New Jersey Department of Environmental Protection
Division of Water Quality
Bureau of Point Source Permitting

FACT SHEET

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This fact sheet sets forth the principle facts and the significant factual, legal, and policy considerations examined during preparation of the draft master general petroleum products clean-up (GPPC) permit. This action has been prepared in accordance with the New Jersey Water Pollution Control Act and its implementing regulations at N.J.A.C. 7:14A-1 et seq. - The New Jersey Pollutant Discharge Elimination System (NJPDES).

PERMIT ACTION: Surface Water Renewal Action - Master General Petroleum Products Clean-up (GPPC) Permit

The Department is proposing to issue a Surface Water Master General Permit Renewal.

1 Description of Master General Petroleum Product Clean-up Permit:

Pursuant to N.J.A.C. 7:14A-6.13(b)4 of the NJPDES Regulations, the Department has determined that the petroleum product clean-up category of point sources require the same effluent limitations or operating conditions, require the same or similar monitoring conditions, and are more appropriately controlled under a general permit than under an individual permit. Given that many facilities with petroleum product contamination contain similar contaminants, the Department has issued one master general permit to regulate these wastestreams. Issuance of a master general permit serves to simplify and streamline the NJPDES permitting process for these similar types of discharges.

Applicants must request authorization to be covered under the general permit by submitting appropriate NJPDES application forms. If the New Jersey Department of Environmental Protection (hereafter "the Department") determines that the individual facility meets the eligibility requirements of the master GPPC permit, then an individual authorization is issued to that facility.

Any individual authorization issued under the GPPC permit is given two NJPDES numbers. The NJPDES number on the individual authorization page will be specific to the individual facility whereas the NJPDES number NJ0102709 of the master general permit is for the master GPPC permit.

2 Name and Address of the Applicant:

Indicated on individual authorizations.

3 Name and Address of the Facility/Site:

Indicated on individual authorizations.

4 Discharge Location Information and Receiving Waterbody Classification:

The receiving waterbody classification and outfall name for each discharge is indicated on the individual authorization page for each facility. A copy of the appropriate section of a USGS quadrangle map indicating the location of the facility and discharge point(s) is also included in each individual authorization.

Receiving waterbody classifications are obtained from N.J.A.C. 7:9B-1.1 et seq., the New Jersey Surface Water Quality Standards (NJSWQS). In accordance with the NJSWQS, saline waters are considered to be those waters classified as SE1, SE2, SE3, or SC and fresh waters are considered to be those waters classified as FW1 or FW2

waters. For waters with two classifications (e.g. FW2-NT/SE1), the waterbody is defined as saline if the result of the salinity measurement exceeds 3.5 parts per thousand at mean high tide or as fresh if the salinity is less than or equal to 3.5 parts per thousand, in accordance with N.J.A.C. 7:9B-1.4. With respect to the Delaware River, where the classifications are specified as zones, the Delaware Memorial Bridge is the approximate location of the interface between fresh and saline waters; therefore, discharges north of the Delaware Memorial Bridge will be considered to be discharging to fresh waters and dischargers south of the Delaware Memorial Bridge will be considered to be discharging to saline waters.

5 Type and Quantity of the Wastes or Pollutants:

The Permit Summary Table near the end of this fact sheet contains a summary of the quantity and quality of pollutants treated and discharged from the facilities covered under this GPPC permit. Effluent data was obtained from the Monitoring Report Forms (MRFs) for the time period specified in the table for all facilities covered under the existing GPPC permit.

Residuals/Sludge Conditions:

All treatment works with a discharge regulated under N.J.A.C. 7:14A must have permits that implement applicable technical standards for residuals management. Generally, the permit issued to the treatment works generating the residual will include applicable residual quality monitoring as well as other general conditions required by N.J.A.C. 7:14A-6. In addition, the permit may include conditions related to any aspect of residual management developed on a case-by-case basis where the Department determines that such conditions are necessary to protect public health and the environment.

Typically, spent granular activated carbon generated by the treatment systems at these types of facilities is regenerated for further use and is not considered to be a sludge for purposes of reporting under the Sludge Quality Assurance Regulations (SQAR, N.J.A.C. 7:14C). Bag filters and cartridge filters removed from these treatment systems are also not considered to be sludges. However, these materials are considered to be residuals as defined in the New Jersey Pollutant Discharge Elimination System regulations (NJPDES, N.J.A.C. 7:14A). Consequently, general residuals conditions have been included in Part II of the permit. Residuals removed that are manifested as hazardous waste are exempt from SQAR as provided for under N.J.A.C 7:14C-1.13(b)1.iii. Should there be any significant change in residual use or disposal practices, the permittee shall give written notification to the Department in accordance with Part II, General Conditions, Section B.4.a.

The documents listed below have been used to establish the residual conditions of the Draft Permit:

a. United States Environmental Protection Agency “Standards for the use or disposal of sewage sludge” (40 CFR Part 503),
b. "New Jersey Pollutant Discharge Elimination System” (N.J.A.C. 7:14A),
c. Technical Manual for Residuals Management, May 1998,
d. USEPA Part 503 Implementation Guidance, EPA 833-R-95-001, October 1995. This document is a compilation of federal requirements, management practices and EPA recommended permit conditions for sewage sludge use and management practices,
e. USEPA A Plain English Guide to the EPA Part 503 Biosolids Rule, EPA/832/R-93/003, September 1994,
f. New Jersey “Statewide Sludge Management Plan”, January 2006 and
g. New Jersey “Sludge Quality Assurance Regulations” (SQAR), N.J.A.C. 7:14C.

6 Description of Facilities Covered by the Master GPPC Permit:

Authorized permittees will discharge only decontaminated groundwater resulting from the remediation of contaminated groundwater associated with petroleum products. Dewatering and pump test discharges that have petroleum product contamination are also eligible under this master permit.

This permit authorizes the discharge of these point sources into surface waters of the State or separate storm sewers, except those waters classified as FW-1 and PL (Pinelands), in compliance with the limitations and conditions described below and in a manner that will not cause violation of the NJSWQS of N.J.A.C. 7:9B-1.1 et seq. and the Federal Surface Water Quality Standards, 40 CFR 131.

All facilities considered eligible under this master general permit are considered minor facilities by the Department in accordance with the United States Environmental Protection Agency (EPA) rating criteria.

Effluent limitations are dependent on the quality of the contaminated groundwater, contaminants present, the duration of the effluent discharge, the ultimate receiving waterbody, and the nature of the remedial activity. Therefore, this permit contains three effluent limitation tables to address various concerns. The three tables can be described as follows:

Table 1: Remediation discharges into waters classified as FW2-NT, FW2-TM, FW2-TP, SE, or SC where petroleum related constituents are present. Other metals, volatile organics, acid extractables, base-neutrals and pesticides may also be present.

Table 2: Short term dewatering or pump test discharges into waters classified as FW2-NT, FW2-TM, FW2-TP, SE or SC where petroleum related constituents are present. Other metals, volatile organics, acid extractables, base-neutrals and pesticides may also be present.

Table 3: Remediation discharges into waters classified as C1 (Category 1) where strictly petroleum related constituents are present.

Please note that the 2003 master general permit specified five tables which can be described as follows: Table A (typical remediation discharges), Table B (remediation discharges where a potable water intake is located on the receiving waterbody that meets certain dilution criteria), Table C (remediation discharges into waters classified as C1), Table D (remediation discharges where other metals, volatile organics, acid extractables, or base-neutrals are present in addition to petroleum related constitutents, and Table E (short term dewatering or pump test discharges). In some instances, the Department specified the outfall name so that the table could be identified. For example, if a facility qualified to discharge under Table C, the outfall would be specified as discharge serial number (DSN) 001C on the discharge authorization page. **In order to minimize confusion for renewal authorizations, all outfall designations have been retained from the previous individual general permit authorization. For new authorizations under this master general permit, outfalls will be designated as DSN 001A regardless of which table is utilized.**

Petroleum products are defined as leaded gasoline, unleaded gasoline, aviation fuel, jet fuel, kerosene, diesel fuel, number 1 fuel oil, number 2 fuel oil, number 4 fuel oil, number 5 fuel oil and number 6 fuel oil. If additional site specific constituents are contained in the petroleum product discharge, the Department will make a case specific determination of the applicant's eligibility for this general permit. If the Department determines that an applicant is not eligible for this general permit due to site specific constituents, the applicant may pursue an individual permit.

