

**COMMONWEALTH OF VIRGINIA  
Department of Environmental Quality  
Northern Virginia Regional Office**

**STATEMENT OF LEGAL AND FACTUAL BASIS**

Prince William County Sanitary Landfill  
Manassas, Virginia  
Permit No. NVRO72340

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, Prince William County Department of Public Works, Solid Waste Division has applied for a Title V Operating Permit for its Sanitary Landfill. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact: *C. Meoli* Date: *2-3-04*  
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Air Permit Manager: *T. Darton* Date: *02/03/04*  
Terry Darton

Event	Date	Initials
Code: PSOB	2/10/04	E.E.
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## **FACILITY INFORMATION**

### Permittee

Prince William County  
Department of Public Works  
Solid Waste Division  
4379 Ridgewood Center Drive  
Prince William, Virginia 22192-5308

### Facility

Prince William County Sanitary Landfill  
14811 Dumfries Road  
Manassas, Virginia 20112-3941

### Other Interested Parties

NEO Prince William LLC – owns and operates the landfill gas collection and control system and landfill gas-fired enclosed flare

Minnesota Methane Prince William Energy LLC – owns and operates two landfill gas-fired internal combustion engines.

AIRS ID No. 51-153-0139

## **SOURCE DESCRIPTION**

SIC Code: 4953 – Sanitary Services, Refuse Systems

Prince William County operates a municipal solid waste landfill on a property of approximately 1,000 acres. The landfill operates under DEQ Solid Waste Management Permit No. 29, and has a design capacity of 8,038,000 megagrams (Mg) and 12,138,000 cubic meters (m<sup>3</sup>). The design Capacity Report is included as Attachment A.

The landfill began operations in 1968 on the site designated the “Old Landfill (17 acres),” moved into the “Existing Landfill (57 acres)” in 1971 and is presently filling in Phase I, Part 1 of the solid waste permitted expansion. The landfill was considered modified on December 31, 1991 for purposes of applicability to 40 CFR 60 Subpart WWW, Standards of Performance for Municipal Solid Waste Landfills.

An active landfill gas collection and control system, owned and operated by NEO Prince William LLC, was installed and became operational in June 1998. The system was designed to handle landfill gas generated from the “Existing Landfill” and future permitted phases. The “Old Landfill” is excluded from the collection system. Methane, carbon dioxide and non-methane organic compounds (NMOCs) are collected by the system and controlled by a combination of two landfill gas-fired, caterpillar model 3516 internal combustion engines rated at 1,340 brake horsepower (Bhp), and one LFG Specialties enclosed flare rated at 60.0 million Btus per hour (MMBtu/hr).

The control devices do not burn supplemental or auxiliary fuel. NEO Prince William LLC owns and operates the enclosed flare and Minnesota Methane Prince William Energy LLC owns and operates the internal combustion engines.

Additional emission sources at Prince William County Sanitary Landfill consist of diesel-fired grinders and screens used as part of a county-owned composting operation, leachate lagoons, diesel storage tanks for a vehicle refueling operation, miscellaneous space heating and the landfill surface and roads.

Prince William County Sanitary Landfill is not a major source of criteria pollutants or Hazardous Air Pollutants (HAPs) but is subject to the requirement to obtain a Title V Operating Permit, as specified in 40 CFR 60.752(b), because the design capacity is greater than 2.5 million megagrams and 2.5 million cubic meters. The source does not currently operate under any state air permits.

Certain landfills, such as this one, were however required to obtain a State Operating Permit (SOP) (9 VAC 5-80-40), as specified by the DEQ Air Division Policy Statement No. 1-96, dated April 23, 1996. But the requirement to obtain a SOP was deferred until a Title V permit was required. 9 VAC 50-80-70 B allows the use of a Title V permit to satisfy the requirements of 9 VAC 5-80-40. Thus many underlying requirements, specifically the emission standards, provide 9 VAC 5-80-40 and 9 VAC 5-80-70 B as the basis, in addition to any specific NSPS requirement.

#### **COMPLIANCE STATUS**

Prince William County Sanitary Landfill is inspected once per year. The facility was last inspected in August, 2001 and was determined to be in compliance with all applicable requirements.

**EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION**

The emissions units at this facility consist of the following:

Emission Unit ID	Emission Unit Description	Size/Rated Capacity	Pollution Control Device (PCD) Description	PCD ID/Stack ID	Pollutant Controlled	Applicable Permit Date
<b>Landfill Operations</b>						
EU-01	Municipal Solid Waste Landfill (began operation 1968)	(8,038,000 Mg and 12,138,000 m <sup>3</sup> ) <sup>1</sup>	Landfill Gas-fired Caterpillar Model 3516 Internal Combustion Engine	PCD-01 and S-1	NMOCs and VOCs	---
			Landfill Gas-fired Caterpillar Model 3516 Internal Combustion Engine			
			LFG Specialties Enclosed Flare	PCD-03 and S-3		
<b>Landfill Surface and Roads</b>						
---	Landfill Surface and Roads	---	---	---	---	---

<sup>1</sup>: The Size/Rated capacity and PCD efficiency is provided for informational purposes only, and is not an applicable requirement.

<sup>1</sup>: Design Capacity from Initial Design Capacity Report Form dated June 7, 1996.

**EMISSIONS INVENTORY**

A copy of the 1999 emission statement is enclosed as Attachment B. Emissions are summarized in the following tables.

2000 Criteria Pollutant Emissions

Emission Source	Pollutants (ton/yr)					
	NMOC	VOC	NO <sub>x</sub>	SO <sub>2</sub>	CO <sup>1</sup>	PM <sub>10</sub>
EU-01, Landfill (fugitive, uncollected emissions)	19.3	7.5	---	---	---	---
PCD-01 and PCD-02, Engines	0.5	0.2	27.9	10.9	55.8	4.7
PCD-03, Enclosed flare	0.2	0.1	8.5	1.5	31.9	1.7
<b>TOTAL</b>	<b>20.0</b>	<b>7.8</b>	<b>36.4</b>	<b>12.4</b>	<b>87.7</b>	<b>6.4</b>

<sup>1</sup>: CO emissions were calculated by DEQ since CO estimates were not required in the Emission Statement.

2000 Hazardous Air Pollutant Emissions, tpy

HAPs <sup>1</sup>	EU-01, Landfill	PCD-01 and PCD-02, Engines	PCD-03, Flare	TOTAL
1,2-dichloropropane	0.02	0.001	0.0	0.021
Acrylonitrile	0.3	0.022	0.0	0.322
Benzene	0.1	0.096	0.0	0.196
Carbon tetrachloride	0.001	0.0	0.0	0.001
Chloroform	0.003	0.0	0.0	0.003
Ethylene dichloride	0.036	0.001	0.0	0.037
Ethylidene dichloride	0.207	0.008	0.002	0.217
Mercury compounds	0.0	0.0	0.0	0.0
Methyle choloroform	0.057	0.002	0.001	0.059
Methyl chloride	0.054	0.002	0.001	0.057
Methylene chloride	1.08	0.039	0.01	1.129
Tetrachloroethylene	0.55	0.02	0.005	0.575
Toluene	3.22	0.233	0.005	3.438
Trichloroethylene	0.33	0.012	0.003	0.345
Vinyl chloride	0.408	0.015	0.004	0.427

<sup>1</sup>: As reported in the 2000 Emission Statement.

