<1.0	<8	<0.03	<3	<0.02	<1.9	<11	<5

Total Metals		As			Cr								
Sample ID: HAN_DO FNE TR													
Matrix Spike Conc.		200			20								
MS Percent Recovery		94%			95%								
MSD Percent Recovery		76%			94%								
MS/MSD RPD		16			<1								

Dissolved Metals	Sb	As	Be	Cd	Cr	Cu	Pb	Hg	Ni	Se	Ag	Tl	Zn
Sample ID: HAN_DO FNE DS													
Matrix Spike Conc.	200	200	10.0	2.0	20	20.0	50	1.0	20	10.0	20.0	100	100
MS Percent Recovery	103%	119%	97%	88%	93%	105%	94%	107%	96%	75%	100%	106%	90%
MSD Percent Recovery	96%	103%	97%	86%	92%	106%	110%	108%	95%	76%	100%	86%	92%
MS/MSD RPD	6	13	<1	3	1	2	14	<1	1	1	<1	19	1

LRB - Laboratory Reagent Blank
MS - Matrix Spike
MSD - Matrix Spike Duplicate
RPD - Relative Percent Difference
*Report Limit is lowest concentration at which quantitation is demonstrated. Values below Report Limit should not be used for compliance determinations due to a high degree of uncertainty.

Validated By Linda Wilkes

Date 061307

Doswell WWTP - 2A Permit Application

Information checked before the start of each sampling event:

1. a. Average of the last five days FNE flow ~~4.6 MGD~~ new 4.5 MGD
   b. Expected FNE flow for next 24 hour sampling period ~4.2 MGD (From Bear Island Paper mill As per plant personel)
   c. Contact Closure (Expected flow/5000 / 30 samples) ~ 28 pulses
2. List the last five days FNE TSS data with the most recent last 9.9 mg/L, 7.2 mg/L (5/17, 5/20)
   _____, _____, _____
3. Is rain expected over the next 24 hours ? Y / (N) (If yes, explain below.)
4. Does RWI have any abnormal characteristics (i.e.. odor, color) ? Y / (N)
   If yes was recorded for the above question, describe characteristics in the notes sectic
5. Composite start time / date:
   Organics: 1110 052207 Calibrated to: 500 mL
6. Composite start time / date:
   Metals: 1110 052207 Calibrated to: 500 mL
7. Sample Personnel: M. Wiggins, G. Thompson

Information checked at the end of the 24 hour sampling period

1. Are sample volumes equal in all composite containers ? (Y) / N
2. Number of samples collected in each composite container 30
3. FNE flow for the sampling period 4.6 MGD, _____
4. TSS during sampling period 11.3 mg/L, _____
5. Does the total flow for the sampling period divided by the flowmeter contact closure equal to the number of samples taken by the Isco sampler ? (Y) / N
6. Are all lids, valves and caps secure ? (Y) / N
7. Composite end time / date:
   Organics: 1110 052307
8. Composite end time / date:
   Metals: 1110 052307
9. Grab end time / date:
   624 FB: 1025 052307 624 FNE: 1030 052307
   Oil & Grease: 1040 052307 Total Phenol: 1050 052307
   Cyanide: 1050 052307
10. Sampling Personnel: M. Wiggins, G. Thompson

Record any other circumstances which could affect the sample result:

TRC check negative.

CENTRAL ENVIRONMENTAL LAB.
1432 AIR RAIL AVENUE
VIRGINIA BEACH, VA 23455
TEL: 757-460-4214
FAX: 757-460-6586

SAMPLE CHAIN OF CUSTODY

PROJECT NAME/CODE: Hanover Co. - Doswell WWTP - 2A Permit Application

ANALYSES REQUIRED & NUMBER OF CONTAINERS

CUSTOMER SAMPLE ID	HRSD Use Only: PROJECT CODE	HRSD Use Only: SAMPLE POINT	DATE	TIME	SAMPLED BY	Circle One: MATRIX	Circle One: SAMPLE TYPE	DS Clean Metals (55)	TR Clean Metals (5)	EPA Semivols (9)	EPA VOAs (10)	Nutrients Presvd (7)	Nutrients Unpresvd (17)	Ammonia (7)	TDS (52)	Cyanide (4)	Oil & Grease (8)	Total Phenol (3)	HRSD Use Only: Pres'v' Checked	HRSD Use Only: CONT. COUNT
Field Blank	HAN_DO	FB	5/23/2007	1110	MW	L S	B C G	1	1	3									✓	5
Field Blank	HAN_DO	FB	5/23/2007	1025	MW	L S	B C G				4								✓	4
Final Effluent	HAN_DO	FNE	5/23/2007	1110	MW	L S	B C G	1	1	6		1	1	1	1				✓	12
Final Effluent	HAN_DO	FNE	5/23/2007	1030	MW	L S	B C G				10								✓	10
Final Effluent	HAN_DO	FNE	5/23/2007	1050	MW	L S	B C G									1			✓	1
Final Effluent	HAN_DO	FNE	5/23/2007	1040	MW	L S	B C G										2		✓	2
Final Effluent	HAN_DO	FNE	5/23/2007	1052	MW	L S	B C G											1	✓	1
						L S	B C G													
						L S	B C G													
						L S	B C G													
						L S	B C G													
						L S	B C G													
						L S	B C G													
						L S	B C G													

Relinquished by / Signature	Date/Time 05/23/07 1443	COMMENTS
Received by / Signature	Date/Time 5/23/07 1443	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	

*Preservatives

*Hg, Metals	(pH<2 - HNO_3)
*Clean Metals	(pH<2-HNO_3,check in section)
*O&G (pH<2 - HCl, check in section) & store ≤4°C or on ice	
*CN	(pH>12 - NaOH) & store ≤4°C or on ice
*Sulfide	(pH>9 - NaOH) & store ≤4°C or on ice
*COD,NOx, NH_3	(pH<2 - H_2SO_4) & store ≤4°C or on ice
*TKN,TP, Phenols	(pH<2 - H_2SO_4) & store ≤4°C or on ice
*BOD, TSS, Turbidity, Micro	Store ≤4° C or on ice
*Organics, Surfactant, Sulfate	Store ≤4° C or on ice

All sample(s) meet proper *preservation requirements unless noted. Yes ✓ No ____ By ____

Sample Type: B=Batch. C=Composite. G=Grab
Matrix: L= Liquid S = Solid

NOTE: ALL APPLICABLE INFORMATION MUST BE COMPLETED PRIOR TO ACCEPTANCE.

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York

September 11, 2007

Barbara Mitchell
Public Utilities
Doswell WWTP
P.O. Box 470
Hanover, VA 23069

RE: 2A PERMIT APPLICATION

Dear Barbara:

Enclosed are the analytical results, analytical QA report, field sheet, subcontracted data and chain of custody record for the July 25, 2007 sampling event.

The field blanks collected in association with the sampling event were within acceptable limits for the analytes of concern.

Should you have any questions, please feel free to contact me at (757) 460-4247.

Sincerely,

Dan Barker
Environmental Scientist

DLB/cmr

Enclosures

cc: David VanGelder, Hanover WWTP Manager

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP - 2A Permit Application
Customer Sample ID: Field Blank
Project Code: HAN_DO
Sample Point: FB
Sample Date: 07/25/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Total Recoverable Metals							
Arsenic	EPA 200.7	ug/L	<60	60	SWILLI	07/27/07	13:57
Chromium	EPA 200.7	ug/L	<10	10	SWILLI	07/27/07	13:57
Dissolved Metals							
Antimony	EPA 200.7	ug/L	<100	100	SLABOC	07/28/07	12:23
Arsenic	EPA 200.7	ug/L	<60	60	SWILLI	07/27/07	14:00
Beryllium	EPA 200.7	ug/L	<2	2	SWILLI	07/27/07	14:00
Cadmium	EPA 200.8	ug/L	<0.50	0.50	CBATO	07/30/07	11:20
Chromium	EPA 200.7	ug/L	<10	10	SWILLI	07/27/07	14:00
Copper	EPA 200.7	ug/L	<5	5	SWILLI	07/27/07	14:00
Lead	EPA 200.7	ug/L	<20	20	SWILLI	07/27/07	14:00
Mercury	EPA 245.1	ug/L	<0.1	0.1	SLABOC	07/28/07	08:49
Nickel	EPA 200.7	ug/L	<10	10	SWILLI	07/27/07	14:00
Selenium	EPA 200.8	ug/L	<2	2	CBATO	07/30/07	11:20
Silver	EPA 200.7	ug/L	<5	5	SWILLI	07/27/07	14:00
Thallium	EPA 200.7	ug/L	<40	40	SWILLI	07/27/07	14:00
Zinc	EPA 200.7	ug/L	<20	20	SWILLI	07/27/07	14:00
Volatiles							
Acrolein	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
Acrylonitrile	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
Benzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
Bromoform	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
Carbon Tetrachloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
Chlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
Chlorodibromomethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
Chloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
2-Chloroethylvinylether	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
Chloroform	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
Dichlorobromomethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
1,1 Dichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
1,2-Dichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32

Notes

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP - 2A Permit Application
Customer Sample ID: Field Blank
Project Code: HAN_DO
Sample Point: FB
Sample Date: 07/25/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Volatiles							
trans 1,2 Dichloroethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
1,1 Dichloroethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
1,2-Dichloropropane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
1,3-Dichloropropylene[2]	EPA 624	ug/L	<20.0	20.0	SLOPEZ	07/26/07	12:32
Ethylbenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
Methyl bromide	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
Methyl chloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
Methylene chloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
1,1,2,2-Tetrachloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
Tetrachloroethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
Toluene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
1,1,1-Trichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
1,1,2-Trichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
Trichlorethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
Vinyl chloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
1,2 Dichlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
1,3 Dichlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
1,4 Dichlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	12:32
Total Xylenes	SW-846 8260	ug/L	<6.00	6.0	SLOPEZ	07/26/07	12:32
Acid Extractable Compounds							
p-Chloro-m-cresol	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
2-Chlorophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
2,4-Dichlorophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
2,4-Dimethylphenol	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
4,6-Dinitro-o-cresol	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
2,4-Dinitrophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
2-Nitrophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
4-Nitrophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Pentachlorophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Phenol	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
2,4,6-Trichlorophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Base Neutral Compounds							
Acenaphthene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Acenaphthylene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Anthracene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Benzidine	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Benzo(a)anthracene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Benzo(a)pyrene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
3,4 Benzo fluoranthene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Benzo(k)fluoranthene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Benzo(b)fluoranthene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31

Notes

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

[2] *1,3-Dichloropropylene is the total of cis-1,3-Dichloropropylene and trans-1,3-Dichloropropylene.*

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP - 2A Permit Application
Customer Sample ID: Field Blank
Project Code: HAN_DO
Sample Point: FB
Sample Date: 07/25/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Base Neutral Compounds							
Benzo(ghi)perylene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Bis(2-chloroethoxy)methane	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Bis(2-chloroethyl)ether	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Bis(2-chloroisopropyl)ether	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Bis (2-ethylhexyl) phthalate	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
4-Bromophenylphenyl ether	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Butyl benzyl phthalate	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
2-Chloronaphthalene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
4-Chlorophenylphenyl ether	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Chrysene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Dibenz(a,h)anthracene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Di-n-butyl phthalate	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Di-n-octyl phthalate	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
3,3-Dichlorobenzidine	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Diethyl phthalate	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Dimethyl phthalate	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
2,4-Dinitrotoluene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
2,6-Dinitrotoluene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
1,2-Diphenylhydrazine	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Fluoranthene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Fluorene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Hexachlorobenzene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Hexachlorobutadiene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Hexachlorocyclopentadiene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Hexachloroethane	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Indeno(1,2,3-cd)pyrene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Isophorone	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Naphthalene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Nitrobenzene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
n-Nitrosodi-n-propylamine	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
n-Nitrosodi-methylamine	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
n-Nitrosodi-phenylamine	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Phenanthrene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
Pyrene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31
1,2,4-Trichlorobenzene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/07/07	22:31

Notes

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP - 2A Permit Application
Customer Sample ID: Field Blank
Project Code: HAN_DO
Sample Point: FB
Sample Date: 07/25/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Pesticides & PCB's							
Hexachlorocyclohexane Alpha-BHC	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:16
Alpha-Endosulfan	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:16
Hexachlorocyclohexane Beta-BHC	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:16
Beta-Endosulfan	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:16
Endosulfan sulfate	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:16
Endrin aldehyde	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:16
Heptachlor epoxide	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:16
PCB 1016	EPA 608	ug/L	ND	1.00	RPRICE	08/01/07	15:35
PCB 1221	EPA 608	ug/L	ND	1.00	RPRICE	08/01/07	15:35
PCB 1232	EPA 608	ug/L	ND	1.00	RPRICE	08/01/07	15:35
PCB 1242	EPA 608	ug/L	ND	1.00	RPRICE	08/01/07	15:35
PCB 1248	EPA 608	ug/L	ND	1.00	RPRICE	08/01/07	15:35
PCB 1254	EPA 608	ug/L	ND	1.00	RPRICE	08/01/07	15:35
PCB 1260	EPA 608	ug/L	ND	1.00	RPRICE	08/01/07	15:35
PCB Total[2]	EPA 608	ug/L	ND	7.00	RPRICE	08/01/07	15:35
Pesticides & PCB's							
Aldrin	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:16
Mirex	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:16
Chlordane	EPA 608	ug/L	ND	0.20	RPRICE	08/02/07	12:16
DDD	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:16
DDE	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:16
DDT	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:16
Diedrin	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:16
Endrin	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:16
Heptachlor	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:16
Hexachlorocyclohexane (Lindane)	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:16
Mehoxychlor	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:16
Toxaphene	EPA 608	ug/L	ND	5.0	RPRICE	08/02/07	12:16
Kepone	EPA 608	ug/L	<0.40	0.4	RPRICE	07/31/07	17:25
Organophosphorous Pesticides							
Demetron	EPA 622	ug/L	<0.10	0.1	RPRICE	07/27/07	18:38
Guthion	EPA 622	ug/L	<0.10	0.1	RPRICE	07/27/07	18:38
Malathion	EPA 622	ug/L	<0.10	0.1	RPRICE	07/27/07	18:38
Chloropyrifos	EPA 622	ug/L	<0.10	0.1	RPRICE	07/27/07	18:38
Parathion	EPA 622	ug/L	<0.10	0.1	RPRICE	07/27/07	18:38

Notes

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

[2] *PCB Total is the sum concentration of the individual PCB Aroclors.*

Authorization: PRLee **Date:** 082207

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP - 2A Permit Application
Customer Sample ID: Final Effluent
Project Code: HAN_DO
Sample Point: FNE
Sample Date: 07/25/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Autochemistry							
Ammonia (as N)	EPA 350.1	mg/L	0.26	0.20	LREED	08/01/07	09:26
Chlorides	SM4500Cl-B	mg/L	29		JGETTI	08/01/07	07:52
Cyanide	EPA 335.3	ug/L	<10	10	AMOORE	07/27/07	13:58
Hardness	SM 2340B	mg eq $CaCO_3$/L	521	0.1	SLABOC	07/28/07	12:50
Nitrate-Nitrite	EPA 353.2	mg/L	2.44	0.20	GMCCAR	07/26/07	14:53
Total Kjeldahl Nitrogen	EPA 351.2	mg/L	2.72	0.50	VJOHNS	07/27/07	11:12
Total Phosphorous	EPA 365.1	mg/L	1.22	0.20	LREED	07/26/07	14:12
Total Dissolved Solids	SM 2540C	mg/L	1790	1.0	TGAY	07/27/07	16:00
Oil and Grease	EPA 1664A	mg/L	<5.0	5.0	RMORGA	08/03/07	06:35
Sulfide	ASTM D 4658	mg/L	<0.3	0.3	RMORGA	07/26/07	07:45
Total Phenol	EPA 420.2	ug/L	<50	50	AMOORE	07/29/07	09:51
Total Recoverable Metals							
Arsenic III	EPA 200.7	ug/L	<60	60	SWILLI	07/27/07	14:27
Chromium	EPA 200.7	ug/L	<10	10	SWILLI	07/27/07	14:29
Dissolved Metals							
Antimony	EPA 200.7	ug/L	<100	100	SLABOC	07/28/07	12:26
Arsenic	EPA 200.7	ug/L	<60	60	SWILLI	07/27/07	14:04
Beryllium	EPA 200.7	ug/L	<2	2	SWILLI	07/27/07	14:04
Cadmium	EPA 200.8	ug/L	<0.50	0.50	CBATO	07/30/07	11:24
Chromium	EPA 200.7	ug/L	<10	10	SWILLI	07/27/07	14:04
Chromium III	Calculation	ug/L	<10	10			
Chromium VI	SM3500-Cr D	ug/L	<5.0	5.0	SLABOC	07/28/07	09:21
Copper	EPA 200.7	ug/L	<5	5	SWILLI	07/27/07	14:04
Lead	EPA 200.7	ug/L	30	20	SWILLI	08/16/07	14:57
Mercury	EPA 245.1	ug/L	<0.1	0.1	SLABOC	07/28/07	08:52
Nickel	EPA 200.7	ug/L	<10	10	SWILLI	07/27/07	14:04
Selenium	EPA 200.8	ug/L	<2	2	CBATO	07/30/07	11:24
Silver	EPA 200.7	ug/L	<5	5	SWILLI	07/27/07	14:04
Thallium	EPA 200.7	ug/L	<40	40	SWILLI	07/27/07	14:04
Zinc	EPA 200.7	ug/L	134	20	SWILLI	07/27/07	14:04
Volatiles							
Acrolein	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
Acrylonitrile	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
Benzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
Bromoform	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
Carbon Tetrachloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
Chlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
Chlorodibromomethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
Chloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
2-Chloroethylvinylether	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
Chloroform	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
Dichlorobromomethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
1,1 Dichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
1,2-Dichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30

Notes

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP - 2A Permit Application
Customer Sample ID: Final Effluent
Project Code: HAN_DO
Sample Point: FNE
Sample Date: 07/25/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Volatiles							
trans 1,2 Dichloroethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
1,1 Dichloroethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
1,2-Dichloropropane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
1,3-Dichloropropylene[2]	EPA 624	ug/L	<20.0	20.0	SLOPEZ	07/26/07	14:30
Ethylbenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
Methyl bromide	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
Methyl chloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
Methylene chloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
1,1,2,2-Tetrachloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
Tetrachloroethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
Toluene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
1,1,1-Trichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
1,1,2-Trichloroethane	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
Trichlorethylene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
Vinyl chloride	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
1,2 Dichlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
1,3 Dichlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
1,4 Dichlorobenzene	EPA 624	ug/L	<10.0	10.0	SLOPEZ	07/26/07	14:30
Total Xylenes	SW-846 8260	ug/L	<6.00	6.0	SLOPEZ	07/26/07	14:30
Acid Extractable Compounds							
p-Chloro-m-cresol	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
2-Chlorophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
2,4-Dichlorophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
2,4-Dimethylphenol	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
4,6-Dinitro-o-cresol	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
2,4-Dinitrophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
2-Nitrophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
4-Nitrophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Pentachlorophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Phenol	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
2,4,6-Trichlorophenol	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Base Neutral Compounds							
Acenaphthene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Acenaphthylene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Anthracene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Benzidine	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Benzo(a)anthracene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Benzo(a)pyrene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
3,4 Benzo fluoranthene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Benzo(k)fluoranthene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Benzo(b)fluoranthene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53

Notes

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

[2] *1,3-Dichloropropylene is the total of cis-1,3-Dichloropropylene and trans-1,3-Dichloropropylene.*

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP - 2A Permit Application
Customer Sample ID: Final Effluent
Project Code: HAN_DO
Sample Point: FNE
Sample Date: 07/25/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Base Neutral Compounds							
Benzo(ghi)perylene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Bis(2-chloroethoxy)methane	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Bis(2-chloroethyl)ether	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Bis(2-chloroisopropyl)ether	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Bis (2-ethylhexyl) phthalate	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
4-Bromophenylphenyl ether	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Butyl benzyl phthalate	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
2-Chloronaphthalene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
4-Chlorophenylphenyl ether	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Chrysene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Dibenz(a,h)anthracene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Di-n-butyl phthalate	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Di-n-octyl phthalate	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
3,3-Dichlorobenzidine	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Diethyl phthalate	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Dimethyl phthalate	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
2,4-Dinitrotoluene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
2,6-Dinitrotoluene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
1,2-Diphenylhydrazine	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Fluoranthene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Fluorene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Hexachlorobenzene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Hexachlorobutadiene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Hexachlorocyclopentadiene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Hexachloroethane	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Indeno(1,2,3-cd)pyrene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Isophorone	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Naphthalene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Nitrobenzene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
n-Nitrosodi-n-propylamine	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
n-Nitrosodi-methylamine	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
n-Nitrosodi-phenylamine	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Phenanthrene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
Pyrene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53
1,2,4-Trichlorobenzene	EPA 625	ug/L	<10.0	10.0	IGERAS	08/08/07	02:53

Notes
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

HRSD
P.O. BOX 5911, VIRGINIA BEACH, VIRGINIA 23471-0911 • (757) 460-4205 • FAX: (757) 460-6586
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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP - 2A Permit Application
Customer Sample ID: Final Effluent
Project Code: HAN_DO
Sample Point: FNE
Sample Date: 07/25/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Pesticides & PCB's							
Hexachlorocyclohexane Alpha-BHC	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:30
Alpha-Endosulfan	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:30
Hexachlorocyclohexane Beta-BHC	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:30
Beta-Endosulfan	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:30
Endosulfan sulfate	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:30
Endrin aldehyde	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:30
Heptachlor epoxide	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:30
PCB 1016	EPA 608	ug/L	ND	1.00	RPRICE	08/01/07	15:50
PCB 1221	EPA 608	ug/L	ND	1.00	RPRICE	08/01/07	15:50
PCB 1232	EPA 608	ug/L	ND	1.00	RPRICE	08/01/07	15:50
PCB 1242	EPA 608	ug/L	ND	1.00	RPRICE	08/01/07	15:50
PCB 1248	EPA 608	ug/L	ND	1.00	RPRICE	08/01/07	15:50
PCB 1254	EPA 608	ug/L	ND	1.00	RPRICE	08/01/07	15:50
PCB 1260	EPA 608	ug/L	ND	1.00	RPRICE	08/01/07	15:50
PCB Total[3]	EPA 608	ug/L	ND	7.00	RPRICE	08/01/07	15:50
Pesticides & PCB's							
Aldrin	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:30
Mirex	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:30
Chlordane	EPA 608	ug/L	ND	0.20	RPRICE	08/02/07	12:30
DDD	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:30
DDE	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:30
DDT	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:30
Diedrin	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:30
Endrin	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:30
Heptachlor	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:30
Hexachlorocyclohexane (Lindane)	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:30
Mehoxychlor	EPA 608	ug/L	<0.05	0.05	RPRICE	08/02/07	12:30
Toxaphene	EPA 608	ug/L	ND	5.0	RPRICE	08/02/07	12:30
Kepone	EPA 608	ug/L	<0.40	0.4	RPRICE	07/31/07	17:34
Organophosphorous Pesticides							
Demetron	EPA 622	ug/L	<0.10	0.1	RPRICE	07/27/07	18:52
Guthion	EPA 622	ug/L	<0.10	0.1	RPRICE	07/27/07	18:52
Malathion	EPA 622	ug/L	<0.10	0.1	RPRICE	07/27/07	18:52
Chloropyrifos	EPA 622	ug/L	<0.10	0.1	RPRICE	07/27/07	18:52
Parathion	EPA 622	ug/L	<0.10	0.1	RPRICE	07/27/07	18:52
Subcontracted Parameters							
Dioxin	EPA 1613						
Tributyltin	Unger *et al*	ng/L		30			

Notes

[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

[2] *PCB Total is the sum concentration of the individual PCB Aroclors.*

Authorization: PR Lee **Date:** 082207

QUALITY ASSURANCE REPORT
Level 1

Project: Hanover County - Doswell WWTP - 2A Permit Application
Project Code: HAN_DO
Sample Point: FB; FNE
Sample Date: 07/25/07

Analytical Run Information	Sb	As	Be	Cd	Cr	Cu	Pb	Hg	Ni	Se	Ag	Tl	Zn
Method	200.7	200.7	200.7	200.8	200.7	200.7	200.7	245.1	200.7	200.8	200.7	200.7	200.7
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Method Detection Limit (MDL)	20	20	0.9	0.010	1	1.0	8	0.03	3	0.02	1.9	11	5
Report Limit (RL)	100	60	2	0.5	10	5	20	0.1	10	2	5.0	40	20
Average LRB	20*	<20	<0.9	<0.010	<1	<1.0	<8	<0.03	<3	<0.02	<1.9	<11	<5

Dissolved Metals	Sb	As	Be	Cd	Cr	Cu	Pb	Hg	Ni	Se	Ag	Tl	Zn
Sample ID: HAN_DO FNE DS													
Matrix Spike Conc.	200	200	10.0	2.0	20	20.0	50	1.0	20	10.0	20.0	100	100
MS Percent Recovery	99%	93%	95%	86%	89%	103%	116%	107%	103%	92%	102%	89%	92%
MSD Percent Recovery	103%	102%	99%	92%	92%	106%	109%	101%	101%	97%	104%	95%	97%
MS/MSD RPD	2	9	4	6	3	2	4	5	2	5	2	6	2

LRB - Laboratory Reagent Blank
MS - Matrix Spike
MSD - Matrix Spike Duplicate
RPD - Relative Percent Difference
*Report Limit is lowest concentration at which quantitation is demonstrated. Values below Report Limit should not be used for compliance determinations due to a high degree of uncertainty.

Validated By Sadha Willia

Date 081607

Doswell WWTP - 2A Permit Application

Information checked before the start of each sampling event:

1. a. Average of the last five days FNE flow —
   b. Expected FNE flow for next 24 hour sampling period ~ 4.3 MGD (From Bear Island Paper Mill as per plant personnel)
   c. Contact Closure (Expected flow/5060/ 30 samples) ~ 28 pulses
2. List the last five days FNE TSS data with the most recent last 16.8 mg/L 7/24 16.9 mg/L 7/24
   _____, _____, _____
3. Is rain expected over the next 24 hours ? Y / (N) (If yes, explain below.)
4. Does RWI have any abnormal characteristics (i.e.. odor, color) ? Y / (N)
   If yes was recorded for the above question, describe characteristics in the notes sectio
5. Composite start time / date:
   Organics: 1100 072407 Calibrated to: 500 mL
6. Composite start time / date:
   Dioxin: 1100 072407 Calibrated to: 500 mL
7. Composite start time / date:
   Metals: 1100 072407 Calibrated to: 500 mL
8. Sampling Personnel: M. Wiggins, G. Thompson

Information checked at the end of the 24 hour sampling period

1. Are sample volumes equal in all composite containers ? (Y) N
2. Number of samples collected in each composite container 28
3. FNE flow for the sampling period 4.159 MGD
4. TSS during sampling period N/A, _____
5. Does the total flow for the sampling period divided by the flowmeter contact closure equal to the number of samples taken by the Isco sampler ? (Y) N
6. Are all lids, valves and caps secure ? (Y) N
7. Composite end time / date:
   Organics: 1100 072507
8. Composite end time / date:
   Dioxin: 1100 072507
9. Composite end time / date:
   Metals: 1100 072507
10. Grab end time / date:
    624 FB: 1000 072507 624 FNE: 1005 072507
    Oil & Grease: 1010 072507 Total Phenol: 1012 072507
    Cyanide: 1013 072507 Cr VI: 1040 072507
    Sulfide: 1012 072507
11. Sampling Personnel: M. Wiggins, G. Thompson

Record any other circumstances which could affect the sample result:

TRC check negative.