7 History of GPPC Permit:

The first master GPPC permit was issued on October 29, 1993. This GPPC permit was tracked as "Category B4B" in the Department's database. The October 29, 1993 master GPPC permit authorized the discharge of treated groundwater (i.e. remediations, dewatering projects and pump tests) contaminated by gasoline as well as by other petroleum products. This October 29, 1993 permit served to replace the General Groundwater Fuel Clean-up (GFC) permit issued on June 2, 1988. The GFC permit (Category B4) was limited to discharges resulting from gasoline contamination and did not cover contamination by other petroleum products.

The October 29, 1993 master GPPC permit was renewed on October 28, 1998. The October 28, 1998 master GPPC permit contained several differences from the October 29, 1993 master permit including the following: effluent limitations and/or monitoring requirements for Methyl *tert* butyl ether (MTBE) and *tert* butyl alcohol (TBA); authorization for remediation discharges where other metals, volatile organics, acid extractables or base/neutral compounds were present; and biomonitoring requirements (i.e. whole effluent toxicity) for any remediation discharge where metals were present in addition to petroleum related constituents.

The October 28, 1998 master GPPC permit was renewed on October 31, 2003. Differences from the October 28, 1998 permit included imposition of an alternate lead limit; inclusion of an influent TBA monitoring requirement; and discontinuation of the authorization to discharge to Pinelands waters under Table C.

This proposed master GPPC permit renewal contains some differences from the 2003 master GPPC permit. These differences include the simplification to three tables, imposition of a more stringent MTBE limit, the inclusion of a TBA limit, inclusion of an alternate lead limit, the ability to regulate pesticides, and the inclusion of alternate monitoring frequencies dependent on site-specific factors. While the Department has reduced the number of tables from five to three, the effluent limitations and/or monitoring requirements are equal to or more stringent than those contained in the previous five tables for renewal authorizations.

8 Background to the Selection of Regulated Parameters for all Tables:

A summary of effluent data is included in the Permit Summary Tables at the end of this Fact Sheet. In addition, influent data (untreated wastewater) continues to be required in the applications for individual authorizations under the master GPPC permit and was considered as part of the decision making in this renewal permit. Both effluent and influent data was considered in the Department's determination regarding which parameters to regulate. In addition, the Department considered the parameters included in the existing GPPC permit, in accordance with N.J.A.C. 7:14A-13.19, as well as information contained in available literature.

Flow, pH, Total Organic Carbon, Total Suspended Solids, and Petroleum Hydrocarbons

As discussed further in the section for Table 1, the Department has retained effluent limitations and/or monitoring requirements for **flow**, **pH**, **total organic carbon**, **total suspended solids**, and **petroleum hydrocarbons** in the master GPPC permit renewal. The majority of these parameters are generally regulated in all NJPDES/DSW permits throughout the State of New Jersey for wastewater discharges. Total organic carbon, total suspended solids and petroleum hydrocarbons are consistently present at detectable levels in untreated groundwater as evidenced by recent renewal application data for requests for authorization under the master GPPC permit renewal.

Benzene

Effluent limitations and monitoring requirements have been retained for benzene from the 2003 master GPPC permit because benzene, ethylbenzene, toluene and xylene (BTEX) constituents are consistently present in petroleum products. As discussed in the 2003 master GPPC permit, benzene is singled out as an appropriate indicator parameter for BTEX constituents and other volatile organic compounds because of its treatability characteristics. Two of the most widely used technologies for the treatment of groundwater contaminated with petroleum products are air stripping and granular activated carbon. Because compounds with lower Henry's Law Constants are more difficult to remove by air stripping than compounds with higher Henry's Law Constants, the compound with the lowest Henry's Law Constant will generally be the limiting compound where multiple volatile organic compounds are present.[1] In addition to Henry's Law Constants, generally the higher the solubility and boiling point of a constituent in water, the more difficult it is to remove that constituent from the water using air stripping.[1] Benzene has a relatively low Henry's Law Constant and a relatively high solubility in water at a consistent temperature; therefore, benzene is an appropriate indicator parameter for the treatment efficiency of groundwater contaminated with petroleum products. Considering treatment with granular activated carbon, benzene has a low mean adsorptive capacity and is therefore expected to be one of the first constituents to "break-through" the carbon or appear in the effluent when the adsorptive capacity is exhausted.[1] In addition to mean adsorption capacity, constituents with a high boiling point in water also

"break through" carbon first thereby further supporting the use of benzene as a major indicator parameter for the control of pollutants from petroleum product contaminated groundwater. [1]

The NJSWQS for benzene, ethylbenzene and toluene for freshwater are 0.15 μg/L, 530 μg/L and 1300 μg/L, respectively. A NJSWQS does not exist at this time for xylene. Because the NJSWQS for benzene is significantly lower than that for ethylbenzene and toluene, this further supports the inclusion of an effluent limit for benzene.

In sum, in order to control the discharge levels of benzene, ethylbenzene, toluene and xylene, an effluent limitation has been retained for benzene.

Naphthalene

Effluent limitations and monitoring requirements have been retained for naphthalene from the 2003 master GPPC permit because this constituent is consistently present in petroleum products based on GPPC permit renewal application data. Naphthalene can be present in gasoline as well as fuel oils, although it is typically present in higher concentrations in fuel oil. Naphthalene has a very low Henry's Law Constant and is therefore more difficult to remove by air stripping than most compounds including benzene.[1] Considering adsorptive capacities, benzene is expected to "break-through" the granular activated carbon before naphthalene; however, because benzene may not be present in fuel oils in large quantities, it is still necessary to limit naphthalene to ensure that the removal efficiency of treatment is adequate. [1]

Other Organics Which May Be Present in Petroleum Products

Other compounds indicated as present in a random sampling of GPPC renewal applications include phenanthrene, acenapthene, fluorene, methylene chloride, di N butyl phthalate, 2,4 dimethyl phenol, bis (2-ethylhexyl) phthalate and phenol. Although these compounds may be present on a case-by-case basis in petroleum products, the Department will not impose effluent limitations and/or monitoring requirements for any of these compounds if they are present in trace amounts. This is because it is expected that limiting benzene and naphthalene will serve to control the discharge of these compounds as benzene and naphthalene are present at significantly higher levels and are comparatively more difficult to treat based on treatability information. However, if these compounds are present at levels comparable to N.J.A.C. 7:14A-12, Appendix B, the Department may limit these compounds as discussed later.

Total Recoverable Lead

Effluent limitations and monitoring requirements have been retained for total recoverable lead on a case-by-case basis. The applicability of the lead limitation and monitoring requirement is dependent on whether or not detectable levels of lead are indicated in the NJPDES GPPC permit application, in levels comparable to or in excess of the remediation standards at N.J.A.C. 7:14A-12, Appendix B.

Methyl *tert* Butyl Ether

Effluent limitations and monitoring requirements have been retained for methyl *tert* butyl ether (MTBE) in the master GPPC permit renewal since recent application data indicates the presence of MTBE. If there is a consistent record of influent MTBE not being detected, the Department will not impose an MTBE effluent limit and monitoring requirement in individual authorizations.