## **EMISSION UNIT APPLICABLE REQUIREMENTS – EU-01 and PCD-01, PCD-02 and PCD-03**

### **Limitations**

Prince William County Sanitary Landfill is subject to 40 CFR 60 Subpart WWW – New Source Performance Standards (NSPS) for Municipal Solid Waste Landfills. The landfill has an active gas collection and control system in place and in operation. The provisions of Subpart WWW apply to both the landfill itself as well as the gas collection and control system. With the exception of the opacity standard in Condition III.A.13, all of the limitations are based directly on Subpart WWW requirements.

Note also that there are no current permits for this landfill. Certain landfills, such as this one, were however required to obtain a State Operating Permit (SOP) (9 VAC 5-80-40), as specified by the DEQ Air Division Policy Statement No. 1-96, dated April 23, 1996, included as Appendix C. But the requirement to obtain a SOP was deferred until a Title V permit was required, as indicated in a letter from Terry Godar, DEQ to Sadhu Sandhu, dated March 14, 1997 and included in Appendix C. 9 VAC 50-80-70 B allows the use of a Title V permit to satisfy the requirements of 9 VAC 5-80-800 et seq. Thus most of the underlying requirements in this section of the Title V permit provide 9 VAC 5-80-850 and 9 VAC 5-80-70 B as the basis, in addition to any specific NSPS requirement. The SOP that was deferred would also have included conditions associated with the minor new source review permitting requirements, as found in 9 VAC 5-80-10, since any source subject to a NSPS, that was modified after March 17, 1972, was subject to 9 VAC 5-80-10 H(1) which indicates that the source “shall be designed, built and equipped to comply with standards of performance prescribed under 9 VAC 5 Chapter 50 (which incorporates the NSPS by reference). Thus, 9 VAC 5-80-10 H(1) is included as an underlying requirement with most Title V conditions.

The basis for the following conditions from the permit, under Limitations, are explained below:

1. The landfill gas collection and control system is required to operate under the provisions of Subpart WWW as provided in 9 VAC 5-50-410. This state rule incorporates Subpart WWW by reference and is cited along side each Subpart WWW reference.
2. 40 CFR 60.752(b)(2)(ii) provides requirements, which an active collection system must meet and include the following:
  - The system must be able to handle the maximum expected landfill gas generation for the entire landfill over the intended use period of the system. Condition III.A.2 requires that Prince William County follow the specifications contained in the DEQ approved gas collection and control system design plan, or any future approved amendments, to ensure that this provision is satisfied.
3. The system must collect gas from all cells for which waste is in place for 5 or more years if active, or 2 or more years if closed or at final grade as specified by 40 CFR 60.753(a).
4. 40 CFR 60.752(2)(ii)(A)(3) specifies that the system must collect gas at a sufficient extraction

rate in order to maintain negative pressure and appropriate temperature, oxygen and/or nitrogen levels at the wellheads. The appropriate parameter values are provided in Conditions III.A.6 and III.A.7 along with any exceptions.

5. 40 CFR 60.752(2)(ii)(A)(4) specifies that the system must be designed to minimize offsite gas migration. Condition III.A.7 requires that Prince William County follow the specifications contained in the DEQ approved gas collection and control system design plan, and any approved amendments, to ensure that this provision is satisfied.
6. See 4, above.
7. See 4, above.
8. 40 CFR 60.753(d) requires operation of the collection and control system such that the surface emissions of methane are less than 500 ppm above background. Special note was added to include the Old Landfill because the collection system was purposely not extended to this part. Surface monitoring in this area will ensure that collection and control is not necessary.
9. 40 CFR 60.755(e) establishes that limitations provided in Subpart WWW apply at all times except during periods of start-up, shutdown, or malfunction, provided that these periods do not exceed 5 days for the collection system and 1 hour for the control devices.
10. 40 CFR 60.753(e) requires that the system be operated such that all collected gases are routed to the control devices, and that the system be shut down, and all valves in the collection system closed, in the event the collection or control system becomes inoperable.
11. 40 CFR 60.752(b)(2)(iii)(B) specifies that each enclosed combustion device, including PCD-01, PCD-02 and PCD-03, must meet one of two emission standards; either 98% destruction of NMOC emissions or an exhaust stack outlet concentration of less than 20 ppmvd, as hexane, at 3% oxygen.
12. 40 CFR 60.753(f), requires that the control system be operated at all times when the collected gas is routed to the system. The enclosed flare, PCD-03, rated at 2,000 cfm is designed to handle the maximum expected gas generated from the entire landfill at any time. Model estimates in the Design Plan indicate the highest landfill gas generation rate to be 1,922 cfm in 2012. However, the engines, PCD-01 and PCD-02, alone or together do not have the capacity to handle that flow. As a result the flare must be available to operate at all times. Available means ready to handle gas flow when actual flow conditions exceed the capacity of the engines. The intent of this requirement is to ensure that no captured landfill gas which flows to the control system should escape control.
13. 9 VAC 5-50-80 sets an opacity standard for new sources of 20% except during one six-minute period in any one hour in which case opacity shall not exceed 30%. This applies at all times except start-up, shutdown and malfunction. The opacity standard applies to each control device.

14. *Proper and appropriate operation and maintenance with respect to minimizing emissions, even during start-up, shutdown and malfunction, is a key component of periodic monitoring. The first step in ensuring appropriate operation and maintenance strategies occur with the purpose of minimizing emissions is to ensure operators are appropriately trained. The starting point for training should be operator familiarity with the manufacturer's operations manual. Proper Operation and maintenance also serve to ensure opacity requirements are met. DEQ Expects that any excess emissions that occur during periods when engine cylinders fail should be recorded and reported appropriately, as permit deviations if necessary.*

### **Monitoring**

The monitoring provisions developed for this permit come primarily from Subpart WWW, with the exception of Condition III.B.2 and 6, which was developed pursuant to the periodic monitoring provisions of 9 VAC 5-80-110E and per EPA and Prince William County Landfill's resolution to surface monitoring concerns. As per EPA's Periodic Monitoring Guidance, all new standards proposed under the authority of Section 111 New Source Performance Standards (NSPS) after November 15, 1990, are presumed to have adequate monitoring to meet the periodic monitoring requirements for those standards. ~~Since Subpart WWW was promulgated on March 1996, this standard contains adequate monitoring to meet the periodic monitoring requirements, and no additional monitoring has been incorporated into this Title V Operating Permit.~~

*It is recognized that the leachate collection system contains a discharge point outside the perimeter of the waste disposal area, specifically, at the leachate retention pond. This point does not require monitoring, however, this point may become an area of concern in the future.*

~~Note that interim "alternate" monitoring of "combustion temperature" at the exhaust manifold has been established for the engines, PCD-01 and PCD-02, until performance testing can be conducted to establish the baseline cylinder temperatures appropriate for evaluating "average combustion temperature." Enclosed combustion devices, which the engines are considered to be, are subject to monitoring of the "combustion temperature" in 40 CFR 60.756(b) and 60.758(b)(2)(i). Combustion temperature is used by NSPS WWW to evaluate whether or not the enclosed combustion devices are operating at temperatures sufficient to destroy NMOCs. A baseline "average combustion temperature" is established for all enclosed combustors during the initial performance tests. At the time of the initial performance tests on the engines, DEQ and the landfill operator agreed that exhaust manifold temperature would be an acceptable indicator of engine performance with respect to NMOC destruction as opposed to the temperature within the combustion chamber (i.e., cylinder). However, after consultations with Michel Laur of EPA at Research Triangle Park, and Jim Topsail of EPA Region III, the DEQ came to the conclusion that proper temperature monitoring of the engines should be conducted in the engine cylinders. Copies of e-mails of these conversations are included in Appendix D.~~