Cr VI pH 9.46 (400 drops 0.1 NaOH)

SAMPLE CHAIN OF CUSTODY

CENTRAL ENVIRONMENTAL LAB.
1432 AIR RAIL AVENUE
VIRGINIA BEACH, VA 23455
TEL: 757-460-4214
FAX: 757-460-6586

PROJECT NAME/CODE: Hanover Co. - Doswell WWTP - 2A Permit Application

ANALYSES REQUIRED & NUMBER OF CONTAINERS

CUSTOMER SAMPLE ID	HRSD Use Only: PROJECT CODE	HRSD Use Only: SAMPLE POINT	DATE	TIME	SAMPLED BY	Circle One: MATRIX	Circle One: SAMPLE TYPE	DS Clean Metals (55)	TR Clean Metals (5)	EPA Semivols (9)	EPA VOAs (10)	Nutrients Presvd (7)	Nutrients Unpresvd (17)	Ammonia (7)	TDS (32)	Cyanide (4)	Oil & Grease (8)	Chlorides (12)	Sulfides (64)	Chromium VI (55)	Total Phenol (3)	HRSD Use Only: Pres'V' Checked	HRSD Use Only: CONT. COUNT
Field Blank	HAN_DO	FB	7/25/2007	1100	MW	L S	B C G	1	1	3												✓	5
Field Blank	HAN_DO	FB	7/25/2007	1000	MW	L S	B C G				4											✓	4
Final Effluent	HAN_DO	FNE	7/25/2007	1100	MW	L S	B C G	1	1	14		1	1	1	1			1				✓	21
Final Effluent	HAN_DO	FNE	7/25/2007	1005	MW	L S	B C G				10											✓	10
Final Effluent	HAN_DO	FNE	7/25/2007	1013	MW	L S	B C G									1						✓	1
Final Effluent	HAN_DO	FNE	7/25/2007	1010	MW	L S	B C G										2					✓	2
Final Effluent	HAN_DO	FNE	7/25/2007	1040	MW	L S	B C G													1		✓	1
Final Effluent	HAN_DO	FNE	7/25/2007	1012	MW	L S	B C G														1	✓	1
Final Effluent	HAN_DO	FNE	7/25/2007	1012	MW	L S	B C G												1			✓	1

Relinquished by / Signature	Date/Time 072507 / 1547	COMMENTS
Received by / Signature	Date/Time 072507 / 1547	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	

***Preservatives**

*Hg, Metals	(pH<2 - HNO_3)
*Clean Metals	(pH<2-HNO_3,check in section)
*O&G	(pH<2 - HCl, check in section) & store ≤4°C or on ice
*CN	(pH>12 - NaOH) & store ≤4°C or on ice
*Sulfide	(pH>9 - NaOH) & store ≤4°C or on ice
*COD,NOx, NH_3	(pH<2 - H_2SO_4) & store ≤4°C or on ice
*TKN,TP, Phenols	(pH<2 - H_2SO_4) & store ≤4°C or on ice
*BOD, TSS, Turbidity, Micro	Store ≤4° C or on ice
*Organics, Surfactant, Sulfate	Store ≤4° C or on ice

All sample(s) meet proper *preservation requirements unless noted. Yes ✓ No ____ By ____

Sample Type: B=Batch, C=Composite, G=Grab
Matrix: L= Liquid , S = Solid

NOTE: ALL APPLICABLE INFORMATION MUST BE COMPLETED PRIOR TO ACCEPTANCE.

WILLIAM & MARY
VIMS
Department of Environmental and Aquatic Animal Health
Virginia Institute of Marine Science
School of Marine Science

August 7, 2007

Jesse DeLuna
HRSD/Central Environmental Lab
1432 Air Rail Avenue
Virginia Beach, VA 23455

Dear Jesse:

The wastewater sample (HAN_DO FNE, 7-25-07) that you submitted on August 2, 2007 for tributyltin analysis was found to contain nondetectable TBT^{+}, DBT^{+2} and MBT^{+3} (detection limit = 30 ng/L (pptr)).

This sample was extracted on August 3, 2007 and was analyzed by GC/FPD on August 6, 2007.

If you have any questions, please call me at 804-684-7654.

Sincerely,

Ellen Travelstead

Ellen Travelstead
TBT Project Supervisor

PO Box 1346 • Route 1208, Greate Road • Gloucester Point, Virginia 23062-1346 USA
804/684-7260 • FAX 804/684-7186

Columbia Analytical Services INC.

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Certificate of Analysis

10655 Richmond Avenue, Suite 130-A, Houston, TX 77042
Phone (713)266-1599 Fax (713)266-0130
www.caslab.com

COLUMBIA ANALYTICAL SERVICES, INC

Client:	Hampton Roads Sanitation District	**Service Request No.:**	E0700731
Project:	Hanover Co.-Doswell WWTP/361445	**Date Received:**	07/27/07
Sample Matrix:	Aqueous		

CASE NARRATIVE

All analyses were performed in adherence to the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One aqueous sample was received for analysis at Columbia Analytical Services on 07/27/07.

The following discrepancies were noted upon initial sample inspection: no custody seals on cooler(s). The exceptions are also noted on the cooler receipt and preservation form included in this data package.

The sample was received at 2°C in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

MS/MSD

EQ0700253: Laboratory Control Spike (LCS) sample was analyzed in addition to an MS/MSD for this extraction batch. The batch quality control criteria were met. The batch precision (MS/MSD) measurements were determined on another order in the extraction batch. The MS/MSD results are not included in this report.

Detection Limits

Detection limits are calculated for each congener in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

Approved by Xiangqiu Liang **Date** 8/30/07

Xiangqiu Liang, Laboratory Director

Client: Hampton Roads Sanitation District
Project: Hanover Co. - Doswell WWTP/361445

Service Request: E0700731

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
E0700731-001	HAN_DO FNE	07/25/07	11:00

Data Qualifier Flags

- B — Used when an associated analyte is found in the method blank, as well as in the sample
- C — Confirmation of the TCDF compound: When 2378-TCDF is detected on the DB-5 column, confirmation analyses are performed on a second column (DB-225.) The results from both the DB-5 column and the DB-225 column are included in this data package. The results from the DB-225 analyses should be used to evaluate the 2378-TCDF in the samples. The confirmed result should be used in determining the TEQ value for TCDF. The samples requiring confirmation are indicated in the table above.
- E — Indicates an estimated value – used when the analyte concentration exceeds the upper end of the linear calibration range
- J — Indicates an estimated value – used when the analyte concentration is below the method reporting limit (MRL) and above the detection limit (DL)
- K — EMPC - When the ion abundance ratios associated with a particular compound are outside the QC limits, samples are flagged with a 'K' flag. A 'K' flag indicates an estimated maximum possible concentration for the associated compound.
- U — Indicates the compound was analyzed and not detected.
- X — User defined; see case narrative for detailed explanation
- Y — Samples that had recoveries of labeled standards outside the acceptance limits are flagged with 'Y' flags on the Form 2s. In all cases, the signal-to-noise ratios are greater than 10:1, making these data acceptable.
- * — Indicates concentration is reported as 'Not Detected'
- S — Peak is saturated; data not reportable
- Q — Lock-mass interference by ether compounds

CAS/HOU - Form Production, Peer Review & Project Review Signatures

SR# Unique ID E0700731

First Level - Data Processing - to be filled by person generating the forms

Date	8/17/07	Person 1	SB
Date		Person 2	

Second Level - Data Review - to be filled by person doing peer review

Date	08/17/07	Primary Data Reviewer	Cel
Date		Secondary Data Reviewer	

Project Level - Review - to be filled by person doing project compliance review

Date	8/30/07	Reviewer	SB

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Dioxin/Furan

Analytical Report

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Hampton Roads Sanitation District	**Service Request:**	E0700731
Project:	Hanover Co. - Doswell WWTP/361445	**Date Collected:**	
Sample Matrix:	Water	**Date Received:**	
Sample Name:	Method Blank	**Units:**	pg/L
Lab Code:	EQ0700253-01.R01	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	8/15/07 1133
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	8/13/07
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-02
		GC Column:	DB-5
Data File Name:	U211293	**Blank File Name:**	U211293
ICAL Name:	U704131613I	**Cal Ver. File Name:**	U211292

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.581	10.0			1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
C13-2,3,7,8-TCDD	2000	1653.320	83		25-164	0.77	1.009
CL37-2,3,7,8-TCDD	800	582.001	73		35-197	NA	1.010

Comments: DB 8/30

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Hampton Roads Sanitation District	**Service Request:**	E0700731
Project:	Hanover Co. - Doswell WWTP/361445	**Date Collected:**	07/25/2007
Sample Matrix:	Water	**Date Received:**	07/27/2007
Sample Name:	HAN_DO FNE	**Units:**	pg/L
Lab Code:	E0700731-001	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	8/15/07 1219
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	8/13/07
Sample Amount:	990mL	**Instrument Name:**	E-HRMS-02
		GC Column:	DB-5
Data File Name:	U211294	**Blank File Name:**	U211293
ICAL Name:	U704131613I	**Cal Ver. File Name:**	U211292

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.393	10.1			1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
C13-2,3,7,8-TCDD	2000	1326.937	66		25-164	0.79	1.009
CL37-2,3,7,8-TCDD	800	620.391	78		35-197	NA	1.010

Comments: VC 8/30/07

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Accuracy & Precision Data

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Hampton Roads Sanitation District
Project: Hanover Co. - Doswell WWTP/361445
Sample Matrix: Water

Service Request: E0700731

Sample Name: Lab Control Sample
Lab Code: EQ0700253-02

Units: pg/L
Basis: NA

Analytical Method: 1613B
Prep Method: Method Sep Funnel/Jar

Analyte Name	Lab Control Sample Result	Expected	% Rec	% Rec Limits
2,3,7,8-TCDD	207	200	104	50 - 150

Comments: AB 8/30/07

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Hampton Roads Sanitation District	**Service Request:**	E0700731
Project:	Hanover Co. - Doswell WWTP/361445	**Date Collected:**	
Sample Matrix:	Water	**Date Received:**	
Sample Name:	Lab Control Sample	**Units:**	pg/L
Lab Code:	EQ0700253-02	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analytical Method:	1613B	**Date Analyzed:**	8/16/07 0700
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	8/13/07
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-01
		GC Column:	DB-5
Data File Name:	U122383	**Blank File Name:**	U211293
ICAL Name:	U6011071613I	**Cal Ver. File Name:**	U122381

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	**207**		0.185	10.0	0.79	1.001	1

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	%Rec	Q	Control Limits	Ion Ratio	RRT
C13-2,3,7,8-TCDD	2000	1705.212	85		25-164	0.77	1.007
CL37-2,3,7,8-TCDD	800	656.909	82		35-197	NA	1.008

Comments:

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Chain-of-custody

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CENTRAL ENVIRONMENTAL LAB.
1432 AIR RAIL AVENUE
VIRGINIA BEACH, VA 23455
TEL: 757-460-4214
FAX: 757-460-6586

SAMPLE CHAIN OF CUSTODY

PROJECT NAME/CODE: Hanover Co. - Doswell WWTP
PROJECT NUMBER:_____

CONTAINERS (NUMBER)

SAMPLE SOURCE CODE/SAMPLING POINT	DATE	TIME	SAMPLED BY	MATRIX **	SAMPLE TYPE *	# CONT. REC'D.	SPLIT IN LAB?	Dioxin	Pres'v Check *	CONT. COUNT
HAN_DO FNE	7/25/2007	1100	MW	L	C	2	N	2		
					B C G		Y N			
					B C G		Y N			
					B C G		Y N			
					B C G		Y N			
					B C G		Y N			
					B C G		Y N			
					B C G		Y N			
					B C G		Y N			
					B C G		Y N			
					B C G		Y N			
					B C G		Y N			
					B C G		Y N			
					B C G		Y N			

Relinquished by / Signature	Date/Time 07/26/07 @ 1321	COMMENTS
Received by / Signature	Date/Time 7/27/07 8:15	Purchase Order #: 361445
Relinquished by / Signature	Date/Time 2°C	
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	

Preservatives

*Hg, Metals	(pH<2 - HNO_3)
**Clean Metals	(pH<2-HNO_3,check in section)
*CN	(pH>12 - NaOH)
*COD,NOX, O&G	(pH<2 - H_2SO_4)
*TKN.TP, Phenols	(pH<2 - H_2SO_4)
*BOD, TSS, Cl, CNS, Micro	Store at 4^0 C
*Organics	Store at 4^0 C
*Turbidity, Surfactant	Store at 4^0 C

* Sample Type: **B**=Batch, **C**=Composite, **G**=Grab

** Matrix: L=Liquid, S=Solid

NO [illegible] INFORMATION MUST B[illegible] COMPLETED PRIOR TO ACCEPTANCE.

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York

November 16, 2007

Barbara Mitchell
Public Utilities
Doswell WWTP
P.O. Box 470
Hanover, VA 23069

RE: PERMIT APPLICATION

Dear Barbara:

Enclosed are the analytical results, analytical QA reports, field sheets, and chain of custody records for the October 11-12, 17-18, 24-25 and 31, 2007 sampling event.

The field blanks collected in association with the sampling event were within acceptable limits for the analytes of concern.

Should you have any questions, please feel free to contact me at (757) 460-4247.

Sincerely,

Dan Barker
Environmental Scientist

DLB/cmr

Enclosures

cc: Matthew Ellinghaus, Hanover County Department of Utilities

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP
Customer Sample ID: Field Blank
Project Code: HAN_DO
Sample Point: FB
Sample Date: 10/11/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Dissolved Metals							
Lead	EPA 200.7	ug/L	<20	20	SLABOC	10/22/07	10:06
Zinc	EPA 200.7	ug/L	<20	20	SLABOC	10/22/07	10:06

Notes
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Authorization: PR Lee **Date:** 110907

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP
Customer Sample ID: Final Effluent
Project Code: HAN_DO
Sample Point: FNE
Sample Date: 10/11/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Dissolved Metals							
Lead	EPA 200.7	ug/L	<20	20	SLABOC	10/22/07	10:21
Zinc	EPA 200.7	ug/L	218	20	SLABOC	10/22/07	10:21

Notes
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Authorization: PRhee **Date:** 110907

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP
Customer Sample ID: Field Blank
Project Code: HAN_DO
Sample Point: FB
Sample Date: 10/12/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Dissolved Metals							
Lead	EPA 200.7	ug/L	<20	20	SLABOC	10/22/07	10:10
Zinc	EPA 200.7	ug/L	<20	20	SLABOC	10/22/07	10:10

Notes
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Authorization: PR Lee **Date:** 110907

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP
Customer Sample ID: Final Effluent
Project Code: HAN_DO
Sample Point: FNE
Sample Date: 10/12/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Dissolved Metals							
Lead	EPA 200.7	ug/L	<20	20	SLABOC	10/22/07	10:42
Zinc	EPA 200.7	ug/L	173	20	SLABOC	10/22/07	10:42

Notes
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Authorization: PRLee **Date:** 110907

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP
Customer Sample ID: Field Blank
Project Code: HAN_DO
Sample Point: FB
Sample Date: 10/17/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Dissolved Metals							
Lead	EPA 200.7	ug/L	<20	20	SLABOC	10/22/07	10:13
Zinc	EPA 200.7	ug/L	<20	20	SLABOC	10/22/07	10:13

Notes
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Authorization: PR Lee **Date:** 110907

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP
Customer Sample ID: Final Effluent
Project Code: HAN_DO
Sample Point: FNE
Sample Date: 10/17/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Dissolved Metals							
Lead	EPA 200.7	ug/L	<20	20	SLABOC	10/22/07	10:46
Zinc	EPA 200.7	ug/L	98	20	SLABOC	10/22/07	10:46

Notes
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP
Customer Sample ID: Field Blank
Project Code: HAN_DO
Sample Point: FB
Sample Date: 10/18/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Dissolved Metals							
Lead	EPA 200.7	ug/L	<20	20	SLABOC	10/22/07	10:17
Zinc	EPA 200.7	ug/L	<20	20	SLABOC	10/22/07	10:17

Notes
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Authorization: PRhee **Date:** 110907

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP
Customer Sample ID: Final Effluent
Project Code: HAN_DO
Sample Point: FNE
Sample Date: 10/18/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Dissolved Metals							
Lead	EPA 200.7	ug/L	<20	20	SLABOC	10/22/07	10:49
Zinc	EPA 200.7	ug/L	113	20	SLABOC	10/22/07	10:49

Notes
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Authorization: PR Lee **Date:** 110907

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP
Customer Sample ID: Field Blank
Project Code: HAN_DO
Sample Point: FB
Sample Date: 10/24/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Dissolved Metals							
Lead	EPA 200.7	ug/L	<20	20	SLABOC	10/28/07	08:27
Zinc	EPA 200.7	ug/L	<20	20	SLABOC	10/28/07	08:27

Notes
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Authorization: PRhee **Date:** 110907

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP
Customer Sample ID: Final Effluent
Project Code: HAN_DO
Sample Point: FNE
Sample Date: 10/24/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Dissolved Metals							
Lead	EPA 200.7	ug/L	<20	20	SLABOC	10/28/07	08:34
Zinc	EPA 200.7	ug/L	110	20	SLABOC	10/28/07	08:34

Notes
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Authorization: PR Lee **Date:** 110907

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP
Customer Sample ID: Field Blank
Project Code: HAN_DO
Sample Point: FB
Sample Date: 10/25/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Dissolved Metals							
Lead	EPA 200.7	ug/L	<20	20	SLABOC	10/28/07	08:31
Zinc	EPA 200.7	ug/L	<20	20	SLABOC	10/28/07	08:31

Notes
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Authorization: PRhee **Date:** 110907

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP
Customer Sample ID: Final Effluent
Project Code: HAN_DO
Sample Point: FNE
Sample Date: 10/25/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Dissolved Metals							
Lead	EPA 200.7	ug/L	<20	20	SLABOC	10/28/07	08:56
Zinc	EPA 200.7	ug/L	104	20	SLABOC	10/28/07	08:56

Notes
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Authorization: PRhee **Date:** 110907

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP
Customer Sample ID: Field Blank
Project Code: HAN_DO
Sample Point: FB
Sample Date: 10/31/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Dissolved Metals							
Lead	EPA 200.7	ug/L	<20	20	SWILLI	11/02/07	11:03
Zinc	EPA 200.7	ug/L	<20	20	SWILLI	11/02/07	11:03

Notes
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Authorization: PRLee **Date:** 110907

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP
Customer Sample ID: Final Effluent
Project Code: HAN_DO
Sample Point: FNE
Sample Date: 10/31/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Dissolved Metals							
Lead	EPA 200.7	ug/L	<20	20	SWILLI	11/02/07	13:34
Zinc	EPA 200.7	ug/L	109	20	SWILLI	11/02/07	11:06

Notes
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Authorization: PRhee **Date:** 110907

QUALITY ASSURANCE REPORT
Level 1

Project:	**Hanover County - Doswell WWTP**
Customer Sample ID:	**Final Effluent**
Project Code:	**HAN_DO**
Sample Point:	**FB;FNE**
Sample Date:	**10/11/2007, 10/12/07, 10/17/07, 10/18/07**

Analytical Run Information	**Zn**	**Pb**
Method	**200.7**	**200.7**
Units	**ug/L**	**ug/L**
Method Detection Limit (MDL)	5	8
Report Limit (RL)	20	20
Average LRB	<5	<8
Dissolved Metals	**Zn**	**Pb**
Sample ID: HAN_DO FNE DS 101107		
Matrix Spike Conc.	100	100
MS Percent Recovery	96%	104%
MSD Percent Recovery	99%	96%
MS/MSD %RPD	1	7

LRB - Laboratory Reagent Blank
MS - Matrix Spike
MSD - Matrix Spike Duplicate
RPD - Relative Percent Difference

Validated By: Sadie Wilson **Date:** 10/22/07

QUALITY ASSURANCE REPORT
Level 1

Project:	**Hanover County - Doswell WWTP**
Customer Sample ID:	**Final Effluent**
Project Code:	**HAN_DO**
Sample Point:	**FB;FNE**
Sample Date:	**10/24/07, 10/25/07**

Analytical Run Information	**Zn**	**Pb**
Method	**200.7**	**200.7**
Units	**ug/L**	**ug/L**
Method Detection Limit (MDL)	5	8
Report Limit (RL)	20	20
Average LRB	<5	<8
Dissolved Metals	**Zn**	**Pb**
Sample ID: HAN_DO FNE DS 102407		
Matrix Spike Conc.	100	100
MS Percent Recovery	96%	88%
MSD Percent Recovery	95%	80%
MS/MSD %RPD	<1	9

LRB - Laboratory Reagent Blank
MS - Matrix Spike
MSD - Matrix Spike Duplicate
RPD - Relative Percent Difference

Validated By: Sadia Willia **Date:** 110507

QUALITY ASSURANCE REPORT
Level 1

Project: Hanover County - Doswell WWTP
Customer Sample ID: Final Effluent
Project Code: HAN_DO
Sample Point: FB;FNE
Sample Date: 10/31/07

Analytical Run Information	Zn	Pb
Method	200.7	200.7
Units	ug/L	ug/L
Method Detection Limit (MDL)	5	8
Report Limit (RL)	20	20
Average LRB	<5	<8
Dissolved Metals	**Zn**	**Pb**
Sample ID: HAN_DO FNE DS 103107		
Matrix Spike Conc.	100	100
MS Percent Recovery	96%	112%
MSD Percent Recovery	103%	101%
MS/MSD %RPD	3	10

LRB - Laboratory Reagent Blank
MS - Matrix Spike
MSD - Matrix Spike Duplicate
RPD - Relative Percent Difference

Validated By: Sadie Willis **Date:** 110507

Doswell WWTP - Permit

Information checked before the start of each sampling event:

1. a. Average of the last five days FNE flow 3.8 MGD
   b. Expected FNE flow for next 24 hour sampling period ~3.8 MGD
   c. Contact Closure (Expected flow/5000 / 30 samples) 25 pulses
2. List the last five days FNE TSS data with the most recent last 7.6mg/L, 12.3mg/L 9.4mg/L, 12.3mg/L, 15.6mg/L
3. Is rain expected over the next 24 hours ? (Y) / N (If yes, explain below.)
4. Does RWI have any abnormal characteristics (i.e.. odor, color) ? Y / (N)
   If yes was recorded for the above question, describe characteristics in the notes sectio
5. Composite start time / date:
   Metals: 10/10/07 @ 1025 Calibrated to: 200 mL
6. Sampling Personnel: G. Thompson, J. Massart

Information checked at the end of the 24 hour sampling period

1. Are sample volumes equal in all composite containers ? (Y) / N
2. Number of samples collected in each composite container 30
3. FNE flow for the sampling period 3.94 MGD, 3.87 MGD
4. TSS during sampling period N/A*, 9.2mg/L
5. Does the total flow for the sampling period divided by the flowmeter contact closure equal to the number of samples taken by the Isco sampler ? (Y) / N
6. Are all lids, valves and caps secure ? (Y) / N
7. Composite end time / date:
   Metals: 10/11/07 @ 1025
8. Sampling Personnel: G. Thompson, J. Massart

Record any other circumstances which could affect the sample result:

*TSS only collected 3x a week

* ~ 1/4 inches of rain during sampling period

*Sampler base temperature < 6°C during sampling.

Doswell WWTP - Permit

Information checked before the start of each sampling event:

1. a. Average of the last five days FNE flow 4.02 MGD
   b. Expected FNE flow for next 24 hour sampling period ~4.02 MGD
   c. Contact Closure (Expected flow/5000 / 30 samples) 25 pulses
2. List the last five days FNE TSS data with the most recent last 12.3 mg/L, 9.4 mg/L 12.3 mg/L, 15.6 mg/L, 9.2 mg/L
3. Is rain expected over the next 24 hours ? Y / (N) (If yes, explain below.)
4. Does RWI have any abnormal characteristics (i.e.. odor, color) ? Y / (N)
   If yes was recorded for the above question, describe characteristics in the notes sectio
5. Composite start time / date:
   Metals: 10/11/07 @ 1045 Calibrated to: 200 mL
6. Sampling Personnel: G. Thompson, J. Massart

Information checked at the end of the 24 hour sampling period

1. Are sample volumes equal in all composite containers ? (Y) / N
2. Number of samples collected in each composite container 30
3. FNE flow for the sampling period 3.87 MGD, 4.05 MGD
4. TSS during sampling period 9.2 mg/L, N/A*
5. Does the total flow for the sampling period divided by the flowmeter contact closure equal to the number of samples taken by the Isco sampler ? (Y) / N
6. Are all lids, valves and caps secure ? (Y) / N
7. Composite end time / date:
   Metals: 10/12/07 @ 1045
8. Sampling Personnel: G. Thompson, J. Massart

Record any other circumstances which could affect the sample result:

*TSS only collected 3x a week

* Sampler base temperature 4.6°C during sampling

Doswell WWTP - Permit

Information checked before the start of each sampling event:

1. a. Average of the last five days FNE flow 3.95MGD
   b. Expected FNE flow for next 24 hour sampling period ~3.95 MGD
   c. Contact Closure (Expected flow/5000 / 30 samples) 25 pulses
2. List the last five days FNE TSS data with the most recent last 9.4mg/L, 12.3mg/L, 15.6mg/L, 9.2mg/L, 6.9 mg/L
3. Is rain expected over the next 24 hours ? Y / (N) (If yes, explain below.)
4. Does RWI have any abnormal characteristics (i.e.. odor, color) ? Y (N)
   If yes was recorded for the above question, describe characteristics in the notes sectio
5. Composite start time / date:
   Metals: 10/16/07 @1050 Calibrated to: 200 mL
6. Sampling Personnel: G. Thompson, B. Weckworth

Information checked at the end of the 24 hour sampling period

1. Are sample volumes equal in all composite containers ? (Y) / N
2. Number of samples collected in each composite container 30
3. FNE flow for the sampling period 3.90MGD, 4.24 MGD
4. TSS during sampling period 10.0 mg/L, N/A*
5. Does the total flow for the sampling period divided by the flowmeter contact closure equal to the number of samples taken by the Isco sampler ? (Y) / N
6. Are all lids, valves and caps secure ? (Y) / N
7. Composite end time / date:
   Metals: 10/17/07 @ 1050
8. Sampling Personnel: G. Thomspon, B. Weckworth

Record any other circumstances which could affect the sample result:

*TSS only collected 3x a week.