MTBE has been blended with gasoline in the United States since 1979, initially as an octane booster then subsequently as an oxygenate. The volume of MTBE blended with gasoline has increased over the years in response to the Clean Air Act Amendments for oxygenated fuels.[2] MTBE, a colorless, flammable liquid with a turpentine-like odor, is highly water soluble, highly flammable and extremely volatile. MTBE does not adsorb to vadose zone materials and, along with its high vapor pressure, moves quickly through soil columns. MTBE has higher water solubility, exhibits lower adsorption to soil, and is more resistant to chemical degradation than the other common groundwater contaminants from gasoline namely benzene, toluene, ethylbenzene, and xylene (BTEX compounds).[3] The water

solubility of MTBE is about 50 g/L which makes it about 25 times more soluble than benzene, the most soluble of the BTEX constituents.[3] This implies that MTBE should be more readily leached to groundwater, and transported more quickly and further in groundwater, than the BTEX compounds.[3]

Because of its low Henry's Law Constant, MTBE is difficult to remove once it is made soluble in groundwater.[4] The Henry's law constant determines the tendency of a chemical to transfer from air to water or vice versa.[2] The Henry's law constant for MTBE is low relative to the BTEX compounds.[2] The relatively high solubility of MTBE, in comparison with BTEX compounds, indicates that MTBE is not as easily stripped from water using air stripping technology.[5] However it is technically feasible to remove MTBE from groundwater by air stripping if the air/water ratio is higher than for BTEX.[5] Air stripping, to remove some MTBE and most of the other volatile organic compounds, followed by activated carbon, to remove the remainder, can be the most efficient treatment approach in some cases.[2]

***tert* Butyl Alcohol**

Effluent limitations and monitoring requirements have been retained for *tert* butyl alcohol (TBA) in the master GPPC renewal since recent application data indicates the presence of TBA. If there is a consistent record of influent TBA not being detected, the Department will not impose a TBA effluent limit and monitoring requirement in individual authorizations.

TBA is a fuel oxygenate compound that is used as an octane booster in gasoline and is also a metabolite of MTBE.[6] Because TBA is a metabolite of MTBE, TBA could be present in greater quantities in the effluent from the treatment system as compared to the influent. TBA has a high solubility and low Henry's Law Constant indicating that it is difficult to treat.[6]

References:
1 US EPA. June 1989. Model NPDES Permit for Discharges Resulting from the Cleanup of Gasoline Released from Underground Storage Tanks. Washington DC.
2 NJDEP MTBE Work Group. December 19, 2000. MTBE in New Jersey's Environment.
3 The Interstate Technology and Regulatory Council, MTBE and Other Fuel Oxygenates Team. "Overview of Groundwater Remediation Technologies for MTBE and TBA". www.itrcweb.org. February 2005
4 Koenigsberg, S. "MTBE Wild Card in Groundwater Cleanup", *Environmental Protection.* November 1997. Page 26.
5 Ellis and Gavas. "MTBE: See It, Ye May Well Find It ... and Then What". *LUST Line Bulletin*. Page 13.
6 Linder, Steven. "Tertiary Butyl Alcohol – MTBE May Not Be the Only Gasoline Oxygenate You Should Be Worrying About", *LUST Line Bulletin 34*. Pages 18-20

9 Description of Limitations and Conditions for all Tables:

A. Basis for Effluent Limitations and Permit Conditions - General

The effluent limitations and permit conditions in this permit have been developed to ensure compliance with the following:

1. NJPDES Regulations (N.J.A.C. 7:14A),
2. New Jersey Surface Water Quality Standards (N.J.A.C. 7:9B),
3. New Jersey 2006 Integrated Water Quality Monitoring and Assessment Report (Integrated Report),
4. Water Quality Regulations of the Delaware River Basin Commission (N.J.A.C. 7:9B-1.5(b)1),
5. Interstate Environmental Commission (N.J.A.C. 7:9B-1.5(b)2),
6. Existing permit limitations in accordance with N.J.A.C. 7:14A-13.19 and 40 CFR 122.44 (antibacksliding requirements),
7. Permit limitations in accordance with N.J.A.C. 7:9B-1.5(d) (antidegradation requirements),
8. Statewide Water Quality Management Planning Rules (N.J.A.C. 7:15).

Technology based limitations are authorized by Section 301 of the Clean Water Act, 40 CFR 122, N.J.S.A. 58:10A-4, and N.J.A.C. 7:14A-13.2(a)1.ii., 13.3(b), and 13.4. BPJ determinations are authorized by Section 402 (a)(1) of the Clean Water Act.

In accordance with N.J.A.C. 7:14A-13.5, Water Quality Based Effluent Limitations (WQBELs) are imposed when it has been determined that the discharge of a pollutant causes an excursion of criteria specified in the New Jersey Surface Water Quality Standards (NJSWQS), N.J.A.C. 7:9B-1.1 et seq., and the Federal Water Quality Standards, 40 CFR Part 131. WQBELs are authorized by Section 301 of the Clean Water Act, 40 CFR 122, N.J.S.A. 58:10A-4, and N.J.A.C. 7:14A-13.2 and 13.3. The policies used to develop WQBELs are contained in the State and Federal Standards. Specific procedures, methodologies, and equations are contained in the current USEPA "Technical Support Document for Water Quality-based Toxics Control" (TSD) (EPA- 505/2-90-001) and are referenced in N.J.A.C. 7:14A-13.5 and 13.6.

Expression of all effluent limitations is in accordance with N.J.A.C. 7:14A-13.14 and 13.15. Whole effluent toxicity limitations are expressed as a minimum as a percent.

This permit action does not authorize any increase in the concentration or loading of pollutants above those levels authorized under the existing permit. All permit limitations and conditions in this permit action are equal to or more stringent than those contained in the existing permit action. As a result, this permit action satisfies the federal and state anti-degradation regulations at 40 CFR 131.12 and N.J.A.C. 7:9B-1.5(d), and no further anti-degradation analysis is necessary.

B. Basis and Derivation for Effluent Limitations and Monitoring Requirements - Specific

Summary of Monitoring Report Form Data

A full summary of monitoring report form data is included at the end of this Fact Sheet. This data was evaluated in determining whether or not facilities can meet the proposed limitations.

Dilution Credit for all Tables

The Department has not considered dilution effects in the application of any effluent limits in this master GPPC permit renewal. Consideration of site-specific dilution effects is not feasible for a master general permit where effluent limits and conditions need to be streamlined.

Table 1

- Remediation discharges into waters classified as FW2-NT, FW2-TM, FW2-TP, SE or SC where petroleum product related constituents are present. Effluent limitations and monitoring requirements can also be included for metals, volatile organics, acid extractables, base/neutral compounds and pesticides.

Flow

Monitoring for flow is required pursuant to N.J.A.C. 7:14A-13.13 and is consistent with the existing master GPPC permit. Flow monitoring shall be performed with a flow meter on a continuous basis.

Total Suspended Solids (TSS)

The TSS limitation for discharges to FW2-NT waters, SE, SC waters, and fresh and saline portions of the Delaware River is consistent with the 2003 master GPPC permit. This daily maximum limitation of 40 mg/L is also consistent with the NJSWQS at N.J.A.C. 7:9B-1.1 et seq. for FW2-NT waters. This limitation is economically and technologically achievable based on monitoring report form effluent data which shows average TSS levels well below the limitation of 40 mg/L. Monthly average monitoring and reporting is also required.

The TSS limitation for discharges to FW2-TM and FW2-TP is 25 mg/L as a daily maximum and is consistent with the 2003 master GPPC permit. This limitation is also consistent with the NJSWQS at N.J.A.C. 7:9B-1.1 et seq. for FW2-TM and FW2-TP waters. This limitation is economically and technologically achievable based on monitoring report form effluent data. Monthly average monitoring and reporting is also required.

Petroleum Hydrocarbons

The effluent limitations for petroleum hydrocarbons are consistent with the 2003 master GPPC permit and are consistent with N.J.A.C. 7:14A-12.8. These limitations are 10 mg/L as a monthly average and 15 mg/L as a daily maximum. Monitoring report form effluent data shows that treatment systems are consistently capable of reducing total petroleum hydrocarbon levels well below the proposed effluent limitations.