~~Since Prince William County Landfill had already established a baseline exhaust manifold temperature for each engine and new performance testing would have to be conducted to establish the average cylinder temperature of each engine, the DEQ has continued to allow~~

~~exhaust manifold temperature monitoring until such time as new performance testing can be conducted. The Title V permit includes a provision to conduct new performance tests, establish the average cylinder temperature for each engine and establishes a timeframe to begin monitoring of cylinder temperatures in lieu of exhaust manifold temperatures.~~

The basis for the following conditions from the permit, under Monitoring, are explained below:

1. 40 CFR 60.755(a)(3) and 40 CFR 60.755(a)(5) require monthly wellhead monitoring of gauge pressure, landfill gas temperature and nitrogen or oxygen concentration.
2. 40 CFR 60.755(c)(1) requires quarterly monitoring of methane on the landfill surface, along the perimeter of the collection area, and along a pattern that traverses the collection area at 30-meter intervals. The pattern for conducting the surface sweeps has already been established and is detailed in the "Prince William County Landfill – Annual Report for New Source Performance Standards Compliance," dated January 1999. This condition requires that the surface sweeps continue as provided in that report or the most recent DEQ approved route. An extra sentence has been added to ensure that monitoring is performed at the "Old Landfill" as well. The path for monitoring in this area is not contained in the current monitoring route and has been added to ensure that the gas collection system does not need to be extended to this area. As provided previously, this area is excluded from the gas collection system.
3. 40 CFR 60.756(b) requires that enclosed combustors be equipped with temperature monitoring devices that measure temperature to within  $\pm 1$  percent accuracy or  $\pm 0.5$  °C, whichever is greater. The temperature monitoring device must also be equipped with a continuous monitor and be calibrated, maintained and operated according to manufacturer specifications.

40 CFR 60.756(b) also requires that the enclosed flare be equipped with a device that records flow to or bypass of the control device.

4. As with item 4 above, 40 CFR 60.756(b) requires that enclosed combustors be equipped with temperature monitoring devices. As discussed in the introduction to this section, the engines are considered enclosed combustors and must have temperature monitoring devices. Currently temperature is being monitored in the exhaust manifold. ~~However, within forty-five days of their new performance test, the permit requires they begin monitoring temperature in all cylinders of each engine. The recording device must report the average temperature across all cylinders. Once cylinder temperature monitoring begins, exhaust manifold temperature monitoring may cease.~~

40 CFR 60.756(b) also requires that the enclosed flare be equipped with a device that records flow to or bypass of the control device.

5. 40 CFR 60.755(c)(5) requires that a program be implemented to monitor cover integrity and to implement cover repairs as necessary on a monthly basis.

- ~~6. As a component of periodic monitoring to provide a reasonable assurance of compliance with the opacity limit on both the engines and enclosed flare, the source is required to operate and maintain the engines properly. Proper operation is to be assured by operators completing training on such procedures. The intent of this requirement is to strengthen the periodic monitoring provisions for visible emissions. So long as the equipment is operated and maintained properly, the likelihood of any visible emissions is very low. The basis for this provision is periodic monitoring, 9 VAC 5-80-110E.~~
7. *After EPA's inspection of the Prince William County Landfill on December 16-17, 2002, monitoring concerns were raised. A report on EPA's inspection findings was written on January 14, 2003. Prince William County Landfill proposed a permit modification to their April 15, 2002, Title V permit on October 6, 2003. EPA's response to their proposal and final resolution was determined on November 6, 2003.*

### **Corrective Actions**

Subpart WWW establishes a set of procedures to correct problems associated with the landfill gas collection system when monitoring shows exceedances of specific limitations. A brief description of the corrective actions required by Subpart WWW are described below with respect to the specific Condition in the permit which addresses the action.

1. 40 CFR 60.755(a)(3) establishes actions to be taken when positive pressures are discovered at wellheads during the monthly monitoring events. Initial corrective actions are determined by PWC unless negative pressure isn't restored within 15 days of the first measurement. In which case, the gas collection system would need to be expanded.
2. 40 CFR 60.755(a)(5) establishes actions to be taken when wellhead temperatures exceed 55 °C, or when oxygen concentrations exceed 5% or nitrogen concentrations exceed 20%. Initial corrective actions are determined by PWC unless the parameters aren't restored within 15 days of the first measurement. In which case, the gas collection system would need to be expanded.
3. 40 CFR 60.755(c)(4) establishes actions to be taken when results of quarterly methane surface monitoring exceeds 500 ppm above background. Actions consist of cover maintenance, well vacuum adjustments, and installation of additional wells or collection devices as necessary.

### **Record Keeping**

This section includes various Subpart WWW requirements for maintaining records of the results of all monitoring and testing required by the permit. These records and the basis for the requirements are included below:

1. 40 CFR 60.758(a) requires the source to keep the most current approved Design Capacity Report, current amount of refuse in place and annual waste acceptance rates.

2. This condition requires the source to keep records of annual landfill gas flow to the control devices. This will provide the necessary information to calculate annual emissions for Emission Statement reporting and for fee determination. The basis for this provision is 9 VAC 5-80-110H.
3. 40 CFR 60.758(b) requires the source to keep records of information related to the control equipment during the initial performance test or subsequent tests, and some additional information. These records include maximum expected gas generation over the life of the landfill, well/collector density information, enclosed flare combustion temperature, engine exhaust manifold temperature, and ~~cylinder temperatures (when applicable)~~.
4. 40 CFR 60.758(c) requires record keeping of all monitored operating parameters including wellhead temperature, pressure and oxygen or nitrogen concentrations. Record keeping is also required for flare or engine temperature monitoring, and for the indication of flow to the control devices. Additionally, records are required to be kept for exceedances of parameter boundaries established during the initial performance tests or subsequent test.
5. 40 CFR 60.758(d) requires record keeping, for the life of the collection system of the following: plot plan of collection system, information related to the disposal of non-degradable wastes including asbestos and location of non-productive areas that are excluded from collection.
6. 40 CFR 60.758(e) requires records of exceedances of all operational standards including wellhead temperature, pressure and oxygen/nitrogen as well as surface methane.
7. 40 CFR 60.753(b)(1) requires records of instances when positive pressure occurs at a well head in efforts to avoid a fire.
8. Requires records of maintenance on the control devices and records of operator training. The intent of this requirement is to strengthen the periodic monitoring provisions for visible emissions. So long as the equipment is operated and maintained properly, the likelihood of any visible emissions is very low. The basis for this provision is periodic monitoring, 9 VAC 5-80-110E.

### Testing

Several test methods have been prescribed in this section as a means to demonstrate compliance with several limitations provided in this permit. The basis for each is presented below.

