

FINAL FACT SHEET
NPDES PERMIT REISSUANCE
POTOMAC ELECTRIC POWER COMPANY
BENNING GENERATING STATION
WASHINGTON, DC
Public Notice Date: February 12, 2009
NPDES Permit Number: DC0000094
June 19, 2009

1. NOTICE OF PERMIT REISSUANCE.

The United States Environmental Protection Agency, Region III (EPA) has made a decision to reissue the National Pollutant Discharge and Elimination System (NPDES) permit to the Potomac Electric Power Company, Inc., (PEPCo), a subsidiary of PEPCO Holdings, Inc., for its Benning Generating Station. There are three principal sources of discharge from this facility, two are process related and the third is storm water runoff. The two process related discharges are identified as cooling water blow down and cooling tower basin wash water. Each of these waste streams is described in the permit application and herein. EPA has made several modifications to the permit that was issued on November 17, 2000, including adding the District of Columbia total maximum daily load (TMDL) requirements for pollutants in the Anacostia River. Permit requirements are based on the Clean Water Act (33 U.S.C. § 1251 et seq.), hereinafter referred to as the Act, and NPDES regulations (40 C.F.R. Parts 122 and 124).

2. PERMITTING AUTHORITY.

The NPDES permitting authority is the U. S. Environmental Protection Agency, Region III ("EPA"), Office of NPDES Permits and Enforcement (3WP41), 1650 Arch Street, Philadelphia, PA 19103. The permit writer is Mary M. Letzkus (215-814-2087), NPDES Permits Branch.

3. PERMITTEE.

The permittee is the Potomac Electric Power Company ("PEPCO"), a subsidiary of PEPCO Holdings Inc., the operator of Benning Generating Station, 3400 Benning Road, N.E., Washington DC, 20019. The contact person is Denise Campbell, Manager, Environmental Management Services, (202-331-6640).

4. EFFECTIVE DATES.

The reissued permit will become effective 30 days after the final determinations are made, unless a request for an evidentiary hearing is submitted within 30 days after receipt of the final determination. The reissued permit will expire five years after the effective date.

5. PUBLIC NOTICE.

A draft permit and fact sheet was offered for a 30-day public comment on February 12, 2009. At that time EPA published a notice in the Washington Times. Public notice began on February 13, 2009 and ended on March 16, 2009. EPA mailed copies of the draft permit and fact sheet to persons and organizations in the District of Columbia who are known to be interested in NPDES permitting matters. Concurrent with public notice, EPA requested certification from the District of Columbia stating that the permit complies with Section 401 of the Clean Water Act. At the conclusion of the comment period EPA addressed all comments received as part of the administrative record and prepared to issue a final permit. Copies of the final permit and fact sheet are available on the EPA Region III website at <http://epa.gov/region03/index.htm>

6. BRIEF DESCRIPTION OF THIS ACTION.

A. Background

EPA issued a revised NPDES permit to the Potomac Electric Power Company for its Benning Road Electric Generation facility on November 17, 2000. On December 22, 2000, PEPCo filed a petition for review with the Environmental Appeals Board (EAB) challenging certain conditions of that permit.

The permittee's petition resulted in a stay of the contested conditions. EPA ordered the permittee to continue PCB monitoring of storm water pursuant to Section 308 of the CWA. In the event that PCBs are found in storm water, the permit contained a reopener provision, whereby the permit could be modified, revoked and reissued in the event that actionable concentrations of PCBs were found.

On May 15, 2001, as a result of discussions with PEPCo on the issues raised by the appeal, and EPA's review of the permit, EPA withdrew the PCB discharge limitations in effect at storm water outfalls, and the TSS limitation at Outfall 013A. On the same date, EPA lifted the stay of the remaining terms of the November 17, 2000 final permit, which has been in effect since that date. Also on May 15, 2001, EPA and PEPCo filed a joint motion to dismiss PEPCo's petition for review, which the Environmental Appeals Board granted on May 29, 2001.

B. Modifications in the Final Permit

1. Part I.A. EPA is retaining the current technology-based effluent limit for oil and grease for internal monitoring point 003 (oil/water separator).

2. Part I.B (formerly Part A) the numeric limit for oil and grease at outfall 013 has been reevaluated in accordance with analytical data obtained over the course of the past permit cycle. Data for this outfall has consistently provided values of <5 mg/l of oil and grease, which is well below the technology-based and water quality- based standards. In addition, no Total Maximum Daily Load (TMDL) allocation has been established for the Upper Anacostia River and the District's water quality standards allow for a mixing zone. Accordingly, no numeric limit is being assigned to this pollutant, as was the case in the 2000 permit. However, this outfall will be subject to stormwater management in accordance with the facilities Stormwater Management Plan.

A new numeric limit for total suspended solids (TSS) at outfall 013 has been added. This is based on a best professional judgment of technology-based limits.

3. Part I. C. Is a new requirement for storm water monitoring at outfall 101. Outfall 101 represents runoff to the Anacostia River via a discharge tunnel and is comprised of discharges from the transformer spill containment pit, storm water runoff area 2 and the old plant floor drains. Due to tidal infiltration, the identification of a representative sampling point for this discharge has been difficult. Within six months after the effective date of this permit, the permittee shall submit a plan and an implementation schedule to EPA and the District of Columbia Department of the Environment (DDOE) for comment, to reconfigure manhole K into a reliable and accurate storm water monitoring point for outfall 101. Construction of the engineered improvement shall begin no later than six months after submission of the plan. Sampling from the reengineered manhole shall commence no later than eighteen months after submission of the plan.

