

COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Piedmont Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

Hopewell Regional Wastewater Treatment Facility
Hopewell, Virginia
Permit No. PRO50735

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, the Hopewell Regional Wastewater Treatment Facility has applied for a Title V Operating Permit for its Hopewell facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact: Sherry L. Tostenson Date: 9/30/14
Sherry L. Tostenson
(804) 527-5097

Air Permit Manager: James E. Kyle Date: 10/1/2014
James E. Kyle, P.E.

Deputy Regional Director: Kyle Ivar Winter Date: 10/2/14
Kyle Ivar Winter, P.E.

FACILITY INFORMATION

Hopewell Regional Wastewater Treatment Facility
P.O. Box 969 (Permittee/Facility's Mailing Address)
Hopewell, Virginia 23860

231 Hummel Ross Road (Facility's Physical Address)
Hopewell, Virginia 23860

County Plant Identification Number. 51-670-0053

SOURCE DESCRIPTION

NAICS Code: 221320 – Sewage Treatment Facilities

The facility is a publicly owned treatment works (POTW) that treats domestic and industrial wastewater. The facility has a design flow rate capacity of 50 million gallons per day (MGD) and currently treats an average influent flow rate of 25-30 million gallons of wastewater per day.

The treatment processes consist of wet stream treatment units and solids handling facilities. Raw wastewater is processed by preliminary* and primary* treatment units and then biologically treated by secondary treatment units. This treatment results in the generation of sludges which are thickened, mechanically dewatered, and thermally oxidized in a multiple hearth furnace. The multiple hearth furnace will have an alternative operating mode (or standby mode) of combusting only auxiliary fuel of natural gas. The treated wastewater is discharged into Gravelly Run, which flows into the James River.

* The domestic influent and the industrial influent will have two separate influent screens, grit chambers, Parshall flumes, and primary clarifiers.

The facility is a Title V major source of VOCs and HAPs. This source is located in an attainment area for all pollutants, and is a PSD minor source. The facility was previously permitted under a Minor NSR Permit issued on December 2, 1974 (amended December 10, 1974). The facility is also covered under a Reasonably Available Control Technology (RACT) issued May 30, 1996.

COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, was last conducted on May 20, 2013. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, were evaluated for compliance. The May 20, 2013 full compliance evaluation found the facility to be in compliance with the permit. An EPA consent decree has been drafted for this facility and others located in the Hopewell area from inspections through EPA Region III's Hopewell Geographic Initiative. The consent decree includes some of the same alleged violations as DEQ of failure to meet 92% HAP mass, removal present in wastewater. The consent decree has not been finalized. The drafted consent decree has time frames which will require the facility to amend their Title V permit.

EMISSION UNITS

The emissions units at this facility consist of the following:

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Biosolids/Sludge Incinerator							
13a	S5	Multiple Hearth Furnace (Mfg. 1974) – Main Operating Mode (Minimum Chamber Temp. (°F) : 100-1,200 (for hearths #1-#8)	Incinerator max. rated cap.: 6,500 lbs/hr (dry biosolids/ sludge @ 30% solids) Burner rated capacity: 40.2 x 10 ⁶ (sludge & auxiliary fuel: natural gas) BTU/hr	Afterburner	S4-1	VOC/HAPs	12/2/74 (amended 12/10/74)
				Venturi Scrubber	S4-2	PM	
				Impingement Plate Scrubber	S4-3	PM	
13b	S6	Multiple Hearth Furnace (Mfg. 1974) – Standby Mode	Burner rated capacity: 40.2 x 10 ⁶ (auxiliary fuel: natural gas) BTU/hr	-	-	-	12/2/74 (amended 12/10/74)
Stationary Combustion Engines							
22		Diesel-fired Kohler 300 RE0ZV emergency generator (Mfg. date: March 2006)	300 kW	-	-	-	-
Wastewater							
2	S1	Grit Chambers (three units)	50 million gallons of wastewater per day plant	Aluminum cover and vent	-	VOC/HAPs	12/2/74 (amended 12/10/74) and 5/30/96 RACT

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
3	S1	Parshall Flume	50 million gallons of wastewater per day plant	Aluminum cover and vent	-	VOC/HAPs	12/2/74 (amended 12/10/74) and 5/30/96 RACT
4	Fug.	Supernatant Return Discharge		-	-	-	12/2/74 (amended 12/10/74)
5	Fug.	Primary Clarifiers/ Denitrification (eight units)		-	-	-	12/2/74 (amended 12/10/74)
6	S2	UNOX System (four trains)		-	-	-	12/2/74 (amended 12/10/74)
7	Fug.	Secondary Clarifiers (eight units)		-	-	-	12/2/74 (amended 12/10/74)
11	S3	Sewage Sludge Holding Tanks (two units)		-	-	-	12/2/74 (amended 12/10/74)
12	S3/S4	Sharples Centrifuges (two units)		-	-	-	12/2/74 (amended 12/10/74)
102	Fug.	Ash Handling System		1,800 lbs/hr	-	-	-

*The Size/Rated capacity is provided for informational purposes only, and is not an applicable requirement.