Total Organic Carbon (TOC)

The effluent limitation of 20 mg/L as a daily maximum for TOC is consistent with the 2003 master GPPC permit. This limitation is economically and technologically achievable based on monitoring report form effluent data. Monthly average monitoring and reporting is also required.

pH

The pH range of 6.0 standard units as a minimum and 9.0 standard units as a maximum is imposed for both fresh and saline waters consistent with the 2003 master GPPC permit. These minimum and maximum pH levels are economically and technologically achievable based on existing monitoring report form effluent data.

Benzene

The effluent limitation of 7 μg/L as a daily maximum for benzene is consistent with the 2003 master GPPC permit. This daily maximum limit is equivalent to the recommended quantitation level (RQL) for benzene and is consistent with N.J.A.C. 7:14A-12, Appendix B. Any value below the RQL is considered to be non-detectable for the purposes of permit compliance. Monthly average monitoring and reporting is also required. Based on existing monitoring report form data this limitation is both economically and technologically achievable.

The Department has not differentiated limits between fresh and saline water as was done in the 2003 master GPPC permit as very few facilities discharge to saline waters. This change serves to simplify the general permit. In addition, the majority of benzene effluent points were non-detectable.

Naphthalene

The effluent limitations for naphthalene of 22 μg/L as a monthly average and 59 μg/L as a daily maximum are consistent with the 2003 master GPPC permit. These limitations are economically and technologically achievable as evidenced by existing monitoring report form effluent data. These limitations are also consistent with N.J.A.C. 7:14A-12, Appendix B for FW2 waters.

Total Recoverable Lead

For renewal authorizations: The daily maximum effluent limitation of 10 μg/L continues to be applicable to those discharges where lead is shown to be detectable in the permittee's GPPC permit application or in other available data. This limit is consistent with the 2003 master general permit and is appropriate pursuant to N.J.A.C. 7:14A-13.19.

For new authorizations: The effluent limitation of 37 μg/L as a monthly average and 79 μg/L as a daily maximum are only applicable for those discharges where lead is shown to be detectable in the permittee's GPPC permit application

or in other available data. The Department has determined that it is beneficial and appropriate to include a limit as a monthly average. These limits are consistent with the 2003 master general permit.

Methyl *Tert* Butyl Ether (MTBE)

Since the 2003 master GPPC permit was issued, the Department promulgated a NJSWQS of 70 µg/L for MTBE at N.J.A.C. 7:9B-1.1 et seq. As a result, the Department has imposed a daily maximum limit of 70 µg/L in this master GPPC permit renewal. Because the 2003 permit established an 85% removal requirement for Table A, the Department is including a three year compliance schedule for those facilities that consistently show detectable influent concentrations for MTBE. This compliance schedule will be imposed on a case-by-case basis.

During this initial period, the existing MTBE limit of 85% removal or 70 µg/L shall apply as follows. If the daily maximum effluent MTBE level is less than or equal to 70 µg/L during a calendar month, the 85% MTBE minimum percent removal limitation does not apply. If the daily maximum effluent MTBE level is greater than 70 µg/L for a calendar month, an 85% MTBE minimum percent removal limitation does apply. This condition is also included in item A.1.j. of Part IV.

For renewal authorizations, if existing influent data demonstrates that TBA is not present where data is available for at least three years, the Department can eliminate monitoring requirements for TBA in any renewal individual authorization.

tert *Butyl* Alcohol (TBA)

In the 2003 master GPPC permit, the Department imposed an effluent and influent monitoring requirement for TBA. While a promulgated NJSWQS, pursuant to N.J.A.C. 7:9B-1.1 et seq. does not exist for TBA at this time, New Jersey does have a drinking water standard of 100 µg/L and an interim specific groundwater criterion of 100 µg/L. Because of the inclusion of TBA influent and effluent monitoring requirements as contained in the 2003 master GPPC permit, the Department has a comprehensive data set available for influent and effluent TBA. Treatability varies widely. Some sites are removing TBA despite significant influent levels while other sites are showing no change between influent and effluent values.

Based on a careful evaluation of the TBA data set, the Department is hereby establishing an effluent limitation based on Best Professional Judgment pursuant to 40 CFR Part 401.14. Specifically, the Department is requiring an effluent limit of 500 µg/L as a quarterly average. To allow time for permittees to come into compliance, this limit does not become effective for three years. Monitoring and reporting is also required as a monthly average and as a daily maximum.

To continue to track treatability effects, the Department has retained the monitoring requirement for influent TBA. Influent TBA shall be monitored and reported as a monthly average, daily maximum and as a quarterly average.

For renewal authorizations, if existing influent data demonstrates that TBA is not present where data is available for at least three years, the Department can eliminate monitoring requirements for TBA in any renewal individual authorization.

Other Metals, Volatile Organics, Acid Extractables, Base/Neutral Compounds or Pesticides Present

The Department is continuing to include the authorization of discharges that contain these parameters in the master GPPC permit renewal since there are times that additional parameters are present in addition to petroleum related constituents. Inclusion of these pollutants in a general permit rather than an individual permit saves time and effort on the part of the permittee and the Department. By including these pollutants that are present in addition to petroleum product contamination, the Department can issue more NJPDES/DSW permits for remediation projects in an expeditious manner with no sacrifice in the protection of the water resource. If any of these pollutants are present in

quantities comparable to the remediation standards at N.J.A.C. 7:14A-12, Appendix B, the Department may include effluent limitations and monitoring requirements for those pollutants included in Part III-Attachment.

The Department has expanded this master GPPC permit to allow for the inclusion of pesticides. Because these compounds are toxic in low amounts, the Department will issue an authorization for any discharge that may contain these components on a case-by-case basis. In reviewing applications to determine eligibility under this master general permit, the Department will consider such factors as the feasibility of meeting effluent limits, the level of Department oversight, and the availability of other discharge options. Given the environmental benefit of ensuring that pumped groundwater remains in the same aquifer, the Department has determined that this option is appropriate. The Department will review applications for remediation discharges on a case-by-case basis and, if the Department determines that the effluent limits can not be attained, it reserves the right to deny authorization to discharge under the master GPPC permit.

The effluent limitations for other metals, volatile organics, acid extractables, or base neutral compounds are consistent with the 2003 master GPPC permit. These limits are consistent with and were originally based on N.J.A.C. 7:14A-12, Appendix B for either FW2 or SE or SC waters depending on the classification of the receiving waterbody. Many of these effluent limits are equivalent to RQLs. Any effluent data which is below the RQL is considered to be non-detectable for the purposes of permit compliance.

Monitoring Frequencies for Flow, TSS, TOC, pH, Petroleum Hydrocarbons, Benzene, Naphthalene, Total Recoverable Lead (where applicable), MTBE, TBA, Metals, Volatile Organics, Acid Extractables, Base/Neutral Compounds and Pesticides (where applicable)

Monitoring frequencies for these pollutants are as follows:

- **For new authorizations and renewal authorizations:** A monthly monitoring frequency is specified for all parameters with the exception of petroleum hydrocarbons. A monthly monitoring frequency is consistent with the existing master GPPC permit for flow, TSS, TOC, pH, benzene, naphthalene, MTBE and TBA whereas a quarterly monitoring requirement is consistent with the existing GPPC permit for petroleum hydrocarbons.

- **For renewal authorizations:** The Department may choose to impose a quarterly monitoring frequency for all parameters provided the following criteria is met; 1) All parameters are consistently in compliance; 2) a compliance schedule has not been imposed for MTBE and TBA.

Whole Effluent Toxicity (WET)
- Requirements applicable only to those dischargers where one or more metals are present:

Section 101(a) of the CWA establishes a national policy of restoring and maintaining the chemical, physical and biological integrity of the Nation's waters. In addition, section 101(a)(3) of the CWA and the NJSWQS at N.J.A.C. 7:9B-1.5(a)3 state that the discharge of toxic pollutants in toxic amounts is prohibited. Further, 40 CFR 122.44(d) and N.J.A.C. 7:14A-13.6(a) require that where the Department determines using site-specific WET data that a discharge causes, shows a reasonable potential to cause, or contributes to an excursion above the SWQS, the permitting authority must establish effluent limits for WET. In order to satisfy the requirements of the CWA, the NJSWQS and the NJPDES Regulations, the need for a WQBEL for WET was evaluated for these discharges.