During construction of manhole K and beginning with the effective date of this permit the permittee is authorized to discharge from outfall 010. Until construction of manhole K is complete, the permittee must use its best efforts to obtain a representative sample of this discharge. Upon completion of construction of Manhole K, and no later than two (2) years after the effective date of this permit monitoring conditions at Part I.C will apply. Whole Effluent Toxicity (WET) testing is required for this outfall.

4. Part I.D. (formerly Part A). The requirement to monitor oil and grease at outfalls 202 and 203 has been removed. This is based upon monitoring information consistently showing no measurable discharge of this pollutant, the nature of the discharge (cooling tower blowdown and cooling tower wash water) and the Total Maximum Daily Load for Oil and Grease. Narrative standard language for the DC Water Quality Standards (DC WQS) still applies.
5. Part I.D. footnote 2. The monitoring requirement for bromine, which is used as a biofouling agent in the cooling water and is discharged at internal monitoring points 202 and 203, is carried over from the existing permit. In the event that the permittee modifies this practice by using a different biofouling agent, it must first contact EPA and the DDOE. The permittee may be required to obtain a permit modification to cover the discharge of a different biofouling agent.

6. Part II.C. (formerly Part C.3) has been revised to include a requirement for PEPCo to review, and if appropriate to revise, its 2001 Storm water Pollution Prevention Plan (SWPPP) and to advise EPA and DDOE in writing that it has done so. A copy of the revised plan should also be forwarded to Adion Chinkuyu of the DDOE at adion.chinkuyu@dc.gov.

7. A new Part III.2 Water Quality Standards Compliance has been added. This is intended to clarify the permittee's obligation to meet narrative conditions in the District's water quality standards (WQS), Title 21 of the District of Columbia Municipal Regulations, Chapter 11, Water Quality Standards. Paragraph a of this section includes narrative conditions that apply to the Anacostia and all District Waters pursuant to Section 1104.1 of the District's WQS. Paragraphs b and c are based on WQS Sections 1104.3 and 1104.4, respectively, and are based on DC WQS requirements that protect the designated uses of the Anacostia River.

8. A new special condition, Part VII.C has been added to require the maintenance of storm water Best Management Practices (BMPs). These BMPs are required to meet the baseline and storm water reductions in accordance with the TMDLs and non-TMDL metals which have been determined to have a reasonable potential to exceed DC water quality standards. BMPs are intended to be placed at internal monitoring points or other internal positions as close to the suspected source of the discharge.

9. A new special condition, Part VII.D. has been added which establishes a benchmark level (goal) for total recoverable iron in storm water discharges. This language mirrors the approach taken in EPA's 2008 Multisector General Permit for storm water and establishes a goal of 1.0 mg/l for total recoverable iron. In addition, the permittee is required to conduct a study to determine the source or sources of iron in the storm water discharge and within three years after the effective date of the permit, to install an appropriate BMP to maintain the established goal.

10. A new Part VII.F has been added. Since the time that this permit was issued in 2000, the District of Columbia has issued 20 total maximum daily load (TMDLs) allocations for the Upper Anacostia River. In accordance with NPDES regulations EPA has reviewed these TMDLs and has set appropriate limits for process and storm water discharges as detailed at Section 11 below.

Percent reductions shall be based upon the following, which has been excerpted from approved TMDLs:

Lower Anacostia River TMDL	TMDL Developed	EPA Approval Date	Waste Load Allocation (WLA)
Fecal Coliform	June 2003	August 28, 2003	97% from direct storm water discharges, not applicable to this permit
Oil and Grease	October 2003	October 31, 2003	Stream not impaired, not applicable to this permit
Organics and Metals	August 2003	October 23, 2003	Copper - 1% reduction Lead - 1% reduction Zinc - 1% reduction PAH - 98% reduction
TSS	June 2007	June 15, 2007	TSS - 85% reduction
BOD, total nitrogen, total phosphorous	May 2001	February 27, 2008	BOD - 50% reduction, not applicable to this permit

TMDL derived limits are imposed at the point of outfall discharge to the Anacostia River. For compliance purposes, the TMDL derived limits are not applicable to internal monitoring points, however, the internal monitoring points represent the most logical opportunities for the placement of Best Management Practices.

11. Based upon sampling results submitted during the pendency of the 2000 permit, the frequency of monitoring has been relaxed to quarterly sampling at the following outfalls: 1) Part I. B. (formerly Part I.A) Storm water discharges from outfalls 013; 2) Part I.D. (formerly Part I.A.) Outfalls 202 and 203 (cooling tower blowdown units 15 and 16); 3) Part I.E. (formerly Part I.A) Outfalls 202 and 203 (cooling tower basin wash water associated with units 15 and 16); and 4) Part I.F. (Formerly Part I.A) Internal monitoring point 201. The decision to reduce the frequency of monitoring takes into consideration the following factors: 1) the infrequent use of this facility (it is a peaking plant) and 2) the low levels of pollutants found in samples during the pendency of the 2000 permit.

12. Sampling frequencies have not been relaxed for effluent streams associated with batch discharges. Batch discharges include the following: 1) Part I.A. Outfall 003 (oil/water separator); and 2) Part I .H. Discharges associated with hydrostatic testing and cleaning of tanks and lines.

13. Outfalls 005, 006, 014, 015, 016 and 401 have been identified as discharging to the District of Columbia Municipal Storm Water Sewer System and monitoring at these outfalls in this permit has been discontinued.