EMISSIONS INVENTORY

Emissions are summarized in the following tables.

2013 Actual Emissions

2013 Facility Criteria Pollutant Emissions in Tons/Year					
VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	NO _x
23.346	21.227	4.871	1.231	1.037	16.662

2013 Facility Hazardous Air Pollutant Emissions

Pollutant	2013 Hazardous Air Pollutant Emission in Tons/Yr
Acetaldehyde (ACETA)	0.768
Benzene (BZ)	0.027
Chloroform (CLFM)	0.099
Dinitrophenol, 2,4- (DNPHN)	0.000
Ethylene Glycol (ETGYL)	0.005
Ethylene Oxide (EO)	0.027
Hydrogen Chloride (HCL)	0.097
Methylene Chloride (Dichloromethane) (MC)	0.009
Mercury Compounds (HGC)	0.000
Methanol (MTHOL)	6.539
Methyl Ethyl Ketone (MTETN)	1.119
Nitrobenzene (NTBZ)	0.004
Phosphorus (P-PT)	0.117

Pollutant	2013 Hazardous Air Pollutant Emission in Tons/Yr
Phenol (PHNL)	0.007
Propionaldehyde (PRPYD)	0.139
Methyl Chloroform (1,1,1-Trichloroethane) (TCA)	0.006
Toluene (TOLU)	0.001
TOTAL OF ALL HAPS	8.96

EMISSION UNIT APPLICABLE REQUIREMENTS – Grit Chambers and Parshall Flume (Reference Numbers 2 and 3)

Limitations

The limitations for the three Grit Chambers (Ref.#2) and the Parshall Flume (Ref.#3) come from the facility's 1996 RACT agreement that was written into Virginia's State Implementation Plan to comply with 9 VAC 5-40-300 of State Regulations (Standard for Volatile Organic Compounds). The limitation in the RACT document is as follows:

Section E: Agreement

2. VOC emissions from the Grit Chambers/Parshall Flume shall be controlled by a cover and vent.

The source has submitted clarification to the above requirement. The clarification is as follows:

“The areas to be covered are the Grit Chamber Weirs (and the area surrounding the weirs) and the entire Parshall Flume basin as shown in Option 1 of Figure 1 in the April 1996 Technical Memorandum detailing VOC RACT cover options.”

This clarification is based on the three design options proposed to the facility in Malcolm Pirnie's April 24, 1996 Technical Memorandum for this requirement. Figure 1 of this document is attached which shows Options 1 – 3. The attached Table 2 of this document shows the projected cost of \$625,000 for Option 1 of which was stated in Hopewell Wastewater Regional Treatment Facility's April 24, 1996 letter to Dave Paylor of VA DEQ as follows:

“The April 2, 1996 draft of the consent agreement states VOC emissions from the Grit Chambers/Parshall Flume shall be controlled by a cover and vent. As we discussed in the meeting, cover and vent will be designed for that portion of the Grit Chambers/Parshall Flume that modeling has determined to emit 99.7% of the VOC (the last several meters of the grit channels, the grit channel weirs and the Parshall Flume). The cost for this control will be \$625,000.00. The funds for project engineering were approved April 16, 1996. Funding approval to complete the project is anticipated during July, 1996.”

The above RACT limitation is the only specific limitation which applies to the Grit Chambers and Parshall Flume. In addition, as VOC RACT for the rest of the facility was deemed to be no additional control, the RACT document contains no specific limitations for any other equipment at the facility.

Monitoring/Recordkeeping

The RACT document specifies that the VOC emission control covers be installed within 24 months of the document's signature date (of which has been accomplished), no further monitoring was specified.

To satisfy Title V Periodic Monitoring requirements, the source will be required to conduct annual structural integrity inspections on the covers. In addition, recordkeeping of the inspections, their results, and any corrective actions will be required.

EMISSION UNIT APPLICABLE REQUIREMENTS – Multiple Hearth Furnace (Sludge Incinerator) (Reference Number 13)

Limitations

The limitations for the Multiple Hearth Furnace come from four sources: Rule 4-7 (Emission standards for Incinerators) of the existing source standards section of Virginia's Regulations, one Environmental Protection Agency (EPA) New Source Performance Standard (NSPS); O (Standards of Performance for Sewage Treatment Plants), one EPA National Emission Standards for Hazardous Air Pollutants (NESHAP); Subpart E (Mercury), and the source's minor New Source Review permit issued by DEQ on December 2, 1974 (amended December 10, 1974). Of these four, two (the 1974 permit and Mercury NESHAP) contain the same mercury emission standard, 3,200 g/24-hrs. The 1974 permit basically copied this standard from the NESHAP. Since the mercury standard was the only non-obsolete or non-environmentally insignificant requirement from the 1974 permit, the mercury NESHAP will be treated as the source of the 3,200 standard and the 1974 permit requirement (and the permit itself) will be considered to be streamlined. None of these four sources contain requirements that apply to any emission unit at HRWTF other than the Multi-Hearth Furnace.