There are two types of WET tests, acute toxicity testing which measures only the lethal effects (mortality) of the effluent on the test organisms, and chronic toxicity testing which measures the lethal and sublethal (ie. growth and/or reproduction) of the effluent on the test organisms. The type of WET test required for a particular facility is determined by evaluating the mixing characteristics of the effluent (i.e. dilution factor) in the receiving water. The acute mixing zone and the chronic mixing zone are compared, and whichever results in a more stringent limit is used to regulate the discharge.

The 2003 master GPPC permit included WET requirements for those discharges that contained metals in the discharge at levels comparable to NJSWQS. As a result, the Department does have existing WET data for these discharges for consideration in this GPPC master permit renewal. Existing WET data showed a wide variability in WET effects as summarized later in this Fact Sheet.

WQBELs for acute and chronic WET were calculated in accordance with N.J.A.C. 7:14A-13.6 and USEPA's "Technical Support Document for Water Quality Based Toxics Control" (EPA/505/2-90-001), March 1991 (TSD).

Since the master GPPC permit renewal does not consider dilution effects, these limits are developed using an acute dilution factor (Df_a) of 1 and a chronic dilution factor (Df_c) of 1. Because the vast majority of discharges covered under the master GPPC permit are routed to small waterbodies, the use of one dilution factor serves to simplify and streamline the master general permit.

The Df_a and Df_c were then used to determine acute and chronic Wasteload Allocations (WLAs) consistent with N.J.A.C. 7:14A-13.5, using a steady state model, as specified in section 5.4.1 of the TSD. Consistent with recommendations in the TSD, values of 0.3 acute toxic unit (TU_a) and 1.0 chronic toxic unit (TU_c) were used to interpret the narrative water quality criteria for WET contained at N.J.A.C. 7:9B-1.14(c) (see Response to Comments 13-74 through 13-89, 29 NJR 1861, (May 5, 1997)). The acute WLA (WLA_a) was translated to equivalent chronic toxic units (WLA_{ac}), to enable comparison of acute and chronic WET limits, by multiplying the WLA_a by a default acute to chronic ratio (ACR) of 10.

The Department evaluated available chronic WET data collected under the existing GPPC permit. Chronic WET limits were applied to those sites where metals were present (excluding lead). Given that the GPPC permit covers similar discharges and chronic WET limits were only applied if metals were present, the Department has determined that this data is representative for consideration in retaining these requirements in this renewal permit. While much of the data indicated no toxicity (i.e. results of >100%), some data showed some toxicity. As a result the Department has retained the chronic WET limitation of 61% in this master GPPC permit renewal. A chronic WET limitation of 61% will continue to be applied to those sites were metals are present (excluding lead) at levels comparable to N.J.A.C. 7:14A-12, Appendix B.

For new discharges only (i.e. not renewal authorizations): In accordance with N.J.A.C. 7:14A-6.4(a) and 13.21(b), a schedule to achieve compliance with the new chronic WET WQBEL has been included in this permit and is applicable for new dischargers. Interim monitoring and reporting requirements have been included based on N.J.A.C. 7:14A-6.2(a)14. Specifically, monitoring only is required for the first three years of the discharge authorization beginning with the commencement of pumping. After that time the referenced limit of 61% is imposed.

For discharges to fresh waters: The test species method to be used for chronic testing shall be the *Ceriodaphnia dubia*, Survival and Reproduction Test, 40 CFR 136.3, method 1002.0 and will be indicated in Part III of the individual authorization. Such selection is based on the freshwater characteristics of the receiving stream, the existing permit (if applicable), N.J.A.C. 7:9B-1.5 and the Department's "Chronic Toxicity Testing Specifications for Use in the NJPDES Permit Program" document. This document is included as Appendix A of this permit, in accordance with N.J.A.C. 7:14A-6.5, 11.2(a)2.iv. and 40 CFR Part 136.

For discharges to saline waters: The test species method to be used for chronic testing shall be the *Mysidopsis bahia*, Survival, Growth, and Fecundity Test, 40 CFR 136.3, method 1007.0 and will be indicated in Part III of the individual authorization. Such selection is based on the saline characteristics of the receiving stream, the existing permit (if applicable), N.J.A.C. 7:9B-1.5 and the Department's "Chronic Toxicity Testing Specifications for Use in the NJPDES Permit Program" document. This document is included as Appendix A of this permit, in accordance with N.J.A.C. 7:14A-6.5, 11.2(a)2.iv. and 40 CFR Part 136.

The Toxicity Reduction Implementation Requirements (TRIR) are included in accordance with N.J.A.C. 7:14A-13.17(a), 7:14A-6.2(a)5 and recommendations in Section 5.8 of the TSD. The requirements are necessary to ensure compliance with the applicable WET limitation on its effective date and to expedite compliance with the WET

limitation should exceedances of the WET limitation occur. As included in section B.1 of the TRIR requirements, the initial step of the TRIR is to identify the variability of the effluent toxicity and to verify that a consistent toxicity problem does in fact exist.

Effluent samples for conducting WET testing are to be collected after the last treatment step, consistent with the collection location for all other parameters. The monitoring frequency is set at **quarterly** consistent with the 2003 master GPPC permit. In the event there are more than ten data points showing results of greater than 100%, the Department can reduce the frequency to annual as specified in item A.1.k. of Part IV.

Table 2

- Short term dewatering or pump test discharges into waters classified as FW2-NT, FW2-TM, FW2-TP, SE or SC where petroleum product related constituents are present. Effluent limitations and monitoring requirements can also be included for metals, volatile organics, acid extractables, base/neutral compounds and pesticides.

Flow, TSS, Petroleum Hydrocarbons, TOC, pH, Benzene, Naphthalene, Total Recoverable Lead (where applicable), MTBE as well as Metals, Volatile Organics, Acid Extractable, Base/Neutral Compounds or Pesticides (where applicable)

The rationale for the effluent limitations and monitoring requirements for flow, TSS, Petroleum Hydrocarbons, TOC, pH, benzene, naphthalene, total recoverable lead (where applicable), MTBE and TBA for Table 2 is identical to the discussion for Table 1. If deemed appropriate and applied, the basis for the effluent limitations and monitoring requirements for metals, volatile organics, acid extractables, base/neutral compounds and pesticides is identical to the discussion for Table 1. Limitations for total recoverable lead are consistent with the limits for new authorizations since these are short term discharges.

TBA

A TBA limit of 500 µg/L has been applied as a monthly average based on Best Professional Judgment as discussed for Table 1. While a quarterly average has been imposed for Table 1, it is not certain that short term dewatering or pump test discharges will last a full quarter; therefore, this limit has been imposed as a monthly average. Monitoring and reporting is also required as a daily maximum.

To continue to track treatability effects, the Department has retained the monitoring requirement for influent TBA. Influent TBA shall be monitored and reported as a monthly average and daily maximum.

Monitoring Frequency

Due to the short term and intermittent nature of dewatering and pump test activities, the monitoring frequency is set as follows:

Flow Rate	Expected Duration of Project	
	Less Than Two Months	Greater than Two Months
Less than 10 gallons per minute (gpm)	Once / 4 Days	Weekly
10 gpm to 50 gpm	Once / 4 Days	Weekly
Greater than 50 gpm	Once / 4 Days	Weekly

Effective Date

The Department will authorize the dewatering or pump test portion of this permit for the first six months following the effective date of the individual authorization or before the expiration of the master general permit, whichever comes first. After such time the individual permit authorization will administratively expire. The Department may issue

authorizations for a longer term on an as needed basis but any such period will not extend past the permit expiration date. Please note that the permittee may specify its effective date during the application process. For example, if a permittee expects to conduct a dewatering discharge activity in May, but submitted the application in February where this chosen effective date is specified, the Department can issue the individual permit authorization with a May 1 effective date.