1. As a means to assure that the control devices are meeting the requirement of 40 CFR 60.752(b)(2)(iii)(B), in addition to the assurance provided by other periodic monitoring, the permit requires compliance testing of each control device, PCD-01, PCD-02 and PCD-03 within 180 days of the issuance of this permit. Approved methods, as specified by 40 CFR 60.754(d), include EPA Method 18 or 25C. During the performance testing for the engines, the permittee is required to establish the average temperature across all cylinders of each

engine, and averaged over the three one-hour tests. ~~The result will establish a baseline temperature for which future reporting of "out of bounds" temperatures can be made.~~

2. A concurrent visible emissions test is required to ensure compliance with the visible emission standards in Condition III.E.1. The basis of this requirement is period monitoring at 9 VAC 5-80-110 E.
3. 40 CFR 60.753(c)(1) requires that wellhead nitrogen monitoring be conducted in accordance with EPA Method 3C, or an alternative if approved by the Administrator.
4. 40 CFR 60.753(c)(2) requires that wellhead oxygen monitoring be conducted with an oxygen meter in accordance with EPA Method 3A, or an alternative approved in advance by the Administrator. The facility has expressed interest in using a monitoring device which does not directly follow the procedures contained in EPA Method 3A. This condition also provides additional specifics from Subpart WWW which are expected to be followed to complete a successful monitoring event.
5. 40 CFR 60.755(c)(3) requires that surface methane monitoring be conducted in accordance with 40 CFR 60 Method 21, Section 4.3.1 with an exception for probe placement.
6. 40 CFR 60.755(d) requires that the portable analyzer used to conduct surface emissions monitoring meet instrument specifications provided with 40 CFR 60, Method 21, Section 3, except that methane replaces all references to VOC and that additional steps be taken to perform the monitoring.
7. 40 CFR 60.755(c)(2) provides the steps necessary to determine background methane concentrations.
8. The table in Condition III.E.8 simply repeats the test methods already provided in separate conditions.

### **Reporting**

1. 40 CFR 60.757(f) requires the permittee to submit an annual compliance report to DEQ and EPA Region III. Each report will include information related to exceedances of all wellhead and surface methane standards, engine and flare performance parameters and corrective actions taken as a result of these exceedances. The report will also include information on instances when a positive pressure at a wellhead occurred in efforts to avoid a fire, periods when the control devices were not operating but while gas was being collected for 1-hr or more, and periods when control devices were down for 5 days or more.

### **Requirements for Landfill Closure**

Subpart WWW provides provisions to be followed in the event the landfill is closed. Though Prince William County has no current plans to close the landfill, these requirements have been included in the event that this occurs. The basis for the following conditions from the permit,

under Landfill Closure, are explained below:

1. 40 CFR 60.752(b)(2)(v) provides the steps, which must be completed in order to qualify to cap or remove the collection and control system.
2. 40 CFR 60.754(b) provides the formula to be used to calculate the NMOC emission rate for purposes of determining when the collection and control system can be removed.
3. 40 CFR 60.757(e) requires submittal of a report stating when the landfill officially stopped accepting waste.
4. 40 CFR 60.757(e) requires submittal of a report stating when the landfill will stop operation or gas collection and control equipment or removal of such equipment. Notification must take place prior to either of these occurring.

## **FACILITY WIDE CONDITIONS – Landfill Surface and Roads**

### **Limitations**

Two additional applicable requirements have been found to be applicable to the landfill surface and roadways used to traverse the landfill property. This includes 9 VAC 5-50-90, which applies to fugitive dust/emissions.

### **Monitoring, Record Keeping and Reporting**

In lieu of conducting periodic evaluations using EPA Method 9 to demonstrate compliance with the facility wide visible emissions limit, the permittee shall perform a daily visual survey of the trafficable roads at the site and landfill waste burying activities. A visible survey is required in lieu of Method 9 since there is no point source to observe. The presence of excess emissions shall require further investigation as to the cause of emissions and be corrected in a timely manner. Records shall be kept of all observations and necessary corrective actions. These records shall be made available for inspection by DEQ for the most recent five (5) years. Performing the daily surveys and taking timely corrective actions shall assure that the opacity standard is not violated and prevent off-site nuisance complaints.

Fugitive dust emissions shall be prevented so long as the preventative measures provided in IV.2. are routinely conducted. Any instances of excessive fugitive emissions, associated with either the fugitive dust or visible emission standards, and any corrective actions taken shall be reported in the annual compliance report required in Condition III.F.1.

### **Streamlined Requirements**

Streamlining of conditions was not necessary for this permit.

However, there are several provisions of Subpart WWW which have been completed and are considered obsolete. The significant provisions, which are considered obsolete, are the

following:

- 40 CFR 60.752(a) requiring submission of an initial design capacity report. The initial design capacity report was submitted June 7, 1996 and was approved by DEQ.
- 40 CFR 60.752(b)(2)(i) if the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, submit a collection and control system design plan. Calculated NMOC emission rate exceeded 50 megagrams per year and a collection and control system design plan was submitted on May 19, 1997.
- 40 CFR 60.752(b)(2)(ii) requires installation of a collection and control system. Collection and control system has been installed and is currently operational.

## 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.

### Comments on General Conditions

#### B: Permit Expiration

This condition refers to the Board taking action on a permit application. The Board referred to is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by § 2.1-20.01:2 and § 10.1-1185 of the *Code of Virginia*, and the "Department of Environmental Quality Agency Policy Statement NO. 3-2001".

This general conditions cites the entire Article(s) that follow:

B.2. Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80. Federal Permits for Stationary Sources

B.3. Article 1 (9 VAC 5-80-50 et seq.), Part II of 9 VAC 5 Chapter 80. Federal Permits for Stationary Sources

This general condition cites the sections that follow:

- B. 9 VAC 5-80-80. "Application"
- B.2. 9 VAC 5-80-150. "Action on Permit Applications"
- B.3. 9 VAC 5-80-80. "Application"
- B.4. 9 VAC 5-80-80. "Application"
- B.4. 9 VAC 5-80-140. "Permit shield"
- B.5. 9 VAC 5-80-80. "Application"

## STATE ONLY APPLICABLE REQUIREMENTS

There are no State only applicable requirements which apply.

**FUTURE APPLICABLE REQUIREMENTS**

Promulgation of the MACT standard, under 40 CFR 63, for Municipal Waste Landfills was due November 15, 2000. However, the Prince William County Sanitary Landfill is not a major source of HAPs. So long as MACT applicability is based on a source being major for a single HAP or combination of HAPs, and the county maintains its collection and control system, PWCL will not be subject to the MACT standard. However, the rule has not yet been promulgated and this is subject to change.

**INAPPLICABLE REQUIREMENTS**

No inapplicable requirements were identified.

**COMPLIANCE PLAN**

A compliance plan was not required.

**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	Citation <sup>1</sup>	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
2	Screens and grinders at compost facility	9 VAC 5-80-720B	NO <sub>x</sub> , CO, SO <sub>2</sub> , PM10, VOC	Various small
3	Leachate lagoons	9 VAC 5-80-720B	VOC	Various
4	Fuel storage tanks	9 VAC 5-80-720B	VOC	1 - 500 gal gasoline 2 - 2,000 gal diesel
5	Diesel-fired space heaters in maintenance garage	9 VAC 5-80-720B	NO <sub>x</sub> , CO, SO <sub>2</sub> , PM10, VOC	0.12 MMBtu/hr per unit
6	Portable kerosene-fired heaters in recycling building	9 VAC 5-80-720A	NO <sub>x</sub> , CO, SO <sub>2</sub> , PM10, VOC	Various small

<sup>1</sup>The citation criteria for insignificant activities are as follows:

- 9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application
- 9 VAC 5-80-720 B - Insignificant due to emission levels
- 9 VAC 5-80-720 C - Insignificant due to size or production rate

**CONFIDENTIAL INFORMATION**

The permittee did not submit a request for confidentiality, therefore all portions of the application are suitable for public review.