The limitations that apply to the Multi-Hearth Furnace (MHF) are then as follows (broken down by requirement source):

Mercury NESHAP:

- 3,200 grams Mercury per 24-hr period.

NSPS Subpart O:

- 0.65 grams of Particulate Matter per kilogram of dry sludge incinerated
- 20% opacity

Rule 4-7:

- 0.14 grains of Particulate Matter per dry standard cubic foot of exhaust gas, @12% CO₂*

- * The following was added to the condition correlating to the standard listed above as this is what is specifically stated in Rule 4-7:

“Without the contribution of auxiliary fuel.”

Monitoring/Recordkeeping

Periodic Monitoring sufficient to give a reasonable assurance of compliance with the emission limitations listed above are as follows:

Mercury NESHAP:

Other than initial testing, no specific monitoring is required by the NESHAP for most sources. This initial testing performed in 1993, and the HRWTF was found to be in compliance. Periodic Monitoring for these requirements will therefore be periodic (once/yr) sampling of sludge charged to the MHF for Mercury and recordkeeping of this sampling, the sampling results, and any corrective actions.

NSPS Subpart O – 0.65 g/kg emission standard:

This NSPS includes initial testing requirements. The initial testing performed in 1989 and a follow-up test performed December 2001, and the facility was found to be in compliance. However, the NSPS also includes extensive monitoring, recordkeeping, and reporting requirements. Taken together, these existing requirements are deemed to be sufficient to satisfy periodic monitoring requirements for the NSPS emission standard. These include:

- a Continuous Monitor (CM) to measure the mass or volume of sludge charged to the MHF.
- a CM to measure the mass of any municipal waste charged to the MHF.
- a CM to measure the oxygen content of the incinerator exhaust gas.
- a CM to measure the pressure drop through the scrubber system.
- a CM to measure the temperature at each hearth of the MHF.
- a CM to measure the fuel flow to the MHF.
- daily sampling of sludge feed for dry sludge content and volatile solids content.
- recordkeeping of the data of each above item.
- Semiannual reporting of scrubber system pressure drop and exhaust gas oxygen content deviations.

The source will be required to take corrective action when one of the monitored parameters indicates sub-optimal performance (as compared to the data obtained in the 1989 stack test and more recently in the December 2001 stack test). Operation of the MHF while the above parameters are within the ranges established during the 1989 stack test and as revised by the

December 2001 will be deemed to be good/normal operation of the MHF and its control system which in turn is deemed to be reasonable assurance that the MHF is complying with the 0.65 g/kg NSPS standard (as it was during the 1989 stack test and the more recent stack test performed December 2001).

NSPS Subpart O – 20% opacity standard:

The periodic monitoring protocol outlined above for the NSPS emission standard should provide reasonably reliable assurance the MHF and its control system is operating correctly. Weekly opacity observations of the MHF stacks (along with recordkeeping of results of the observations and any corrective actions taken) are the only additional periodic monitoring required for the opacity standard.

Rule 4-7 – 0.14 grains/dscf emission standard:

The monitoring requirements required for the NSPS emission standard is again deemed to be sufficient to reasonably guarantee proper operation of the MHF and its control system. As the 1989 stack test data showed, a properly operating system easily complies with the Rule 4-7 standard. The NSPS monitoring requirements are therefore deemed to be Periodic Monitoring for the Rule 4-7 standard as well.

CAM for the Multiple Hearth Furnace Scrubber System:

The site specific compliance assurance monitoring (CAM) includes two indicators: 1) Pressure drop across the wet scrubber system and 2) visible emissions. These requirements are incorporated in Conditions 23 -31. The site specific CAM will not be applicable in the future once the site specific “Final Control Plan”* is implemented by the final compliance date of March 21, 2016. The facility will have to abide by Rule 4-55 for Sewage Sludge Incineration (SSI) and all of the required monitoring under this rule.

* The “Final Control Plan” for this facility will be to install a new scrubber system to replace the existing system.

NEW APPLICABLE REQUIREMENTS for Multiple Hearth Furnace (Sludge Incinerator) (Reference Number 13) and associated Ash Handling System (Ref. No. 102)

40 CFR 60 Subpart MMMM – Emission Guidelines and Compliance Times for Existing Sewage Sludge Incineration Units:

40 CFR 60 Subpart MMMM – Emission Guidelines and Compliance Times for Existing Sewage Sludge Incineration Units has been incorporated into the State’s Implementation Plan (SIP) under “Emission Standards for Sewage Sludge Incineration Units (Rule 4-55)”. To highlight some of the requirements of Rule 4-55, they are as follows:

9 VAC 5-40-8220 Emission limits and emission standards, 9 VAC 5-40-8240 Standard for fugitive dust/emissions which includes specific visible emissions for the ash conveying system as outlined in this permit, 9 VAC 5-40-8270 Operator training and certification, 9 VAC 5-40-8280 Compliance schedule includes a final control plan of which has been submitted before the deadline of March 21, 2013, 9 VAC 5-40-8290 Operating requirements, 9 VAC 5-40-8310 Performance testing, monitoring, and calibration requirements and 9 VAC 5-40-8340 Facility and control equipment maintenance or malfunction.