Table 3

- Remediation discharges into waterbodies classified as C1 (Category One) where strictly petroleum product related constituents are present.

Impact of Discharge Approvals to High Water Quality Classifications

Pursuant to N.J.A.C. 7:9B-1.5(d), Category One waters shall be protected from any measurable changes to the existing water quality characteristics that are generally worse than the water quality criteria. However, often times when a pump and treat remediation project is deemed necessary, it is because the facility can not ensure hydraulic control of the contaminated groundwater plume and contaminated groundwater is migrating off-site which could impact sensitive receptors. Therefore, in order to ensure approval of these remediation projects in an expeditious manner, the Department has included requirements for remediation discharges to Category One waters in the master GPPC permit renewal. Water quality concerns have been considered for each limited parameter as discussed below where non-detectable limitations have been imposed in certain instances.

The Department has issued a minimal number of authorizations for Category One waters during the term of the 2003 master GPPC permit.

Flow

Monitoring for flow is required pursuant to N.J.A.C. 7:14A-13.13 and shall be metered on a continuous basis.

TSS, Petroleum Hydrocarbons, TOC

The effluent limitation for TSS is consistent with the 2003 master GPPC permit. Considering current monitoring report form data collected under the 2003 master GPPC permit, permittees can consistently comply with the proposed daily maximum effluent limitation of 25 mg/L; therefore, this limit is economically and technologically achievable. In fact, the vast majority of TSS effluent data collected under the 2003 master GPPC permit shows non-detectable levels. Monthly average monitoring and reporting is also required.

Effluent limitations for petroleum hydrocarbons are imposed consistent with the 2003 master GPPC permit. These limits of 10 mg/L as a monthly average and 15 mg/L as a daily maximum are consistent with N.J.A.C. 7:14A-12.8. Based on current monitoring report form data, current treatment technology can consistently treat total petroleum hydrocarbons to non-detectable or trace levels.

Effluent limitations for TOC are imposed consistent with the 2003 master GPPC permit. Based on current monitoring report form data, current treatment technology can consistently treat to the proposed limit of 20 mg/L as a daily maximum where current data shows primarily non-detectable or trace levels. Monthly average monitoring and reporting is also required.

pH

The effluent limits for minimum and maximum pH for Category 1 waters are based on N.J.A.C. 7:9B-1.1 et seq. for FW2 waters. The in-stream pH range of 6.5 standard units as a minimum and 8.5 standard units as a maximum have

been imposed as effluent limits due to the high quality characteristics of Category 1 waters. These limits are consistent with the 2003 master GPPC permit.

Benzene, Total Recoverable Lead (where applicable)

Due to the low in-stream NJSWQS for benzene and total recoverable lead as well as the "no measurable change" criteria for Category 1 waters pursuant to N.J.A.C. 7:9B-1.5(d)6.iii., non-detectable effluent limitations are appropriate pursuant to N.J.A.C. 7:9B-1.5(e)7. Therefore, the RQL of 7 µg/L for benzene and 10 µg/L for lead have been established as daily maximum effluent limitations. RQLs are levels which certified laboratories can routinely attain as method detection levels. As such, any value below the RQL is considered to be non-detectable for the purposes of permit compliance. Monthly average monitoring and reporting is also required. A requirement for lead is only imposed if lead is present in the influent application data.

Naphthalene

Although there is no NJSWQS for naphthalene at this time, naphthalene is listed as a toxic pollutant at N.J.A.C. 7:14A-4 Appendix A Table II. Based on the fact that naphthalene is toxic as well as the "no measurable change" criteria for Category 1 waters, pursuant to N.J.A.C. 7:9B-1.5(d)6iii, the Department has determined that a non-detectable effluent limitation is appropriate. Therefore, the applicable RQL of 8 µg/L has been imposed as an effluent limitation consistent with the 2003 master GPPC permit.

MTBE

The Department has retained a daily maximum limitation of 70 µg/L from the 2003 master GPPC permit for Category One waters. This limit is consistent with the NJSWQS. Monthly average monitoring and reporting is also required.

To continue to track treatability effects, the Department has retained the monitoring requirement for influent MTBE. Influent MTBE shall be monitored and reported as a monthly average and daily maximum.

TBA

The Department has conservatively imposed a TBA monthly average effluent limitation of 100 µg/L based on the drinking water standard and interim specific groundwater criterion. Monitoring and reporting is also required as a daily maximum.

To continue to track treatability effects, the Department has retained the monitoring requirement for influent TBA. Influent TBA shall be monitored and reported as a monthly average and daily maximum.

Whole Effluent Toxicity (WET)

The Department has not imposed WET requirements for Table 3 at this time. This is due to the fact that Table 3 only covers petroleum related constituents where the Department has determined that WET requirements are most appropriate where one or more metals are present.

Monitoring Frequency

Due to the high quality classification of C1 waters, the monitoring frequency for Table 3 is set at once per two weeks.

C. <u>Effluent Monitoring Frequencies and Sample Types</u>:

Monitoring frequencies and sample types are in accordance with N.J.A.C. 7:14A-14, unless specified otherwise in the permit.

D. Recommended Quantitation Levels Policy (RQLs):

The Department developed the RQLs to insure that useful data is provided to the Department in order to characterize the discharger's effluent. The Department recommends that the permittee achieve detection levels that are at least as sensitive as the RQLs found in Part III. The Department has determined that the quantitation levels listed therein can be reliably and consistently achieved by most state certified laboratories for most of the listed pollutants using the appropriate procedures specified in 40 CFR Part 136. FAILURE TO ATTAIN A QUANTITATION LEVEL AS SENSITIVE AS A LISTED RQL IS NOT A VIOLATION OF THE PERMIT, BUT DOES TRIGGER SOME ADDITIONAL REPORTING REQUIREMENTS FOR THE PERMITTEE AS SPECIFIED IN PART IV OF THE PERMIT.

E. Reporting Requirements:

All data requested to be submitted by this permit shall be reported on the Discharge Monitoring Reports (DMRs) as appropriate and submitted to the Department as required by N.J.A.C. 7:14A-6.8(a).

F. General conditions:

In accordance with N.J.A.C. 7:14A-2.3 and 6.1(b), specific rules from the New Jersey Administrative Code have been incorporated either expressly or by reference in Part I and Part II.

G. Outfall Tag:

Pursuant to N.J.A.C. 7:14A-6.2(a)9, the permittee shall ensure that a tag is present to mark the location of the outfall pipe on or before the start of discharge.

H. Operator Classification Number:

The operator classification requirement is no longer included in the individual requests for authorization. To obtain or determine the appropriate licensed operator classification for the treatment works utilized in each individual authorization, the permittee shall contact the Bureau of Finance and Construction, Engineering North Section at (609) 292-3025; Engineering South Section (609) 633-1169 or the Engineering/Combined Sewer Overflow Section at (609) 292-5563. The Engineering North Section has jurisdiction over the counties of Sussex, Morris, Warren, Somerset and Hunterdon whereas the Engineering South Section has jurisdiction over the counties of Monmouth, Ocean, Atlantic, Mercer, Burlington, Camden, Cape May, Cumberland, Gloucester and Salem. The Engineering/Combined Sewer Overflow Section has jurisdiction over the counties of Middlesex, Union, Essex, Hudson, Bergen, and Passaic.

I. Flow Related Conditions:

Groundwater remediations such as those regulated under this permit are not included in the applicable Water Quality Management Plan and/or Wastewater Management Plan for each individual request for authorization.

J. Compliance Schedule:

In accordance with N.J.A.C. 7:14A-6.4(a), a schedule of compliance is included in the permit for MTBE, TBA and WET, including interim deadlines for progress or reports of progress towards compliance with the conditions of this permit. N.J.A.C. 7:14A-13.21(b) allows the Department to include a schedule to achieve compliance with a WET WQBEL. This compliance schedule time frame is established at three years and is modeled after the schedule applied to new source, new dischargers, or expanded direct discharges at N.J.A.C. 7:14A-12.31(c).

