PERMIT MODIFICATION FACT SHEET

** Refer to the Fact Sheet for WPDES Permit No. WI-0046531-06-0 for complete permit information **

General Information

Permit Number:	WI-0046531-06-1
Permit Name:	Petroleum Contaminated Water
Permittee:	Point source dischargers in the state of Wisconsin
Discharge Location:	Land surface or surface water in the state of Wisconsin
Receiving Water:	Surface water or groundwater in the state of Wisconsin

General Permit Description

This general permit is applicable to point source discharges of wastewater that have been contaminated with petroleum. Petroleum products may include, but are not limited to: gasoline, diesel fuel, aircraft fuel, jet fuel, heating oils, and lubrication oils. The discharge from activities covered under the permit will be intermittent in nature, dependent on storm water runoff or the amount of condensation formed within storage tanks. Flow volumes may range from 1,000 to 20,000 gallons per day. Many of the facilities covered under this general permit will also likely need coverage under a WPDES storm water permit, because these same industrial activities are subject to the storm water discharge requirements in ch. NR 216, Wis. Adm. Code. Four types of water contaminated by petroleum products may be discharged under this permit as defined below:

(1) Petroleum Contact Water (excluding tank bottom water): The transfer of petroleum products and the general operation and maintenance of vehicles and equipment at these facilities typically result in small spills and drippings of petroleum products that may commingle with storm water runoff or other sources of water. In addition, storm water that falls within containment areas storing fuel may become contaminated with petroleum products. These contaminated waters contain free phase (not emulsified or dissolved) petroleum products and may be covered by this general permit. Examples of facilities that may be regulated by this general permit include vehicular fueling stations, railroad yards, airports, petroleum tank farm operations, bus parking areas, garbage truck parking areas, wastewater that has been treated with an oil/water separator, or similar facilities.

A standard treatment system for the removal of free phase petroleum products consists of an oil/water separator. The permittee may use an oil/water separator or other similar device to treat this category of wastewater. Oil/water separators provides simple gravity separation of the oil from collected water. A few important common features of oil/water separators include: a small inlet under-flow baffle extending a short distance under the operating level of the wastewater for distribution of the incoming flow across the cross section of the separator, a large outlet under-flow baffle that extends far below the water surface to prevent separated oil from discharging, and a method for removal of the collected oil from the surface of the water. Some of the methods for removal of petroleum products from the oil/water separator include: rope skimmers, paddle skimmers, semi-permeable membranes, absorbents, and manual removal. Oil/water separator equipment may also include: extensive baffle systems, inclined plates, coalescing media, and air flotation systems. The separated petroleum products are usually stored in slop tanks for recycling. Activities that use treatment equipment for other purposes may not be able to meet permit requirements. For example, if an oil/water separator is used to store waste oils and spills, any contact water entering the oil/water separator could result in the discharge of oil and grease in exceedance of permit limits.

(2) Tank Bottom Water: Water collects in petroleum storage tanks due to condensation and infiltration of rain and snow. The volume of water collected in a tank over time depends on the tank design, precipitation, ambient temperature, and other factors. The wastewater drained from the storage tanks requires collection and treatment prior to discharge. The largest volumes of wastewaters will come from the bulk petroleum storage tank facilities; these are the facilities anticipated to be regulated by this general permit. However, this general permit may be appropriate for regulating other facilities that store petroleum products and drain the water from the storage tanks.

When water is removed from a tank, it has usually been in contact with petroleum products for an extended period of time. The waste removed from the bottom of the tanks (tank bottoms) contains a limited, and usually small, amount of free product, water saturated with dissolved petroleum products, and sometimes water with emulsified petroleum products. The water removed from petroleum storage tanks requires more extensive treatment than other wastewaters contaminated with petroleum products because of the dissolved and emulsified petroleum products. Commonly, oil/water separators are used as pretreatment to remove free product from the wastewater. Treatment for removal of dissolved petroleum products may include: air stripping, activated carbon, activated clays, dissolved air floatation (DAF) and or distillation. Activated clays or carbon units are used to remove contaminants from water resulting from contact with the heavier end hydrocarbons. To protect against contaminants breaking through carbon or clay units, two units are required in series when this type of treatment is used. The activated clays and carbon will remove insoluble organics and color. Hydrocarbons are adsorbed in the following order: unsaturates, aromatics, naphthalene, and paraffins. In each series, the high molecular weight hydrocarbons are adsorbed more readily. Resinous and asphaltic substances are actively adsorbed. Since wastewater contaminated strictly with gasoline mostly contains low molecular weight, saturated, paraffin hydrocarbons, these wastewaters are usually not treated by activated clay or carbon filters; rather air stripping is used to volatilize contaminants from the water. Treatment for removal of emulsified petroleum products may include thermal or chemical treatment.

(3) Scrap and Waste Storage Area Oily Water: Storage areas for scrap and waste materials, especially scrap metal, may generate an "oily wastewater" from storm water contacting the material during storage. This petroleum contaminated storm water may not be discharged to waters of the state unless it is treated and complies with the treatment technology based effluent limits contained in this permit. This contaminated wastewater may contain a combination of free product and dissolved petroleum products, depending upon the exposure time.