*Sampler base temperature <6°C during sampling.

Doswell WWTP - Permit

Information checked before the start of each sampling event:

1. a. Average of the last five days FNE flow 4.04 MGD
   b. Expected FNE flow for next 24 hour sampling period ~4.04 MGD
   c. Contact Closure (Expected flow/~~5000~~ / 30 samples) 25 pulses
2. List the last five days FNE TSS data with the most recent last 12.3 mg/L, 15.6 mg/L 9.3 mg/L, 6.9 mg/L, 10.0 mg/L
3. Is rain expected over the next 24 hours ? Y / (N) (If yes, explain below.)
4. Does RWI have any abnormal characteristics (i.e.. odor, color) ? Y / (N)
   If yes was recorded for the above question, describe characteristics in the notes sectio
5. Composite start time / date:
   Metals: 10/17/07 Calibrated to: 200 mL
6. Sampling Personnel: G. Thompson, B. Weckworth

Information checked at the end of the 24 hour sampling period

1. Are sample volumes equal in all composite containers ? (Y) / N
2. Number of samples collected in each composite container 34
3. FNE flow for the sampling period 4.24 MGD, 4.44 MGD
4. TSS during sampling period N/A*, 8.3 mg/L
5. Does the total flow for the sampling period divided by the flowmeter contact closure equal to the number of samples taken by the Isco sampler ? (Y) / N
6. Are all lids, valves and caps secure ? (Y) / N
7. Composite end time / date:
   Metals: 10/18/07 @ 1050
8. Sampling Personnel: G. Thompson, B. Weckworth

Record any other circumstances which could affect the sample result:

*TSS only collected 3x a week.

*Sampler base temperature 4.6°C during sampling.

Doswell WWTP - Permit

Information checked before the start of each sampling event:

1. a. Average of the last five days FNE flow 4.69 MGD
   b. Expected FNE flow for next 24 hour sampling period 4.7 MGD
   c. Contact Closure (Expected flow/5000 / 30 samples) 25 pulses
2. List the last five days FNE TSS data with the most recent last 9.2 mg/L, 6.9 mg/L, 10.0 mg/L, 8.3 mg/L, ~~10.0~~ 10.9 mg/L
3. Is rain expected over the next 24 hours ? Y / N (If yes, explain below.)
4. Does RWI have any abnormal characteristics (i.e.. odor, color) ? Y / N
   If yes was recorded for the above question, describe characteristics in the notes sectio
5. Composite start time / date:
   Metals: 10/23/07 @ 1020 Calibrated to: 200 mL
6. Sampling Personnel: B. Weckworth, J. Massart

Information checked at the end of the 24 hour sampling period

1. Are sample volumes equal in all composite containers ? Y / N
2. Number of samples collected in each composite container 35
3. FNE flow for the sampling period 4.77 MGD, 4.65 MGD
4. TSS during sampling period 13.6 mg/L, N/A**
5. Does the total flow for the sampling period divided by the flowmeter contact closure equal to the number of samples taken by the Isco sampler ? Y / N
6. Are all lids, valves and caps secure ? Y / N
7. Composite end time / date:
   Metals: 10/24/07 @ 1020
8. Sampling Personnel: B. Weckworth, J. Massart

Record any other circumstances which could affect the sample result:

**TSS only collected 3x a week.

* Sampler base temperature <6°C during sampling.

Doswell WWTP - Permit

Information checked before the start of each sampling event:

1. a. Average of the last five days FNE flow 4.61 MGD
   b. Expected FNE flow for next 24 hour sampling period ~4.7 MGD
   c. Contact Closure (Expected flow/ / 30 samples) 27 pulses
2. List the last five days FNE TSS data with the most recent last 6.9 mg/L, 10.0 mg/L, 8.3 mg/L, ~~tot~~ 10.9 mg/L, 13.6 mg/L
3. Is rain expected over the next 24 hours ? Y/N (If yes, explain below.)
4. Does RWI have any abnormal characteristics (i.e.. odor, color) ? Y / N
   If yes was recorded for the above question, describe characteristics in the notes sectio
5. Composite start time / date:
   Metals: 10/24/07 @ 1025 Calibrated to: 200 mL
6. Sampling Personnel: B. Weckworth, J. Massart

Information checked at the end of the 24 hour sampling period

1. Are sample volumes equal in all composite containers ? Y / N
2. Number of samples collected in each composite container 33
3. FNE flow for the sampling period 4.65 MGD, 4.89 MGD
4. TSS during sampling period 13.6 mg/L, N/A**
5. Does the total flow for the sampling period divided by the flowmeter contact closure equal to the number of samples taken by the Isco sampler ? Y / N
6. Are all lids, valves and caps secure ? Y / N
7. Composite end time / date:
   Metals: 10/25/07 @ 1025
8. Sampling Personnel: B. Weckworth, J. Massart

Record any other circumstances which could affect the sample result:

** TSS only collected 3x a week
* ~ 2 inches of rain occured during sampling event
* Sampler base temperature 4.6°C during sampling.

Doswell WWTP - Permit

Information checked before the start of each sampling event:

1. a. Average of the last five days FNE flow 4.78MGD
   b. Expected FNE flow for next 24 hour sampling period 4.8MGD
   c. Contact Closure (Expected flow/5000 / 30 samples) 32 pulses
2. List the last five days FNE TSS data with the most recent last 8.3mg/L, 10.9 mg/L 13.6mg/L, 7.2mg/L, 6.7 mg/L
3. Is rain expected over the next 24 hours ? Y / N (If yes, explain below.)
4. Does RWI have any abnormal characteristics (i.e.. odor, color) ? Y / N
   If yes was recorded for the above question, describe characteristics in the notes sectio
5. Composite start time / date:
   Metals: 10/30/07 @1109 Calibrated to: 2000 ml
6. Sampling Personnel: K. Parker, K. Coffie

Information checked at the end of the 24 hour sampling period

1. Are sample volumes equal in all composite containers ? Y N
2. Number of samples collected in each composite container 27
3. FNE flow for the sampling period 4.61MGD, 3.99MGD
4. TSS during sampling period 9.4, N/A**
5. Does the total flow for the sampling period divided by the flowmeter contact closure equal to the number of samples taken by the Isco sampler ? Y / N
6. Are all lids, valves and caps secure ? Y / N
7. Composite end time / date:
   Metals: 10/31/07 @1109
8. Sampling Personnel: K. Coffie, L. Forbes

Record any other circumstances which could affect the sample result:

**TSS only collected 3x a week.

CENTRAL ENVIRONMENTAL LAB.
1432 AIR RAIL AVENUE
VIRGINIA BEACH, VA 23455
TEL: 757-460-4214
FAX: 757-460-6586

CHAIN OF CUSTODY

PROJECT NAME/CODE: Hanover Co. - Doswell WWTP - Permit

ANALYSES REQUIRED & NUMBER OF CONTAINERS

CUSTOMER SAMPLE ID	HRSD Use Only: PROJECT CODE	HRSD Use Only: SAMPLE POINT	DATE	TIME	SAMPLED BY	Circle One: MATRIX	Circle One: SAMPLE TYPE	DS CLEAN METALS (55)							HRSD Use Only: Pres'v' Checked	HRSD Use Only: CONT. COUNT
Field Blank	HAN_DO	FB	10-11-07	1025	GT	L S	B C G	1							✓	1
Final Effluent	HAN_DO	FNE	10-11-07	1025	GT	L S	B C G	1							✓	1
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									

Relinquished by / Signature	Date/Time 10/11/07 18:22	COMMENTS
Received by / Signature	Date/Time 10/11/07 14:22	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	

***Preservatives**

*Hg, Metals	(pH<2 - HNO_3)
*Clean Metals	(pH<2-HNO_3,check in section)
*O&G	(pH<2 - HCl, check in section) & store $\leq 4^0$C or on ice
*CN	(pH>12 - NaOH) & store $\leq 4^0$C or on ice
*Sulfide	(pH>9 - NaOH) & store $\leq 4^0$C or on ice
*COD,NOx, NH_3	(pH<2 - H_2SO_4) & store $\leq 4^0$C or on ice
*TKN,TP, Phenols	(pH<2 - H_2SO_4) & store $\leq 4^0$C or on ice
*BOD, TSS, Turbidity, Micro	Store $\leq 4^0$ C or on ice
*Organics, Surfactant, Sulfate	Store $\leq 4^0$ C or on ice

All sample(s) meet proper *preservation requirements unless noted. Yes ✓ No _____ By _____

Sample Type: B=Batch, C=Composite, G=Grab
Matrix: L= Liquid , S = Solid

NOTE: ALL APPLICABLE INFORMATION MUST BE COMPLETED PRIOR TO ACCEPTANCE.

CENTRAL ENVIRONMENTAL LAB.
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CHAIN OF CUSTODY

PROJECT NAME/CODE: Hanover Co. - Doswell WWTP - Permit

ANALYSES REQUIRED & NUMBER OF CONTAINERS

CUSTOMER SAMPLE ID	HRSD Use Only: PROJECT CODE	HRSD Use Only: SAMPLE POINT	DATE	TIME	SAMPLED BY	Circle One: MATRIX	Circle One: SAMPLE TYPE	HDS CLEAN METALS (55)							HRSD Use Only: Pres'v* Checked	HRSD Use Only: CONT. COUNT
Field Blank	HAN_DO	FB	10-12-07	1045	GT	L S	B C G	1							✓	1
Final Effluent	HAN_DO	FNE	10-12-07	1045	GT	L S	B C G	1							✓	1
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									

Relinquished by / Signature	Date/Time 10/12/07 1340	COMMENTS
Received by / Signature	Date/Time 10/12/07 1340	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	

*Preservatives

*Hg, Metals	(pH<2 - HNO_3)
*Clean Metals	(pH<2-HNO_3,check in section)
*O&G	(pH<2 - HCl, check in section) & store $\leq 4^0$C or on ice
*CN	(pH>12 - NaOH) & store $\leq 4^0$C or on ice
*Sulfide	(pH>9 - NaOH) & store $\leq 4^0$C or on ice
*COD,NOx, NH_3	(pH<2 - H_2SO_4) & store $\leq 4^0$C or on ice
*TKN.TP, Phenols	(pH<2 - H_2SO_4) & store $\leq 4^0$C or on ice
*BOD, TSS, Turbidity, Micro	Store $\leq 4^0$ C or on ice
*Organics, Surfactant, Sulfate	Store $\leq 4^0$ C or on ice

All sample(s) meet proper *preservation requirements unless noted. Yes ✓ No _____ By Conca

Sample Type: B=Batch, C=Composite, G=Grab
Matrix: L= Liquid , S = Solid

NOTE: ALL APPLICABLE INFORMATION MUST BE COMPLETED PRIOR TO ACCEPTANCE.

CENTRAL ENVIRONMENTAL LAB.
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TEL: 757-460-4214
FAX: 757-460-6586

CHAIN OF CUSTODY

PROJECT NAME/CODE: Hanover Co. - Doswell WWTP - Permit

ANALYSES REQUIRED & NUMBER OF CONTAINERS

CUSTOMER SAMPLE ID	HRSD Use Only: PROJECT CODE	HRSD Use Only: SAMPLE POINT	DATE	TIME	SAMPLED BY	Circle One: MATRIX	Circle One: SAMPLE TYPE	DS CLEAN METALS (55)							HRSD Use Only: Pres'V' Checked	HRSD Use Only: CONT. COUNT
Field Blank	HAN_DO	FB	10-17-07	1050	BW	(L) S	B (C) G	1 ✓							✓	1
Final Effluent	HAN_DO	FNE	10-17-07	1050	BW	(L) S	B (C) G	1 ✓							✓	1
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									

Relinquished by / Signature	Date/Time 10/17/07 @ 1233	COMMENTS
Received by / Signature	Date/Time 10/17/07 1333	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	

***Preservatives**

*Hg, Metals	(pH<2 - HNO_3)
*Clean Metals	(pH<2-HNO_3,check in section)
*O&G	(pH<2 - HCl, check in section) & store ≤4°C or on Ice
*CN	(pH>12 - NaOH) & store ≤4°C or on ice
*Sulfide	(pH>9 - NaOH) & store ≤4°C or on Ice
*COD,NOx, NH_3	(pH<2 - H_2SO_4) & store ≤4°C or on ice
*TKN,TP, Phenols	(pH<2 - H_2SO_4) & store ≤4°C or on Ice
*BOD, TSS, Turbidity, Micro	Store ≤4° C or on Ice
*Organics, Surfactant, Sulfate	Store ≤4° C or on Ice

All sample(s) meet proper *preservation requirements unless noted. Yes ✓ No _____ By _____

Sample Type: B=Batch, C=Composite, G=Grab
Matrix: L= Liquid , S = Solid

NOTE: ALL APPLICABLE INFORMATION MUST BE COMPLETED PRIOR TO ACCEPTANCE.

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FAX: 757-460-6586

CHAIN OF CUSTODY

PROJECT NAME/CODE: Hanover Co. - Doswell WWTP - Permit

ANALYSES REQUIRED & NUMBER OF CONTAINERS

CUSTOMER SAMPLE ID	HRSD Use Only: PROJECT CODE	HRSD Use Only: SAMPLE POINT	DATE	TIME	SAMPLED BY	Circle One: MATRIX	Circle One: SAMPLE TYPE	DS CLEAM METALS (55)							HRSD Use Only: Pres'V' Checked	HRSD Use Only: CONT. COUNT
Field Blank	HAN_DO	FB	10-18-07	1050	BW	L S	B C G	1 ✓							✓	1
Final Effluent	HAN_DO	FNE	10-18-07	1050	BW	L S	B C G	1 ✓							✓	1
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
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						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									

Relinquished by / Signature	Date/Time 10/18/07 @ 1414	COMMENTS
Received by / Signature	Date/Time 10/18/07 1414	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	

*Preservatives

*Hg, Metals	(pH<2 - HNO_3)
*Clean Metals	(pH<2-HNO_3,check in section)
*O&G	(pH<2 - HCl, check in section) & store ≤4°C or on ice
*CN	(pH>12 - NaOH) & store ≤4°C or on ice
*Sulfide	(pH>9 - NaOH) & store ≤4°C or on ice
*COD,NOx, NH_3	(pH<2 - H_2SO_4) & store ≤4°C or on ice
*TKN,TP, Phenols	(pH<2 - H_2SO_4) & store ≤4°C or on ice
*BOD, TSS, Turbidity, Micro	Store ≤4° C or on ice
*Organics, Surfactant, Sulfate	Store ≤4° C or on ice

All sample(s) meet proper *preservation requirements unless noted. Yes ✓ No _____ By _____

Sample Type: B=Batch, C=Composite, G=Grab
Matrix: L= Liquid , S = Solid

NOTE: ALL APPLICABLE INFORMATION MUST BE COMPLETED PRIOR TO ACCEPTANCE.

CENTRAL ENVIRONMENTAL LAB.
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CHAIN OF CUSTODY

PROJECT NAME/CODE: Hanover Co. - Doswell WWTP - Permit

ANALYSES REQUIRED & NUMBER OF CONTAINERS

CUSTOMER SAMPLE ID	HRSD Use Only: PROJECT CODE	HRSD Use Only: SAMPLE POINT	DATE	TIME	SAMPLED BY	Circle One: MATRIX	Circle One: SAMPLE TYPE	DS CLEAN METALS (55)							HRSD Use Only: Pres'v* Checked	HRSD Use Only: CONT. COUNT
Field Blank	HAN_DO	FB	10/24/07	1020	BW	L S	B C G	1							✓	1
Final Effluent	HAN_DO	FNE	10/24/07	1020	BW	L S	B C G	1							✓	1
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									

Relinquished by / Signature	Date/Time 10/24/07 @ 1408	COMMENTS
Received by / Signature	Date/Time 10/24/07 1408	Sampler base L 6°C
Relinquished by / Signature	Date/Time	Bea
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	

***Preservatives**

*Hg, Metals	(pH<2 - HNO_3)
*Clean Metals	(pH<2-HNO_3,check in section)
*O&G	(pH<2 - HCl, check in section) & store ≤4°C or on ice
*CN	(pH>12 - NaOH) & store ≤4°C or on ice
*Sulfide	(pH>9 - NaOH) & store ≤4°C or on ice
*COD,NOx, NH_3	(pH<2 - H_2SO_4) & store ≤4°C or on ice
*TKN,TP, Phenols	(pH<2 - H_2SO_4) & store ≤4°C or on ice
*BOD, TSS, Turbidity, Micro	Store ≤4° C or on ice
*Organics, Surfactant, Sulfate	Store ≤4° C or on ice

All sample(s) meet proper *preservation requirements unless noted. Yes ✓ No _____ By _____

Sample Type: B=Batch, C=Composite, G=Grab
Matrix: L= Liquid , S = Solid

NOTE: ALL APPLICABLE INFORMATION MUST BE COMPLETED PRIOR TO ACCEPTANCE.

CENTRAL ENVIRONMENTAL LAB.
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CHAIN OF CUSTODY

PROJECT NAME/CODE: Hanover Co. - Doswell WWTP - Permit

ANALYSES REQUIRED & NUMBER OF CONTAINERS

CUSTOMER SAMPLE ID	HRSD Use Only: PROJECT CODE	HRSD Use Only: SAMPLE POINT	DATE	TIME	SAMPLED BY	Circle One: MATRIX	Circle One: SAMPLE TYPE	DS CLEAN METALS (55)							HRSD Use Only: Pres'V' Checked	HRSD Use Only: CONT. COUNT
Field Blank	HAN_DO	FB	10/25/07	1025	BCW	L S	B C G	1							✓	1
Final Effluent	HAN_DO	FNE	10/25/07	1025	BCW	L S	B C G	1							✓	1
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
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						L S	B C G									
						L S	B C G									
						L S	B C G									

Relinquished by / Signature		Date/Time 10/25/07 @ 1215	COMMENTS
Received by / Signature		Date/Time 10/25/07 1215	sampler base 5.6°C
Relinquished by / Signature		Date/Time	
Received by / Signature		Date/Time	BCW
Relinquished by / Signature		Date/Time	
Received by / Signature		Date/Time	
Relinquished by / Signature		Date/Time	
Received by / Signature		Date/Time	

***Preservatives**

*Hg, Metals	(pH<2 - HNO_3)
*Clean Metals	(pH<2-HNO_3,check in section)
*O&G	(pH<2 - HCl, check in section) & store ≤4°C or on ice
*CN	(pH>12 - NaOH) & store ≤4°C or on ice
*Sulfide	(pH>9 - NaOH) & store ≤4°C or on ice
*COD,NOx, NH_3	(pH<2 - H_2SO_4) & store ≤4°C or on ice
*TKN,TP, Phenols	(pH<2 - H_2SO_4) & store ≤4°C or on ice
*BOD, TSS, Turbidity, Micro	Store ≤4° C or on ice
*Organics, Surfactant, Sulfate	Store ≤4° C or on ice

All sample(s) meet proper *preservation requirements unless noted. Yes ✓ No _____ By _____

Sample Type: B=Batch, C=Composite, G=Grab
Matrix: L= Liquid , $ = Solid

NOTE: ALL APPLICABLE INFORMATION MUST BE COMPLETED PRIOR TO ACCEPTANCE.

CENTRAL ENVIRONMENTAL LAB.
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CHAIN OF CUSTODY

PROJECT NAME/CODE: Hanover Co. - Doswell WWTP - Permit

ANALYSES REQUIRED & NUMBER OF CONTAINERS

CUSTOMER SAMPLE ID	HRSD Use Only: PROJECT CODE	HRSD Use Only: SAMPLE POINT	DATE	TIME	SAMPLED BY	Circle One: MATRIX	Circle One: SAMPLE TYPE	DS CLEAN METALS (55)							HRSD Use Only: Pres'v' Checked	HRSD Use Only: CONT. COUNT
Field Blank	HAN_DO	FB	10/31/07	1109	KAC	L S	B C G	1 ✓							✓	1
Final Effluent	HAN_DO	FNE	10/31/07	1109	KAC	L S	B C G	1 ✓							✓	1
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									

Relinquished by / Signature	Kimberly Collins	Date/Time 11/1/07 @ 0739	COMMENTS
Received by / Signature	[illegible]	Date/Time 11/1/07 0739	
Relinquished by / Signature		Date/Time	
Received by / Signature		Date/Time	
Relinquished by / Signature		Date/Time	
Received by / Signature		Date/Time	
Relinquished by / Signature		Date/Time	
Received by / Signature		Date/Time	

***Preservatives**

*Hg, Metals	(pH<2 - HNO_3)
*Clean Metals	(pH<2-HNO_3,check in section)
*O&G	(pH<2 - HCl, check in section) & store ≤4°C or on ice
*CN	(pH>12 - NaOH) & store ≤4°C or on ice
*Sulfide	(pH>9 - NaOH) & store ≤4°C or on ice
*COD,NOx, NH_3	(pH<2 - H_2SO_4) & store ≤4°C or on ice
*TKN.TP, Phenols	(pH<2 - H_2SO_4) & store ≤4°C or on ice
*BOD, TSS, Turbidity, Micro	Store ≤4° C or on ice
*Organics, Surfactant, Sulfate	Store ≤4° C or on ice

All sample(s) meet proper *preservation requirements unless noted. Yes ✓ No _____ By [illegible]

Sample Type: B=Batch, C=Composite, G=Grab
Matrix: L= Liquid , S = Solid

NOTE: ALL APPLICABLE INFORMATION MUST BE COMPLETED PRIOR TO ACCEPTANCE.

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King William
Mathews
Middlesex
York

January 4, 2008

Barbara Mitchell
Public Utilities
Doswell WWTP
P.O. Box 470
Hanover, VA 23069

RE: DOSWELL - METALS

Dear Barbara:

Enclosed are the analytical results, analytical QA reports, field sheet, and chain of custody records for the December 19, 2007 sampling event.

The field blanks collected in association with the sampling event were within acceptable limits for the analytes of concern.

Should you have any questions, please feel free to contact me at (757) 460-4247.

Sincerely,

C.M. Remo
for

Dan Barker
Environmental Scientist

DLB/cmr

Enclosures

cc: Matthew Ellinghaus, Hanover County Department of Utilities

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ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP
Customer Sample ID: Field Blank
Project Code: HAN_DO
Sample Point: FB
Sample Date: 12/19/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Dissolved Metals							
Zinc	EPA 200.7	ug/L	<20	20	SLABOC	12/28/07	10:03

Notes
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Authorization: R Lee **Date:** 010408

HRSD
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www.hrsd.com

ANALYTICAL REPORT

Project: Hanover County - Doswell WWTP
Customer Sample ID: Final Effluent
Project Code: HAN_DO
Sample Point: FNE
Sample Date: 12/19/07

Analyte	Method	Unit	Result	Report Limit[1]	Analyst	Analysis Date	Analysis Time
Dissolved Metals							
Zinc	EPA 200.7	ug/L	204	20	SLABOC	12/28/07	09:36

Notes
[1] *Report Limit is lowest concentration at which quantitation is demonstrated.*

Authorization: PR Lee **Date:** 010408

QUALITY ASSURANCE REPORT
Level 1

Project:	**Hanover County - Doswell WWTP**
Customer Sample ID:	**Field Blank**
Project Code:	**HAN_DO**
Sample Point:	**FB;FNE**
Sample Date:	**12/19/07**

Analytical Run Information	**Zn**
Method	**200.7**
Units	**ug/L**
Method Detection Limit (MDL)	5
Report Limit (RL)	20
Average LRB	<5

Dissolved Metals	**Zn**
Sample ID: HAN_DO FNE DS	
Matrix Spike Conc.	100
MS Percent Recovery	98%
MSD Percent Recovery	97%
MS/MSD RPD	<1

LRB - Laboratory Reagent Blank

Report Limit is lowest concentration at which quantitation is demonstrated. Values below report limit should not be used for compliance determinations due to a high degree of uncertanity.

Validated By: Sandra Willia

Date: 01/02/08

Doswell WWTP - Permit

Information checked before the start of each sampling event:

1. a. Average of the last five days FNE flow 4.30 MGD
   b. Expected FNE flow for next 24 hour sampling period 4.30 MGD
   c. Contact Closure (Expected flow/5000/ 30 samples) 29 pulses
2. List the last five days FNE TSS data with the most recent last *, *
   33.3 mg/L, 30.0 mg/L, 31.3 mg/L
3. Is rain expected over the next 24 hours ? Y / N (If yes, explain below.)
4. Does RWI have any abnormal characteristics (i.e.. odor, color) ? Y / N
   If yes was recorded for the above question, describe characteristics in the notes sectio
5. Composite start time / date:
   Metals: 11:11 12/18/07 Calibrated to: 200 ML
6. Sampling Personnel: G. THOMPSON, J. MASSART

Information checked at the end of the 24 hour sampling period

1. Are sample volumes equal in all composite containers ? Y / N
2. Number of samples collected in each composite container 28
3. FNE flow for the sampling period 4.35 MG, 4.34 MG
4. TSS during sampling period 30 mg/L, NA *
5. Does the total flow for the sampling period divided by the flowmeter contact closure equal to the number of samples taken by the Isco sampler ? Y / N
6. Are all lids, valves and caps secure ? Y / N
7. Composite end time / date:
   Metals: 11:11 12/19/07
8. Sampling Personnel: G. THOMPSON, J. MASSART

Record any other circumstances which could affect the sample result:

SAMPLER BASE TEMP < 6C

* TSS ONLY COLLECTED 3 TIMES A WEEK.

CENTRAL ENVIRONMENTAL LAB.
1432 AIR RAIL AVENUE
VIRGINIA BEACH, VA 23455
TEL: 757-460-4214
FAX: 757-460-6586

CHAIN OF CUSTODY

PROJECT NAME/CODE: Hanover Co. - Doswell WWTP

ANALYSES REQUIRED & NUMBER OF CONTAINERS

CUSTOMER SAMPLE ID	HRSD Use Only: PROJECT CODE	HRSD Use Only: SAMPLE POINT	DATE	TIME	SAMPLED BY	Circle One: MATRIX	Circle One: SAMPLE TYPE	DS CLEAN METALS (55)							HRSD Use Only: Pres'V' Checked	HRSD Use Only: CONT. COUNT
Field Blank	HAN_DO	FB	12-19-07	1111	BT	L S	B C G	1							✓	1
Final Effluent	HAN_DO	FNE	12-19-07	1111	BT	L S	B C G	1							✓	1
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									
						L S	B C G									

Relinquished by / Signature	Date/Time 12/19/07 1440	COMMENTS
Received by / Signature	Date/Time 12/19/07 1440	Where required, submitted
Relinquished by / Signature	Date/Time	samples were transported in
Received by / Signature	Date/Time	coolers maintained at <6C
Relinquished by / Signature	Date/Time	(Y/N)? Y/S
Received by / Signature	Date/Time	
Relinquished by / Signature	Date/Time	
Received by / Signature	Date/Time	

*Preservatives

*Hg, Metals	(pH<2 - HNO_3)
*Clean Metals	(pH<2-HNO_3,check in section)
*O&G	(pH<2 - HCl, check in section) & store ≤4°C or on ice
*CN	(pH>12 - NaOH) & store ≤4°C or on ice
*Sulfide	(pH>9 - NaOH) & store ≤4°C or on ice
*COD,NOx, NH_3	(pH<2 - H_2SO_4) & store ≤4°C or on ice
*TKN,TP, Phenols	(pH<2 - H_2SO_4) & store ≤4°C or on ice
*BOD, TSS, Turbidity, Micro	Store ≤4° C or on ice
*Organics, Surfactant, Sulfate	Store ≤4° C or on ice

All sample(s) meet proper *preservation requirements unless noted. Yes ✓ No _____ By _____

Sample Type: B=Batch, C=Composite, G=Grab
Matrix: L= Liquid , S = Solid

NOTE: ALL APPLICABLE INFORMATION MUST BE COMPLETED PRIOR TO ACCEPTANCE.