14. Whole Effluent Toxicity (WET) testing requirements formerly found at Part A and B. IV of the 2000 permit have been removed. This is based upon the results from samples taken July 18, 2003 (non-blow down) and August 21, 2003 (blow down) and corresponding Anacostia River water samples. Results of a 48-hour test on the non-blow down samples showed a 99% survival in Anacostia River water and 93% survival in the effluent. The test conducted on the blow down effluent sample showed 97% survival in the Anacostia River water and 91% survival in the effluent. These results show no statistically significant differences ($p=0.05$) between the non-blow down sample and its corresponding river water sample or for the blowdown sample and its corresponding river water sample. These results indicate that the Benning Road Generation Station effluent samples collected during blowdown and non-blowdown are not acutely toxic to *D. pulex*. WET testing on these discharges is no longer required during the duration of this permit.

15. WET testing is being retained for stormwater discharges from outfall 013 because of the variability of pollutants and concentrations of pollutants in stormwater. WET Tests are to be conducted in accordance with the guidelines established at 40 C.F.R. 136.3 and EPA Document 821-R-02-012, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, October 2002.

16. Part I.C, stormwater discharges from outfall 101, were not formerly identified or tested. For this discharge, WET Tests are to be conducted in accordance with the guidelines established at 40 C.F.R. 136.3 and EPA Document 821-R-02-012, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, October 2002.

17. The special condition formerly Part H.I. A Water Quality Standards Reopener has been removed. It is redundant to the standard reopener clause found at Part III.13 of this permit.

18. The special condition formerly found at Part H. II relating to Materials Handling and Storage has been removed. Review of information submitted with the permit application and data reviewed over the past eight years suggests that this condition is redundant to other protections afforded by the permit and are, therefore, unnecessary.

19. Storm water monitoring at outfalls 401, 402, and 416 has been removed because past monitoring at these locations has shown no measurable discharges of pollutants.

20. Storm water monitoring from outfalls 011 and 012 has been deleted. Outfall 011 has been closed. Outfall 012 is outside PEPCo's fence line, is not on PEPCo property and between the street and waste transfer station so it is possible that monitoring results from that outfall may not be representative of discharge from the Benning facility.

21. Storm water monitoring from outfall 420 has also been deleted because it is an internal discharge point located underground and accessible only through a manhole cover.
22. Parts I.B, VII.E and F. New numeric limits for the TMDL listed metals copper, lead and zinc have been added. New limits have also been established for non-TMDL, but water quality based metals, cadmium and nickel. These limits are based on analytical results obtained from Data Monitoring Reports (DMRs) submitted since 2002 where review of the data showed reasonable potential to exceed the District's water quality standards. Part VII.E also requires the submission of a plan and schedule to meet these limits. Compliance must be met in three years from the date of permit issuance. As these are storm water discharges, compliance is expected to be accomplished using Best Management Practices. The facility is required to submit a TMDL implementation plan which is intended to describe all efforts to meet pollutant reductions required by the Anacostia River TMDLs. BMPs necessary to achieve numeric limits shall be in place within three years after the effective date of this permit unless the permittee can demonstrate that additional time to meet the limits is required.
23. The permit continues the "no discharge" requirement for PCBs in process water. The "no discharge" requirement for the process discharge is technology based and based on the limit in the Steam Effluent Guidelines at 40 C.F.R. 423.12(b)(2). The permit carries over the monitoring requirements for PCBs for storm water discharges for this permit.
24. Part VII.A is based on a new TMDL (approved on October 31, 2007) for PCBs for the tidal portions of the Potomac and Anacostia Rivers. For the implementation of this TMDL, regulatory authorities in the Mid-Atlantic Region are requiring PCB sampling in NPDES permits to be performed using Method 1668B. The TMDL provides that "[i]f not already available, congener specific data should be collected using the most current version of EPA Method 1668 (currently, Method 1668, Revision B), or other equivalent methods capable of providing low-detection level, congener specific results, or other methods appropriate under the circumstances which are approved in advance by the permitting authority." Further, because of the historic use of the Benning Road facility for the transfer and cleaning of PCB cleaning equipment and manhole sediments which may contain PCBs, the use of the facility as a PCB storage facility, and reports of past spills on the property, EPA has determined that PCBs may be present in soil, material, storm water runoff and/or groundwater from or beneath the property. In the 2000 permit PEPCO conducted compliance monitoring for PCBs with approved EPA Method 608. For the purposes of this permit, sampling will be performed using both approved method 608 and method 1668B. However, for the purposes of compliance with PCB discharge limits in the current permit, EPA will consider only results from Method 608 monitoring. In the event that PCBs are determined to be present, the permittee shall be required to develop a pollutant minimization plan.
25. The NPDES permit application states on attachment 5, page 3 that internal monitoring point 010 has been plugged and capped. Accordingly, monitoring requirements for this area (a drying pit) have been removed.

26. Part VII.G is a new monitoring requirement for temperature at outfall 013. This requires a temperature measurement once a day for cooling water when the permittee is planning to discharge. In addition, a simultaneous measurement of ambient Anacostia water temperature must also be recorded. The waters discharged may not exceed the District of Columbia's water quality standard of a 2.8 degree Celsius raise above ambient water temperature.

27. 316(b) Status. Clean Water Act Section 316(b) requires that the location, design, construction, and capacity of cooling water intake structures (CWIS) reflect the best technology available for minimizing adverse environmental impact. The Benning Road facility uses a closed-cycle cooling system. In 1995, the permittee installed a CWIS which is comprised of two 24-inch diameter pipes with wedgewire screens that are located into the main channel of the Anacostia River, approximately 550 feet from the shoreline. The 24-inch pipes are made of a low density, high molecular weight high density polyethelene (HDPE) material. The ends of the pipes are fitted with wedge-wire screens which minimize entrainment and clogging from debris. The screens are passive water intake screens with 3/8 inch mesh that admit water in low, uniform velocities (designed with a 0.5 feet per second maximum slot velocity), which minimize plugging and holding materials against the screen surface. Each 24-inch pipe is fitted with a 4-inch diameter airburst backwash pipe which, among other things, keeps the pipes and screens clean, and prevents impingement. The pipes are buried under the riverbed upstream of the existing Metrorail bridge piers and associated pilings, and are held in place by concrete anchors.