Streamlined Requirements

The following otherwise applicable requirements have not been included in the Title V permit because of the existence of more stringent requirements:

The 3,200 g/24-hr mercury standard from the 12/10/74 permit has not been included in the Title V permit since an identical standard is being incorporated into the Title V permit from the mercury NESHAP.

Neither Rule 4-1 nor Rule 5-1 opacity standards apply to the MHF, since the MHF is subject to the more stringent NSPS Subpart O opacity standard.

EMISSION UNIT APPLICABLE REQUIREMENTS – UNOX System (biological treatment system) (four trains) (Reference No. 6)

The source of the applicable requirements for the UNOX System is an EPA standard: 40 CFR Part 63 Subpart VVV – National Emission Standards for Hazardous Air Pollutants: Publicly Owned Treatment Works (POTW) (Sections 63.1580 through 63.1595). This standard is commonly known as the POTW MACT (Maximum Achievable Control Technology) Standard. For HRWTF, an existing industrial POTW Plant as defined in the MACT, the requirements of the POTW MACT are as follows: the source has to meet the wastewater treatment requirements of any other MACT standard that may apply to any wastewater stream from the industrial sources that discharge to the HRWTF. Only one such wastewater stream has been identified at this time: one stream from Stone Container Corporation that is subject to the Pulp and Paper Mill MACT standard (40 CFR 63, Subpart S). Since the HRWTF's UNOX System treat kraft pulping process condensates, as defined in Subpart S, they qualify as a biological treatment system under Subpart S as well. As such, the UNOX system must meet the following requirements:

Limitations

- discharge the pulping process condensate below the liquid surface of a biological treatment system meeting the requirement specified in paragraph (e)(3) of 40 CFR 63.446. 40 CFR 63.446(e)(2) (Standards for kraft pulping process condensates)
- treat the pulping processes condensates to reduce or destroy the total HAPs by at least 92 percent or more by weight 40 CFR 63.446(e)(3)

Monitoring/Recordkeeping/Testing

Periodic Monitoring sufficient to give a reasonable assurance of compliance with the emission limitations listed above are as follows:

MACT Subpart S:

According to EPA periodic monitoring guidance, NSPS and MACT standards promulgated after 1993 are considered to have sufficient testing, monitoring, and recordkeeping requirements written into such documents to meet the Title V periodic monitoring. Since Subpart S was first promulgated in 1997, the monitoring, etc. requirements within Subpart S are considered to be sufficient periodic monitoring for the above standards. The UNOX system used by the source does not have any specific monitoring in Subpart S. Subpart S contains monitoring requirements for open-style treatment tanks, but not for closed-style treatment system such as the source's UNOX system. Subpart S requires that closed UNOX tank operators submit an alternative monitoring plan to the U.S. EPA for approval on a case-by-case site specific basis. The source has made such a submittal, the most recent version being dated July 25, 2001 as amended September 25, 2001.

The applicable monitoring requirements are as follows:

- Each owner or operator using a biological treatment system to comply with 40 CFR 63.446(e)(2) shall install, operate and maintain continuous monitoring devices for the following parameters for the UNOX System when receiving regulated wastewater:
 - UNOX system oxygen supply flow rate;
 - Horsepower of UNOX system aerators;
 - UNOX system vent gas purity;
 - Regulated wastewater inlet flow to the UNOX system; and
 - Total Inlet liquid flow to UNOX system.(40 CFR 63.453(j)(1-2(i)))

- Obtain daily inlet and outlet liquid grab samples from each biological treatment unit. Perform the following procedures:
 - Store samples for 5 days as specified
 - Perform a percent reduction test within 45 days after the beginning of each quarter as follows:
 - The percent reduction test performed in the first quarter (annually) shall be performed for total HAP
 - The remaining quarterly percent reduction tests shall be performed for methanol
 - The parameter values used to calculate the percent reductions required above shall be the parameter values measured and sampled from 40 CFR 63.453(j)(1).(40 CFR 63.453(j)(2))

- The owner or operator shall establish the value of each operating parameter required to be monitored in 40 CFR 63.453(j) by continuously recording each operating parameter during the initial performance test required by 40 CFR 63.457(a) with determinations being based on the control performance and the parameter data monitored during the performance test, supplemented if necessary by engineering assessments and the manufacturer's recommendations. A rationale for the selected operating parameter value, the monitor frequency, and averaging time shall be included. The permittee shall submit periodic performance reports for the CMS relative to the above parameters and these reports will be included as part of the semiannual reports in Condition 60.
(40 CFR 63.453(n))