CLIENT: Hanover County [illegible] WWTP
ATTN: Barbara Stone
ADDRESS: P.O. Box [illegible]
Hanover, VA [illegible]
PHONE: 804-876-3365
FAX: 804-876-[illegible]

Special Notes:
NF Dome WWTP

SAMPLE COLLECTED BY: CLIENT
GRAB COLLECTION
Date: 2-13-08 Time: 1035
COMPOSITE COLLECTION
Start Date: Time:
End Date: Time:
PICK UP BY: REED - US
SAMPLE RECEIPT
Date: 2/14/08 Time: 1435
NUMBER OF CONTAINERS: 1
SAMPLE CONDITION: ☑ Good ☐ Other (See Comments)

SAMPLE ID: BIPCO 20
SAMPLE NO: 38-02708

Parameter	Method Number	JRA QL	Result	Unit	Analyst Date	Time
surfactants	[illegible]	0.05	0.26	mg/L	LEP 2/14/08	1033

NOTES
RA Quant Reaction Level [illegible] Not [illegible] distribution standard [illegible] with reliable [illegible]
Reproduction of [illegible] James R. Reed & Associates

RESPECTFULLY SUBMITTED,

Elaine Claiborne
Laboratory Director
Date: 19-Feb-08

Jenkins,Ray

From: Jenkins,Ray
Sent: Thursday, January 24, 2008 9:53 AM
To: 'mbellinghaus@co.hanover.va.us'
Subject: Doswell WWTF Permit Renewal Application

I decided to send you my entire list of questions – see attachment – before we talk over the telephone.

Thanks.

Ray R. Jenkins, Jr.
Environmental Engineer Senior
Telephone: 804/527-5037
E-mail: rrjenkins@deq.virginia.gov

Review of permit renewal appl...

Fax: 804/527-5106

Review of Doswell WWTF permit renewal application
January 24, 2008

Form 2A

1. Has the metals data mentioned in cover letter dated 11-13-07 been submitted?

2. Data not provided for hexavalent chromium (required QL of 9.2 µg/L), chloride, and hydrogen sulfide.

3. Are metals data expressed as total recoverable or dissolved?

4. Please provide lab sheets for the pollutant scans.

5. Questions A.9. d and e do not appear to have been correctly answered.

6. Is the reported cyanide concentration of 18.8 µg/L additional data collected since the modification of the permit in September 2006 to remove cyanide? Is it the only additional data since September 2006?

7. Part F was marked "not applicable". Does that mean there are no significant industrial users?

Form 2C

1. The production figures for Bear Island in Part III.C are the same as reported in August 1999. Are those production figures still accurate?

2. In Part V.A, provide maximum 30 day values for BOD, TSS, ammonia, and flow.

3. In Part. V. B, sulfate, surfactants, aluminum, barium, iron, and manganese are reported as "believed absent". Concentrations were reported for those pollutants however, in the August 1999 permit renewal application. Please reconcile these discrepancies.

4. In Part V.C., if a pollutant was detected in Outfall 001 it is shown as "believed present" with a triple asterisk. The triple asterisk refers to Outfall 001 data. Given that convention, copper should have been marked "believed present" with a triple asterisk.

   I'm curious why a complete scan was not done for the Bear Island effluent.

BOARD OF SUPERVISORS

ROBERT R. SETLIFF, CHAIRMAN
CHICKAHOMINY DISTRICT

AUBREY M. STANLEY, VICE-CHAIRMAN
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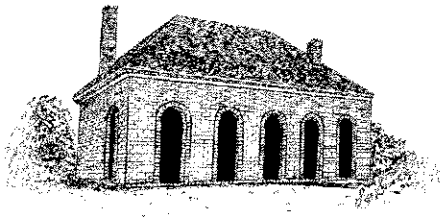
COLD HARBOR DISTRICT

J. T. "JACK" WARD
MECHANICSVILLE DISTRICT

CECIL R. HARRIS, JR.
COUNTY ADMINISTRATOR



HANOVER COURTHOUSE

HANOVER COUNTY

ESTABLISHED IN 1720

DEPARTMENT OF PUBLIC UTILITIES

FRANK W. HARKSEN, JR., DIRECTOR
P. O. BOX 470
HANOVER, VA 23069-0470

PHONE: (804) 365-6019
FAX: (804) 365-6245

WEB SITE: www.co.hanover.va.us

RECEIVED
NOV 13 2007
PRO

November 13, 2007

Mr. Ray R. Jenkins, Jr.
DEQ Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060

RE: VPDES Permit Re-issuance Application for the Doswell Wastewater Treatment Plant (VA0029521)

Dear Mr. Jenkins:

This letter transmits one original and three copies of the VPDES application package for the Doswell Wastewater Treatment Plant. Additional "clean" metals data is being collected and analyzed for lead and zinc. Once the data is received and reviewed, it will be forwarded to you for inclusion in the permit application.

If you have any questions please give me a call at (804) 365-6701 or e-mail at mbellinghaus@co.hanover.va.us.

Sincerely,

David F. Van Gelder
Chief of Operations and Maintenance

Enc: VA0029521 VPDES re-issuance application.

FACILITY NAME AND PERMIT NUMBER:
VA0029521

Form Approved 1/14/99
OMB Number 2040-0086

FORM 2A NPDES

NPDES FORM 2A APPLICATION OVERVIEW

APPLICATION OVERVIEW

Form 2A has been developed in a modular format and consists of a "Basic Application Information" packet and a "Supplemental Application Information" packet. The Basic Application Information packet is divided into two parts. All applicants must complete Parts A and C. Applicants with a design flow greater than or equal to 0.1 mgd must also complete Part B. Some applicants must also complete the Supplemental Application Information packet. The following items explain which parts of Form 2A you must complete.

BASIC APPLICATION INFORMATION:

A. **Basic Application Information for all Applicants.** All applicants must complete questions A.1 through A.8. A treatment works that discharges effluent to surface waters of the United States must also answer questions A.9 through A.12.

B. **Additional Application Information for Applicants with a Design Flow ≥ 0.1 mgd.** All treatment works that have design flows greater than or equal to 0.1 million gallons per day must complete questions B.1 through B.6.

C. **Certification.** All applicants must complete Part C (Certification).

SUPPLEMENTAL APPLICATION INFORMATION:

D. **Expanded Effluent Testing Data.** A treatment works that discharges effluent to surface waters of the United States and meets one or more of the following criteria must complete Part D (Expanded Effluent Testing Data):

1. Has a design flow rate greater than or equal to 1 mgd,
2. Is required to have a pretreatment program (or has one in place), or
3. Is otherwise required by the permitting authority to provide the information.

E. **Toxicity Testing Data.** A treatment works that meets one or more of the following criteria must complete Part E (Toxicity Testing Data):

1. Has a design flow rate greater than or equal to 1 mgd,
2. Is required to have a pretreatment program (or has one in place), or
3. Is otherwise required by the permitting authority to submit results of toxicity testing.

F. **Industrial User Discharges and RCRA/CERCLA Wastes.** A treatment works that accepts process wastewater from any significant industrial users (SIUs) or receives RCRA or CERCLA wastes must complete Part F (Industrial User Discharges and RCRA/CERCLA Wastes). SIUs are defined as:

1. All industrial users subject to Categorical Pretreatment Standards under 40 Code of Federal Regulations (CFR) 403.6 and 40 CFR Chapter I, Subchapter N (see instructions); and
2. Any other industrial user that:
   a. Discharges an average of 25,000 gallons per day or more of process wastewater to the treatment works (with certain exclusions); or
   b. Contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the treatment plant; or
   c. Is designated as an SIU by the control authority.

G. **Combined Sewer Systems.** A treatment works that has a combined sewer system must complete Part G (Combined Sewer Systems).

ALL APPLICANTS MUST COMPLETE PART C (CERTIFICATION)

FACILITY NAME AND PERMIT NUMBER:
VA0029521

Form Approved 1/14/99
OMB Number 2040-0086

BASIC APPLICATION INFORMATION

PART A. BASIC APPLICATION INFORMATION FOR ALL APPLICANTS:

All treatment works must complete questions A.1 through A.8 of this Basic Application Information packet.

A.1. Facility Information.

Facility name: Doswell Wastewater Treatment Plant

Mailing Address: P. O. Box 470
Hanover, VA 23069-0470

Contact person: David F. Van Gelder

Title: Chief of Operations & Maintenance

Telephone number: (804) 365-6235

Facility Address (not P.O. Box): 15468 Theme Park Way
Doswell, VA 23047

A.2. Applicant Information. If the applicant is different from the above, provide the following:

Applicant name: Hanover County

Mailing Address: P.O. Box 470
Hanover, VA 23069-0470

Contact person: David F. Van Gelder

Title: Chief of Operations & Maintenance

Telephone number: (804) 365-6235

Is the applicant the owner or operator (or both) of the treatment works?

✓ owner ✓ operator

Indicate whether correspondence regarding this permit should be directed to the facility or the applicant.

____ facility ✓ applicant

A.3. Existing Environmental Permits. Provide the permit number of any existing environmental permits that have been issued to the treatment works (include state-issued permits).

NPDES	VA0029521	PSD	
UIC		Other	VAR051377
RCRA		Other	VAN030051

A.4. Collection System Information. Provide information on municipalities and areas served by the facility. Provide the name and population of each entity and, if known, provide information on the type of collection system (combined vs. separate) and its ownership (municipal, private, etc.).

Name	Population Served	Type of Collection System	Ownership
Kings Dominion, in season	15,000	Separate	Municipal
Doswell Service Area	3,800	Separate	Municipal

Total population served 18,800

A.5. Indian Country.

a. Is the treatment works located in Indian Country?

_____ Yes ✓ No

b. Does the treatment works discharge to a receiving water that is either in Indian Country or that is upstream from (and eventually flows through) Indian Country?

_____ Yes ✓ No

A.6. Flow. Indicate the design flow rate of the treatment plant (i.e., the wastewater flow rate that the plant was built to handle). Also provide the average daily flow rate and maximum daily flow rate for each of the last three years. Each year's data must be based on a 12-month time period with the 12th month of "this year" occurring no more than three months prior to this application submittal.

a. Design flow rate 1.0 mgd

	Two Years Ago	Last Year	This Year	
b. Annual average daily flow rate	0.347	0.254	0.281	mgd
c. Maximum daily flow rate	1.139	0.707	0.656	mgd

A.7. Collection System. Indicate the type(s) of collection system(s) used by the treatment plant. Check all that apply. Also estimate the percent contribution (by miles) of each.

✓ Separate sanitary sewer 100 %

_____ Combined storm and sanitary sewer _____ %

A.8. Discharges and Other Disposal Methods.

a. Does the treatment works discharge effluent to waters of the U.S.? ✓ Yes _____ No

If yes, list how many of each of the following types of discharge points the treatment works uses:

i. Discharges of treated effluent 1

ii. Discharges of untreated or partially treated effluent 0

iii. Combined sewer overflow points 0

iv. Constructed emergency overflows (prior to the headworks) 0

v. Other _____ 0

b. Does the treatment works discharge effluent to basins, ponds, or other surface impoundments that do not have outlets for discharge to waters of the U.S.? _____ Yes ✓ No

If yes, provide the following for each surface impoundment:

Location: _____

Annual average daily volume discharged to surface impoundment(s) _____ mgd

Is discharge _____ continuous or _____ intermittent?

c. Does the treatment works land-apply treated wastewater? _____ Yes ✓ No

If yes, provide the following for each land application site:

Location: _____

Number of acres: _____

Annual average daily volume applied to site: _____ Mgd

Is land application _____ continuous or _____ intermittent?

d. Does the treatment works discharge or transport treated or untreated wastewater to another treatment works? _____ Yes ✓ No

If yes, describe the mean(s) by which the wastewater from the treatment works is discharged or transported to the other treatment works (e.g., tank truck, pipe).

_____

If transport is by a party other than the applicant, provide:

Transporter name: _____

Mailing Address: _____

_____

Contact person: _____

Title: _____

Telephone number: _____

For each treatment works that receives this discharge, provide the following:

Name: _____

Mailing Address: _____

_____

Contact person: _____

Title: _____

Telephone number: _____

If known, provide the NPDES permit number of the treatment works that receives this discharge. _____

Provide the average daily flow rate from the treatment works into the receiving facility. _____ mgd

e. Does the treatment works discharge or dispose of its wastewater in a manner not included in A.8.a through A.8.d above (e.g., underground percolation, well injection)? _____ Yes ✓ No

If yes, provide the following for each disposal method:

Description of method (including location and size of site(s) if applicable):

_____

Annual daily volume disposed of by this method: _____

Is disposal through this method _____ continuous or _____ intermittent?

FACILITY NAME AND PERMIT NUMBER:
VA0029521

Form Approved 1/14/99
OMB Number 2040-0086

WASTEWATER DISCHARGES:

If you answered "yes" to question A.8.a, complete questions A.9 through A.12 **once for each outfall** (including bypass points) through which effluent is discharged. Do not include information on combined sewer overflows in this section. **If you answered "no" to question A.8.a**, go to Part B, "Additional Application Information for Applicants with a Design Flow Greater than or Equal to 0.1 mgd."

A.9. Description of Outfall.

a. Outfall number: 101

b. Location
- Doswell (City or town, if applicable) — 23047 (Zip Code)
- Hanover County (County) — Virginia (State)
- 37 deg. 49 min. 30 sec. (Latitude) — 77 deg. 25 min. 37 sec. (Longitude)

c. Distance from shore (if applicable): 15 ft.

d. Depth below surface (if applicable): 2 ft.

e. Average daily flow rate: 0.281 mgd

f. Does this outfall have either an intermittent or a periodic discharge? ____ Yes ✓ No (go to A.9.g.)

If yes, provide the following information:

Number of times per year discharge occurs: ____

Average duration of each discharge: ____

Average flow per discharge: ____ mgd

Months in which discharge occurs: ____

g. Is outfall equipped with a diffuser? ____ Yes ✓ No

A.10. Description of Receiving Waters.

a. Name of receiving water: North Anna River

b. Name of watershed (if known): York River Basin

United States Soil Conservation Service 14-digit watershed code (if known): unknown

c. Name of State Management/River Basin (if known): York River Basin

United States Geological Survey 8-digit hydrologic cataloging unit code (if known): unknown

d. Critical low flow of receiving stream (if applicable):
acute 42 cfs chronic 43 cfs

e. Total hardness of receiving stream at critical low flow (if applicable): 19.3 mg/l of $CaCO_3$

FACILITY NAME AND PERMIT NUMBER:
VA0029521

Form Approved 1/14/99
OMB Number 2040-0086

A.11. Description of Treatment.

a. What levels of treatment are provided? Check all that apply.

✓ Primary ✓ Secondary

____ Advanced ____ Other. Describe: ____

b. Indicate the following removal rates (as applicable):

Design BOD_5 removal or Design $CBOD_5$ removal	>85	%
Design SS removal	>85	%
Design P removal	Not Applicable	%
Design N removal	Not Applicable	%
Other ____	Not Applicable	%

c. What type of disinfection is used for the effluent from this outfall? If disinfection varies by season, please describe.

Ultraviolet Light Disinfection

If disinfection is by chlorination, is dechlorination used for this outfall? ____ Yes ____ No

d. Does the treatment plant have post aeration? ✓ Yes ____ No

A.12. Effluent Testing Information. All Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide the indicated effluent testing required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least three samples and must be no more than four and one-half years apart.

Outfall number: 101 See Attachment 5 for additional data on Outfall 001

PARAMETER	MAXIMUM DAILY VALUE		AVERAGE DAILY VALUE		
	Value	Units	Value	Units	Number of Samples
pH (Minimum)	7.1	s.u.			
pH (Maximum)	7.9	s.u.			
Flow Rate	1.139	mgd	0.281	mgd	105
Temperature (Winter)	80.6	o F	69.6	o F	182
Temperature (Summer)	93.2	o F	81.6	o F	182

* For pH please report a minimum and a maximum daily value

POLLUTANT		MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML / MDL
		Conc.	Units	Conc.	Units	Number of Samples		
CONVENTIONAL AND NONCONVENTIONAL COMPOUNDS.								
BIOCHEMICAL OXYGEN	BOD-5	58	mg/l	5.0	mg/l	260	SM 5210 B.	2
DEMAND (Report one)	CBOD-5							
FECAL COLIFORM		>1600	n/cml	65	n/cml	156	SM 9221 C,E	2
TOTAL SUSPENDED SOLIDS (TSS)		60.3	mg/l	13.7	mg/l	156	SM 2540 D	1.0

END OF PART A.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

FACILITY NAME AND PERMIT NUMBER:
VA0029521

Form Approved 1/14/99
OMB Number 2040-0086

BASIC APPLICATION INFORMATION

PART B. ADDITIONAL APPLICATION INFORMATION FOR APPLICANTS WITH A DESIGN FLOW GREATER THAN OR EQUAL TO 0.1 MGD (100,000 gallons per day).

All applicants with a design flow rate ≥ 0.1 mgd must answer questions B.1 through B.6. All others go to Part C (Certification).

B.1. Inflow and Infiltration. Estimate the average number of gallons per day that flow into the treatment works from inflow and/or infiltration.

Unknown gpd

Briefly explain any steps underway or planned to minimize inflow and infiltration.

See Attachment 1 for additional information

B.2. Topographic Map. Attach to this application a topographic map of the area extending at least one mile beyond facility property boundaries. This map must show the outline of the facility and the following information. (You may submit more than one map if one map does not show the entire area.)

a. The area surrounding the treatment plant, including all unit processes. See Attachment 2

b. The major pipes or other structures through which wastewater enters the treatment works and the pipes or other structures through which treated wastewater is discharged from the treatment plant. Include outfalls from bypass piping, if applicable.

c. Each well where wastewater from the treatment plant is injected underground.

d. Wells, springs, other surface water bodies, and drinking water wells that are: 1) within 1/4 mile of the property boundaries of the treatment works, and 2) listed in public record or otherwise known to the applicant.

e. Any areas where the sewage sludge produced by the treatment works is stored, treated, or disposed.

f. If the treatment works receives waste that is classified as hazardous under the Resource Conservation and Recovery Act (RCRA) by truck, rail, or special pipe, show on the map where that hazardous waste enters the treatment works and where it is treated, stored, and/or disposed.

B.3. Process Flow Diagram or Schematic. Provide a diagram showing the processes of the treatment plant, including all bypass piping and all backup power sources or redundancy in the system. Also provide a water balance showing all treatment units, including disinfection (e.g. chlorination and dechlorination). The water balance must show daily average flow rates at influent and discharge points and approximate daily flow rates between treatment units. Include a brief narrative description of the diagram. See Attachment 3

B.4. Operation/Maintenance Performed by Contractor(s).

Are any operational or maintenance aspects (related to wastewater treatment and effluent quality) of the treatment works the responsibility of a contractor? ____Yes ✓ No

If yes, list the name, address, telephone number, and status of each contractor and describe the contractor's responsibilities (attach additional pages if necessary).

Name: _____

Mailing Address: _____

Telephone Number: _____

Responsibilities of Contractor: _____

B.5. Scheduled Improvements and Schedules of Implementation. Provide information on any uncompleted implementation schedule or uncompleted plans for improvements that will affect the wastewater treatment, effluent quality, or design capacity of the treatment works. If the treatment works has several different implementation schedules or is planning several improvements, submit separate responses to question B.5 for each. (If none, go to question B.6.)

a. List the outfall number (assigned in question A.9) for each outfall that is covered by this implementation schedule.

Outfall 101

b. Indicate whether the planned improvements or implementation schedule are required by local, State, or Federal agencies.

____Yes ✓ No

c. If the answer to B.5.b is "Yes," briefly describe, including new maximum daily inflow rate (if applicable).

See Attachment 4 for additional information

d. Provide dates imposed by any compliance schedule or any actual dates of completion for the implementation steps listed below, as applicable. For improvements planned independently of local, State, or Federal agencies, indicate planned or actual completion dates, as applicable. Indicate dates as accurately as possible.

Implementation Stage	Schedule MM / DD / YYYY	Actual Completion MM / DD / YYYY
– Begin construction	___/ ___/ _____	___/ ___/ _____
– End construction	___/ ___/ _____	___/ ___/ _____
– Begin discharge	___/ ___/ _____	___/ ___/ _____
– Attain operational level	___/ ___/ _____	___/ ___/ _____

e. Have appropriate permits/clearances concerning other Federal/State requirements been obtained? _____Yes _____No

Describe briefly: _____

B.6. EFFLUENT TESTING DATA (GREATER THAN O.1 MGD ONLY).

Applicants that discharge to waters of the US must provide effluent testing data for the following parameters. Provide the indicated effluent testing required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. At a minimum, effluent testing data must be based on at least three pollutant scans and must be no more than four and one-half years old.

Outfall Number: 101 See Attachment 5 for additional data on Outfall 001

POLLUTANT	MAXIMUM DAILY DISCHARGE		AVERAGE DAILY DISCHARGE			ANALYTICAL METHOD	ML / MDL
	Conc.	Units	Conc.	Units	Number of Samples		
CONVENTIONAL AND NONCONVENTIONAL COMPOUNDS.							
AMMONIA (as N)	0.7	mg/l	0.13	mg/l	12	EPA 350.1	0.2
CHLORINE (TOTAL RESIDUAL, TRC)	***	***	***	***	***	***	***
DISSOLVED OXYGEN	***	***	***	***	***	***	***
TOTAL KJELDAHL NITROGEN (TKN)	4.1	mg/l	1.48	mg/l	12	EPA 351.4	0.1
NITRATE PLUS NITRITE NITROGEN	24.4	mg/l	12.8	mg/l	32	EPA 300.0, 354.1	0.1
OIL and GREASE	***	***	***	***	***	***	***
PHOSPHORUS (Total)	4.05	mg/l	2.06	mg/l	12	EPA 365.2	0.5
TOTAL DISSOLVED SOLIDS (TDS)	***	***	***	***	***	***	***
PHOSPHOROUS (Ortho)	2.81	mg/l	1.46	mg/l	32	EPA 365.2	0.5

END OF PART B.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

*** See Attachment 5 for applicable data collected for Outfall 001

FACILITY NAME AND PERMIT NUMBER:
VA0029521

Form Approved 1/14/99
OMB Number 2040-0086

BASIC APPLICATION INFORMATION

PART C. CERTIFICATION

All applicants must complete the Certification Section. Refer to instructions to determine who is an officer for the purposes of this certification. All applicants must complete all applicable sections of Form 2A, as explained in the Application Overview. Indicate below which parts of Form 2A you have completed and are submitting. By signing this certification statement, applicants confirm that they have reviewed Form 2A and have completed all sections that apply to the facility for which this application is submitted.

Indicate which parts of Form 2A you have completed and are submitting:

✓ Basic Application Information packet

Supplemental Application Information packet:

✓ Part D (Expanded Effluent Testing Data)

✓ Part E (Toxicity Testing: Biomonitoring Data)

____ Part F (Industrial User Discharges and RCRA/CERCLA Wastes)

____ Part G (Combined Sewer Systems)

ALL APPLICANTS MUST COMPLETE THE FOLLOWING CERTIFICATION.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information 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.

Name and official title: Cecil R. Harris, Jr., County Administrator

Signature: Cecil R. Harris Jr.

Telephone number: (804) 365-6005

Date signed: 11-9-07

Upon request of the permitting authority, you must submit any other information necessary to assess wastewater treatment practices at the treatment works or identify appropriate permitting requirements.

SEND COMPLETED FORMS TO:

FACILITY NAME AND PERMIT NUMBER:
VA0029521

Form Approved 1/14/99
OMB Number 2040-0086

SUPPLEMENTAL APPLICATION INFORMATION

PART D. EXPANDED EFFLUENT TESTING DATA

Refer to the directions on the cover page to determine whether this section applies to the treatment works.

Effluent Testing: 1.0 mgd and Pretreatment Treatment Works. If the treatment works has a design flow greater than or equal to 1.0 mgd or it has (or is required to have) a pretreatment program, or is otherwise required by the permitting authority to provide the data, then provide effluent testing data for the following pollutants. Provide the indicated effluent testing information and any other information required by the permitting authority for each outfall through which effluent is discharged. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analyses conducted using 40 CFR Part 136 methods. In addition, these data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. Indicate in the blank rows provided below any data you may have on pollutants not specifically listed in this form. At a minimum, effluent testing data must be based on at least three pollutant scans and must be no more than four and one-half years old.