The facility's peak cooling water intake from the Anacostia River is 1.516 mgd. The average cooling water capacity intake from the Anacostia River is 0.464 mgd. The facility's "capacity utilization rate" (see 40 C.F.R. § 125/93) is 1.5 (70,428 Mwh/ 4,590,240 MW/yr). For the year 2006, the permittee reports that the river intake pumps ran 357 total hours, or 58 minutes per day. In 2007, the permittee reports that the river water intake pumps ran 635 total hours or 1.7 hours per day. In 2008, the permittee estimates that the river water intake pumps will run for approximately 617 hours, or 1.7 hours per day.

In its Form 10-K submission to the United States Securities and Exchange Commission for the fiscal year that ended December 31, 2007, the permittee reported that it plans to deactivate the Benning Road facility by May 2012.

Given the low velocity of the intake water, the use of wedgewire screens, the low use of the facility and the permittee's stated intent to close the facility by 2012, EPA has made a "best professional judgment" determination that the CWIS location, design, construction, and capacity (including low volume flow, peaking status and intent to decommission the facility) qualify as Best Technology Available for the purposes of 316(b) of the CWA. In the event that the facility does not close by May 2012, or facility's operational status otherwise changes, EPA may modify this permit to include additional CWA 316(b) conditions, or include such conditions in the next permit.

28. Because this is a peaking plant, in operation 617 hours a year or less, and because no endangered species are believed or known to be in the Anacostia River, EPA has determined that the conditions in this permit are protective of the continued existence of listed species and their habitat. In its letter dated May 11, 2009, the National Oceanic and Atmospheric Administration (NOAA) Fisheries concurred with EPA's position. Accordingly, the requirement to submit DMRs to NOAA Fisheries, the US Fish and Wildlife Service and the EPA permit writer has been discontinued.

7. FACILITY DESCRIPTION.

The Benning Road Electric Generation facility consists of two oil-fired steam turbine generator units which produce electricity during peak demand. It is located on a 77 acre site adjacent to the Anacostia River. In addition to the electric generation station, the site contains a 69 kV switchyard and a service center. The service center provides support services to Transmission and Distribution operations and, among other operational centers, includes PCB and hazardous waste accumulation and storage areas. Benning Road is not a Treatment, Storage and Disposal Facility (TSD) under the meaning of the Resource Conservation and Recovery Act (RCRA).

A. Stores Department

The Stores Department operates 10 buildings for the purpose of receiving and transferring supplies. In addition, Stores operates a specially constructed building for the temporary storage of hazardous waste and PCBs prior to disposal off site.

B. Vehicle Resource Management

PEPCo's Vehicle Resource Management group provides maintenance and fueling for PEPCo's motor fleet.

C. Electric System Operations

Electric System Operations is responsible for the operation, maintenance and construction of PEPCo's electric system, including all overhead, underground and substation facilities. Substation facilities at Benning consist of the Plant Electrical; Substation No. 14 (34/4kV Substation); Substation No. 41 (69kV Switchyard); Substation No. 41 (230kV Switchyard); and Substation No. 7 (230/69kV Substation).

D. Manhole Sediment and Wastewater Treatment Operations

Sediments from manholes are brought to a concrete drying pit on site. Sediments are tested for PCBs prior to placement in the drying pit and again prior to offsite disposal. Water generated during settling in the pit is taken to the manhole wastewater treatment system. The

wastewater treatment system consists of two 6,500 gallon tanks equipped with an oil/water separator and carbon filtration. Treated water is tested for PCBs and pH prior to discharge.

E. Electrical Equipment Oil Removal Facility

PCB equipment (with a concentration greater than 500 ppm) leaking equipment and oil-filled equipment with unknown PCB content are stored at a covered outdoor holding area. This area has a concrete floor with no drains. It is protected with concrete curbing to contain any spilled mineral oil. Oil absorbent booms are maintained around and in the storm drains receiving runoff from the pavement outside the curb.

8. SOURCE WATER AND USE.

The Benning Road Station uses water from two sources. The primary source of water is the Anacostia River which is used for make-up water pumped to the station by two 5,000 gpm pumps. This water is run through a clarifier to reduce suspended solids prior to use. Condenser cooling water demands at the facility are minimized by the use of two mechanical draft cooling towers (one for each unit). River water is also used for once-through cooling of equipment.

The second source of water is city water, which is treated in a demineralizer and used to fill and maintain water levels in the boilers. In addition, city water is used for potable water and the station has the flexibility to use city water in the cooling towers if river water is not available.

9. WASTEWATER CHARACTERIZATION.

A. Process Discharge Water

As noted above, there are two major process water streams. The first is cooling tower basin wash water which averages approximately 518,000 gallons per day when the facility is in operation. Virtually all of this water passes through an oil/water separator prior to passing through internal monitoring point 201.

The second major type of process water is cooling tower blowdown, which discharges at approximately 531,000 gallons per day during the times the facility is in operation. These discharges make up under 5 percent of the total annual flow and occur only when the station is operating. Approximately 80 percent of these discharges last less than 12 hours. Small amounts of approved chemicals are added to the cooling tower to control biofouling tower chemistry.

B. Storm Water

The majority of storm water passes through an oil/water separator. The facility uses a variety of Best Management Practices such as secondary containment around oil filled equipment to prevent contamination of storm water.