1. MTBE Compliance Schedule:

For Table 1, if the Department has determined that an MTBE compliance schedule is warranted, the Department will set an initial and final phase for MTBE limits. During the **initial** phase, from January 1, 2009 through December 31, 2011, a 70 μg/L effluent limit or an 85% removal limitation applies. Please refer to item A.1.j. of Part IV for more specific information. During the **final** phase, from January 1, 2012 through the expiration of this master permit, a 70 μg/L effluent limit applies.

For Tables 2 and 3, a compliance schedule does not apply for MTBE.

2. TBA Compliance Schedule:

For Table 1, during the **initial** phase, from January 1, 2009 through December 31, 2011, a monitoring and reporting requirement for TBA influent and effluent applies. During the **final** phase, from December 1, 2011 through the expiration of this master permit, a limit of 500 μg/L applies as a quarterly average.

For Tables 2 and 3, a compliance schedule does not apply for TBA.

3. WET Compliance Schedule:

For new dischargers under Table 1, if the Department has determined that a WET compliance schedule is warranted, the Department will set an initial and final phase for WET limits. During the **initial** phase, which begins from the commencement of pumping (as specified in the application) and extends three years from that effective date, a monitoring and reporting requirement applies for Chronic WET. During the **final** phase, a 61% effluent limit applies.

For Tables 2 and 3, a WET limitation does not apply.

10 Variances to Permit Conditions:

Procedures for modifying a WQBEL are found in the NJSWQS, N.J.A.C. 7:9B-1.8 and 1.9. If a WQBEL has been proposed in this permit action, the permittee may request a modification of that limitation in accordance with N.J.A.C. 7:14A-11.7(a). This request must be made prior to the close of the public comment period. The information that must be submitted to support the request may be obtained from the Bureau of Water Quality Standards and Assessment at (609) 777-1753.

11 Description of Procedures for Reaching a Final Decision on the Draft Action:

Please refer to the procedures described in the public notice that is part of the draft permit. In addition to the DEP Bulletin, the public notice for this permit action is published in the following newspapers, which represent the counties indicated:

Newspaper	County
The Press of Atlantic City	Atlantic and Cape May
The Record	Bergen
Burlington County Times	Burlington
Courier Post Newspaper	Camden
Daily Journal	Cumberland
Gloucester County Times	Gloucester
Star Ledger	Essex, Somerset and Union
Courier News	Hunterdon, Middlesex, Somerset, and Union
The Democrat	Hunterdon
Jersey Journal	Hudson
The Times	Mercer
Asbury Park Press	Monmouth and Ocean
Daily Record	Morris
The Herald News	Passaic
Today's Sunbeam	Salem
The New Jersey Herald	Sussex
The Express	Warren

12 Contact Information

If you have any questions regarding this permit action, please contact Susan Rosenwinkel , Tara Goodreau, or Robert Hall, all of the Bureau of Point Source Permitting. All can be reached at either (609) 292-4860 or via e-mail at susan.rosenwinkel@dep.state.nj.us, tara.goodreau@dep.state.nj.us, or robert.hall@dep.state.nj.us, respectively.

13 Data Summary

Wastewater data was summarized for the period beginning on December 2003 and ending on December 2007. There were 117 active outfalls within this period. Average and maximum values do not consider non-detectable quantities. Values that were out of compliance are not considered in the average, minimum, and maximum calculations.

Typical Petroleum Product Parameters

Parameter	Wastewater Data	Parameter	Wastewater Data
Total Suspended Solids, mg/L	average – 11.02 maximum - 40 # detect - 563 # non-detect -1778 **% non-detect - 76%** # out of compliance – 32	Benzene, µg/L	average – 1.33 maximum – 5.99 # detect – 76 # non-detect - 2268 **% non-detect - 97%** # out of compliance - 5
Petroleum Hydrocarbons, mg/L	average – 1.69 maximum – 8.4 # detect - 92 # non-detect - 1040 **% non-detect - 92%** # out of compliance - 3	Naphthalene, µg/L	average – 2.99 maximum – 22 # detect – 73 # non-detect - 2225 **% non-detect - 97%** # out of compliance – 0
Total Organic Carbon, mg/L	average – 0.73 maximum – 19.6 # detect - 985 # non-detect - 1357 **% non-detect - 58%** # out of compliance – 11	Total Recoverable Lead, µg/L	average – 3.66 maximum – 9.8 # detect – 227 # non-detect - 691 **% non-detect - 75%** # out of compliance - 53
MTBE - Effluent, µg/L	average – 13.99 maximum - 970 # detect - 472 # non-detect - 1870 **% non-detect - 80%** # > 70 µg/L - 70	MTBE – Influent, µg/L	average – 3529 maximum – 1,270,000 # detect – 1834 # non-detect - 501 **% non-detect - 21%** # out of compliance - N/A
TBA - Effluent, µg/L	average – 1080 maximum – 20,600 # detect - 683 # non-detect - 1660 **% non-detect - 71%** # < 100 µg/L – 264 # 100 to 500 µg/L – 197 # > 500 µg/L – 222	TBA – Influent, µg/L	average – 3167 maximum – 384,000 # detect – 1127 # non-detect - 1204 **% non-detect - 52%** # < 100 µg/L – 308 # 100 to 500 µg/L – 287 # > 500 µg/L – 532
pH, s.u.	minimum – 6.0 maximum – 8.9 # < 6.0 – 11 # > 9.0 – 1 Total data points - 1462	Chronic WET, %	# < 20% - 24 # 20% to 40% - 12 # 40% to 60% - 14 # 60% to 80% - 16 # 80% to 100% - 20 # >100% - 40 % >100% - 32%

The following conclusions can be drawn from the existing data:

- In comparing effluent data to effluent limits, very few data points are out of compliance.
- The majority of the effluent points are non-detectable.
- MTBE influent levels are significantly greater than MTBE effluent levels which indicates that treatment systems are proving capable of removing MTBE.
- Chronic toxicity data is available for 28 sites. This data ranges from 3.07 to >100%. This data supports the retention of the chronic toxicity requirement for Table 1.

Summary of Toxic Pollutants from
December 31, 2003 through December 31, 2007

Pollutants (All units are in μg/L)	**Number of Non-Detect Values**	**Number of Detected Values**	**Maximum**	**Avg ***	**Number of Sites that Include Limits for this Pollutant**
1,1,1 Trichloroethane	31	9	31	4.35	2
1,1 Dichloroethane	36	4	8.2	2.26	2
1,1 Dichloroethylene	39	1	0.4	0.4	2
1,2 Dichloroethane	50	2	1	0.7	2
2,4 Dimethyl Phenol	153	2	4.9	4.35	10
Arsenic (Total & TR)	123	98	90.3	16.97	19
Benzo (a) Anthracene	51	2	0.25	0.3	3
Benzo (a) Pyrene	0	2	0.22	0.019	1
Benzo (b) Fluoranthene	0	2	0.4	0.055	1
Benzo (k) Flouranthene	0	2	0.2	0.02	1
Bis 2 Ethyl Hexyl Phthalate	30	4	28.3	14.85	5
Dichlorobromomethane	0	2	0.2	0.2	1
Cadmium	12	0	0	0	3
Chlorobenzene	38	0	0	0	1
Chloroethane	39	1	10	3.6	1
Chloroform	0	1	0.1	0.1	1
Chromium	112	9	29.1	8.46	10
Chrysene	17	2	0.3	0.03	2
Copper (Total & TR)	148	82	77.4	16.5	23
Cyanide	47	5	140	29	2
Diethyl Phthalate	3	2	0.1	0.1	2
Di-N-Butyl Phthalate	3	2	0.2	0.2	2
Fluoranthene	34	2	0.7	0.1	2
Fluorene	35	2	0.9	0.2	5
Indeno (1,2,3 c,d) Pyrene	0	2	0.1	0.015	1
Mercury	11	2	0.14	0.05	5
Nickel	77	44	63	10.01	12
Phenanthrene	54	5	3.3	1.69	9
Phenol (Single Compound)	85	5	12.2	10.6	5
Pyrene	51	2	1	0.01	3
Selenium	0	2	7.4	2.95	2
Tetrachloroethylene	34	0	0	0	2
Tricholoroethylene	40	0	0	0	2
Vinyl Chloride	39	1	2.8	1.2	1
Zinc (Total & TR)	114	168	196	39.31	31
*** Average values do not consider non-detectable quantities.**					

14 Permit Summary Table

Unless otherwise noted all effluent limitations are expressed as maximums. MR indicates monitoring and reporting.