Outfall number: 001 This data represents the combined discharge of 101 and 201. (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
METALS (TOTAL RECOVERABLE), CYANIDE, PHENOLS, AND HARDNESS.											
ANTIMONY	<100	ug/l	<1.97	kg/d	<100	ug/l	<1.97	kg/d	3	EPA 200.7	100
ARSENIC	<60	ug/l	<1.18	kg/d	<60	ug/l	<1.18	kg/d	3	EPA 200.7	60
BERYLLIUM	<2	ug/l	<0.04	kg/d	<2	ug/l	<0.04	kg/d	3	EPA 200.7	2
CADMIUM	<0.50	ug/l	<0.01	kg/d	<0.05	ug/l	<0.01	kg/d	3	EPA 200.8	0.50
CHROMIUM	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 200.7	10
COPPER	6	ug/l	0.12	kg/d	<5.3	ug/l	<0.10	kg/d	3	EPA 200.7	5
LEAD	30	ug/l	0.59	kg/d	<23.3	ug/l	<0.46	kg/d	3	EPA 200.7	20
MERCURY	<0.1	ug/l	<0.01	kg/d	<0.1	ug/l	<0.01	kg/d	3	EPA 245.1	0.1
NICKEL	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 200.7	10
SELENIUM	<2	ug/l	<0.04	kg/d	<2	ug/l	<0.04	kg/d	3	EPA 200.8	2
SILVER	<5	ug/l	<0.1	kg/d	<5	ug/l	<0.1	kg/d	3	EPA 200.7	5
THALLIUM	<40	ug/l	<0.79	kg/d	<40	ug/l	<0.79	kg/d	3	EPA 200.7	40
ZINC	134	ug/l	2.64	kg/d	114	ug/l	2.24	kg/d	3	EPA 200.7	20
CYANIDE	18.8	ug/l	0.37	kg/d	11.5	ug/l	0.23	kg/d	16	EPA 335.3	7
TOTAL PHENOLIC COMPOUNDS	<50	ug/l	<0.98	kg/d	<50	ug/l	<0.98	kg/d	3	EPA 420.2	50
HARDNESS (AS $CaCO_3$)	586	mg/l	11500	kg/d	563	mg/l	11000	kg/d	3	SM 2340B	0.1
Use this space (or a separate sheet) to provide information on other metals requested by the permit writer.											
Arsenic III	<60	ug/l	<1.18	kg/d	<60	ug/l	<1.18	kg/d	3	EPA 200.7	60

FACILITY NAME AND PERMIT NUMBER:
VA0029521

Form Approved 1/14/99
OMB Number 2040-0086

Outfall number: 001 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
VOLATILE ORGANIC COMPOUNDS.											
ACROLEIN	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
ACRYLONITRILE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
BENZENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
BROMOFORM	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
CARBON TETRACHLORIDE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
CLOROBENZENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
CHLORODIBROMO-METHANE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
CHLOROETHANE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
2-CHLORO-ETHYLVINYL ETHER	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
CHLOROFORM	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
DICHLOROBROMO-METHANE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
1,1-DICHLOROETHANE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
1,2-DICHLOROETHANE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
TRANS-1,2-DICHLORO-ETHYLENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
1,1-DICHLOROETHYLENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
1,2-DICHLOROPROPANE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
1,3-DICHLORO-PROPYLENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
ETHYLBENZENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
METHYL BROMIDE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
METHYL CHLORIDE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
METHYLENE CHLORIDE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
1,1,2,2-TETRACHLORO-ETHANE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
TETRACHLORO-ETHYLENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
TOLUENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10

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Outfall number: 001 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
1,1,1-TRICHLOROETHANE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
1,1,2-TRICHLOROETHANE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
TRICHLORETHYLENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
VINYL CHLORIDE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 624	10
Use this space (or a separate sheet) to provide information on other volatile organic compounds requested by the permit writer.											
ACID-EXTRACTABLE COMPOUNDS											
P-CHLORO-M-CRESOL	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
2-CHLOROPHENOL	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
2,4-DICHLOROPHENOL	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
2,4-DIMETHYLPHENOL	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
4,6-DINITRO-O-CRESOL	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
2,4-DINITROPHENOL	<20	ug/l	<0.39	kg/d	<20	ug/l	<0.39	kg/d	3	EPA 625	20
2-NITROPHENOL	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
4-NITROPHENOL	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
PENTACHLOROPHENOL	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
PHENOL	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
2,4,6-TRICHLOROPHENOL	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
Use this space (or a separate sheet) to provide information on other acid-extractable compounds requested by the permit writer.											
BASE-NEUTRAL COMPOUNDS.											
ACENAPHTHENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
ACENAPHTHYLENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
ANTHRACENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
BENZIDINE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
BENZO(A)ANTHRACENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
BENZO(A)PYRENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10

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Outfall number: 001 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
3,4 BENZO-FLUORANTHENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
BENZO(GHI)PERYLENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
BENZO(K)FLUORANTHENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
BIS (2-CHLOROETHOXY) METHANE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
BIS (2-CHLOROETHYL)-ETHER	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
BIS (2-CHLOROISO-PROPYL) ETHER	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
BIS (2-ETHYLHEXYL) PHTHALATE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
4-BROMOPHENYL PHENYL ETHER	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
BUTYL BENZYL PHTHALATE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
2-CHLORONAPHTHALENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
4-CHLORPHENYL PHENYL ETHER	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
CHRYSENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
DI-N-BUTYL PHTHALATE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
DI-N-OCTYL PHTHALATE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
DIBENZO(A,H) ANTHRACENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
1,2-DICHLOROBENZENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
1,3-DICHLOROBENZENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
1,4-DICHLOROBENZENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
3,3-DICHLOROBENZIDINE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
DIETHYL PHTHALATE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
DIMETHYL PHTHALATE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
2,4-DINITROTOLUENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
2,6-DINITROTOLUENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
1,2-DIPHENYLHYDRAZINE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10

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Outfall number: 001 (Complete once for each outfall discharging effluent to waters of the United States.)

POLLUTANT	MAXIMUM DAILY DISCHARGE				AVERAGE DAILY DISCHARGE					ANALYTICAL METHOD	ML/ MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	Number of Samples		
FLUORANTHENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
FLUORENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
HEXACHLOROBENZENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
HEXACHLOROBUTADIENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
HEXACHLOROCYCLO-PENTADIENE	<10	ug/l	<019	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
HEXACHLOROETHANE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
INDENO(1,2,3-CD)PYRENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
ISOPHORONE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
NAPHTHALENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
NITROBENZENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
N-NITROSODI-N-PROPYLAMINE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
N-NITROSODI- METHYLAMINE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
N-NITROSODI-PHENYLAMINE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
PHENANTHRENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
PYRENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10
1,2,4-TRICHLOROBENZENE	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	3	EPA 625	10

Use this space (or a separate sheet) to provide information on other base-neutral compounds requested by the permit writer.

Use this space (or a separate sheet) to provide information on other pollutants (e.g., pesticides) requested by the permit writer.

END OF PART D.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

Please see Attachment 5 for additional effluent data.

FACILITY NAME AND PERMIT NUMBER:
VA0029521

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SUPPLEMENTAL APPLICATION INFORMATION

PART E. TOXICITY TESTING DATA

POTWs meeting one or more of the following criteria must provide the results of whole effluent toxicity tests for acute or chronic toxicity for each of the facility's discharge points: 1) POTWs with a design flow rate greater than or equal to 1.0 mgd; 2) POTWs with a pretreatment program (or those that are required to have one under 40 CFR Part 403); or 3) POTWs required by the permitting authority to submit data for these parameters.

- At a minimum, these results must include quarterly testing for a 12-month period within the past 1 year using multiple species (minimum of two species), or the results from four tests performed at least annually in the four and one-half years prior to the application, provided the results show no appreciable toxicity, and testing for acute and/or chronic toxicity, depending on the range of receiving water dilution. Do not include information on combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136.
- In addition, submit the results of any other whole effluent toxicity tests from the past four and one-half years. If a whole effluent toxicity test conducted during the past four and one-half years revealed toxicity, provide any information on the cause of the toxicity or any results of a toxicity reduction evaluation, if one was conducted.
- If you have already submitted any of the information requested in Part E, you need not submit it again. Rather, provide the information requested in question E.4 for previously submitted information. If EPA methods were not used, report the reasons for using alternate methods. If test summaries are available that contain all of the information requested below, they may be submitted in place of Part E.

If no biomonitoring data is required, do not complete Part E. Refer to the Application Overview for directions on which other sections of the form to complete.

E.1. Required Tests.

Indicate the number of whole effluent toxicity tests conducted in the past four and one-half years.

✓ chronic ✓ acute

E.2. Individual Test Data. Complete the following chart for each whole effluent toxicity test conducted in the last four and one-half years. Allow one column per test (where each species constitutes a test). Copy this page if more than three tests are being reported.

	Test number:_____	Test number:_____	Test number:_____
a. Test information.	See Attachment 6 for Individual Test Data		
Test species & test method number			
Age at initiation of test			
Outfall number			
Dates sample collected			
Date test started			
Duration			
b. Give toxicity test methods followed.			
Manual title			
Edition number and year of publication			
Page number(s)			
c. Give the sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used.			
24-Hour composite			
Grab			
d. Indicate where the sample was taken in relation to disinfection. (Check all that apply for each)			
Before disinfection			
After disinfection			
After dechlorination			

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	Test number:_____	Test number:_____	Test number:_____
e. Describe the point in the treatment process at which the sample was collected.			
Sample was collected:			
f. For each test, include whether the test was intended to assess chronic toxicity, acute toxicity, or both.			
Chronic toxicity			
Acute toxicity			
g. Provide the type of test performed.			
Static			
Static-renewal			
Flow-through			
h. Source of dilution water. If laboratory water, specify type; if receiving water, specify source.			
Laboratory water			
Receiving water			
i. Type of dilution water. It salt water, specify "natural" or type of artificial sea salts or brine used.			
Fresh water			
Salt water			
j. Give the percentage effluent used for all concentrations in the test series.			
k. Parameters measured during the test. (State whether parameter meets test method specifications)			
pH			
Salinity			
Temperature			
Ammonia			
Dissolved oxygen			
l. Test Results.			
Acute:			
Percent survival in 100% effluent	%	%	%
LC_{50}			
95% C.I.	%	%	%
Control percent survival	%	%	%
Other (describe)			

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Chronic:			
NOEC	%	%	%
IC_{25}	%	%	%
Control percent survival	%	%	%
Other (describe)			

m. Quality Control/Quality Assurance.

Is reference toxicant data available?			
Was reference toxicant test within acceptable bounds?			
What date was reference toxicant test run (MM/DD/YYYY)?			
Other (describe)			

E.3. Toxicity Reduction Evaluation. Is the treatment works involved in a Toxicity Reduction Evaluation?

____Yes ✓ No If yes, describe: _____

E.4. Summary of Submitted Biomonitoring Test Information. If you have submitted biomonitoring test information, or information regarding the cause of toxicity, within the past four and one-half years, provide the dates the information was submitted to the permitting authority and a summary of the results.

Not Applicable

Date submitted: _____ (MM/DD/YYYY)

Summary of results: (see instructions)

END OF PART E.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE.

FACILITY NAME AND PERMIT NUMBER:
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Form Approved 1/14/99
OMB Number 2040-0086

SUPPLEMENTAL APPLICATION INFORMATION

Part F is Not Applicable

PART F. INDUSTRIAL USER DISCHARGES AND RCRA/CERCLA WASTES

All treatment works receiving discharges from significant industrial users or which receive RCRA, CERCLA, or other remedial wastes must complete Part F.

GENERAL INFORMATION:

F.1. Pretreatment Program. Does the treatment works have, or is it subject to, an approved pretreatment program?

____Yes____No

F.2. Number of Significant Industrial Users (SIUs) and Categorical Industrial Users (CIUs). Provide the number of each of the following types of industrial users that discharge to the treatment works.

a. Number of non-categorical SIUs. _____

b. Number of CIUs. _____

SIGNIFICANT INDUSTRIAL USER INFORMATION:

Supply the following information for each SIU. If more than one SIU discharges to the treatment works, copy questions F.3 through F.8 and provide the information requested for each SIU.

F.3. Significant Industrial User Information. Provide the name and address of each SIU discharging to the treatment works. Submit additional pages as necessary.

Name: _____

Mailing Address: _____

_____

F.4. Industrial Processes. Describe all of the industrial processes that affect or contribute to the SIU's discharge.

_____

F.5. Principal Product(s) and Raw Material(s). Describe all of the principal processes and raw materials that affect or contribute to the SIU's discharge.

Principal product(s): _____

Raw material(s): _____

F.6. Flow Rate.

a. Process wastewater flow rate. Indicate the average daily volume of process wastewater discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

_____ gpd (_____continuous or _____intermittent)

b. Non-process wastewater flow rate. Indicate the average daily volume of non-process wastewater flow discharged into the collection system in gallons per day (gpd) and whether the discharge is continuous or intermittent.

_____ gpd (_____continuous or _____intermittent)

F.7. Pretreatment Standards. Indicate whether the SIU is subject to the following:

a. Local limits ____Yes ____No

b. Categorical pretreatment standards ____Yes ____No

If subject to categorical pretreatment standards, which category and subcategory?

_____

FACILITY NAME AND PERMIT NUMBER:
VA0029521

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F.8. Problems at the Treatment Works Attributed to Waste Discharged by the SIU. Has the SIU caused or contributed to any problems (e.g., upsets, interference) at the treatment works in the past three years?

____Yes____No If yes, describe each episode.

_____

_____

RCRA HAZARDOUS WASTE RECEIVED BY TRUCK, RAIL, OR DEDICATED PIPELINE:

F.9. RCRA Waste. Does the treatment works receive or has it in the past three years received RCRA hazardous waste by truck, rail, or dedicated pipe? _____Yes ___No (go to F.12.)

F.10. Waste Transport. Method by which RCRA waste is received (check all that apply):

_____Truck _____Rail _____Dedicated Pipe

F.11. Waste Description. Give EPA hazardous waste number and amount (volume or mass, specify units).

EPA Hazardous Waste Number	Amount	Units

CERCLA (SUPERFUND) WASTEWATER, RCRA REMEDIATION/CORRECTIVE ACTION WASTEWATER, AND OTHER REMEDIAL ACTIVITY WASTEWATER:

F.12. Remediation Waste. Does the treatment works currently (or has it been notified that it will) receive waste from remedial activities?

____Yes (complete F.13 through F.15.) ____No

Provide a list of sites and the requested information (F.13 - F.15.) for each current and future site.

F.13. Waste Origin. Describe the site and type of facility at which the CERCLA/RCRA/or other remedial waste originates (or is expected to originate in the next five years).

_____

_____

_____

F.14. Pollutants. List the hazardous constituents that are received (or are expected to be received). Include data on volume and concentration, if known. (Attach additional sheets if necessary).

_____

_____

F.15. Waste Treatment.

a. Is this waste treated (or will it be treated) prior to entering the treatment works?

____Yes ____No

If yes, describe the treatment (provide information about the removal efficiency):

_____

_____

b. Is the discharge (or will the discharge be) continuous or intermittent?

____Continuous ____Intermittent If intermittent, describe discharge schedule.

_____

END OF PART F.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE

FACILITY NAME AND PERMIT NUMBER:
VA0029521

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SUPPLEMENTAL APPLICATION INFORMATION

Part G is Not Applicable

PART G. COMBINED SEWER SYSTEMS

If the treatment works has a combined sewer system, complete Part G.

G.1. System Map. Provide a map indicating the following: (may be included with Basic Application Information)

a. All CSO discharge points.

b. Sensitive use areas potentially affected by CSOs (e.g., beaches, drinking water supplies, shellfish beds, sensitive aquatic ecosystems, and outstanding natural resource waters).

c. Waters that support threatened and endangered species potentially affected by CSOs.

G.2. System Diagram. Provide a diagram, either in the map provided in G.1. or on a separate drawing, of the combined sewer collection system that includes the following information:

a. Locations of major sewer trunk lines, both combined and separate sanitary.

b. Locations of points where separate sanitary sewers feed into the combined sewer system.

c. Locations of in-line and off-line storage structures.

d. Locations of flow-regulating devices.

e. Locations of pump stations.

CSO OUTFALLS:

Complete questions G.3 through G.6 once for each CSO discharge point.

G.3. Description of Outfall.

a. Outfall number _____

b. Location _____
(City or town, if applicable) (Zip Code)

_____
(County) (State)

_____
(Latitude) (Longitude)

c. Distance from shore (if applicable) _____ft.

d. Depth below surface (if applicable) _____ft.

e. Which of the following were monitored during the last year for this CSO?

____Rainfall ____CSO pollutant concentrations ____CSO frequency

____CSO flow volume ____Receiving water quality

f. How many storm events were monitored during the last year? _____

G.4. CSO Events.

a. Give the number of CSO events in the last year.

_____ events (___ actual or ___ approx.)

b. Give the average duration per CSO event.

_____ hours (____ actual or ____ approx.)

c. Give the average volume per CSO event.

_____ million gallons (_____ actual or _____ approx.)

d. Give the minimum rainfall that caused a CSO event in the last year.

_____ inches of rainfall

G.5. Description of Receiving Waters.

a. Name of receiving water: _____

b. Name of watershed/river/stream system: _____

United States Soil Conservation Service 14-digit watershed code (if known): _____

c. Name of State Management/River Basin: _____

United States Geological Survey 8-digit hydrologic cataloging unit code (if known): _____

G.6. CSO Operations.

Describe any known water quality impacts on the receiving water caused by this CSO (e.g., permanent or intermittent beach closings, permanent or intermittent shell fish bed closings, fish kills, fish advisories, other recreational loss, or violation of any applicable State water quality standard).

_____

_____

END OF PART G.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHICH OTHER PARTS OF FORM 2A YOU MUST COMPLETE.

Additional information, if provided, will appear on the following pages.

Doswell Wastewater Treatment Plant
VA0029521

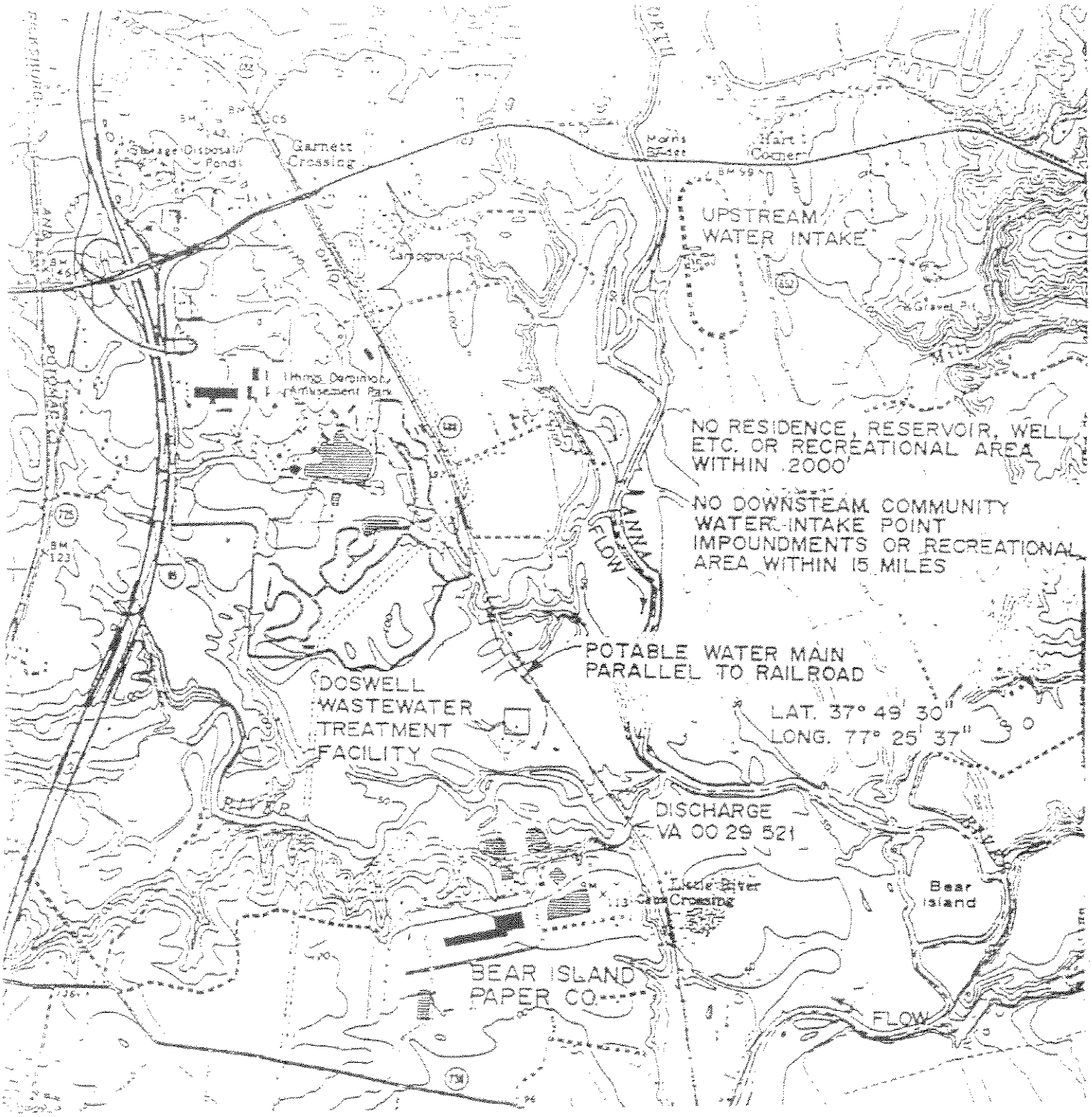
Attachment 1 – Inflow and Infiltration

EPA Form 2A Section B.1

Influent flows to the Doswell Wastewater Treatment Plant vary seasonally as a result of Kings Dominion's operation and with wet weather. Inflow and infiltration is not a major problem in the DWWTP service area, but the County proactively cleans, inspects and maintains the sewer collection system to minimize the impact I&I have on our facilities.

In 2002 a sanitary sewer evaluation was completed in the Doswell service area by O'Brien & Gere Engineers, Inc. This evaluation included smoke testing, flow measurements and manhole inspections. The findings and recommendations from this work resulted in a rehabilitation project to correct deficiencies in eleven (11) manholes. The rehabilitation work addressed issues such as replacing or resetting frames and covers, repairing benches and channels, coating manholes, sealing pipe connections, sealing joints and repairing holes and cracks. The rehabilitation work was coupled with another sanitary sewer rehabilitation project and completed in 2004. Since completing this work Hanover County staff continue to monitor the system for any significant I/I.

In 2006/2007 Greeley and Hansen conducted an evaluation of the DWWTP to determine if capacity was available to accommodate the projected flows from the State Fair site in Caroline County. It was determined that sufficient capacity exists which is further evidence that I/I is minimal. Please note that Greeley and Hansen did make recommendations detailing minor improvements that will be needed to accommodate the State Fair as well as more significant future upgrades that will be needed as development in the area continues. These recommendations have been incorporated into our capitol improvement budgets (see Attachment #4 - Form 2A).



SCALE: 1:24000

1 1/2 0 1 mile

1000 0 1000 2000 3000 4000 5000 6000 7000 ft.

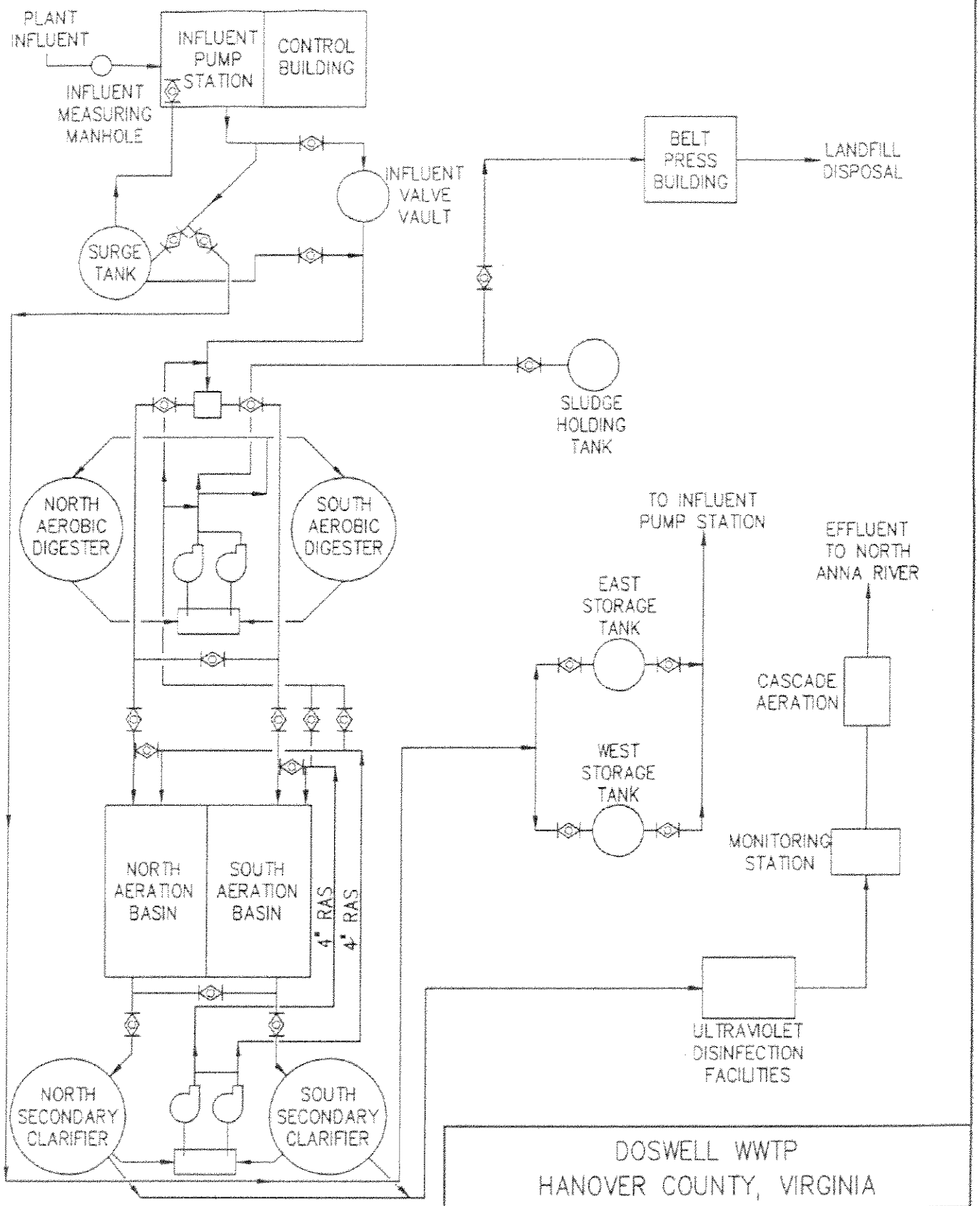
Attachment 2

SITE LOCATION MAP

TAKEN FROM USGS MAP
ASHLAND QUADRANGLE,
PHOTOREVISED 1985

AWARE ENVIRONMENTAL INC

Attachment 3



DOSWELL WWTP
HANOVER COUNTY, VIRGINIA

PROCESS FLOW SCHEMATIC

HAZEN AND SAWYER
Environmental Engineers & Scientists

Doswell Wastewater Treatment Plant
VA0029521

Attachment 4 – Caroline County Contract & State Fair Improvements

EPA Form 2A Section B.5.c

In 2007, Hanover County executed a contract with Caroline County to provide water and sewer service to the new State Fair site at Meadow Farms. The contract has multiple provisions including limits governing sewer discharges to the Doswell Wastewater Treatment Plant. The limitations are as follows:

- Discharges are limited to 860 gallons per minute (gpm) during the fair, not to exceed the 11-day fair period.
- Daily totals shall not exceed 340,000 gallons per day during the fair, not to exceed the 11-day fair period.
- Total discharge from the 11-day fair shall not exceed 2 million gallons.
- Special events (11 weekends between October & May) shall be limited to 100,000 gallons per weekend at a maximum rate of 170 gpm.
- All other days not covered by these provisions shall be limited to 50,000 gallons per day.

Minor facility upgrades will be required to accommodate the State Fair flows which will primarily focus on flow equalization, storage and pumping capacity. Design work is currently underway to retrofit the existing facility to maximize use of the existing equalization basins which is scheduled to be completed in 2009.