**PUBLIC PARTICIPATION**

The proposed permit will be placed on public notice in the Washington Times from November 16, 2001 to December 15, 2001.

**ATTACHMENT A**

**INITIAL DESIGN CAPACITY REPORT  
DATED JUNE 7, 1996**

**ATTACHMENT B**  
**2000 EMISSION STATEMENT**

**APPENDIX C**

**DEQ Air Division Policy Statement No. 1-96 and March 14, 1997 Letter from Terry Godar,  
Air Permit Manager to Sadhu Sandhu, Prince William County**

**APPENDIX D**

**E-mails Between Chris Meoli, DEQ-Environmental Engineer, Michelle Laur, EPA-RTP and  
Jim Topsale, EPA-Region III**

\*\*\*OCR\*\*\*

The following pages contain the Optical Character Recognition text of the preceding scanned images.

COMMONWEALTH OF VIRGINIA  
Department of Environmental Quality  
Northern Virginia Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

Prince William County Sanitary Landfill  
Manassas, Virginia  
Permit No. NVRO72340

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, Prince William County Department of Public Works, Solid Waste Division has applied for a Title V Operating Permit for its Sanitary Landfill. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact: Date:  
Christopher D. Meoli  
(703) 583-3842

Air Permit Manager: TASIZ@@7vvl Date: 0 z  
Terry Darton

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Prince William County Sanitary Landfill  
NVR072340  
Statement of Basis  
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#### FACILITY INFORMATION

Permittee  
Prince William County  
Department of Public Works  
Solid Waste Division  
4379 Ridgewood Center Drive  
Prince William, Virginia 22192-5308

Facility  
Prince William County Sanitary Landfill  
14811 Dumfries Road  
Manassas, Virginia 20112-3941

Other Interested Parties  
NEO Prince William LLC - owns and operates the landfill gas collection and control system and landfill gas-fired enclosed flare

Minnesota Methane Prince William Energy LLC - owns and operates two landfill gas-fired internal combustion engines.

AlfIS ID No. 51-153-0139

#### SOURCE DESCRIPTION

SIC Code: 4953 - Sanitary Services, Refuse Systems

Prince William County operates a municipal solid waste landfill on a property of approximately 1,000 acres. The landfill operates under DEQ Solid Waste Management Permit No. 29, and has a design capacity of 8,038,000 megagrams (Mg) and 12,138,000 cubic meters (M). The design Capacity Report is included as Attachment A.

The landfill began operations in 1968 on the site designated the "Old Landfill (17 acres)," moved into the "Existing Landfill (57 acres)" in 1971 and is presently filling in Phase 1, Part 1 of the solid waste permitted expansion. The landfill was considered modified on December 31, 1991 for purposes of applicability to 40 CFR 60 Subpart WWW, Standards of Performance for Municipal Solid Waste Landfills.

An active landfill gas collection and control system, owned and operated by NEO Prince William LLC, was installed and became operational in June 1998. The system was designed to handle landfill gas generated from the "Existing Landfill" and future permitted phases. The "Old Landfill" is excluded from the collection system. Methane, carbon dioxide and non-methane organic compounds (NMOCs) are collected by the system and controlled by a combination of two landfill gas-fired, caterpillar model 3516 internal combustion engines rated at 1,340 brake horsepower (Bhp), and one LFG Specialties enclosed flare rated at 60.0 million Btus per hour (MMBtu/hr).



Prince William County Sanitary Landfill  
NVR072340  
Statement of Basis  
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The control devices do not burn supplemental or auxiliary fuel. NEO Prince William LLC owns and operates the enclosed flare and Minnesota Methane Prince William Energy LLC owns and operates the internal combustion engines.

Additional emission sources at Prince William County Sanitary Landfill consist of diesel-fired grinders and screens used as part of a county-owned composting operation, leachate lagoons, diesel storage tanks for a vehicle refueling operation, miscellaneous space heating and the landfill surface and roads.

Prince William County Sanitary Landfill is not a major source of criteria pollutants or Hazardous Air Pollutants (HAPs) but is subject to the requirement to obtain a Title V Operating Permit, as specified in 40 CFR 60.752(b), because the design capacity is greater than 2.5 million megagrams and 2.5 million cubic meters. The source does not currently operate under any state air permits.

Certain landfills, such as this one, were however required to obtain a State Operating Permit. (SOP) (9 VAC 5-80-40), as specified by the DEO Air Division Policy Statement No. 1-96, dated April 23, 1996. But the requirement to obtain a SOP was deferred until a Title V permit was required. 9 VAC 50-80-70 B allows the use of a Title V permit to satisfy the requirements of 9 VAC 5-80-40. Thus many underlying requirements, specifically the emission standards, provide 9 VAC 5-80-40 and 9 VAC 5-80-70 B as the basis, in addition to any specific NSPS requirement.

#### COMPLIANCE STATUS

Prince William County Sanitary Landfill is inspected once per year. The facility was last inspected in August, 2001 and was determined to be in compliance with all applicable requirements.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following:

Emission Unit	Size/Rated Capacity	Pollution Control Device (PCD)	Applicable Pollutant
Landfill Gas-fired	3516 Internal and S-1	Caterpillar Model PCD-01	NMOCs
Landfill Gas-fired	3516 Internal and S-2	Caterpillar Model PCD-02	VOCs
Landfill Surface and Roads	---	---	---

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

1: Design Capacity from Initial Design Capacity Report Form dated June 7, 1996

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EMISSIONS INVENTORY

A copy of the 1999 emission statement is enclosed as Attachment B. Emissions are summarized in the following tables.

2000 Criteria Pollutant Emissions

Emission Source	NMOC	voc	NO.	S02	co	PM10
EU-01, Landfill (fugitive, uncollected emissions)	19.3	7.5	---	---	---	---
PCD-01 and PCD-02, Engines	0.5	0.2	27.9	10.9	55.8	4.7
PCD-03, Enclosed flare	0.2	0.1	8.5	1.5	31.9	1.7
TOTAL	20.0	7.8	36.4	12.4	87.7	6.4

CO emissions were calculated by DEQ since CO estimates were not required in the Emission Statement.

Prince William County Sanitary Landfill  
NVRO72340  
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2000 Hazardous Air Pollutant Emissions, tpy

HAPs' EU-01, Landfill PCD-01 and PCD-03, Flare TOTAL  
PCD-02, Engines

1,1,2-dichloropropane	0.02	0.001	0.0	0.021
Acrylonitrile	0.3	0.022	0.0	0.322
Benzene	0.1	0.096	0.0	0.196
Carbon tetrachloride	0.001	0.0	0.0	0.001
Chloroform	0.003	0.0	0.0	0.003
Ethylene dichloride	0.036	0.001	0.0	0.037
Ethylidene dichloride	0.207	0.008	0.002	0.217
Mercury compounds	0.0	0.0	0.0	0.0
Methyl chloroform	0.057	0.002	0.001	0.059
Methyl chloride	0.054	0.002	0.001	0.057
Methylene chloride	1.08	0.039	0.01	1.129
Tetrachloroethylene	0.55	0.02	0.005	0.575
Toluene	3.22	0.233	0.005	3.438
	0.33	0.0	0.003	0.345
Vinyl chloride	0.408	0.015	0.004	0.427

1: As reported in the 2000 Emission Statement.