- The source shall operate the UNOX system in a manner consistent with the minimum or maximum operating parameter value or procedure required to be monitored under 40 CFR 63.453(j).
(40 CFR 63.453(o))

- The source shall perform the following when the monitoring parameters specified in 40 CFR 63.453(j) are below minimum operating parameter values established in 40 CFR 63.453(n):
 - Determine compliance with 40 CFR 63.446(e)(3) by the test procedures of 40 CFR 63.457(l) and the monitoring data of 40 CFR 63.453(j) that coincide with the parameter excursion
 - Take steps to repair or adjust the operation of the process to end the parameter excursion period; and
 - Take steps to minimize total HAP emissions to the atmosphere during the parameter excursion period.

If the reduction test demonstrates compliance with the standard in 40 CFR 63.446(e)(3) and no maintenance or changes have been made to the process or control device after the beginning of a parameter excursion that would influence the results of the determination, then no violation shall have occurred.

(40 CFR 63.453(p))

- For all days in which monitoring data for one or more designated monitoring parameters is unavailable for greater than 25 percent of the day (greater than 6 hours), the permittee shall conduct a performance test for percent HAP reduction using the test procedures of 40 CFR 63.457(l). Since the permittee has the ability to monitor certain operating parameters by alternate methods during periods when a primary monitoring device is malfunctioning or not functional, performance testing for percent HAP reduction is not required for periods when valid monitoring parameter data is available from alternate methods. DEQ reserves the right to determine if the alternate method is valid for determining compliance during periods when a primary monitoring device is malfunctioning or not functional
(40 CFR 63.457(l))

EMISSION UNIT APPLICABLE REQUIREMENTS – 300 kW* Diesel-fired Kohler 300 RE0ZV emergency generator (Reference No. 22)

(* 300 kW converts to less than 500 hp of 402.3 hp)

The emergency generator is not subject to NSPS IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines as it was manufactured before April 1, 2006 (Mfg. date of unit: March 2006). It is subject to MACT ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE) as an existing unit at a major source of HAPs.

The remaining applicable requirements of the emergency generator is the new and modified source visible emission standard, Rule 5-1 (9 VAC 5-50-80), which limits affected sources to 20% opacity (except for one 6-minute period in any 1-hour in which visible emissions shall not exceed 30% opacity).

Since violations of the 20% opacity standard are not expected for distillate oil-fired engines of this type, periodic monitoring shall be weekly opacity observations of the emergency generator stack (along with recordkeeping of results of the observations and any corrective actions taken).

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110, that apply to all Federal operating permit sources. These include requirements for submitting semi-

annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions, including those caused by upsets, within one business day.

STATE ONLY APPLICABLE REQUIREMENTS

No specific state-only requirements were identified.

FUTURE APPLICABLE REQUIREMENTS

There are no future applicable requirements.

INAPPLICABLE REQUIREMENTS

The Rule 4-4 general process particulate standard does not apply to the MHF, per 9 VAC 5-40-240 D, because the MHF falls under a more specific Part IV standard, the Rule 4-7 particulate standard and the Rule 4-55 Sewage Sludge Incineration emission limits and standards. Similarly, the Rule 4-4 particulate standard does not apply to the emergency generator because the standard is based on a unit's process weight rate. As the Rule 4-4 definition of process weight excludes liquid fuels (such as distillate oil), the process weight rate of the emergency generator is zero, and therefore the pump has no Rule 4-4 particulate standard.

COMPLIANCE PLAN

Compliance Plan – Certified Progress Report – Upon a signed EPA consent decree, the permittee shall submit a permit application to modify the Title V as according to the requirements in the signed EPA consent decree.

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Pollutant(s) Emitted (9 VAC 5-80-720B)
1	Influent (Bar) Screens	VOC < 5 tons/yr
8	Gravity Thickeners	
9	Dissolved Air Flotation Thickeners	

Emission Unit No.	Emission Unit Description	Pollutant(s) Emitted (9 VAC 5-80-720B)
10	Supernatant Return Wet Well	VOC < 5 tons/yr
16	Re-Aeration Unit	
17	Disinfection Contact Tanks	VOC < 5 tons/yr
18(b)	Holding Tank	
19	Foreign Sludge Hopper	
100	Influent (Bar) Screen Conveyor and Storage Bin	PM/PM ₁₀ < 5 tons/yr
101	Grit Handling System	
103	Sludge Cake Storage Pad	
104	Degreasing Unit	VOC < 5 tons/yr
105	Primary Sludge Pump Station Vault Vent	
106	Gravity Thickener Basement Vent	
107	Dissolved Air Flotation Thickener Louver Vent	
108	Hypochlorite System	
109	Non-Potable Water Wet Well	
112	Influent Screens – for Domestic Wastewater	
113	Grit Tanks - for Domestic Wastewater	
114	Parshall Flume - for domestic wastewater	
115	Hypochlorite Disinfection System-for domestic wastewater	
14	Solids Handling Building	PM/PM ₁₀ < 5 tons/yr

The citation criteria for insignificant activities is as follows:
 9 VAC 5-80-720 B - Insignificant due to emission levels

CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

PUBLIC PARTICIPATION

The proposed permit was placed on public notice in the Progress-Index from August 21, 2014 to September 22, 2014. EPA's review period was conducted concurrently with the public comment period.