PARAMETER	UNITS	AVERAGING PERIOD	TABLE 1 - FINAL LIMITS	TABLE 2 - FINAL LIMITS	TABLE 3 - FINAL LIMITS
Flow	GPD	Monthly Avg. Daily Max.	MR MR	MR MR	MR MR
Total Suspended Solids (TSS)	mg/L	Monthly Avg. Daily Max.	MR 40 (1)	MR 40 (1)	MR 25
Petroleum Hydrocarbons	mg/L	Monthly Avg. Daily Max.	10 15	10 15	10 15
Total Organic Carbon	mg/L	Monthly Avg. Daily Max.	MR 20	MR 20	MR 20
pH Range	S.U.	Monthly Min. Monthly Max.	6.0 9.0	6.0 9.0	6.5 8.5
Benzene	µg/L	Monthly Avg. Daily Max	MR 7	MR 7	MR 7
Naphthalene	µg/L	Monthly Avg. Daily Max.	22 59	22 59	MR 8.0
Effluent MTBE (2)	µg/L	Monthly Avg. Daily Max.	MR 70 (3)	MR 70	MR 70
Influent MTBE (2)	µg/L	Monthly Avg. Daily Max.	MR MR	MR MR	MR MR
MTBE Percent Removal	%	Mo. Avg. Min.	85 (3)	--	--
Effluent TBA (2)	µg/L	Monthly Avg. Quarterly Avg. Daily Max.	MR 500 (4) MR	500 -- MR	100 -- MR
Influent TBA (2)	µg/L	Monthly Avg. Quarterly Avg. Daily Max.	MR MR MR	MR -- MR	MR -- MR
Total Recoverable Lead – renewal authorizations (5)	µg/L	Monthly Avg. Daily Max.	MR 10	N/A N/A	MR 10
Total Recoverable Lead – new authorizations (5)	µg/L	Monthly Avg. Daily Max.	37 79	37 79	MR 10
Chronic Toxicity, IC25	%	Minimum	61 (6) (7)	--	--
Other Metals, Volatile Organics, Base/Neutral Compounds, Acid Extractables, Pesticides	µg/L	Monthly Avg. Daily Max.	Applied as needed – see Part III – Attachment (8)	Applied as needed – see Part III – Attachment (8)	N/A

Footnotes and Abbreviations:

(1) The daily maximum TSS limit is 25 mg/L for FW2-TM and FW2-TP waters.

(2) For renewal authorizations: the Department may delete the influent and effluent requirements for MTBE and TBA provided all influent data from previous permit cycle is trace or non-detectable.

(3) On a case-by-case basis, a three year compliance schedule may be imposed for MTBE where the following condition applies from January 1, 2009 through December 31, 2011. If the daily maximum effluent MTBE level is less than or equal to 70 µg/L during a calendar month, the 85% MTBE minimum percent removal limitation does not apply. If the daily maximum effluent MTBE level is greater than 70 µg/L for a calendar month, an 85% MTBE minimum percent removal limitation does apply. This condition is also specified as item A.1.j. of Part IV.

(4) A three year compliance schedule is imposed for TBA. From January 1, 2009 through December 31, 2011 the permittee is only required to monitor and report for TBA.

(5) A lead limit and monitoring requirement is only applied if lead is present at quantities comparable to the remediation standards at N.J.A.C. 7:14A-12, Appendix B in the influent application data. For any renewal authorization, if lead is still present and the existing authorization contained a lead limit of 10 µg/L, this limit will be retained.

(6) Limit is only applicable if one or more metals are present in quantities comparable to or greater than the remediation standards at N.J.A.C. 7:14A-12, Appendix B.

(7) For new authorizations - Chronic WET limit is imposed with a three year compliance schedule beginning with commencement of pumping.

(8) Limits are applied as needed where parameters are detected at quantities comparable to the remediation standards at N.J.A.C. 7:14A-12, Appendix B.

15 Contents of the Administrative Record

The following items are used to establish the basis of the Draft Permit:

Rules and Regulations:

1. 33 U.S.C. 1251 et seq., Federal Water Pollution Control Act. [C]
2. 40 CFR Part 131, Federal Water Quality Standards. [A] [C]
3. 40 CFR Part 122, National Pollutant Discharge Elimination System. [C]
4. N.J.S.A. 58:10A-1 et seq., New Jersey Water Pollution Control Act. [A] [B]
5. N.J.A.C. 7:14A-1 et seq., New Jersey Pollutant Discharge Elimination System Regulations. [A] [B]
6. N.J.A.C. 7:9B-1 et seq., New Jersey Surface Water Quality Standards. [A] [B]
7. N.J.A.C. 7:15, Statewide Water Quality Management Planning Rules. [A] [B]
8. N.J.A.C. 7:14C, Sludge Quality Assurance Regulations. [B]

Guidance Documents / Reports:

1. "Field Sampling Procedures Manual", published by the NJDEP. [A]
2. "NJPDES Monitoring Report Form (MRF) Reference Manual", published by the NJDEP. [A]
3. "EPA Technical Support Document for Water Quality-based Toxics Control", EPA/505/2-90-001, March 1991. [A]
4. New Jersey's 2006 Integrated Water Quality Monitoring and Assessment Report (includes 305 (b) Report 303(d) List). [A] [B]
5. USEPA. June 1989. Model NPDES Permit for Discharges Resulting from the Cleanup of Gasoline Released from Underground Storage Tanks, Washington DC.
6. NJDEP MTBE Work Group. December 19, 2000. MTBE in New Jersey's Environment.
7. The Interstate Technology and Regulatory Council, MTBE and Other Fuel Oxygenates Team. "Overview of Groundwater Remediation Technologies for MTBE and TBA". www.itrcweb.org. February 2005.
8. Koenigsberg, S. "MTBE Wild Card in Groundwater Cleanup", *Environmental Protection.* November 1997. Page 26.
9. Ellis and Gavas. "MTBE: See It, Ye May Well Find It ... and Then What". *LUST Line Bulletin*. Page 13.
10. Linder, Steven. "Tertiary Butyl Alcohol – MTBE May Not Be the Only Gasoline Oxygenate You Should Be Worrying About", *LUST Line Bulletin 34*. Pages 18-20.

Permits / Applications:

1. NJPDES/DSW General Petroleum Product Cleanup (GPPC) Permit No. NJ0102709 issued October 31, 2003 and effective December 1, 2003.
2. NJPDES/DSW General Petroleum Product Cleanup (GPPC) Permit No. NJ0102709 issued October 29, 1998 and effective December 1, 1998.
3. NJPDES/DSW General Groundwater Fuel Cleanup (GFC) Permit No. NJ0070122 issued September 26, 1988 and effective November 1, 1988.

Footnotes:

[A] Denotes items that may be found in the NJPDES/DSW Administrative Record Library located in the NJDEP Central File Room, 401 East State Street, Trenton, New Jersey.

[B] Denotes items that may be found on the New Jersey Department of Environmental Protection (NJDEP) website located at "http://www.state.nj.us/dep/".

[C] Denotes items that may be found on the United States Environmental Protection Agency (USEPA) website at "http://www.epa.gov/".