EMISSION UNIT APPLICABLE REQUIREMENTS - EU-01 and PCD-01, PCD-02 and PCD-03

Limitations

Prince William County Sanitary Landfill is subject to 40 CFR 60 Subpart WWW - New Source Performance Standards (NSPS) for Municipal Solid Waste Landfills. The landfill has an active gas collection and control system in place and in operation. The provisions of Subpart WWW apply to both the landfill itself as well as the gas collection and control system. With the exception of the opacity standard in Condition III.A.13, all of the limitations are based directly on Subpart WWW requirements.

Note also that there are no current permits for this landfill. Certain landfills, such as this one, were however required to obtain a State Operating Permit (SOP) (9 VAC 5-80-40), as specified by the DEQ Air Division Policy Statement No. 1-96, dated April 23, 1996, included as Appendix C. But the requirement to obtain a SOP was deferred until a Title V permit was required, as indicated in a letter from Terry Godar, DEQ to Sadhu Sandhu, dated March 14, 1997 and included in Appendix C. 9 VAC 5-80-70 B allows the use of a Title V permit to satisfy the requirements of 9 VAC 5-80-800 et seq. Thus most of the underlying requirements in this section of the Title V permit provide 9 VAC 5-80-850 and 9 VAC 5-80-70 B as the basis, in addition to any specific NSPS requirement. The SOP that was deferred would also have included conditions associated with the minor new source review permitting requirements, as found in 9 VAC 5-80-10, since any source subject to a NSPS, that was modified after March 17, 1972, was subject to 9 VAC 5-80-10 H(1) which indicates that the source "shall be designed, built and equipped to comply with standards of performance prescribed under 9 VAC 5 Chapter 50 (which incorporates the NSPS by reference). Thus, 9 VAC 5-80-10 H(1) is included as an underlying requirement with most Title V conditions.

The basis for the following conditions from the permit, under Limitations, are explained below:

1. The landfill gas collection and control system is required to operate under the provisions of Subpart WWW as provided in 9 VAC 5-50-410. This state rule incorporates Subpart WWW by reference and is cited along side each Subpart WWW reference.

2. 40 CFR 60.752(b)(2)(ii) provides requirements, which an active collection system must meet and include the following:  
- The system must be able to handle the maximum expected landfill gas generation for the entire landfill over the intended use period of the system. Condition III.A.2

requires that Prince William County follow the specifications contained in the DEO approved gas collection and control system design plan, or any future approved amendments, to ensure that this provision is satisfied.

3. The system must collect gas from all cells for which waste is in place for 5 or more years if active, or 2 or more years if closed or at final grade as specified by 40 CFR 60.753(a).

4. 40 CFR 60.752(2)(ii)(A)(3) specifies that the system must collect gas at a sufficient extraction

rate in order to maintain negative pressure and appropriate temperature, oxygen and/or nitrogen levels at the wellheads. The appropriate parameter values are provided in Conditions III-A.6 and III.A.7 along with any exceptions.

5. 40 CFR 60.752(2)(ii)(A)(4) specifies that the system must be designed to minimize offsite gas migration. Condition III.A.7 requires that Prince William County follow the specifications contained in the DEQ approved gas collection and control system design plan, and any approved amendments, to ensure that this provision is satisfied.

6. See 4, above.

7. See 4, above.

8. 40 CFR 60.753(d) requires operation of the collection and control system such that the surface emissions of methane are less than 500 ppm above background. Special note was added to include the Old Landfill because the collection system was purposely not extended to this part. Surface monitoring in this area will ensure that collection and control is not necessary.

9. 40 CFR 60.755(e) establishes that limitations provided in Subpart WWW apply at all times except during periods of start-up, shutdown, or malfunction, provided that these periods do not exceed 5 days for the collection system and 1 hour for the control devices.

10. 40 CFR 60.753(e) requires that the system be operated such that all collected gases are routed to the control devices, and that the system be shut down, and all valves in the collection system closed, in the event the collection or control system becomes inoperable.

11. 40 CFR 60.752(b)(2)(iii)(B) specifies that each enclosed combustion device, including PCD-01, PCD-02 and PCD-03, must meet one of two emission standards; either 98% destruction of NMOC emissions or an exhaust stack outlet concentration of less than 20 ppm vd, as hexane, at 3% oxygen.

12. 40 CFR 60.753(f), requires that the control system be operated at all times when the collected gas is routed to the system. The enclosed flare, PCD-03, rated at 2,000 cfm is designed to handle the maximum expected gas generated from the entire landfill at any time. Model estimates in the Design Plan indicate the highest landfill gas generation rate to be 1,922 cfm in 2012. However, the engines, PCD-01 and PCD-02, alone or together do not have the capacity to handle that flow. As a result the flare must be available

e to operate at all times. Available means ready to handle gas flow when actual flow conditions exceed the capacity of the engines. The intent of this requirement is to ensure that no captured landfill gas which flows to the control system should escape control.

13. 9 VAC 5-50-80 sets an opacity standard for new sources of 20% except during one six-minute period in any one hour in which case opacity shall not exceed 30%. This applies at all times except start-up, shutdown and malfunction. The opacity standard applies to each control device.

14. Proper and appropriate operation and maintenance with respect to minimizing emissions, even during start-up, shutdown and malfunction, is a key component of periodic monitoring. The first step in ensuring appropriate operation and maintenance strategies occur with the purpose of minimizing emissions is to ensure operators are appropriately trained. The starting point for training should be operator familiarity with the manufacturer's operations manual. Proper Operation and maintenance also serve to ensure opacity requirements are met. DEO Expects that any excess emissions that occur during periods when engine cylinders fail should be recorded and reported appropriately, as permit deviations if necessary.

#### Monitoring

The monitoring provisions developed for this permit come primarily from Subpart W of the Clean Air Act, with the exception of Condition III.B.2 and 6, which was developed pursuant to the periodic monitoring provisions of 9 VAC 5-80-111 OE and per EPA and Prince William County Landfill's resolution to surface monitoring concerns. As per EPA's Periodic Monitoring Guidance, all new standards proposed under the authority of Section 111 New Source Performance Standards (NSPS) after November 15, 1990, are presumed to have adequate monitoring to meet the periodic monitoring requirements for those standards. Subpart W was promulgated in May 1996, through the Federal Register. Adequate monitoring to meet the permit requirements, as added to the MRR for the Title V Operating Permit.

It is recognized that the leachate collection system contains a discharge point outside the perimeter of the waste disposal area, specifically, at the leachate retention pond. This point does not require monitoring, however, this point may become an area of concern in the future.

The exhaust manifold has been established for the engines, PGD 01 and PCQ 02, until the effective date of the GORD. To establish the baseline "average" combustion temperature for the enclosed combustion devices, which the engines are considered to be, are subject to monitoring of the "combustion temperature" in 40 CFR 60.756(b) and 60.758(b)(2)(i). Combustion temperature is used by NSPS W to evaluate whether or not the enclosed combustion devices are operating at temperatures sufficient to destroy NMOCs. A baseline "average combustion temperature" is established for all enclosed combustors during the initial performance tests. At the time of the 40 CFR 60.756 tests O

R the eRgmRes, DEQ  
and the landfill operator agreed that exhaust manifold temperature would be an  
acceptable  
indicator of engine performance with respect to NMOC destruction as opposed to  
the  
temperature within the combustion chamber (i.e., cylinder). However, after GO  
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The basis for the following conditions from the permit, under Monitoring, are explained below:

1. 40 CFR 60.755(a)(3) and 40 CFR 60.755(a)(5) require monthly wellhead monitoring of gauge pressure, landfill gas temperature and nitrogen or oxygen concentration.