Doswell Wastewater Treatment Plant
VA0029521

Attachement 5 - Additional Effluent Data - EPA Form 2A Section B.6

Outfall 001 This is the combined discharge of 101 (DWWTP) and 201 (BIPCO treated process wastewater)

Pollutant	Maximun Daily Discharge		Average Daily Discharge			Analytical Method	MDL
	Conc.	Units	Conc.	Units	# of Samples		
Ammonia (as N)	0.8	mg/l	0.66	mg/l	12	EPA 350.1	0.20
Total Residual Chlorine (TRC)	0.48	mg/l	0.37	mg/l	3	EPA 330.5	0.1
Dissolved Oxygen	11.6	mg/l	8.4	mg/l	365	SM 4500-O	0.1
TKN	15.5	mg/l	6.5	mg/l	156	EPA 351.2	0.5
Nitrate + Nitrite, Nitrogen	2.69	mg/l	1.13	mg/l	32	EPA 353.2	0.2
Oil & Grease	<5.0	mg/l	<5.0	mg/l	3	EPA 413.1	5
Phosphorous (Total)	5.9	mg/l	3.33	mg/l	12	EPA 365.1	0.2
Total Dissolved Solids (TDS)	2120	mg/l	1967	mg/l	3	SM 2540 C.	1
Phosphorous (Ortho)	1.2	mg/l	0.76	mg/l	32	EPA 365.2	0.5

Doswell Wastewater Treatment Plant
VA0029521

Attachement 5 - Additional Effluent Data - EPA Form 2A Section D

Pollutant	Maximun Daily Discharge				Average Daily Discharge					Analytical	MDL
	Conc.	Units	Mass	Units	Conc.	Units	Mass	Units	# of Samples	Method	
Hexachlorocyclhexane Alpha-BHC	<0.05	ug/l	<1.0	g/d	<0.05	ug/l	<1.0	g/d	1	EPA 608	0.05
Alpha-Endosulfan	<0.05	ug/l	<1.0	g/d	<0.05	ug/l	<1.0	g/d	1	EPA 608	0.05
Hexachlorocyclhexane Beta-BHC	<0.05	ug/l	<1.0	g/d	<0.05	ug/l	<1.0	g/d	1	EPA 608	0.05
Beta-Endosulfan	<0.05	ug/l	<1.0	g/d	<0.05	ug/l	<1.0	g/d	1	EPA 608	0.05
Endosulfan sulfate	<0.05	ug/l	<1.0	g/d	<0.05	ug/l	<1.0	g/d	1	EPA 608	0.05
Endrin aldehyde	<0.05	ug/l	<1.0	g/d	<0.05	ug/l	<1.0	g/d	1	EPA 608	0.05
Heptachlor epoxide	<0.05	ug/l	<1.0	g/d	<0.05	ug/l	<1.0	g/d	1	EPA 608	0.05
PCB 1016	ND	ug/l	ND	g/d	ND	ug/l	ND	g/d	1	EPA 608	1.00
PCB 1221	ND	ug/l	ND	g/d	ND	ug/l	ND	g/d	1	EPA 608	1.00
PCB 1232	ND	ug/l	ND	g/d	ND	ug/l	ND	g/d	1	EPA 608	1.00
PCB 1242	ND	ug/l	ND	g/d	ND	ug/l	ND	g/d	1	EPA 608	1.00
PCB 1248	ND	ug/l	ND	g/d	ND	ug/l	ND	g/d	1	EPA 608	1.00
PCB 1254	ND	ug/l	ND	g/d	ND	ug/l	ND	g/d	1	EPA 608	1.00
PCB 1260	ND	ug/l	ND	g/d	ND	ug/l	ND	g/d	1	EPA 608	1.00
PCB Total	ND	ug/l	ND	g/d	ND	ug/l	ND	g/d	1	EPA 608	7.00
Aldrin	<0.05	ug/l	<1.0	g/d	<0.05	ug/l	<1.0	g/d	1	EPA 608	0.05
Mirex	<0.05	ug/l	<1.0	g/d	<0.05	ug/l	<1.0	g/d	1	EPA 608	0.05
Chlordane	ND	ug/l	ND	g/d	ND	ug/l	ND	g/d	1	EPA 608	0.20
DDD	<0.05	ug/l	<1.0	g/d	<0.05	ug/l	<1.0	g/d	1	EPA 608	0.05
DDE	<0.05	ug/l	<1.0	g/d	<0.05	ug/l	<1.0	g/d	1	EPA 608	0.05
DDT	<0.05	ug/l	<1.0	g/d	<0.05	ug/l	<1.0	g/d	1	EPA 608	0.05
Diedrin	<0.05	ug/l	<1.0	g/d	<0.05	ug/l	<1.0	g/d	1	EPA 608	0.05
Endrin	<0.05	ug/l	<1.0	g/d	<0.05	ug/l	<1.0	g/d	1	EPA 608	0.05
Heptachlor	<0.05	ug/l	<1.0	g/d	<0.05	ug/l	<1.0	g/d	1	EPA 608	0.05
Hexachlorocyclohexane (Lindane)	<0.05	ug/l	<1.0	g/d	<0.05	ug/l	<1.0	g/d	1	EPA 608	0.05
Mehoxychlor	<0.05	ug/l	<1.0	g/d	<0.05	ug/l	<1.0	g/d	1	EPA 608	0.05
Toxaphene	ND	ug/l	ND	g/d	ND	ug/l	ND	g/d	1	EPA 608	5.0
Kepone	<0.4	ug/l	<7.9	g/d	<0.4	ug/l	<7.9	g/d	1	EPA 608	0.4
Demetron	<0.01	ug/l	<0.2	g/d	<0.01	ug/l	<0.2	g/d	1	EPA 622	0.1
Guthion	<0.01	ug/l	<0.2	g/d	<0.01	ug/l	<0.2	g/d	1	EPA 622	0.1
Malathion	<0.01	ug/l	<0.2	g/d	<0.01	ug/l	<0.2	g/d	1	EPA 622	0.1
Chloropyrifos	<0.01	ug/l	<0.2	g/d	<0.01	ug/l	<0.2	g/d	1	EPA 622	0.1
Parathion	<0.01	ug/l	<0.2	g/d	<0.01	ug/l	<0.2	g/d	1	EPA 622	0.1
Dioxin	ND	ng/l	ND	g/d	ND	ng/l	ND	g/d	1	EPA 1613	30
Tributyltin	ND	ng/L	ND	g/d	ND	ng/l	ND	g/d	1	Unger et al	30
1,2 Dichlorobenzene	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	2	EPA 624	10
1,3 Dichlorobenzene	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	2	EPA 624	10
1,4 Dichlorobenzene	<10	ug/l	<0.19	kg/d	<10	ug/l	<0.19	kg/d	2	EPA 624	10
Total Xylenes	<6	ug/l	<0.12	kg/d	<6	ug/l	<0.12	kg/d	1	SW-846 8260	6

Doswell Wastewater Treatment Plant
VA0029521

EPA Form 2A Part E Toxicity Testing Data

E.2 Individual Test Data

	Test #1	Test #2	Test #3	Test #4	Test #5	Test #6	Test #7	Test #8	Test #9	Test #10	Test #11	Test #12	Test #13	Test #14	Test #15	Test #16	Test #17	Test #18
a. Test Information																		
Test species & test method number	C. dubia EPA 1002.0	C. dubia EPA 2002.0	P. promelas EPA 2000.0	C. dubia EPA 1002.0	P. promelas EPA 1000.0	C. dubia EPA 1002.0	C. dubia EPA 1002.0	P. promelas EPA 1000.0	C. dubia EPA 2002.0	P. promelas EPA 2000.0	C. dubia EPA 1002.0	P. promelas EPA 1000.0	C. dubia EPA 2002.0	P. promelas EPA 2000.0	C. dubia EPA 1002.0	P. promelas EPA 1000.0	C. dubia EPA 2002.0	P. promelas EPA 2000.0
Age at initiation of test	< 24 hours	< 24 hours	3 days	< 24 hours	< 24 hours	< 24 hours	< 24 hours	< 24 hours	< 24 hours	3 Days	<24 hours	<24 hours	<24 Hours	2-3 Days	<24 hours	<24 hours	<24 Hours	3 Days
Outfall number	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001	001
Dates sample collected	4/15-20/2007	3/11-16/2007				4/30-5/5/2006	4/9-14/2006				4/3-8/2005				2/22-23/2004			
Date test started	4/16/2007	3/14/2007	3/14/2007	3/13/2007	3/12/2007	5/1/2006	4/10/2006	4/10/2006	4/12/2006	4/12/2006	4/4/2005	4/4/2005	4/6/2005	4/6/2005	2/24/2004	2/24/2004	2/25/2004	2/25/2004
Duration	7 Days	48 Hours	48 Hours	7 Days	7 Days	7 Days	7 Days	7 Days	48 Hours	48 Hours	7 Days	7 Days	48 Hours	48 Hours	6 Days	7 Days	48 Hours	48 Hours
b. Give toxicity test methods followed																		
Manual title	EPA/600/4-90/027F	EPA/600/4-90/027F				EPA/600/4-90/027F			EPA/600/4-90/027F		EPA/600/4-90/027F		EPA/600/4-90/027F		EPA/600/4-90/027F		EPA/600/4-90/027F	
Edition number and year of publication	4th edition, 1993	4th edition, 1993				4th edition, 1993			4th edition, 1993		4th edition, 1993		4th edition, 1993		4th edition, 1993		4th edition, 1993	
Page number(s)	Unknown	Unknown				Unknown			Unknown		Unknown		Unknown		Unknown		Unknown	
c. Give the sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used																		
24-Hour composite	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Grab																		
d. Indicate where the sample was taken in relation to disinfection. (Check all that apply for each)																		
Before disinfection																		
After disinfection	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
After dechlorination																		
e. Describe the point in the treatment process at which the sample was collected.																		
Sample was collected	Effluent sampling point	Effluent sampling point at Parshall Flume				Effluent sampling point			Effluent sampling point		Effluent sampling point		Effluent sampling point		Effluent sampling point		Effluent sampling point	
f. For each test, include whether the test was intended to assess chronic toxicity, acute toxicity, or both																		
Chronic toxicity	X		X	X				X			X	X			X	X		
Acute toxicity		X	X						X	X			X	X			X	X
g. Provide the type of test performed.																		
Static		X	X						X	X			X	X			X	X
Static-renewal	X			X	X	X	X	X			X	X			X	X		
Flow-through																		
h. Source of dilution water. If laboratory water, specify type. If receiving water, specify source.																		
Laboratory water	Moderately hard synthetic freshwater made with ASTM Type I deionized water	Moderately hard synthetic freshwater made with ASTM Type I deionized water				Moderately hard synthetic freshwater made with ASTM Type I deionized water			Moderately hard synthetic freshwater made with ASTM Type I deionized water		Moderately hard synthetic freshwater made with ASTM Type I deionized water		Moderately hard synthetic freshwater made with ASTM Type I deionized water		Moderately hard synthetic freshwater made with ASTM Type I deionized water		Moderately hard synthetic freshwater made with ASTM Type I deionized water	
Receiving water																		
i. Type of dilution water. If salt water, specify "natural" or type of artificial sea salts or brine used																		
Fresh water	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Salt water																		
j. Give the percentage effluent used for all concentrations in the test series																		
	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%
	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%
	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	25%	25%
	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
k. Parameters measured during the test. (State whether parameter meets test method specifications)																		
pH	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Salinity		Not Tested				Not Tested			Not Tested		Not Tested		Not Tested		Not Tested		Not Tested	
Temperature	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ammonia		Not Tested				Not Tested			Not Tested		Not Tested		Not Tested		Not Tested		Not Tested	
Dissolved oxygen	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
l. Test Results																		
Acute																		
Percent survival in 100% effluent		100%	100%						100%	100%			100%	100%			100%	95%
LC50		>100%	>100%						>100%	>100%			>100%	>100%			>100%	>100%
95% C.I.		N/A	N/A						N/A	N/A			N/A	N/A			N/A	N/A
Control percent survival		100%	100%						100%	100%			100%	100%			100%	100%
Other (describe)																		
Chronic																		
NOEC	100%			<6.25%	100%	100%	N/A	100%			100%	100%			81%	100%		
IC25	>100%			1.84%	>100%	52%	N/A	>100%			46.40%	>100%			70.80%	>100%		
Control percent survival	100%			90%	100%	100%	N/A	100%			100%	95%			100%	100%		
Other (describe)	Retest required per 3/12/07 results Retest passed, no toxicity found						repeated on 5/1/2006 Retest passed											
m. Quality Control/Quality Assurance																		
Is reference toxicant data available?	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Was reference toxicant test within acceptable bounds?	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
What date was reference toxicant test run?	4/16/2007	3/20/2007	3/12/2007	3/26/2007	3/12/2007	5/1/2006		4/10/2006	4/6/2006	4/10/2006	4/19/2005	4/5/2005	4/5/2005	4/5/2005	2/9/2004	2/10/2004	2/16/2004	2/16/2004
Other (describe)				See Attachment 2a & 2b for additional information														

FACILITY NAME: Doswell Wastewater Treatment Plant **VPDES PERMIT NUMBER:** VA0029521

VPDES SEWAGE SLUDGE PERMIT APPLICATION FORM

SCREENING INFORMATION

This application is divided into sections. Sections A pertain to all applicants. The applicability of Sections B, C and D depend on your facility's sewage sludge use or disposal practices. The information provided on this page will help you determine which sections to fill out.

1. All applicants must complete Section A (General Information).

2. Will this facility generate sewage sludge? X Yes __No

   Will this facility derive a material from sewage sludge? __Yes X No

   If you answered Yes to either, complete Section B (Generation Of Sewage Sludge Or Preparation Of A Material Derived From Sewage Sludge).

3. Will this facility apply sewage sludge to the land? __Yes X No

   Will sewage sludge from this facility be applied to the land? __Yes X No

   If you answered No to both questions above, skip Section C.

   If you answered Yes to either, answer the following three questions: Not Applicable

   a. Will the sewage sludge from this facility meet the ceiling concentrations, pollutant concentrations, Class A pathogen reduction requirements and one of the vector attraction reduction requirements 1-8, as identified in the instructions?
      __Yes __No

   b. Will sewage sludge from this facility be placed in a bag or other container for sale or give-away for application to the land? __Yes __No

   c. Will sewage sludge from this facility be sent to another facility for treatment or blending? __Yes __No

   If you answered No to all three, complete Section C (Land Application Of Bulk Sewage Sludge).

   If you answered Yes to a, b or c, skip Section C.

4. Do you own or operate a surface disposal site? __Yes X No

   If Yes, complete Section D (Surface Disposal).

FACILITY NAME: Doswell Wastewater Treatment Plant **VPDES PERMIT NUMBER:** VA0029521

SECTION A. GENERAL INFORMATION

All applicants must complete this section.

1. Facility Information.
   a. Facility name: Doswell Wastewater Treatment Plant
   b. Contact person: David F. Van Gelder
      Title: Chief of Operations & Maintenance
      Phone: ( ) (804) 365-6235
   c. Mailing address:
      Street or P.O. Box: P.O. Box 470
      City or Town: Hanover State: VA Zip: 23069
   d. Facility location:
      Street or Route #: 15468 Theme Park Way
      County: Hanover
      City or Town: Doswell State: VA Zip: 23047
   e. Is this facility a Class I sludge management facility? __Yes X No
   f. Facility design flow rate: 5.2 (1.0 mgd municipal) mgd
   g. Total population served: Approximately 18,800
   h. Indicate the type of facility:
      X Publicly owned treatment works (POTW)
      __ Privately owned treatment works
      __ Federally owned treatment works
      __ Blending or treatment operation
      __ Surface disposal site
      __ Other (describe): _____

2. Applicant Information. If the applicant is different from the above, provide the following:
   a. Applicant name: Hanover County
   b. Mailing address:
      Street or P.O. Box: P.O. Box 470
      City or Town: Hanover State: VA Zip: 23069
   c. Contact person: David F. Van Gelder
      Title: Chief of Operations & Maintenance
      Phone: ( ) (804) 365-6235
   d. Is the applicant the owner or operator (or both) of this facility?
      X owner X operator
   e. Should correspondence regarding this permit be directed to the facility or the applicant? (Check one)
      _____ facility X applicant

3. Permit Information.
   a. Facility's VPDES permit number (if applicable): VA0029521
   b. List on this form or an attachment, all other federal, state or local permits or construction approvals received or applied for that regulate this facility's sewage sludge management practices:

Permit Number:	Type of Permit:
VAR051377	VPDES Industrial General Storm Water Permit
VAN030051	VPDES Nutrient General Permit

4. Indian Country. Does any generation, treatment, storage, application to land or disposal of sewage sludge from this facility occur in Indian Country? __Yes X No If yes, describe:

_____

FACILITY NAME: Doswell Wastewater Treatment Plant **VPDES PERMIT NUMBER:** VA0029521

5. Topographic Map. Provide a topographic map or maps (or other appropriate maps if a topographic map is unavailable) that shows the following information. Maps should include the area one mile beyond all property boundaries of the facility: See Attachment 1
   a. Location of all sewage sludge management facilities, including locations where sewage sludge is generated, stored, treated, or disposed.
   b. Location of all wells, springs, and other surface water bodies listed in public records or otherwise known to the applicant within 1/4 mile of the property boundaries.

6. Line Drawing. Provide a line drawing and/or a narrative description that identifies all sewage sludge processes that will be employed during the term of the permit including all processes used for collecting, dewatering, storing, or treating sewage sludge, the destination(s) of all liquids and solids leaving each unit, and all methods used for pathogen reduction and vector attraction reduction. See Attachment 2

7. Contractor Information. Are any operational or maintenance aspects of this facility related to sewage sludge generation, treatment, use or disposal the responsibility of a contractor? X Yes ___ No
   If yes, provide the following for each contractor (attach additional pages if necessary).
   Name: _____
   Mailing address: See Attachment 3
   Street or P.O. Box: _____
   City or Town: _____ State: _____ Zip: _____
   Phone: ( ) _____
   Contractor's Federal, State or Local Permit Number(s) applicable to this facility's sewage sludge:
   _____
   If the contractor is responsible for the use and/or disposal of the sewage sludge, provide a description of the service to be provided to the applicant and the respective obligations of the applicant and the contractor(s).

8. Pollutant Concentrations. Using the table below or a separate attachment, provide sewage sludge monitoring data for the pollutants which limits in sewage sludge have been established in 9 VAC 25-31-10 et seq. for this facility's expected use or disposal practices. All data must be based on three or more samples taken at least one month apart and must be no more than four and one-half years old. Not Applicable

POLLUTANT	CONCENTRATION (mg/kg dry weight)	SAMPLE DATE	ANALYTICAL METHOD	DETECTION LEVEL FOR ANALYSIS
Arsenic				
Cadmium				
Chromium				
Copper				
Lead				
Mercury				
Molybdenum				
Nickel				
Selenium				
Zinc				

9. Certification. Read and submit the following certification statement with this application. Refer to the instructions to determine who is an officer for purposes of this certification. Indicate which parts of the application you have completed and are submitting:

   X Section A (General Information)
   X Section B (Generation of Sewage Sludge or Preparation of a Material Derived from Sewage Sludge)
   ___ Section C (Land Application of Bulk Sewage Sludge)
   ___ Section D (Surface Disposal)

FACILITY NAME: Doswell Wastewater Treatment Plant **VPDES PERMIT NUMBER:** VA0029521

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 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.

Name and official title Cecil R. Harris, Jr., County Administrator

Signature Cecil R. Harris Date Signed 11/9/07

Telephone number (804) 365-6005

Upon request of the department, you must submit any other information necessary to assess sewage sludge use or disposal practices at your facility or identify appropriate permitting requirements.

FACILITY NAME: Doswell Wastewater Treatment Plant VPDES PERMIT NUMBER: VA0029521

SECTION B. GENERATION OF SEWAGE SLUDGE OR PREPARATION OF A MATERIAL DERIVED FROM SEWAGE SLUDGE

Complete this section if your facility generates sewage sludge or derives a material from sewage sludge

1. Amount Generated On Site.
   Total dry metric tons per 365-day period generated at your facility: 14.87 dry metric tons 2006 Annual Total

2. Amount Received from Off Site. If your facility receives sewage sludge from another facility for treatment, use or disposal, provide the following information for each facility from which sewage sludge is received. If you receive sewage sludge from more than one facility, attach additional pages as necessary.
   a. Facility name: Not Applicable
   b. Contact Person: _____
      Title: _____
      Phone ( ) _____
   c. Mailing address:
      Street or P.O. Box: _____
      City or Town: _____ State: _____ Zip: _____
   d. Facility Address: _____
      (not P.O. Box) _____
   e. Total dry metric tons per 365-day period received from this facility: _____ dry metric tons
   f. Describe, on this form or on another sheet of paper, any treatment processes known to occur at the off-site facility, including blending activities and treatment to reduce pathogens or vector attraction characteristics:
      _____
      _____

3. Treatment Provided at Your Facility.
   a. Which class of pathogen reduction is achieved for the sewage sludge at your facility?
      __Class A __Class B X Neither or unknown
   b. Describe, on this form or another sheet of paper, any treatment processes used at your facility to reduce pathogens in sewage sludge: Aerobic Digestion
   c. Which vector attraction reduction option is met for the sewage sludge at your facility?
      __ Option 1 (Minimum 38 percent reduction in volatile solids)
      __ Option 2 (Anaerobic process, with bench-scale demonstration)
      __ Option 3 (Aerobic process, with bench-scale demonstration)
      __ Option 4 (Specific oxygen uptake rate for aerobically digested sludge)
      __ Option 5 (Aerobic processes plus raised temperature)
      __ Option 6 (Raise pH to 12 and retain at 11.5)
      __ Option 7 (75 percent solids with no unstabilized solids)
      __ Option 8 (90 percent solids with unstabilized solids)
      X None or unknown
   d. Describe, on this form or another sheet of paper, any treatment processes used at your facility to reduce vector attraction properties of sewage sludge: Aerobic Digestion
   e. Describe, on this form or another sheet of paper, any other sewage sludge treatment activities, including blending, not identified in a - d above: _____

4. Preparation of Sewage Sludge Meeting Ceiling and Pollutant Concentrations, Class A Pathogen Requirements and One of Vector Attraction Reduction Options 1-8 (EQ Sludge). Not Applicable
   (If sewage sludge from your facility does not meet all of these criteria, skip Question 4.)
   a. Total dry metric tons per 365-day period of sewage sludge subject to this section that is applied to the land: _____ dry metric tons
   b. Is sewage sludge subject to this section placed in bags or other containers for sale or give-away?

__Yes __No

5. Sale or Give-Away in a Bag or Other Container for Application to the Land.

(Complete this question if you place sewage sludge in a bag or other container for sale or give-away prior to land application. Skip this question if sewage sludge is covered in Question 4.) Not Applicable

a. Total dry metric tons per 365-day period of sewage sludge placed in a bag or other container at your facility for sale or give-away for application to the land:_____ dry metric tons

b. Attach, with this application, a copy of all labels or notices that accompany the sewage sludge being sold or given away in a bag or other container for application to the land.

6. Shipment Off Site for Treatment or Blending. Not Applicable

(Complete this question if sewage sludge from your facility is sent to another facility that provides treatment or blending. This question does not apply to sewage sludge sent directly to a land application or surface disposal site. Skip this question if the sewage sludge is covered in Questions 4 or 5. If you send sewage sludge to more than one facility, attach additional sheets as necessary.)

a. Receiving facility name:_____

b. Facility contact: _____

Title: _____

Phone: ( )_____

c. Mailing address:

Street or P.O. Box:_____

City or Town:_____ State:_____ Zip:_____

d. Total dry metric tons per 365-day period of sewage sludge provided to receiving facility: _____ dry metric tons

e. List, on this form or an attachment, the receiving facility's VPDES permit number as well as the numbers of all other federal, state or local permits that regulate the receiving facility's sewage sludge use or disposal practices:

Permit Number:	Type of Permit:
_____	_____
_____	_____

f. Does the receiving facility provide additional treatment to reduce pathogens in sewage sludge from your facility? ___Yes ___No

Which class of pathogen reduction is achieved for the sewage sludge at the receiving facility?

___Class A ___Class B ___Neither or unknown

Describe, on this form or another sheet of paper, any treatment processes used at the receiving facility to reduce pathogens in sewage sludge:_____

_____

g. Does the receiving facility provide additional treatment to reduce vector attraction characteristics of the sewage sludge? ___Yes ___No

Which vector attraction reduction option is met for the sewage sludge at the receiving facility?

___ Option 1 (Minimum 38 percent reduction in volatile solids)
___ Option 2 (Anaerobic process, with bench-scale demonstration)
___ Option 3 (Aerobic process, with bench-scale demonstration)
___ Option 4 (Specific oxygen uptake rate for aerobically digested sludge)
___ Option 5 (Aerobic processes plus raised temperature)
___ Option 6 (Raise pH to 12 and retain at 11.5)
___ Option 7 (75 percent solids with no unstabilized solids)
___ Option 8 (90 percent solids with unstabilized solids)
___ None unknown

Describe, on this form or another sheet of paper, any treatment processes used at the receiving facility to reduce vector attraction properties of sewage sludge:_____

_____

h. Does the receiving facility provide any additional treatment or blending not identified in f or g above?

___Yes ___No

If yes, describe, on this form or another sheet of paper, the treatment processes not identified in f or g above:

_____

_____

i. If you answered yes to f., g or h above, attach a copy of any information you provide to the receiving facility

to comply with the "notice and necessary information" requirement of 9 VAC 25-31-530.G.

j Does the receiving facility place sewage sludge from your facility in a bag or other container for sale or give-away for application to the land? ___Yes ___No
If yes, provide a copy of all labels or notices that accompany the product being sold or given away.

k. Will the sewage sludge be transported to the receiving facility in a truck-mounted watertight tank normally used for such purposes? ___ Yes ___ No. If no, provide description and specification on the vehicle used to transport the sewage sludge to the receiving facility.
Show the haul route(s) on a location map or briefly describe the haul route below and indicate the days of the week and the times of the day sewage sludge will be transported. _____
_____
_____

7. Land Application of Bulk Sewage Sludge. Not Applicable

(Complete Question 7.a if sewage sludge from your facility is applied to the land, unless the sewage sludge is covered in Questions 4, 5 or 6; complete Question 7.b, c & d only if you are responsible for land application of sewage sludge.)

a. Total dry metric tons per 365-day period of sewage sludge applied to all land application sites:_____dry metric tons

b. Do you identify all land application sites in Section C of this application? ___Yes ___No
If no, submit a copy of the Land Application Plan (LAP) with this application (LAP should be prepared in accordance with the instructions).

c. Are any land application sites located in States other than Virginia? ___Yes ___No
If yes, describe, on this form or on another sheet of paper, how you notify the permitting authority for the States where the land application sites are located. Provide a copy of the notification.
_____
_____

d. Attach a copy of any information you provide to the owner or lease holder of the land application sites to comply with the "notice and necessary" information requirement of 9 VAC 25-31-530 F and/or H (Examples may be obtained in Appendix IV).