Only EPA's comments were received by e-mail during the thirty day public comment period. EPA's comments were addressed as follows in an e-mail back to them along with DEQ's responses (in *italics*):

"The SOB refers to stack testing performed in 1989. Has there been a stack test since that time? Does VA require stack tests to be performed at least once during each permit term? I do not see a condition in this permit reflecting this."

Yes, a follow-up stack test was performed in 2001. Virginia normally does not require stack tests for periodic monitoring. Stack tests may be required when no other periodic monitoring is deemed to be appropriate. Periodic monitoring is required for the multi-hearth furnace. The NSPS O discussion was revised to include the follow-up 2001 stack test as follows:

"NSPS Subpart O – 0.65 g/kg emission standard:

This NSPS includes initial testing requirements. The initial testing performed in 1989 and a follow-up test performed December 2001, and the facility was found to be in compliance. However, the NSPS also includes extensive monitoring, recordkeeping, and reporting requirements. Taken together, these existing requirements are deemed to be sufficient to satisfy periodic monitoring requirements for the NSPS emission standard. These include:

- *a Continuous Monitor (CM) to measure the mass or volume of sludge charged to the MHF.*
- *a CM to measure the mass of any municipal waste charged to the MHF.*
- *a CM to measure the oxygen content of the incinerator exhaust gas.*
- *a CM to measure the pressure drop through the scrubber system.*
- *a CM to measure the temperature at each hearth of the MHF.*
- *a CM to measure the fuel flow to the MHF.*
- *daily sampling of sludge feed for dry sludge content and volatile solids content.*
- *recordkeeping of the data of each above item.*
- *Semiannual reporting of scrubber system pressure drop and exhaust gas oxygen content deviations.*

The source will be required to take corrective action when one of the monitored parameters indicates sub-optimal performance (as compared to the data obtained in the 1989 stack test and more recently in the December 2001 stack test). Operation of the MHF while the above

parameters are within the ranges established during the 1989 stack test and as revised by the December 2001 will be deemed to be good/normal operation of the MHF and its control system which in turn is deemed to be reasonable assurance that the MHF is complying with the 0.65 g/kg NSPS standard (as it was during the 1989 stack test and the more recent stack test performed December 2001)."

"The SOB contains language on future applicable requirements. Although the compliance date has not yet arrived, the Rule 4-55 is actually applicable at this time."

Yes, it was understood this was the case and that the compliance date is in the future. However, to remove any confusion the discussion of Rule 4-55 was removed along with the discussion of 40 CFR 60 Subpart Mmmm was implemented through Rule 4-55. The following statement replaced the previous discussion:

"There are no future applicable requirements."

"The SOB also states that a compliance plan is not necessary. For consistency, the Statement of Basis language should mirror the language in the permit at condition #49."

Condition 49 language was repeated under the "Compliance Plan" section of the Statement of Basis as follows:

COMPLIANCE PLAN

Compliance Plan – Certified Progress Report – *Upon a signed EPA consent decree, the permittee shall submit a permit application to modify the Title V as according to the requirements in the signed EPA consent decree.*

The above statement replaced the following statement:

As this facility certified compliance with all requirements in their application, no compliance plan was necessary.

"Insignificant emissions units: The list of insignificant emission units contains units associated with treatment process, separate from those with conditions in the permit. Do these process units have minor permits? Can you please provide justification, for example via engineering analysis, VOC and HAP calculations, etc, that they are indeed insignificant."

It is understood these activities have not been included in a permit; therefore, they would not be considered significant from this basis. Clarifications have been added to the insignificant activities list as follows for this discussion:

Insignificant Emission Units

<i>Emission Unit No.</i>	<i>Emission Unit Description</i>	<i>Pollutant(s) Emitted (9 VAC 5-80-720B)</i>	<i>Basis</i>
1	<i>Influent (Bar) Screens</i>	<i>VOC < 5 tons/yr</i>	<i>General Fate Modeling using plant PTE conditions (1996 VOC RACT - Emissions Inventory).</i>
8	<i>Gravity Thickeners</i>		
9	<i>Dissolved Air Flotation Thickeners</i>		
10	<i>Supernatant Return Wetwell</i>		
16	<i>Re-aeration unit</i>	<i>VOC < 5 tons/yr</i>	<i>General Fate Modeling using plant PTE conditions.</i>
17	<i>Disinfection Contact Tanks</i>		<i>These units are present, but currently not in use. They were once used to disinfect domestic wastewater (no industrial discharges) and VOC emissions would have been negligible.</i>
18a	<i>Holding Tank 1</i>		<i>This unit is used for landfill leachate and has negligible VOC emissions.</i>
18b	<i>Holding Tank 2</i>		<i>This unit used for water from the sludge storage pad and has negligible VOC emissions.</i>
19	<i>Foreign Sludge Hopper</i>		<i>Negligible emissions based on General Fate Modeling using plant PTE conditions which show minimal residual VOCs in sludge removed from gravity thickeners.</i>
104	<i>Primary sludge pump station vault vent</i>	<i>VOC < 5 tons/yr</i>	<i>These are building vents with negligible emissions presumed based on field measurements using hand held organic vapor analyzer in 1997.</i>
106	<i>Gravity thickener basement vent</i>		
107	<i>Dissolved air flotation thickener louver vent</i>		
108	<i>Hypochlorite System</i>		<i>This unit is present, but currently not in use. No emissions. Probably doesn't need to be on this list at all.</i>

<i>Emission Unit No.</i>	<i>Emission Unit Description</i>	<i>Pollutant(s) Emitted (9 VAC 5-80-720B)</i>	<i>Basis</i>
109	Non-potable water wetwell	VOC < 5 tons/yr	This is associated with water used in the MHF scrubbers and comes from the secondary clarifiers. Negligible emissions based on minimal residual VOCs in scrubber water.
112	Influent Screens – for domestic wastewater	VOC < 5 tons/yr	These are all domestic wastewater treatment units (no industrial discharges) and VOC emissions would be negligible.
113	Grit Tanks-for domestic wastewater		
114	Parshall Flume-for domestic wastewater		
115	Hypochlorite Disinfection System-for domestic wastewater		No emissions. Probably doesn't need to be on this list at all.

Also, it is being pointed out as indicated in the insignificant activities list; the insignificant activities associated with domestic wastewater are totally separate and cannot be used for industrial wastewater. The source did verify this is the case.

“Permit conditions 23 through 31: it should be made clear that these conditions apply currently. I suggest a statement like “Conditions 23 through 31 apply until March 21, 2016, after which Conditions 12 thorough 22 will apply.”

The above suggested statement was added to the permit.

“UNOX System Process Equipment: The current permit conditions only require monitoring of parameters, there are no actual ranges or limits for each parameter to ensure compliance.”

The reason the permit does not contain any monitoring values or ranges for the operating parameters is because it would not be prudent. The means to establish the initial values was through performance testing that was done and submitted in the notification of compliance status. Since HRWTF also has to do quarterly testing, the permit language was crafted to allow the quarterly testing to potential expand the initial ranges if the quarterly testing was outside of the ranges observed during the initial testing and the quarterly testing showed compliance.

Based on that structure, it was agreed that putting values into the permit would just require extra work (revising the permit over and over again) as more data became available. This is still valid based on today's compliance structure.

However, it should be noted that once HRWTF and EPA settle their current dispute on UNOX, more rigid values (and additional operating parameters) will be adopted as that is the current structure of the draft consent decree.

The above comments were considered formal comments. The resulting edits due to these comments are just as stringent or more. Since the edits are just as stringent or more this does not trigger a new public comment period.