2. 40 CFR 60.755(c)(1) requires quarterly monitoring of methane on the landfill surface, along the perimeter of the collection area, and along a pattern that traverses the collection area at 30-meter intervals. The pattern for conducting the surface sweeps has already been

- Annual Report for New

established and is detailed in the "Prince William County Landfill Source Performance Standards Compliance," dated January 1999. This condition requires

that the surface sweeps continue as provided in that report or the most recent DEO

approved route. An extra sentence has been added to ensure that monitoring is performed

at the "Old Landfill" as well. The path for monitoring in this area is not contained in the

current monitoring route and has been added to ensure that the gas collection system does

not need to be extended to this area. As provided previously, this area is excluded from the gas collection system.

3. 40 CFR60.756(b) requires that enclosed combustors be equipped with temperature

monitoring devices that measure temperature to within  $\pm 1$  percent accuracy or  $\pm 0.5$  OC,

whichever is greater. The temperature monitoring device must also be equipped with a

continuous monitor and be calibrated, maintained and operated according to manufacturer

specifications.

40 CFR 60.756(b) also requires that the enclosed flare be equipped with a device that

records flow to or bypass of the control device.

4. As with item 4 above, 40 CFR60.7Mb) requires that enclosed combustors be equipped with

temperature monitoring devices. As discussed in the introduction to this section, the engines

are considered enclosed combustors and must have temperature monitoring devices.

Currently temperature is being monitored in the exhaust manifold. HGweVeF, Wi thiR toFty-fiVe

days of the test, the permit requires they begin the test  
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40 CFR 60.756(b) also requires that the enclosed flare be equipped with a device that records flow to or bypass of the control device.

5. 40 CFR 60.755(c)(5) requires that a program be implemented to monitor cover integrity and to implement cover repairs as necessary on a monthly basis.

6. As a condition of the permit, the permittee shall provide a feasible assurance of good air quality. Both the operation and the engine flare, the equipment used with the engine shall be operated properly. The permittee shall be assured by the engine manufacturer that the engine will meet the requirements of this permit for the engine's emissions. So long as the equipment used is operated properly, the engine's emissions shall be low. The basis for this permit is the engine's emissions of 19 VAG 5 80 '4-@.

7. After EPA's inspection of the Prince William County Landfill on December 16-17, 2002, monitoring concerns were raised. A report on EPA's inspection findings was written on January 14, 2003. Prince William County Landfill proposed a permit modification to their April 15, 2002, Title V permit on October 6, 2003. EPA's response to their proposal and final resolution was determined on November 6, 2003.

#### Corrective Actions

Subpart WWW establishes a set of procedures to correct problems associated with the landfill gas collection system when monitoring shows exceedances of specific limitations. A brief description of the corrective actions required by Subpart WWW are described below with respect to the specific Condition in the permit which addresses the action.

1. 40 CFR 60.755(a)(3) establishes actions to be taken when positive pressures are discovered at wellheads during the monthly monitoring events. Initial corrective actions are determined by PWC unless negative pressure isn't restored within 15 days of the first measurement. In which case, the gas collection system would need to be expanded.

2. 40 CFR 60.755(a)(5) establishes actions to be taken when wellhead temperatures exceed 55 OC, or when oxygen concentrations exceed 5% or nitrogen concentrations exceed 20%. Initial corrective actions are determined by PWC unless the parameters aren't restored within 15 days of the first measurement. In which case, the gas collection system would need to be expanded.

3. 40 CFR 60.755(c)(4) establishes actions to be taken when results of quarterly methane surface monitoring exceeds 500 ppm above background. Actions consist of cover maintenance, well vacuum adjustments, and installation of additional wells or collection devices as necessary.

## Record Keeping

This section includes various Subpart WWW requirements for maintaining records of the results of all monitoring and testing required by the permit. These records and the basis for the requirements are included below:

1. 40 CFR 60.758(a) requires the source to keep the most current approved Design Capacity Report, current amount of refuse in place and annual waste acceptance rates.

2. This condition requires the source to keep records of annual landfill gas flow to the control devices. This will provide the necessary information to calculate annual emissions for Emission Statement reporting and for fee determination. The basis for this provision is 9 VAC 5-80-11 OH.

3. 40 CFR 60.758(b) requires the source to keep records of information related to the control equipment during the initial performance test or subsequent tests, and some additional information. These records include maximum expected gas generation over-the life of the landfill, well/collector density information, enclosed flare combustion temperature, engine exhaust manifold temperature, and engine temperature (when applicable).

4. 40 CFR 60.758(c) requires record keeping of all monitored operating parameters including wellhead temperature, pressure and oxygen or nitrogen concentrations. Record keeping is also required for flare or engine temperature monitoring, and for the indication of flow to the control devices. Additionally, records are required to be kept for exceedances of parameter boundaries established during the initial performance tests or subsequent tests.

5. 40 CFR 60.758(d) requires record keeping, for the life of the collection system of the following: plot plan of collection system, information related to the disposal of non-degradable wastes including asbestos and location of non-productive areas that are excluded from collection.

6. 40 CFR 60-758(e) requires records of exceedances of all operational standards including wellhead temperature, pressure and oxygen/nitrogen as well as surface methane.

7. 40 CFR 60.753(b)(1) requires records of instances when positive pressure occurs at a well head in efforts to avoid a fire.

8. Requires records of maintenance on the control devices and records of operator training. The intent of this requirement is to strengthen the periodic monitoring provisions for visible emissions. So long as the equipment is operated and maintained properly, the likelihood of any visible emissions is very low. The basis for this provision is periodic monitoring, 9 VAC 5-80-11 OE.

#### Testing

Several test methods have been prescribed in this section as a means to demonstrate

compliance with several limitations provided in this permit. The basis for each is presented below.

1 . As a means to assure that the control devices are meeting the requirement of 40 CFR 60.752(b)(2)(iii)(B), in addition to the assurance provided by other periodic monitoring, the permit requires compliance testing of each control device, PCD-01, PCD-0@ and PCD-03 within 180 days of the issuance of this permit. Approved methods, as specified by 40 CFR 60-754(d), include EPA Method 18 or 25C. During the performance testing for the engines, the permittee is required to establish the average temperature across all cylinders of each

engine, and averaged over the three one-hour tests. The Result will establish a baseline

2. A concurrent visible emissions test is required to ensure compliance with the visible emission standards in Condition III.E.1. The basis of this requirement is period monitoring at 9 VAC 5-80-110 E.

3. 40 CFR 60.753(c)(1) requires that wellhead nitrogen monitoring be conducted in accordance with EPA Method 3C, or an alternative if approved by the Administrator.

4. 40 CFR 60.753(c)(2) requires that wellhead oxygen monitoring be conducted with an oxygen analyzer in accordance with EPA Method 3A, or an alternative approved in advance by the Administrator. The facility has expressed interest in using a monitoring device which does not directly follow the procedures contained in EPA Method 3A. This condition also provides additional specifics from Subpart WWW which are expected to be followed to complete a successful monitoring event.

5. 40 CFR 60.755(c)(3) requires that surface methane monitoring be conducted in accordance with 40 CFR 60 Method 21, Section 4.3.1 with an exception for probe placement.