10. DESCRIPTION OF OUTFALLS

Outfall Number	Operations Contributing to Flow		Discharge Data	
	Operation	Average flow (Mgd)	Discharge	Drainage Area (acres)
005	Runoff from parking area 25	0.07	MS4 ⁽¹⁾	0.59
006	Runoff from parking areas and Benning Road entrance area 9	0.28	MS4 ⁽¹⁾	2.27
011	Runoff from southwest corner of property (interior roadways, landscaping, area 1 roof drains and Anacostia Ave.	0.27	Anacostia	2.53
012	Runoff from northwest side of the property and transformer spill containment pit (area 4)	0.06	Anacostia	0.45
013	Major outfall for process wastewater and storm water	5.86	Anacostia	50.27
014	Runoff from northeast side of property including roadways and storage areas (area 23).	0.28	MS4 ⁽¹⁾	2.42
015	Runoff from Substation 7 and roadways all collect in Water Quality Structure prior to Discharge (area 27)	0.43	MS4 ⁽¹⁾	4.34

016 (previously outfall 411)	Runoff from internal roadways and building 32 (area 5)	0.26	MS4 ⁽¹⁾	2.27
101	Runoff from southwest corner of the property including interior roadways, landscaping and generating station roof drains (area 2)	0.53	Anacostia	4.38
401	Runoff from Substation 7	0.14	MS4 ⁽¹⁾	1.12
412	Runoff from area 20 (above ground storage tank and switchyard). Runoff discharges to an outlet that is connected to outfall 013.	0.75	Anacostia	7.21
420	Runoff from storm water area 11 and oil/water separator. Runoff discharges to an inlet that is connected to outfall 013.		Anacostia via outfall 013	

(1) Outfalls to the DC Municipal Separate Storm Water System are regulated under NPDES Permit No. DC0000221

11. EFFLUENT LIMITS

A. Total Maximum Daily Load (TMDL) Review and Derivation of Limits

1. General -

The CWA requires a TMDL to be developed for those water bodies identified by the state to be impaired, where technology-based and other controls do not provide for the attainment of water quality standards. Benning Road outfalls discharge to the upper portion of the Anacostia River, which is tidal, and has been listed as impaired for the following pollutants: biological oxygen demand (BOD), total suspended solids (TSS), bacteria, organics and metals.

TMDLs were completed for each of these pollutants during the term of the 2000 issued permit, and were evaluated for permit conditions or limits in this permit cycle.

All waste streams from a facility must be evaluated in accordance with the applicable TMDLs. In the case of this facility that includes both process and storm water discharges. The rationale for complying with the TMDLs is to control the process wastes from the internal monitoring points (e.g., oil/water separator, outfall 003; oil/water separator and other wastes from internal monitoring point 201; cooling water washwater and blowdown from outfalls 202 and 203, etc.), and the storm water discharges from the principal storm water outfall 013. Additional storm water outfalls have been identified and monitoring only is required for them.

Storm water discharge limits shall be monitored and met at outfall 013, which is the main outfall to the Anacostia River. New TMDL based limits have been calculated for TSS, PCB, TMDL metals (copper, lead and zinc) and non-TMDL metals of concern (iron, cadmium and nickel). All of these metals have been identified in the storm water discharges and with the exception of iron, the DDOE has provided for water quality standards. Iron is a pollutant of concern because it is regulated in storm water by the 2008 multisector general permit. Reasonable potential analyses were performed for each of these metals and limits have been established. Since the metal discharges are related to storm water it is anticipated that these discharges will be reduced using Best Management Practices (BMPs).

For the purposes of this permit, all of the DDOE's Anacostia TMDLs are relevant with the exception of bacteria. Biochemical oxygen demand (BOD) TMDL only applies to the discharge from a hydrostatic tank that is occasionally cleaned at the facility.

2. TMDLs for Process Wastes -

- a. TSS TMDL - For TSS, the draft final TMDL for the tidal portion of the Anacostia accounted for the Benning Road facility with the District's MS4 loads and has modeled an 85% reduction of the loading caps for both the Maryland and DC tidal and non-tidal waters. In order to meet this reduction for process related wastes, the permit retains the limits calculated for the 2000 issued permit for outfall 003 (oil/water separator), 201 (oil/water separator and other waste streams), and 202 and 203 (cooling water).
- b. BOD TMDL - For BOD, limits related to this pollutant are only relevant to the discharges from cleaning the hydrostatic tank and associated lines. The contents of the tank are pumped out and disposed of at another location and, therefore, are not subject to this permit. Since the wash waters are an infrequent and low concentration discharge, they are considered to be de minimus and no new requirements are imposed upon

them by this permit. All conditions are carried over from the 2000 issued permit.

- c. Bacteria TMDL - Reductions in accordance with the bacteria TMDL do not apply because this pollutant has not been identified in any of the waste streams from this facility.
- d. Oil and Grease TMDL - According to the DDOE's TMDL for oil and grease, the Anacostia River is no longer impaired by oil and grease. Given the low concentrations of oil and grease released from internal outfall 003 and outfall 013, EPA is retaining the technology-based effluent limits found at 40 C.F.R. 423.12 (20 mg/l maximum daily and 15 mg/l monthly average) from the 2000 permit.
- e. Organics TMDL - For this permit, PCB is the organic pollutant of interest. The 2000 permit contained a technology-based no discharge limit for PCB. Analytical results obtained pursuant to that permit show that PEPCo has consistently met this limit. This limit is carried over from the 2000 permit. The 2000 final permit required the use of EPA approved analytical method 608. For the purposes of this permit samples will be analyzed using both methods 608 and 1668 B, however, for compliance purposes only those results determined using method 608 will be used.
- f. Metals - no new metals limits for process related discharges are imposed by this permit. Existing limits for metals on outfalls 202 and 203 are carried over from the existing permit.