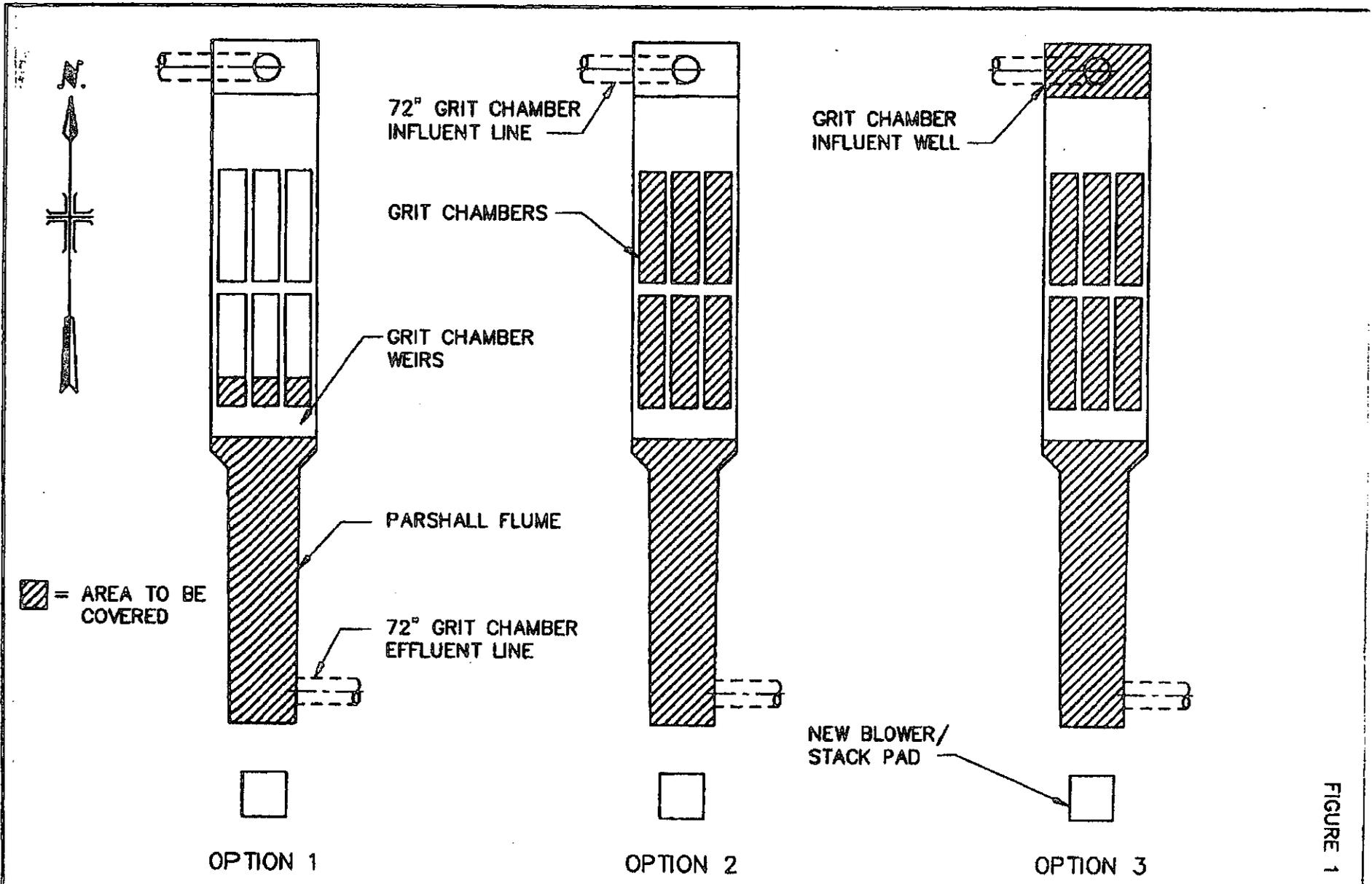


FIGURE 1

Table 2

Hopewell RWTF Grit Chamber/Parshall Flume Modifications					
Engineer's Opinion of Probable Capital Costs					
Item	Option 1	Option 2	Option 3	Option 4a	Option 4b
Concrete Preparation and Cleanup	\$ 16,000	\$ 55,000	\$ 58,000	\$ -	\$ -
Concrete Coating	\$ 39,000	\$ 131,000	\$ 139,000	\$ -	\$ -
Covers	\$ 54,000	\$ 97,000	\$ 114,000	\$ -	\$ -
Parshall Flume	\$ 30,000	\$ 30,000	\$ 30,000	\$ 179,000	\$ -
Magmeter with vault	\$ -	\$ -	\$ -	\$ -	\$ 159,000
Blower System	\$ 60,000	\$ 77,000	\$ 80,000	\$ -	\$ -
Flow Bypass/Diversion	\$ 120,000	\$ 120,000	\$ 168,000	\$ -	\$ -
Testing and Balancing	\$ 5,000	\$ 5,000	\$ 5,000	\$ -	\$ -
Grit Collection Equipment	\$ -	\$ -	\$ -	\$ 1,209,000	\$ 1,209,000
Subtotal	\$ 324,000	\$ 515,000	\$ 594,000	\$ 1,388,000	\$ 1,368,000
Contingency (25%)	\$ 81,000	\$ 129,000	\$ 149,000	\$ 347,000	\$ 342,000
Subtotal	\$ 405,000	\$ 644,000	\$ 743,000	\$ 1,735,000	\$ 1,710,000
Overhead & Profit (25%)	\$ 102,000	\$ 161,000	\$ 186,000	\$ 434,000	\$ 428,000
Mobilization/Bonds/Insurance (3%)	\$ 13,000	\$ 20,000	\$ 23,000	\$ 53,000	\$ 52,000
Construction Total	\$ 520,000	\$ 825,000	\$ 952,000	\$ 2,222,000	\$ 2,190,000
Engineering	\$ 90,000	\$ 90,000	\$ 90,000	\$ 320,000	\$ 320,000
Dispersion Modeling	\$ 15,000	\$ 15,000	\$ 15,000	\$ -	\$ -
PROJECT TOTAL	\$ 625,000	\$ 930,000	\$ 1,057,000	\$ 2,542,000	\$ 2,510,000

Option 1 - Cover the grit chamber weirs and parshall flume.

Option 2 - Cover the grit chamber channels and weirs and the parshall flume (not including the grit chamber influent well).

Option 3 - Cover the entire grit chamber and parshall flume structure.

Option 4a - Install new vortex grit chambers and parshall flume.

Option 4b - Install new vortex grit chambers and magnetic flow meter.