8. Surface Disposal. Not Applicable

(Complete Question 8 if sewage sludge from your facility is placed on a surface disposal site.)

a. Total dry metric tons per 365-day period of sewage sludge from your facility placed on all surface disposal sites: _____ dry metric tons

b. Do you own or operate all surface disposal sites to which you send sewage sludge for disposal?
___Yes ___No
If no, answer questions c - g for each surface disposal site that you do not own or operate. If you send sewage sludge to more than one surface disposal site, attach additional pages as necessary.

c. Site name or number: _____

d. Contact person: _____
Title: _____
Phone: ( )_____
Contact is: ___Site Owner ___Site operator

e. Mailing address.
Street or P.O. Box:_____
City or Town:_____ State:_____ Zip:_____

f. Total dry metric tons per 365-day period of sewage sludge from your facility placed on this surface disposal site: _____ dry metric tons

g. List, on this form or an attachment, the surface disposal site VPDES permit number as well as the numbers of all other federal, state or local permits that regulate the sewage sludge use or disposal practices at the surface disposal site:

Permit Number:	Type of Permit:
_____	_____
_____	_____

9. Incineration. Not Applicable

(Complete Question 9 if sewage sludge from your facility is fired in a sewage sludge incinerator.)

a. Total dry metric tons per 365-day period of sewage sludge from your facility fired in a sewage sludge incinerator: _____ dry metric tons

b. Do you own or operate all sewage sludge incinerators in which sewage sludge from your facility is fired?
___Yes ___No
If no, answer questions c - g for each sewage sludge incinerator that you do not own or operate. If you send sewage sludge to more than one sewage sludge incinerator, attach additional pages as necessary.

c. Incinerator name or number: _____

d. Contact person: _____
Title: _____
Phone: ( ) _____
Contact is: ___Incinerator Owner ___Incinerator Operator

e. Mailing address.
Street or P.O. Box: _____
City or Town: _____ State: _____ Zip: _____

f. Total dry metric tons per 365-day period of sewage sludge from your facility fired in this sewage sludge incinerator: _____ dry metric tons

g. List on this form or an attachment the numbers of all other federal, state or local permits that regulate the firing of sewage sludge at this incinerator:

Permit Number:	Type of Permit:

10. Disposal in a Municipal Solid Waste Landfill.

(Complete Question 10 if sewage sludge from your facility is placed on a municipal solid waste landfill. Provide the following information for each municipal solid waste landfill on which sewage sludge from your facility is placed. If sewage sludge is placed on more than one municipal solid waste landfill, attach additional pages as necessary.)

a. Landfill name: Shoosmith Bros., Inc.

b. Contact person: Bruce Coble
Title: Landfill Operations Manager
Phone: ( ) (804) 748-5823
Contact is: X Landfill Owner X Landfill Operator

c. Mailing address.
Street or P.O. Box: 11800 Lewis Road
City or Town: Chester State: VA Zip: 23831

d. Landfill location.
Street or Route #: Same As Above
County: _____
City or Town: _____ State: _____ Zip: _____

e. Total dry metric tons per 365-day period of sewage sludge placed in this municipal solid waste landfill:
14.87 (2006 annual total) dry metric tons

f. List, on this form or an attachment, the numbers of all federal, state or local permits that regulate the operation of this municipal solid waste landfill:

Permit Number:	Type of Permit:
587	DEQ Solid Waste

g. Does sewage sludge meet applicable requirements in the Virginia Solid Waste Management Regulation, 9 VAC 20-80-10 et seq., concerning the quality of materials disposed in a municipal solid waste landfill?
X Yes ___No

h. Does the municipal solid waste landfill comply with all applicable criteria set forth in the Virginia Solid Waste Management Regulation, 9 VAC 20-80-10 et seq.? X Yes ___No

i. Will the vehicle bed or other container used to transport sewage sludge to the municipal solid waste landfill be watertight and covered? X Yes ___ No
Show the haul route(s) on a location map or briefly describe the route below and indicate the days of the week and time of the day sewage sludge will be transported. _____
See Attachment 3

FACILITY NAME: Doswell Wastewater Treatment Plant **VPDES PERMIT NUMBER:** VA0029521

SECTION C. LAND APPLICATION OF BULK SEWAGE SLUDGE

Complete this section for sewage sludge that is land applied unless any of the following conditions apply:

The sewage sludge meets the Table 1 ceiling concentrations, the Table 3 pollutant concentrations, Class A pathogen requirements and one of the vector attraction reduction options 1-8 (fill out B.4 instead) (EQ Sludge); or

The sewage sludge is sold or given away in a bag or other container for application to the land (fill out B.5 instead); or

You provide the sewage sludge to another facility for treatment or blending (fill out B.6 instead).

Complete Section C for every site on which the sewage sludge that you reported in B.7 is land applied.

This Section is Not Applicable

1. Identification of Land Application Site.
   a. Site name or number: _____
   b. Site location (Complete i and ii)
      i. Street or Route#: _____
         County: _____
         City or Town: _____ State: _____ Zip: _____
      ii. Latitude:_____ Longitude:_____
         Method of latitude/longitude determination
         _____ USGS map _____ Filed survey _____ Other
   c. Topographic map. Provide a topographic map (or other appropriate map if a topographic map is unavailable) that shows the site location.

2. Owner Information.
   a. Are you the owner of this land application site? ___Yes ___No
   b. If no, provide the following information about the owner:
      Name: _____
      Street or P.O. Box:_____
      City or Town: _____ State:_____ Zip:_____
      Phone: ( )_____

3. Applier Information:
   a. Are you the person who applies, or who is responsible for application of, sewage sludge to this land application site? ___Yes ___No
   b. If no, provide the following information for the person who applies the sewage sludge:
      Name: _____
      Street or P.O. Box:_____
      City or Town:_____ State:_____ Zip:_____
      Phone: ( )_____
   c. List, on this form or an attachment, the numbers of all federal, state or local permits that regulate the person who applies sewage sludge to this land application site:

Permit Number:	Type of Permit:
_____	_____
_____	_____

4. Site Type. Identify the type of land application site from among the following:
   ___Agricultural land ___Reclamation site ___Forest
   ___Public contact site ___Other. Describe _____

5. Vector Attraction Reduction.
   Are any vector attraction reduction requirements met when sewage sludge is applied to the land application site?
   ____Yes ____No If yes, answer a and b.
   a. Indicate which vector attraction reduction option is met:
      ___ Option 9 (Injection below land surface)
      ___ Option 10 (Incorporation into soil within 6 hours)
   b. Describe, on this form or on another sheet of paper, any treatment processes used at the land application site to reduce the vector attraction properties of sewage sludge:
      _____
      _____

FACILITY NAME: Doswell Wastewater Treatment Plant **VPDES PERMIT NUMBER:** VA0029521

6. Cumulative Loadings and Remaining Allotments.

(Complete Question 6 only if the sewage sludge applied to this site since July 20, 1993 is subject to the cumulative pollutant loading rates (CPLRs) - see instructions.)

a. Have you contacted DEQ or the permitting authority in the state where the sewage sludge subject to the CPLRs will be applied to ascertain whether bulk sewage sludge subject to the CPLRs has been applied to this site since July 20, 1993? ___Yes ___No

If no, sewage sludge subject to the CPLRs may not be applied to this site.

If yes, provide the following information:

Permitting authority: _____

Contact person: _____

Phone:( ) _____

b. Based upon this inquiry, has bulk sewage sludge subject to the CPLRs been applied to this site since July 20, 1993? ___Yes ___No If no, skip the rest of Question 6. If yes, answer questions c - e.

c. Site size, in hectares: _____ (one hectare = 2.471 acres)

d. Provide the following information for every facility other than yours that is sending or has sent sewage sludge subject to the CPLRs to this site since July 20, 1993. If more than one such facility sends sewage sludge to this site, attach additional pages as necessary.

Facility name: _____

Facility contact: _____

Title: _____

Phone: ( ) _____

Mailing address.

Street or P.O. Box: _____

City or Town: _____ State: _____ Zip: _____

e. Provide the total loading and allotment remaining, in kg/hectare, for each of the following pollutants:

	Cumulative loading	Allotment remaining
Arsenic	_____	_____
Cadmium	_____	_____
Copper	_____	_____
Lead	_____	_____
Mercury	_____	_____
Nickel	_____	_____
Selenium	_____	_____
Zinc	_____	_____

Complete Questions 7-12 below only if you apply sewage sludge, or you are responsible for land application of sewage sludge. Information required by these questions may be prepared as attachments to this form. Skip the following questions if you contract land application to someone else (as indicated under Section A.7) who is responsible for the operation.

7. Sludge Characterization. Use the table below or a separate attachment, provide at least one analysis for each parameter.

PCBs (mg/kg)	_____
pH (S. U.)	_____
Percent Solids (%)	_____
Ammonium Nitrogen (mg/kg)	_____
Nitrate Nitrogen (mg/kg)	_____
Total Kjeldahl Nitrogen (mg/kg)	_____
Total Phosphorus (mg/kg)	_____
Total Potassium (mg/kg)	_____
Alkalinity as $CaCO_3$* (mg/kg)	_____

* Lime treated sludge (10% or more lime by dry weight) should be analyzed for percent $CaCO_3$.

8. Storage Requirements.
Existing and proposed sludge storage facilities must provide an estimated annual sludge balance on a monthly basis incorporating such factors as storage capacity, sludge production and land application schedule. Include pertinent calculations justifying storage requirements.
Proposed sludge storage facilities must also provide the following information:
   a. A sludge storage site layout on a 7.5 minute topographic quadrangle or other appropriate scaled map to show the following topographic features of the surrounding landscape to a distance of 0.25 mile. Clearly mark the property line.
      1) Water wells, abandoned or operating
      2) Surface waters
      3) Springs
      4) Public water supply(s)
      5) Sinkholes
      6) Underground and/or surface mines
      7) Mine pool (or other) surface water discharge points
      8) Mining spoil piles and mine dumps
      9) Quarry(s)
      10) Sand and gravel pits
      11) Gas and oil wells
      12) Diversion ditch(s)
      13) Agricultural drainage ditch(s)
      14) Occupied dwellings, including industrial and commercial establishments
      15) Landfills or dumps
      16) Other unlined impoundments
      17) Septic tanks and drainfields
      18) Injection wells
      19) Rock outcrops
   b. A topographic map of sufficient detail to clearly show the following information:
      1) Maximum and minimum percent slopes
      2) Depressions on the site that may collect water
      3) Drainageways that may attribute to rainfall run-on to or runoff from this site
      4) Portions of the site (if any) which are located with the 100-year floodplain and how the storage facility will be protected from flooding
   c. Data and specifications for the storage facility lining material.
   d. Plan and cross-sectional views of the storage facility.
   e. Depth from the bottom of the storage facility to the seasonal high water table and separation distance to the permanent water table.

9. Land Area Requirements. Provide calculations justifying the land area requirements for land application of sewage sludge taking into consideration average soil productivity group, crop(s) to be grown and most limiting factor(s) of the sewage sludge, specifically Plant Available Nitrogen (PAN), Calcium Carbonate Equivalence (CCE), and metal loadings (CPLR sewage sludge only), where applicable. Relate PAN, CCE, and metal loadings to demonstrate the most limiting factor for land application.

10. Landowner Agreement Forms. Provide a properly completed Sewage Sludge Application Agreement Form (attached) for each landowner if sewage sludge is to be applied onto land not owned by the applicant.

11. Ground Water Monitoring.
Are any ground water monitoring data available for this land application site? ___Yes ___No
If yes, submit the ground water monitoring data with this permit application. Also submit a written description of the well locations, approximate depth to ground water, and the ground water monitoring procedures used to obtain these data.

12. Land Application Site Information.
(Complete Items a-d for sites receiving infrequent application - land application of sewage sludge up to the agronomic rate at a frequency of once in a 3 year period; complete Items a-h for sites receiving frequent application - land application of sewage sludge in excess of 70% the agronomic rate at a frequency greater than once in a 3 year period)

a. Provide a general location map for each county which clearly indicates the location of all the land application sites.

b. For each land application site provide a site plan of sufficient detail to clearly show the concerned landscape features and associated buffer zones (See instructions). Provide a legend for each landscape feature and the net acreage for each field taking into account the proposed buffer zones.

c. In order to ensure that land application of bulk sewage sludge will not impact federally listed threatened or endangered species or federally designated critical habitat, the applicant must notify the field office of the U. S. Department of the Interior, Fish and Wildlife Service (FWS), by a letter, the proposed land application activities with the identification of the land application sites. The address and phone number of FWS are provided below.

U. S. Fish and Wildlife Service
Ecological Services
6669 Short Lane
Gloucester, VA 23061
TEL: (804) 693-6694

Provide a copy of the notification letter with this application form.

d. Provide a soil survey map, preferably photographically based, with the field boundaries clearly marked. (A USDA-SCS soil survey map should be provided, if available.)
Provide a detailed legend for each soil survey map which uses accepted USDA-SCS descriptions of the typifying pedon for each soil series (soil type). Complex associations may be described as a range of characteristics. Soil descriptions shall include as a minimum the following information.

1) Soil symbol
2) Soil series, textural phase and slope range
3) Depth to seasonal high water table
4) Depth to bedrock
5) Estimated soil productivity group (for the proposed crop rotation)

Item e - h are required for sites receiving frequent application of sewage sludge

e. In order to verify the information provided in item d, characterize the soil at each land application site. Representative soil borings or test pits to a depth of five feet or to bedrock if shallower, are to be coordinated for the typifying pedon of each soil series (soil type). Soil descriptions shall include as a minimum the following information:

1). Soil symbol
2). Soil series, textural phase and slope range
3). Depth to seasonal high water table
4). Depth to bedrock
5). Estimated soil productivity group (for the proposed crop rotation)

f. Collect and analyze soil samples from each field, weighted to best represent each of the soil borings performed for Item e. Using the table below or a separate attachment, provide at least one analysis per sample for each of the following parameters.

Soil Organic Matter (%)	_____
Soil pH (std. units)	_____
Cation Exchange Capacity (meq/100g)	_____
Total Nitrogen (ppm)	_____
Organic Nitrogen (ppm)	_____
Ammonia Nitrogen (ppm)	_____
Nitrate Nitrogen (ppm)	_____
Available Phosphorus (ppm)	_____
Exchangeable Potassium (mg/100g)	_____
Exchangeable Sodium (mg/100g)	_____
Exchangeable Calcium (mg/100g)	_____
Exchangeable Magnesium (mg/100g)	_____
Arsenic (ppm)	_____
Cadmium (ppm)	_____
Copper (ppm)	_____
Lead (ppm)	_____
Mercury (ppm)	_____
Molybdenum (ppm)	_____
Nickel (ppm)	_____
Selenium (ppm)	_____
Zinc (ppm)	_____
Manganese (ppm)	_____
Particle Size Analysis or USDA Textural Estimate (%)	_____

g. Relate the crop nutrient needs to anticipated yields, soil productivity rating and the various fertilizer or nutrient sources from sludge and chemical fertilizers. Describe any specialized agronomic management practices which may be required as a result of high soil pH. If the sludge is expected to possess an unusually high CCE or other unusual properties, provide a description of any plant tissue testing, supplemental fertilization or intensive agronomic management practices which may be necessary.

h. Using a narrative format and referencing any related charts, describe the proposed cropping system. Show how the crop rotation and management will be coordinated with the design of the land application system. Include any supplemental fertilization program, soil testing and the coordination of tillage practices, planting and harvesting schedules and timing of land application.

FACILITY NAME: Doswell Wastewater Treatment Plant **VPDES PERMIT NUMBER:** VA0029521

SEWAGE SLUDGE APPLICATION AGREEMENT

This sewage sludge application agreement is made on this date _____ between _____, referred to here as "landowner", and _____, referred to here as the "Permittee".

Landowner is the owner of agricultural land shown on the map attached as Exhibit A and designated there as _____ ("landowner's land"). Permittee agrees to apply and landowner agrees to comply with certain permit requirements following application of sewage sludge on landowner's land in amounts and in a manner authorized by VPDES permit number _____ which is held by the Permittee.

Landowner acknowledges that the appropriate application of sewage sludge will be beneficial in providing fertilizer and soil conditioning to the property. Moreover, landowner acknowledges having been expressly advised that, in order to protect public health, the following site restrictions must be adhered to when sewage sludge receives Class B treatment for pathogen reduction:

1. Food crops with harvested parts that touch the sewage sludge/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of sewage sludge;

2. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of sewage sludge when the sewage sludge remains on the land surface for four months or longer prior to incorporation into the soil;

3. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than four months prior to incorporation into the soil;

4. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of sewage sludge;

5. Animals shall not be grazed on the land for 30 days after application of sewage sludge;

6. Turf grown on land where sewage sludge is applied shall not be harvested for one year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by the State Water Control Board;

7. Public access to land with a high potential for public exposure shall be restricted for one year after application of sewage sludge;

8. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of sewage sludge.

9. Tobacco, because it has been shown to accumulate cadmium, should not be grown on landowner's land for three years following the application of sewage sludge borne cadmium equal to or exceeding 0.5 kilograms/hectare (0.45 pounds/acre).

Permittee agrees to notify landowner or landowner's designee of the proposed schedule for sewage sludge application and specifically prior to any particular application to landowner's land. This agreement may be terminated by either party upon written notice to the address specified below.

Landowner:	Permittee:
_____	_____
Signature	Signature
_____	_____
Mailing Address	Mailing Address

FACILITY NAME: Doswell Wastewater Treatment Plant **VPDES PERMIT NUMBER:** VA0029521

SECTION D. SURFACE DISPOSAL

Complete this section only if you own or operate a surface disposal site. Provide the information for each active sewage sludge unit.

This Section is Not Applicable

1. Information on Active Sewage Sludge Units.
   a. Unit name or number: _____
   b. Unit location
      i. Street or Route#: _____
         County: _____
         City or Town: _____ State: _____ Zip: _____
      ii. Latitude:_____ Longitude:_____
         Method of latitude/longitude determination
         _____ USGS map _____ Filed survey _____ Other
   c. Topographic map. Provide a topographic map (or other appropriate map if a topographic map is unavailable) that shows the site location.
   d. Total dry metric tons of sewage sludge placed on the active sewage sludge unit per 365-day period: _____dry metric tons.
   e. Total dry metric tons of sewage sludge placed on the active sewage sludge unit over the life of the unit: _____ dry metric tons.
   f. Does the active sewage sludge unit have a liner with a minimum hydraulic conductivity of 1×10^{-7}cm/sec? ___Yes ___No If yes, describe the liner or attach a description.
      _____
      _____
   g. Does the active sewage sludge unit have a leachate collection system? ___Yes ___No
      If yes, describe the leachate collection system or attach a description. Also, describe the method used for leachate disposal and provide the numbers of any federal, state or local permits for leachate disposal:
      _____
      _____
      _____
   h. If you answered no to either f or g, answer the following:
      Is the boundary of the active sewage sludge unit less than 150 meters from the property line of the surface disposal site? ___Yes ___No If yes, provide the actual distance in meters:_____
   i. Remaining capacity of active sewage sludge unit, in dry metric tons:_____ dry metric tons
      Anticipated closure date for active sewage sludge unit, if known:_____ (MM/DD/YYYY)
      Provide with this application a copy of any closure plan developed for this active sewage sludge unit.

2. Sewage Sludge from Other Facilities.
   Is sewage sludge sent to this active sewage sludge unit from any facilities other than yours? ___Yes ___No
   If yes, provide the following information for each such facility, attach additional sheets as necessary.
   a. Facility name:_____
   b. Facility contact: _____
      Title: _____
      Phone: ( )_____
   c. Mailing address.
      Street or P.O. Box:_____
      City or Town:_____ State:_____ Zip:_____
   d. List, on this form or an attachment, the facility's VPDES permit number as well as the numbers of all other federal, state or local permits that regulate the facility's sewage sludge management practices:

Permit Number:	Type of Permit:
_____	_____
_____	_____

   e. Which class of pathogen reduction is achieved before sewage sludge leaves the other facility?
      ___Class A ___Class B ___Neither or unknown
   f. Describe, on this form or on another sheet of paper, any treatment processes used at the other facility to reduce pathogens in sewage sludge:_____
      _____
      _____

g. Which vector attraction reduction option is achieved before sewage sludge leaves the other facility?
___ Option 1 (Minimum 38 percent reduction in volatile solids)
___ Option 2 (Anaerobic process, with bench-scale demonstration)
___ Option 3 (Aerobic process, with bench-scale demonstration)
___ Option 4 (Specific oxygen uptake rate for aerobically digested sludge)
___ Option 5 (Aerobic processes plus raised temperature)
___ Option 6 (Raise pH to 12 and retain at 11.5)
___ Option 7 (75 percent solids with no unstabilized solids)
___ Option 8 (90 percent solids with unstabilized solids)
___ None or unknown

h. Describe, on this form or another sheet of paper, any treatment processes used at the other facility to reduce vector attraction properties of sewage sludge:_____
_____
_____

i. Describe, on this form or another sheet of paper, any other sewage sludge treatment activities performed by the other facility that are not identified in e - h above:_____
_____
_____

3. Vector Attraction Reduction.

a. Which vector attraction reduction option, if any, is met when sewage sludge is placed on this active sewage sludge unit?
___ Option 9 (Injection below land surface)
___ Option 10 (Incorporation into soil within 6 hours)
___ Option 11 (Covering active sewage sludge unit daily)

b. Describe, on this form or another sheet of paper, any treatment processes used at the active sewage sludge unit to reduce vector attraction properties of sewage sludge: _____
_____
_____

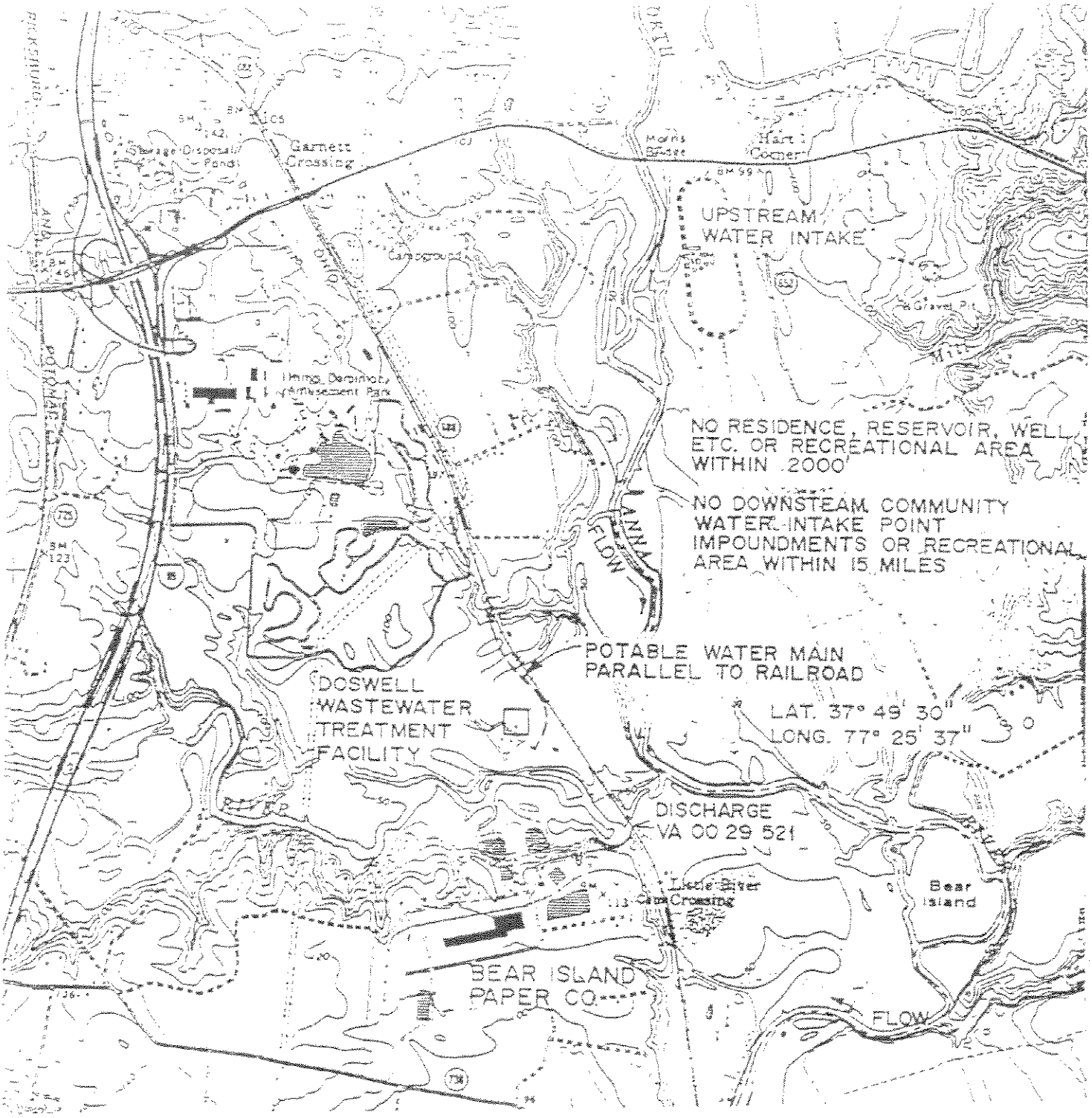
4. Ground Water Monitoring.

a. Is ground water monitoring currently conducted at this active sewage sludge unit or are ground water monitoring data otherwise available for this active sewage sludge unit? ___Yes ___No
If yes, provide a copy of available ground water monitoring data. Also provide a written description of the well locations, the approximate depth to ground water, and the ground water monitoring procedures used to obtain these data.

b. Has a ground water monitoring program been prepared for this active sewage sludge unit?
___Yes ___No If yes, submit a copy of the ground water monitoring program with this application.

c. Have you obtained a certification from a qualified ground water scientist that the aquifer below the active sewage sludge unit has not been contaminated? ___Yes ___No
If yes, submit a copy of the certification with this application.

5. Site-Specific Limits.
Are you seeking site-specific pollutant limits for the sewage sludge placed on the active sewage sludge unit?
___Yes ___No If yes, submit information to support the request for site-specific pollutant limits with this application.



SCALE: 1:24000

1/2 0 1 mile

1000 0 1000 2000 3000 4000 5000 6000 7000 ft.

N

TAKEN FROM USGS MAP
ASHLAND QUADRANGLE,
PHOTOREVISED 1985

Figure 1
SITE LOCATION MAP

AWARE ENVIRONMENTAL INC

Doswell Wastewater Treatment Plant
VA0029521

Attachment 2 – Sludge Application Treatment Process Narrative

Sludge Application – Section A.6

The Doswell Wastewater Treatment Plant utilizes bar screens, with Rotomat screening, aerated grit chambers, equalization tanks, conventional, diffused air, activated sludge aeration tanks (operated in extended aeration mode in winter due to low flows), secondary clarifiers, ultraviolet disinfection and cascade post aeration prior to discharge to the North Anna River with a design capacity of 1.0 MGD.

Sludge is wasted from the clarifiers to the aerobic digester where it is thickened and stabilized. Digested sludge is dewatered with a belt filter press where polymer is used to aid in the dewatering. All filtrate is returned to the plant for treatment and the dewatered cake is conveyed to a 30 cubic yard roll-off container situated on a covered concrete pad.