3. TMDLs for Storm Water Discharges -

- a. TSS - For TSS, the draft final TMDL for the tidal portion of the Anacostia accounted for the Benning Road facility with the District's MS4 loads and has modeled an 85% reduction of the loading caps for both the Maryland and DC tidal and non-tidal waters. These caps represent 7097.6 tons per year annually and 3396.1 tons per growing season (April 1 - October 31) and allows 84.6 tons per year annual load and 60.4 tons per year during the growing season.

Since the PEPCo Benning Road facility is a peaking plant, its process discharge is intermittent, similarly to storm water discharges. Accordingly, no TMDL derived limit is calculated for TSS, however, a Best Professional Judgement (BPJ) based limit of 100 mg/l daily and 30 mg/l monthly average are imposed to assure that there is no additional degradation to the Anacostia River. These limits are equal to the best practicable control technology (BPT) found at 40 C.F.R. 423.12 and

should be achieved by placing best management practice controls (BMPs) at all drains and/or internal monitoring points to achieve the 85% reduction.

Since the purpose of imposing the TSS limit is to assure no increase of this pollutant into the Anacostia River, NET credits will not be allowed. Further, the TMDL has already taken into account the background, seasonal variations and margin of safety to meet protective water quality standards.

Special Condition Part VII.E requires the submission of a plan which describes all previous, on-going and future efforts for achieving the limit. The implementation plan shall describe the method by which compliance with the pollutant reduction is calculated. The implementation plan must be submitted for comment by EPA and the DDOE, within one year of the effective date of this permit and all identified BMPs shall be in place on or before three years of the effective date of this permit.

- b. For PCBs in storm water the existing permit required monitoring using method 608. The monitoring requirement is carried over into this permit, however, analysis will be performed using both methods 608 and 1668B. Test results obtained using test method 608 are to be reported on the DMRs. Test results obtained using test method 1668B may be submitted as a separate letter report that is submitted with the Annual Laboratory Report.
- c. For TMDL metals (copper, lead and zinc). In accordance with the *Technical Support Document for Water Quality-Based Toxics Control*, EPA/505/2-90-001, March 1991, (TSD) EPA calculated results for the potential to exceed water quality standards. (See attached Reasonable Potential Analysis) The following is a summary of how reasonable potential is determined:
 - Step 1. Determine the number of total observations “n” for a particular set of effluent data (concentrations or toxic units [TUs]), and determine the highest number from that data step.
 - Step 2. Determine the coefficient of variation for the data set. For a data set where $n \geq 10$, the coefficient of variation (CV) is estimated to equal 0.6, or the CV is calculated from data obtained from a discharger. For a data set where $n < 10$, the CV is calculated as standard deviation/mean. For less than 10 items of data, the uncertainty in the CV is too large to calculate a standard deviation or mean with sufficient confidence.

Step 3. Determine the appropriate ratio from Table 3-1 or 3-2 in the TSD.

Step 4. Multiply the highest value from a data set by the value from Table 3-1 or 3-2. Use this value with the appropriate dilution to project a maximum receiving water concentration (RCV).

Step 5. Compare the projected maximum RWC to the applicable standard (criteria maximum concentration, criteria continuous concentration [CCC] or reference ambient concentration. EPA finds reasonable potential when the projected RWC is greater than an ambient criterion.

Pollutant	"n"	Highest #	CV	ratio	RWC ¹
Copper	19	1.4 mg/l	2.400	7.1	13.439 ug/l
Lead	17	0.1	0.196	1.4	64.581 ug/l
Zinc	18	1.5	0.785	3	117.18 ug/l

1/ In this case the RWC is equal to the wasteload average (WLA) because there is no dilution (this is an end of the pipe limit).

Using the above and the Calculation of Long Term Average for acute exposure

$$LTA_{a,c} = WLA_{a,c} \cdot e^{[0.562 - Z\delta]}$$

The calculation of the maximum daily limit is derived using the equation

$$MDL = LTA \cdot e^{[Z\delta - 0.562]}$$

Using the above formulae for copper, lead and zinc the results show:

Pollutant	Maximum Daily Limit	Average Monthly Limit
Copper	13.44 ug/l	5.24 ug/l
Lead	64.58 ug/l	56.60 ug/l
Zinc	117.18 ug/l	73.11 ug/l

- a. In addition to the TMDL listed metals the results from the storm water DMRs showed water quality standard metals that were not TMDL listed (cadmium and

nickel). A Reasonable potential Analysis was performed for them in accordance with the procedures outlined at 11.A.3.c above.

The Reasonable Potential Analysis for cadmium and nickel show the following:

Pollutant	Monthly Daily Limit	Average Monthly Limit
Cadmium	4.95 ug/l	2.08 ug/l
Nickel	No reasonable potential to exceed DC WQS	No reasonable potential to exceed DC WQS

In accordance with the terms of the permit the permittee is expected to attain the above TMDL and water quality based levels using BMPs, In addition, within one year of the issuance date of this permit, the permittee is required to submit a TMDL implementation plan which addresses actions to meet pollution reduction goals in accordance with these levels and identify a base year which shall be the highest discharge concentration between 2005 and 2007. The permittee is expected to attain the required levels on or before three years after the effective date of this permit.

e. For Non-TMDL listed metal (iron)

Using the results reported on the storm water DMRs EPA performed a reasonable potential analysis outlined above at 11.A.3 for total iron. Those results show the following:

Pollutant	Monthly Daily Limit	Average Monthly Limit
Iron	1.00 mg/l	0.69 mg/l

EPA's 2008 Multi-Sector General Permit for Industrial Activities specifies a benchmark monitoring cut-off concentration of 1.0 mg/l, accordingly a Special Condition has been added which identifies 1.0 mg/l as the goal for iron discharge. In addition, the permittee must perform a study to determine the source of the iron discharge and apply BMPs until the discharge reaches and maintains the benchmark goal. The study will be developed and submitted on or before 12 months after the effective date of the permit. The permittee is expected to attain the above goal on or before three years after the effective date of this permit.

e. For oil and grease - the O&G TMDL does not apply.

g. Storm water monitoring requirements for nitrogen and phosphorous have been removed from the permit as the average discharge reported on the DMRs is well below the District's Tributary Strategy and collaborative efforts of the Chesapeake Bay partners.