6. 40 CFR 60.755(d) requires that the portable analyzer used to conduct surface emissions monitoring meet instrument specifications provided with 40 CFR 60, Method 21, Section 3, except that methane replaces all references to VOC and that additional steps be taken to perform the monitoring.

7. 40 CFR 60.755(c)(2) provides the steps necessary to determine background methane concentrations.

8. The table in Condition III.E.8 simply repeats the test methods already provided in separate conditions.

#### Reporting

1. 40 CFR 60.757(f) requires the permittee to submit an annual compliance report to DEQ and EPA Region 111. Each report will include information related to exceedances of all wellhead and surface methane standards, engine and flare performance parameters and corrective actions taken as a result of these exceedances. The report will also include information on instances when a positive pressure at a wellhead occurred in efforts to avoid a fire, periods when the control devices were not operating but while gas was being collected for 1-hr or

more, and periods when control devices were down for 5 days or more.

#### Requirements for Landfill Closure

Subpart WWW provides provisions to be followed in the event the landfill is closed. Though Prince William County has no current plans to close the landfill, these requirements have been included in the event that this occurs. The basis for the following conditions from the permit,

under Landfill Closure, are explained below:

1. 40 CFR 60.752(b)(2A) provides the steps, which must be completed in order to qualify to cap or remove the collection and control system.

2. 40 CFR 60.754(b) provides the formula to be used to calculate the NMOC emission rate for purposes of determining when the collection and control system can be removed.

3. 40 CFR 60.757(e) requires submittal of a report stating when the landfill officially stopped accepting waste.

4. 40 CFR 60.757(e) requires submittal of a report stating when the landfill will stop operation or gas collection and control equipment or removal of such equipment. Notification must take place prior to either of these occurring.

#### FACILITY WIDE CONDITIONS - Landfill Surface and Roads

##### Limitations

Two additional applicable requirements have been found to be applicable to the landfill surface and roadways used to traverse the landfill property. This includes 9 VAC 5-50-90, which applies to fugitive dust emissions.

##### Monitoring, Record Keeping and Reporting

In lieu of conducting periodic evaluations using EPA Method 9 to demonstrate compliance with the facility wide visible emissions limit, the permittee shall perform a daily visual survey of the trafficable roads at the site and landfill waste burying activities. A visible survey is required in lieu of Method 9 since there is no point source to observe. The presence of excess emissions shall require further investigation as to the cause of emissions and be corrected in a timely manner. Records shall be kept of all observations and necessary corrective actions. These records shall be made available for inspection by DEQ for the most recent five (5) years. Performing the daily surveys and taking timely corrective actions shall assure that the opacity standard is not violated and prevent off-site nuisance complaints.

Fugitive dust emissions shall be prevented so long as the preventative measures provided in IV.2. are routinely conducted. Any instances of excessive fugitive emissions, associated with either the fugitive dust or visible emission standards, and any corrective actions taken shall be reported in the annual compliance report required in Condition III.F.1.

##### Streamlined Requirements

Streamlining of conditions was not necessary for this permit.

However, there are several provisions of Subpart WWW which have been completed and are considered obsolete. The significant provisions, which are considered obsolete, are the

following:

n 40 CFR 60.752(a) requiring submission of an initial design capacity report. The initial design capacity report was submitted June 7, 1996 and was approved by DEQ.

0 40 CFR 60.752(b)(2)(i) if the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, submit a collection and control system design plan. Calculated NMOC emission rate exceeded 50 megagrams per year and a collection and control system design plan was submitted on May 19, 1997.

0 40 CFR 60.752(b)(ZIM requires installation of a collection and control system. Collection and control system has been installed and is currently operational.

#### 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.

#### Comments on General Conditions

##### 13: Permit Expiration

This condition refers to the Board taking action on a permit application. The Board referred to is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by 2.1-20.01:2 and 10.1-1185 of the Code of Virginia, and the "Department of Environmental Quality Agency Policy Statement NO. 3-2001."

This general conditions cites the entire Article(s) that follow:

- B.2. Article 1 (9 VAC 5-80-50 et seq.), Part 11 of 9 VAC 5 Chapter 80. Federal Permits for Stationary Sources
- B.3. Article 1 (9 VAC 5-80-50 et seq.), Part 11 of 9 VAC 5 Chapter 80. Federal Permits for Stationary Sources

This general condition cites the sections that follow:

- B. 9 VAC 5-80-80. "Application"
- B.2. 9 VAC 5-80-150. "Action on Permit Applications"
- B.3. 9 VAC 5-80-80. "Application"
- BA. 9 VAC 5-80-80. "Application"
- BA. 9 VAC 5-80-140. "Permit shield"
- B.5. 9 VAC 5-80-80. "Application"

#### STATE ONLY APPLICABLE REQUIREMENTS

Prince William County Sanitary Landfill  
NVR072340  
Statement of Basis  
Page 16

There are no State only applicable requirements which apply.

#### FUTURE APPLICABLE REQUIREMENTS

Promulgation of the MACT standard, under 40 CFR 63, for Municipal Waste Landfills was due November 15, 2000. However, the Prince William County Sanitary Landfill is not a major source of HAPs. So long as MACT applicability is based on a source being major for a single HAP or combination of HAPs, and the county maintains its collection and control system, PWCL will not be subject to the MACT standard. However, the rule has not yet been promulgated and this is subject to change.

#### INAPPLICABLE REQUIREMENTS

No inapplicable requirements were identified.

#### COMPLIANCE PLAN

A compliance plan was not required.

#### 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	Pollutant(s)	Rated Capacity
Unit Description	Citation	Emitted (9 VAC 5-80-720 C)
No. 80-720 B)		
Screens and grinders at compost facility	9 VAC 5-80-720B	NO <sub>x</sub> , CO, SO <sub>2</sub> , Various small PM <sub>10</sub> , VOC
3 Leachate lagoons	9 VAC 5-80-720B	voc Various
4 Fuel storage tanks	9 VAC 5-80-720B	1 - 500 gal gasoline
Diesel-fired space	9 VAC 5-80-720B	2 - 2,000 gal diesel
5 heaters in maintenance garage	9 VAC 5-80-720B	NO <sub>x</sub> , CO, SO <sub>2</sub> , 0.12 MMBtu/hr per unit
Portable kerosene-fired	9 VAC 5-80-720A	NO <sub>x</sub> , CO, SO <sub>2</sub> , Various small PM <sub>10</sub> , VOC
6 heaters in recycling building	9 VAC 5-80-720A	NO <sub>x</sub> , CO, SO <sub>2</sub> , Various small PM <sub>10</sub> , VOC

The citation criteria for insignificant activities are as follows:

- 9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application
- 9 VAC 5-80-720 B - Insignificant due to emission levels
- 9 VAC 5-80-720 C - Insignificant due to size or production rate

#### CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality, therefore all portions of the application are suitable for public review.

#### PUBLIC PARTICIPATION

The proposed permit will be placed on public notice in the Washington Times from November 116-2001 to December 15, 2001.

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ArrACHMENT A

INITIAL DESIGN CAPACITY REPORT  
DATED JUNE 7,1996

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ATTACHMENT B  
2000 EMISSION STATEMENT

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APPENDIX C

DEO Air Division Policy Statement No. 1-96 and March 14,1997 Letter from Terry Godar,  
Air Permit Manager to Sadhu Sandhu, Prince William County

APPENDIX D

E-mails Between Chris Meoli, DEQ-Environmental Engineer, Michelle Laur, EPA-RT  
P and  
Jim Topsale, EPA-Region III