The dewatered sludge is ultimately disposed of in a municipal solid waste landfill, owned and operated by Shoosmith Bros., Inc. Hauling of the sludge is currently contracted out to Richmond Waste Services where the sludge is transported in sealed, covered roll-off containers to ensure no leakage or spillage of material occurs.

Doswell Wastewater Treatment Plant
VA0029521

Attachment 3 – Sludge Application Information

Sludge Application – Section A.7

Sludge disposal services are provided under contract by:

Shoosmith Bros., Inc
11800 Lewis Road
Chester, VA 23831
(804) 748-3311
DEQ Solid Waste Permit # 587

Sludge transportation/hauling services are provided under contract by:

Richmond Waste Services, LLC
1790 Darbytown Road
Richmond, VA 23231
(804) 226-2460

Sludge Application – Section B.10.i

Transportation of digested, dewatered sludge is conducted Monday through Friday during normal business hours (approximately 7:00 am to 5:00 pm), as needed. The hauling route varies with traffic, but centers around the following route:

- DWWTP to Route 30 west.
- Route 30 west to Interstate 95 south.
- I95 south to exit 62 (Highway 288 north)
- 288 north to Highway 10 east (Ironbridge Road)
- Ironbridge Road to Lewis Road to landfill.

Please print or type in the unshaded areas only.

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

VA0029521

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

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.	
201	37	49	30	77	26	45	North Anna River
							Outfall 201 refers to the Bear Island
							tie-in to the DWWTP discharge line.

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. OUT-FALL 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	
201	Thermo-mechanical newsprint	1.92 MGD	See Attachement 1 for description of existing facilities and diagrams	1-U	3-A
	Recycle newsprint	1.84 MGD		2-K	4A
	Newsprint from purchased kraft	0.11 MGD		5-E	5-L
	Total (max)	3.87 MGD		5-R	

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		4. FLOW				
		a. DAYS PER WEEK (*specify average*)	b. MONTHS PER YEAR (*specify average*)	a. FLOW RATE (*in mgd*)		B. TOTAL VOLUME (*specify with units*)		C. DURATION (*in days*)
				1. LONG TERM AVERAGE	2. MAXIMUM DAILY	1. LONG TERM AVERAGE	2. MAXIMUM DAILY	

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			2. AFFECTED OUTFALLS (*list outfall numbers*)
a. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. (*specify*)	
300	T/D	Recycle Pulp	201
360	T/D	Thermo-mechanical pulp	201
50	T/D	Purchased kraft pulp	201
		Recycled pulp, thermo-mechanical pulp and purchased kraft pulp are used to make newsprint.	
		NOTE: Production based effuent guidelines are not applicable. Regional water quality standards are more stringent.	

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		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
	a. NO.	b. SOURCE OF DISCHARGE		a. REQUIRED	b. PROJECTED

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 I of Form 1*)
VA0029521

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
None			

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*)

 CONTINUE ON REVERSE

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*)

Routine toxicity compliance monitoring for VPDES Permit Number VA0029521. Please refer to EPA Form 2A for data summary.

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*)
AWARE Environmental, Inc.	9305-J Monroe Road, Charlotte, NC 28270	(704) 845-1687	Cyanide
NALCO Analytical Resources	1601 West Diehl Road, Naperville, IL 60563	(630) 305-2315	Chlorine investigation, see Attachment 2 for reprot information

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.*)
Cecil R. Harris, Jr., County Administrator	(804) 365-6005
C. SIGNATURE	D. DATE SIGNED
Cecil R. Harris Jr.	11/9/07

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*): VA0029521

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

OUTFALL NO.: 201

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. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (*if available*) (1) CONCENTRATION	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (*if available*) (2) MASS	2. EFFLUENT c. LONG TERM AVRG. VALUE (*if available*) (1) CONCENTRATION	2. EFFLUENT c. LONG TERM AVRG. VALUE (*if available*) (2) MASS	2. EFFLUENT d. NO. OF ANALYSES	3. UNITS (*specify if blank*) a. CONCEN-TRATION	3. UNITS (*specify if blank*) b. MASS	4. INTAKE (*optional*) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	4. INTAKE (*optional*) a. LONG TERM AVERAGE VALUE (2) MASS	4. INTAKE (*optional*) b. NO. OF ANALYSES
a. Biochemical Oxygen Demand (*BOD*)	24.4	387.9			7.7	122.4	260	mg/l	kg/d			
b. Chemical Oxygen Demand (*COD*)	116	1,844					1	mg/l	kg/d			
c. Total Organic Carbon (*TOC*)	52.0	826.6					1	mg/l	kg/d			
d. Total Suspended Solids (*TSS*)	75.2	1195.5			17.9	284.6	156	mg/l	kg/d			
e. Ammonia (*as N*)	3.0	48.5			0.8	12.93	12	mg/l	kg/d			
f. Flow	VALUE 6.472		VALUE		VALUE 4.132		365	mgd		VALUE		
g. Temperature (*winter*)	VALUE ***		VALUE		VALUE ***			°C		VALUE		
h. Temperature (*summer*)	VALUE ***		VALUE		VALUE ***			°C		VALUE		
i. pH	MINIMUM ***	MAXIMUM ***	MINIMUM	MAXIMUM			***	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	2. MARK "X" b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	3. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (*if available*) (1) CONCENTRATION	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (*if available*) (2) MASS	3. EFFLUENT c. LONG TERM AVRG. VALUE (*if available*) (1) CONCENTRATION	3. EFFLUENT c. LONG TERM AVRG. VALUE (*if available*) (2) MASS	3. EFFLUENT d. NO. OF ANALYSES	4. UNITS a. CONCEN-TRATION	4. UNITS b. MASS	5. INTAKE (*optional*) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE (*optional*) a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE (*optional*) b. NO. OF ANALYSES
a. Bromide (24959-67-9)		X												
b. Chlorine, Total Residual		X												
c. Color	X		235	N/A					1	mg/l	N/A			
d. Fecal Coliform		X												
e. Fluoride (16984-48-8)		X												
f. Nitrate-Nitrite (*as N*)	X		***				***							

*** See EPA Form 2A and Form 2C Attachment 2 for additional data as represented in outfall 001

*** See EPA Form 2A for data as represented in outfall 001

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		***				***							
h. Oil and Grease		X												
i. Phosphorus (as P), Total (7723-14-0)	X		***				***							
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

*** See EPA Form 2A for data as represented in outfall 001

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)	OUTFALL NUMBER
VA0029521	201

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												
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		***	***										
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

*** See EPA Form 2A for data as represented in outfall 001

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

*** See EPA Form 2A for data as represented in outfall 001

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

*** See EPA Form 2A for data as represented in outfall 001

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

*** See EPA Form 2A for data as represented in outfall 001

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

*** See EPA Form 2A for data as represented in outfall 001

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

*** See EPA Form 2A for data as represented in outfall 001

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)	OUTFALL NUMBER
Va0029521	201

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												

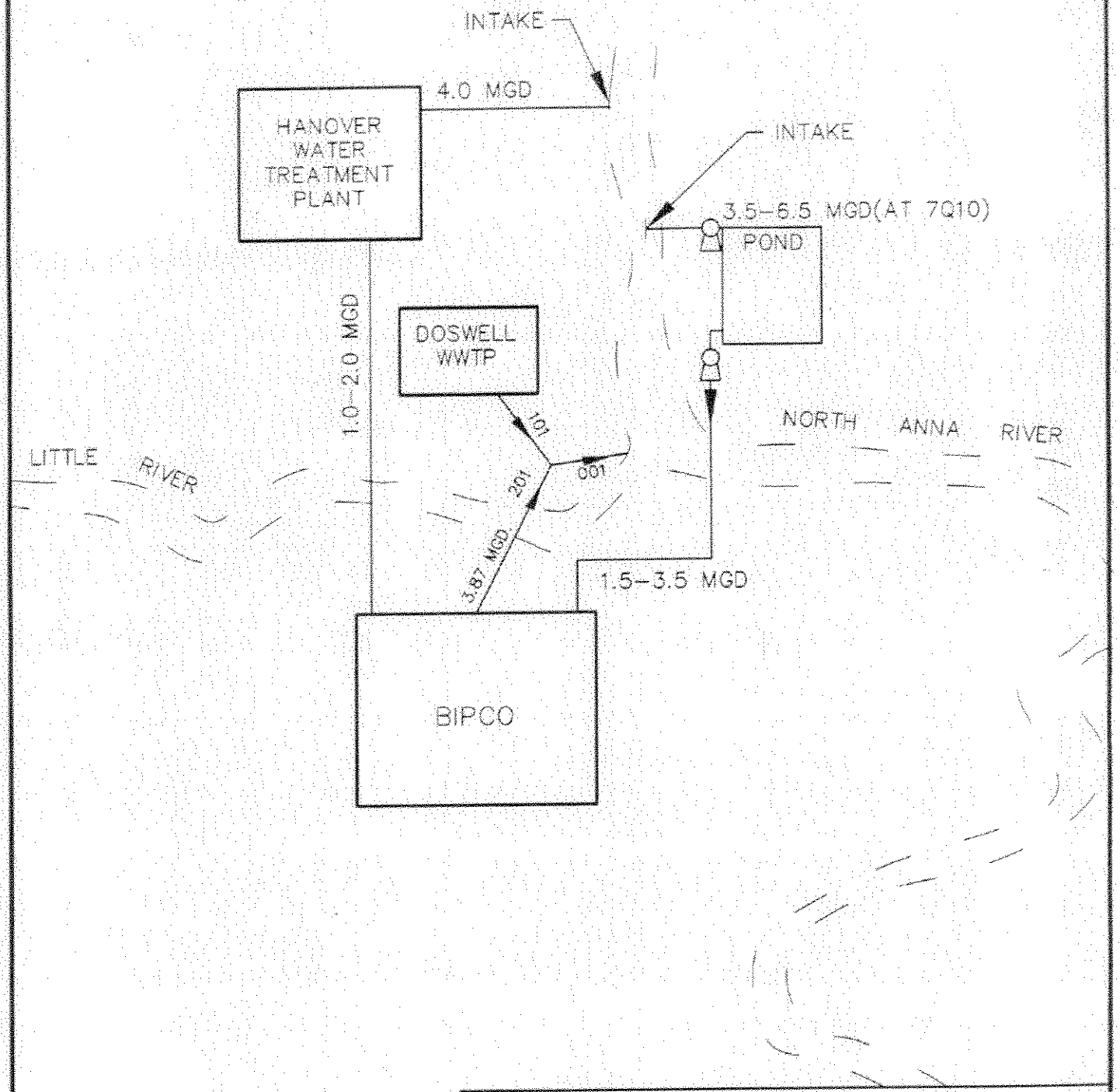
Doswell Wastewater Treatment Plant
VA0029521

Attachment 1 – Facility Description

EPA Form 2C Section II.B

Bear Island Paper Company – TMP & Recycle Mill

Wastewater from the thermo-mechanical and recycled newsprint pulp production processes are treated in the mill treatment facility. Wastewater treatment processes include equalization, primary clarification, air activated sludge and pure oxygen activated sludge, secondary clarification and off-line effluent holding ponds. The combined sludges are dewatered on belt filter or screw presses. All sludge is then burned on-site. A schematic of the treatment process is attached.

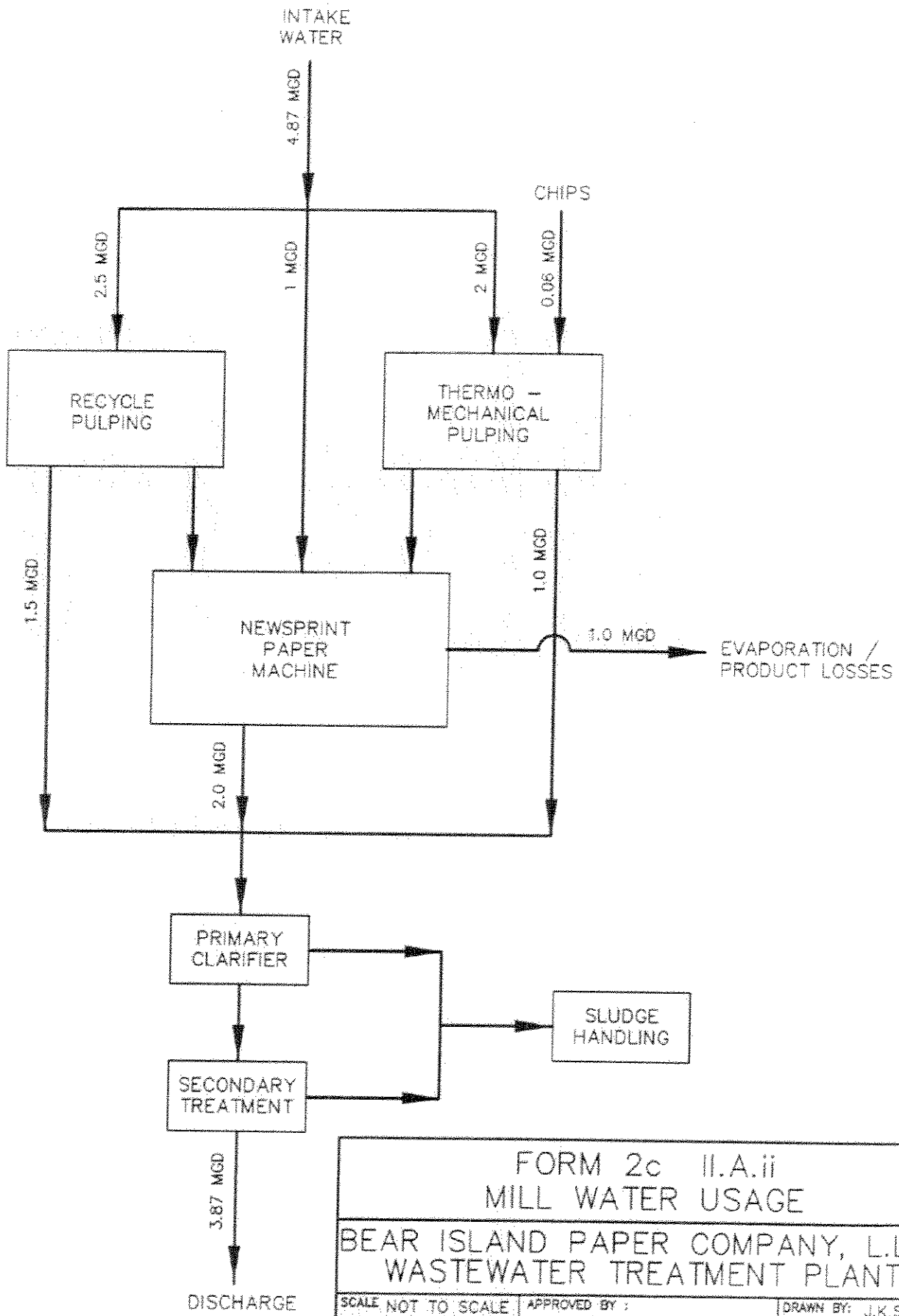


FORM 2c II.A.i
MILL WATER BALANCE

BEAR ISLAND PAPER COMPANY, L.L.C.
WASTEWATER TREATMENT PLANT

SCALE NOT TO SCALE	APPROVED BY :	DRAWN BY: J.K.S.
DATE AUGUST 1999	DESIGNED BY :	REVISED
PROJECT NUMBER N106-22	AWARE 6305-J MONROE RD CHARLOTTE, NC 28270	DRAWING NO. FIGURE

August 04, 1999 9:20:31 a.m.
Drawing: C:\DRAWINGS\10617P04.DWG

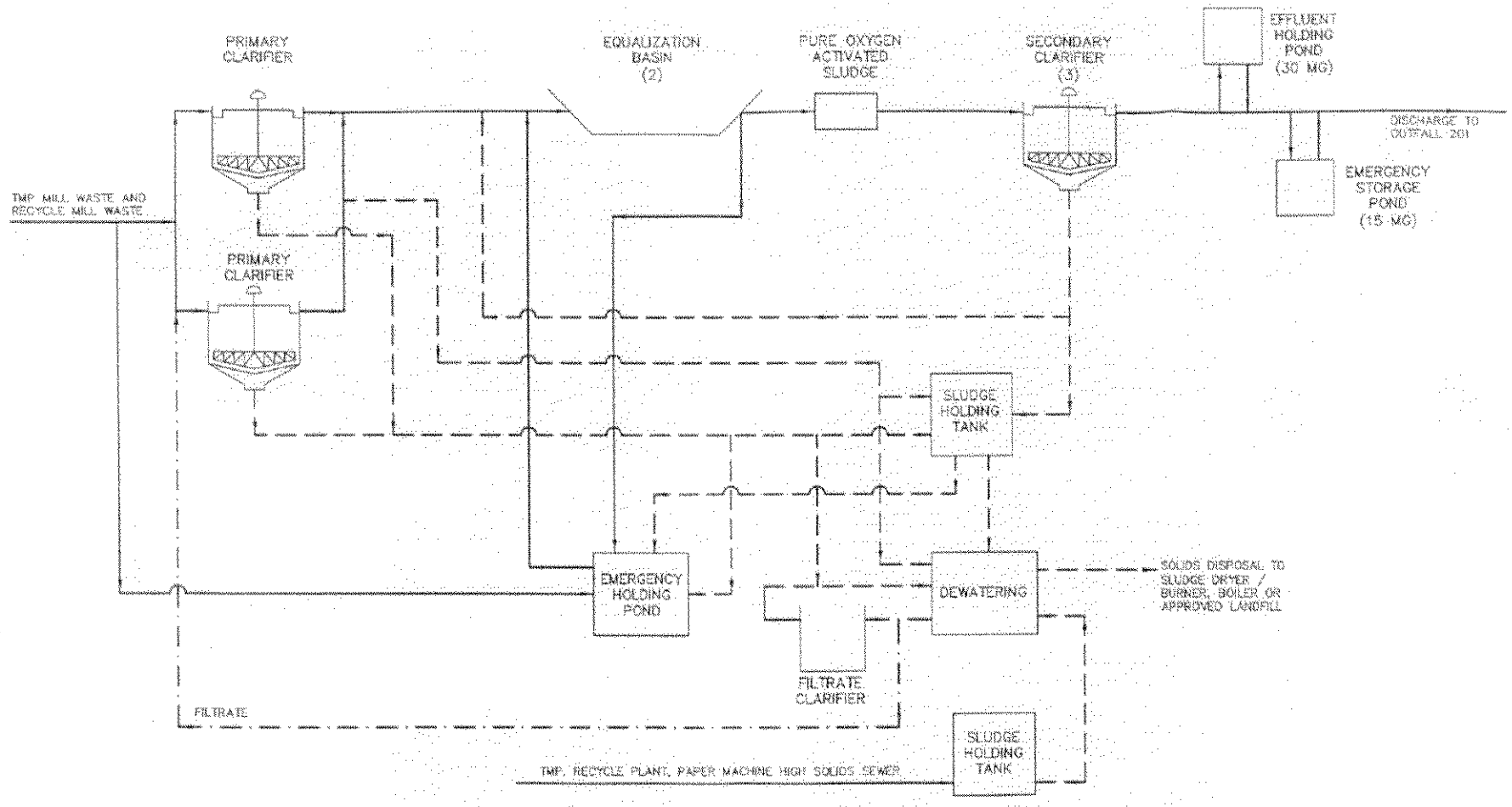


FORM 2c II.A.ii
MILL WATER USAGE

BEAR ISLAND PAPER COMPANY, L.L.C.
WASTEWATER TREATMENT PLANT

SCALE NOT TO SCALE	APPROVED BY :	DRAWN BY: J.K.S.
DATE AUGUST 1999	DESIGNED BY :	REVISED
PROJECT NUMBER N106-22	AWARE INC 9305-J MONROE RD. CHARLOTTE, NC 28270	DRAWING NO. FIGURE

August 04, 1999 9:19:24 a.m.
Drawing: C:\DRAWINGS\106\7P02-1.DWG



LEGEND

LIQUID LINE

SLUDGE LINE

FILTRATE LINE

FORM 2c II.B.3.a
PROCESS FLOW SCHEMATIC

BEAR ISLAND PAPER COMPANY, L.L.C.
WASTEWATER TREATMENT PLANT

SCALE NOT TO SCALE	APPROVED BY	DRAWN BY J.K.S.
DATE AUGUST 1999	DESIGNED BY	REVISED
PROJECT NUMBER N106-17	AWARE™	DRAWING NO. FIGURE

August 03, 1999 2:19:46 p.m.
qwidg: C:\DRAWINGS\N0617P01-1.DWG

AWARE ENVIRONMENTAL®

MEMO

TO: DAVE VANGELDER
HANOVER COUNTY

FROM: BOB STEIN
AWARE ENVIRONMENTAL INC.

DATE: APRIL 10, 2007

SUBJECT: BEAR ISLAND CHLORINE RESIDUAL
AEI JOB NO. N106-29

The recent bioassay test conducted on the Doswell Discharge noted an elevated residual chlorine (0.4 mg/l). Based on my review of the Reed Laboratory report, I do not feel that the chlorine residual contributed to the problems in the Ceriodaphnia test. However, we have reviewed the possible causes of the chlorine residual.

My initial analysis is that the residual chlorine is a false positive caused by interferences in the basic DPD chlorine residual test. I reached this conclusion because neither the Doswell treatment plant nor Bear Island use chlorine as part of their normal processes and there are know interferences in the DPD chlorine residual test. These interferences include:

Acidity
Alkalinity
Bromine
Chlorine Dioxide
Chloramines
Hardness
Iodine
Manganese
Chromium
Monochloramine
Ozone
Peroxide
Extreme sample pH or highly buffered sample

9305 MONROE ROAD • SUITE J • CHARLOTTE, N.C. 28270-1490 • TELEPHONE (704) 845-1697 • FAX (704) 845-1759

An analysis of possible causative agents was conducted by Nalco. A copy of their report is attached. Based on this report, manganese or alkalinity could be a cause of the interference. To minimize interference, the best approach would be to perform the chlorine residual test using a flow through spectrophotometer or the use the amphometric titration procedure. Bear Island has been unsuccessful in locating local laboratories which can conduct these tests.

It is my understanding the repeat bioassay tests are being conducted starting on April 15. I suggest we wait to the results of these tests to determine if there is a potential problem. If chlorine residual appears to be a problem, we can proceed in an approach to improving analytical quality.

cc: John McAllister
Cary Murrell

10629m013

Attachment 2b

Nalco Analytical Resources
1601 West Diehl Road, Naperville, Illinois 60563-1198
Phone: (630) 305-2315, Fax: (630) 305-2946, Analytical.Lab.Naperville@Nalco.com

Bear Island Paper		**Sample Number:**	NW0705561
Ashland VA USA		**Date Sampled:**	3:00 pm 28-Mar-2007
Sample Marked: Final Effluent		**Date Received:**	29-Mar-2007
SAP SoldTo Number: 0001027932		**Date Completed:**	05-Apr-2007

Water Analysis Report

Cations/Metals - Total

Aluminum (Al)	<1.0 mg/L
Barium (Ba)	<4.0 mg/L
Boron (B)	<1.0 mg/L
Cadmium (Cd)	<0.40 mg/L
Calcium (Ca)	220 mg/L
Chromium (Cr)	<0.10 mg/L
Copper (Cu)	<0.10 mg/L
Iron (Fe)	0.23 mg/L
Lead (Pb)	<2.0 mg/L
Lithium (Li)	<0.10 mg/L
Magnesium (Mg)	7.6 mg/L
Manganese (Mn)	0.47 mg/L
Molybdenum (Mo)	<1.0 mg/L
Nickel (Ni)	<1.0 mg/L
Phosphorus (P)	<9.9 mg/L
Phosphorus (PO4)	<30.4 mg/L
Potassium (K)	20.0 mg/L
Silica (SiO2)	<10.6 mg/L
Sodium (Na)	400 mg/L
Strontium (Sr)	0.29 mg/L
Vanadium (V)	<4.96 mg/L
Zinc (Zn)	0.17 mg/L
Calcium (CaCO3)	560 mg/L
Magnesium (CaCO3)	31.0 mg/L
Sodium (CaCO3)	870 mg/L
Calculated Hardness (CaCO3)	590 mg/L

Authorized by : Karen B Harriman

Nalco Analytical Resources - Naperville
An ISO 9001:2000 Certified Laboratory
DNV Cert. #: CERT-10616-2005-AQ-HOU-ANAB

NALCO

Nalco Analytical Resources
1601 West Diehl Road, Naperville, Illinois 60563-1198
Phone: (630) 305-2315, Fax: (630) 305-2946, Analytical.Lab.Naperville@Nalco.com

Bear Island Paper
Ashland VA USA
Sample Marked: Final Effluent
SAP SoldTo Number: 0001027932

Sample Number: NW0705561
Date Sampled: 3:00 pm 28-Mar-2007
Date Received: 29-Mar-2007
Date Completed: 05-Apr-2007

Water Analysis Report

Anions

Bromide (Br)	<2.0 mg/L
Chloride (Cl)	26 mg/L
Nitrate (NO3)	<2.0 mg/L
Nitrite (NO2)	<2.0 mg/L
Sulfate (SO4)	1000 mg/L
Chloride (CaCO3)	37 mg/L
Nitrate (CaCO3)	<1.6 mg/L
Sulfate (CaCO3)	1100 mg/L

ALK - Alkalinity

Bicarbonate (CaCO3)	270 mg/L
Methyl Orange (CaCO3)	270 mg/L
Phenolphthalein (CaCO3)	<10 mg/L

Others

Conductivity	2500 µS/cm
pH	8.0 pH Units

Trace metals analysis could not be completed due to particulate in sample.

Authorized by : Karen B Harriman

Nalco Analytical Resources - Naperville
An ISO 9001:2000 Certified Laboratory
DNV Cert. #: CERT-10616-2005-AQ-HOU-ANAB

VPDES Permit Application Addendum

1. **Entity to whom the permit is to be issued:** Hanover County
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?** Y (N)

3. **What is the tax map parcel number for the land where this facility is located?** 7882-96-4321

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?** None

5. ALL FACILITIES: **What is the design average flow of this facility?** 5.2 MGD
Industrial facilities: **What is the max. 30-day avg. production level (include units)?** Varies

In addition to the above design flow or production level, should the permit be written with limits for any other discharge flow tiers or production levels? Y (N)

If AYes≅, please specify the other flow tiers (in MGD) or production levels:

Please consider: Is your facility=s design flow considerably greater than your current flow? Do you plan to expand operations during the next five years?

6. **Nature of operations generating wastewater:**
Municipal wastewater treatment and paper production wastewater

25 % of flow from domestic connections/sources
Number of private residences to be served by the wastewater treatment facilities: 0 X 1-49 __ 50 or more

75 % of flow from non-domestic connections/sources

7. **Mode of discharge:** X Continuous __ Intermittent __ Seasonal
Describe frequency and duration of intermittent or seasonal discharges:

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
__ Lake or pond at or below the discharge point
__ Other:

9. **Approval Date(s):**
O & M Manual August 18, 1999 **Sludge/Solids Management Plan** May 19, 2003

Have there been any changes in your operations or procedures since the above approval dates? Y (N)