B. Storm Water Pollution Prevention Plan

In recognition of the difficulty in establishing numeric effluent limits for storm water discharges, EPA's storm water policy provides for the installation of best management practices (BMPs) in accordance with a Storm Water Pollution Prevention Plan (SWPPP) to protect water quality standards.

In August 2001, PEPCo submitted its SWPPP to EPA, as required by the existing permit. This plan identified potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges associated with industrial activity from the facility. The SWPPP also includes best management practices (BMPs) designed to minimize contamination of storm water runoff.

Since considerable time has passed since the submission of this plan, the draft permit requires PEPCo to review the SWPPP and update the plan as necessary to include any changes implemented since August 2001. In particular, the permittee is required to review and modify the SWPPP in the event that there has been a change in design, construction, operation or maintenance which creates a potential for the discharge of pollutants to the waters of the District or if the SWPPP is not achieving the general objectives of controlling pollutants in storm water discharges associated with industrial activity (including but not limited to discharges associated with the degree of surface imperviousness, site runoff and the nature of the precipitation). PEPCo shall indicate by letter no later than one year after the issuance date of this permit that the SWPPP has been reviewed and any necessary modifications to the plan have been made. This letter and any modifications to the SWPPP shall be sent to EPA and DDOE.

C. Internal Monitoring Points

e. Internal Monitoring Point 003

This monitoring point is the discharge point from a treatment system designed to remove oil and grease and solids from water which is pumped from a variety of sources on the Benning property, as well as waste water from utility manholes on the PEPCo system and transported to the Benning site.

The dual basin treatment system, which operates in a batch mode, consists of an oil/water separator and a carbon filter. Discharge duration and frequency varies but generally is less than three hours per event periodically throughout the year.

EPA is regulating the wastewater discharged at Outfall 003 as it had in the previous permit. The limit for oil and grease is based upon technology based limitation for steam electric power plants (40 C.F.R. Part 423). The limits for pH, and no discharge PCB limitations are based upon District of Columbia Water Quality Standards and are carried over from the previous permit. The limitation for TSS is also carried over from the existing permit and is based on Best Professional Judgment and DC WQS.

Monitoring point 003 is an internal monitoring point with discharges that ultimately discharge to the Anacostia River through outfall 013. Discharge limits are to be met at internal monitoring point 003.

The permittee is required to monitor once per discharge for all pollutants. Monitoring for each discharge event is performed prior to releasing treated water from the basin. To ensure that the sample is representative of the batch to be discharged, the treated water is circulated within the basin before the sample is collected. The permittee does not release treated wastewater unless the testing results demonstrate that all permit limitations have been achieved.

f. Internal Monitoring Points 202 and 203 (cooling tower blowdown)

Cooling tower blowdown is subject to the effluent limitations at 40 C.F.R. § 423.13(d)(1). For the purpose of this permit, those limitations include chlorine, total chromium and zinc. The effluent limits for these pollutants are carried over from the previous permit and remain the same since this is an internal monitoring point. However, there is an approved TMDL for zinc on the Upper Anacostia, this means that the discharge from this process stream at the outfall to the Anacostia must be zero. The discharge point on the Anacostia River for internal monitoring points 202 and 203 is outfall 013 and authorization for internal monitoring points 202 and 203 is found at Part I.D of this permit. If zinc is detected in the discharge at outfall 013 during cooling water blowdown, additional BMPs must be placed on monitoring points 202 and 203 to control the discharge of zinc.

The permittee has advised that bromine is used as a biological defouling agent to the cooling water. The past 5 years of testing for bromine has shown generally low concentrations, with the exception of one outlier of 4.5 mg/l in June of 2005. The source of this outlier is unknown because no disinfectant had been added to the cooling water since at least January of 2004 and subsequent measurements returned to normal. There is no DC WQS for bromine. WET Tests during blowdown conditions have shown acceptable survival of test organisms. EPA recommends the use of biofouling agents in the cooling water. Permittee must advise EPA and DDOE if it intends to switch to a different biocide.

The permittee is required to perform quarterly monitoring for all pollutants in this discharge when blowdown is discharged. This monitoring frequency is relaxed from the requirements in the previous permit based upon data reported on the DMRs from December of 2000 until February 2006.

g. Internal Monitoring Points 202 and 203 (cooling tower basin cleaning washwater)

The cooling tower basins are emptied approximately once every other year to allow removal of solids that have settled to the bottom of the basins. The wash water generated in that

cleaning process is considered a low volume waste under 40 C.F.R. § 423.11(b). It is discharged to the 54-inch sewer after passing through internal monitoring points 202 and 203.

The permit includes the effluent limitations established for low volume waste in 40 C.F.R. § 423.12(b)(1)(2) and (3). Those limitations include no discharge for PCBs, pH range from 6.0 - 9.0, and BPT and BCT for total suspended solids and oil and grease. These limits are carried over from the previous permit. However, in the case of TSS and oil and grease, although the limits for this internal monitoring point remain the same, as the TMDLs for TSS and oil and grease do not allocate to point sources for non-storm water releases, and these internal points ultimately discharge to the Anacostia at outfall 013, in the event that these pollutants (TSS and oil and grease) are found in the non-storm water discharges from 013, additional controls may be necessary during the discharge of this wash water.

Because these discharges occur infrequently (once every other year), the frequency of monitoring remains the same as the previous permit, once per discharge.

4a. Internal Monitoring Point 201

The discharges through this internal monitoring point include water from the oil/water separator, which treats boiler blowdown, storm water, demineralizer regeneration wastewater, groundwater infiltration, fireside washing, and other miscellaneous wastestreams. The permit includes BPT and BCT limitations including oil and grease and TSS, as well as WQS limitations on pH and PCBs. Because this is an internal monitoring point the limits from the previous permit remain the same. However, because waste streams from this monitoring point discharge to the Anacostia through outfall 013, and EPA has approved TMDLs for TSS, oil and grease and PCBs for the Anacostia, in the event that oil and grease and TSS are found at 013 additional controls may be necessary at monitoring point 201. There can be no discharge of PCB, TSS or oil and grease to the Anacostia.

Monitoring at this outfall has been relaxed to once per quarter due to the low levels of pollutants reported during the pendency of the previous permit.

4b. Internal Monitoring Point 201 (hydrostatic tank test and wash waters)

Wastes from the periodic cleaning of the facility's oil tanks are trucked off-site for disposal. City water is then used to perform hydrostatic testing on each of the tanks. The hydrostatic test water is then discharged to the oil/water separator. These waste fluids are required to be tested prior to release to the oil/water separator. Effluent limits based on DC WQS are imposed for pH, TSS, BOD, total residual chlorine, and oil and grease. These limits and monitoring requirements are carried over from the previous permit.

5. Monitoring Point 010 (Sediment drying pit)

The permit discontinues the technology-based effluent limitations imposed in the previous permit on any discharges from the sediment drying pit to the 54-inch pipe. This modification to the permit is based upon information received in the application that the drain pipe from the pit to the 54-inch pipe, which discharges at outfall 013, has been capped and locked.

The drying pit is used to dewater manhole sediments collected from PEPCo's manholes and transported to Benning. The decanted water is pumped to the oil/water separator and discharged in accordance with the requirements specified for internal outfall 003 above.

12. Whole Effluent Toxicity

During the five year cycle of the previous permit, WET monitoring requirements have been imposed on Outfall 013. Outfall 013 is the discharge from the 54-inch pipe both during blowdown and non-blowdown events. As explained at Section 6.B.14, 15 and 16 above, the WET results achieved during the pendency of the 2000 permit has shown no toxicity, WET testing is required one time at outfalls 013 and 101 during the pendency of this permit and is to be submitted no later than with the submission of the next NPDES permit application.

13. Part VII. Special Conditions

A EPA has retained the identification of the major PCB aroclors and has added the requirement to test samples of process and storm water using both Method 608 and 1668B, and to quantify, where possible, levels below the detection limits of method 608.

B. EPA has added a special condition for monitoring at outfall 013. The monitoring point for Outfall 013 shall be the manhole located just prior to where the 54-inch pipe discharges to the Anacostia River (Outfall O13B) or at the discharge point to the river (Outfall 013A). In reports of monitoring at Outfall 013A or 013B, the permittee shall note the date, time and all other conditions specified in Part A. of this permit. In addition, for monitoring at Outfall 013A, permittee shall note the tidal conditions at the time of monitoring.

C. Part VII. C requires the maintenance of BMPs. EPA's policy recognizes that storm water discharges are not easily characterized and are difficult to establish numeric conditions. Where a TMDL has been approved, NPDES permits must contain effluent limits and conditions consistent with the requirements and assumptions of the wasteload allocations in the TMDL. Storm water discharges are expected to be managed with the use of BMPs, accordingly, a requirement to maintain storm water BMPs has been added. BMPs are intended to be placed at internal monitoring or internal positions as close to the suspected source of pollution as possible, rather than at the discharge point of outfall 013.

D. The 2008 Multisector General Permit for Storm water (Industrial Facilities) specifies a benchmark goal of 1.0 mg/l for total recoverable iron. This permit establishes a goal of 1.0 mg/l for iron in storm water discharges. This goal is based on the benchmark for industrial facilities found in the 2008 multisector general permit and levels of total iron found in analyses since 2000, and the DC water quality standards. According to the results reported on the DMRs from December 31, 2000 to March 31, 2006, the range in total recoverable iron is from 0.85 to 16.0 mg/l. A benchmark goal of 1.0 mg/l for total iron in storm water and process discharges has been added. Part IV.E of the permit requires the permittee to develop and submit a study to determine the source of iron in storm water on or before 12 months of the effective date of this permit.

E. A schedule to submit a TMDL implementation plan has been added. This is based on the requirements of the National TMDL program

F. A requirement to control TMDL based limits by placing and maintaining best management practices has been added.

G. A new requirement to measure the temperature of the discharge from the cooling towers and the ambient river temperature has been added.

H. A new requirement to retrofit manhole K so that it is suitable for monitoring stormwater discharges has been added.

14. Other

- A. Public Notice of Draft Permit: February 12, 2009; to begin February 13 and end on March 16, 2009.
- B. Date DC 401 Certification received: April 7, 2009 and modified June 10, 2009
- C. Date comments from the State of Maryland are received: April 10, 2009
- D. Date comments from the Commonwealth of Virginia are received: Waived
- E. Date comments from NMFS are received: May 14, 2009
- F. Date comments from US FWS are received: Waived