This category of wastewater will contain oil and grease, and dissolved or emulsified petroleum products that may not be able to be removed by an oil/water separator. Methods for removing dissolved or emulsified petroleum products from water would be similar to the tank bottom water described above.

Facilities in the business of recycling of scrap and waste materials are typically covered under one of two storm water permits, either the "Recycling of Scrap and Waste Materials" General Permit WI-S058831, or the "Dismantling of Vehicles for Parts Selling and Salvage" General Permit WI-S059145. When treatment of the "oily wastewater" is necessary, because best management practices cannot control the petroleum product contamination, the facility must obtain coverage under this permit to discharge from the treatment system.

(4) Secondary Containment Water: The EPA specifies under 40 CFR 264.193(b) that secondary containment systems are required to prevent any migration of wastes or accumulated liquid out of the system to the soil, ground water or surface water during the use of the tank system. Minimum requirements of how the system must be constructed are listed in 40 CFR 264.193(c). Wastewater collected in secondary containment structure at petroleum bulk stations, terminals, or tank farms is normally clean storm water and may discharge untreated. If oil sheen is present or monitoring indicates contamination, this water must be treated before discharging.

1 Applicability Criteria

Changes from Previous Permit

No changes were made to Section 1 for this permit modification.

2 Obtaining Permit Coverage

Changes from Previous Permit

No changes were made to Section 2 for this permit modification.

3 Surface Water Discharge Requirements

Sampling Point(s)

The discharge(s) shall be limited to the waste type(s) designated for the listed sampling point(s).

Sampling Point Designation	
Sampling Point Number	**Sampling Point Location, WasteType/Sample Contents and Treatment Description (as applicable)**
001	**Petroleum Contact Water:** Storm water runoff or other water that contacts petroleum products and becomes contaminated. An oil/water separator is the typical treatment necessary. Samples shall be taken following treatment and prior to discharge to surface water via Outfall 001. The samples taken shall be representative of the discharge that consists solely of the treated effluent before mixing with any other water.
002	**Tank Bottom Water:** Water that collects in the bottom of petroleum storage tanks that contains dissolved or emulsified petroleum products. An oil/water separator may provide pretreatment to remove free product, followed by advanced treatment processes to remove dissolved petroleum products. Samples shall be taken following treatment and prior to discharge to surface water via Outfall 002. The samples taken shall be representative of the discharge that consists solely of the treated effluent before mixing with any other water.
003	**Scrap and Waste Storage Area Oily Water:** Storm water runoff from storage areas for scrap and waste materials such as salvage yards contain free product and dissolved or emulsified petroleum products that is collected and discharged to surface water. An oil/water separator may provide adequate treatment, but additional advanced treatment processes to remove dissolved substances may be necessary. Samples shall be taken following treatment and prior to discharge to surface water via Outfall 003. The samples taken shall be representative of the discharge that consists solely of the treated effluent before mixing with any other water.
004	**Secondary Containment Water:** Water that collects in the secondary containment structures, which surround petroleum storage tanks to capture spills. It may be discharged without treatment if it is uncontaminated. An oil/water separator may provide adequate treatment, but additional advanced treatment processes to remove dissolved substances may be necessary. Samples shall be taken following treatment and prior to discharge to surface water via Outfall 004. The samples taken shall be representative of the discharge that consists solely of the treated effluent before mixing with any other water.

Monitoring Requirements and Effluent Limitations

The permittee shall comply with the following monitoring requirements and limitations.

3.2.1 Sampling Point (Outfall) 001 – Petroleum Contact Water

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate – Daily Avg		gpd	**Monthly**	Estimated	
Oil & Grease (Hexane)	Daily Max	15 mg/L	Monthly	Grab	
pH	Daily Min	6.0 su	Monthly	Grab	

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
pH	Daily Max	9.0 su	Monthly	Grab	
BOD_5, Total	Monthly Avg	20 mg/L	Monthly	Grab	
BETX, Total	Monthly Avg	750 µg/L	Monthly	Grab	
PAHs	Monthly Avg	0.1 µg/L	Monthly	Grab	
Benzo(a)pyrene	Monthly Avg	0.1 µg/L	Monthly	Grab	
Naphthalene	Monthly Avg	70 µg/L	Monthly	Grab	

3.2.2 Sampling Point (Outfall) 002 – Tank Bottom Water

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate – Daily Avg		gpd	**Monthly**	Estimated	
Oil & Grease (Hexane)	Daily Max	15 mg/L	Monthly	Grab	
pH	Daily Min	6.0 su	Monthly	Grab	
pH	Daily Max	9.0 su	Monthly	Grab	
BOD_5, Total	Monthly Avg	20 mg/L	Monthly	Grab	
BETX, Total	Monthly Avg	750 µg/L	Monthly	Grab	
Benzene	Monthly Avg	50 µg/L	Monthly	Grab	
PAHs	Monthly Avg	0.1 µg/L	Monthly	Grab	
Benzo(a)pyrene	Monthly Avg	0.1 µg/L	Monthly	Grab	
Naphthalene	Monthly Avg	70 µg/L	Monthly	Grab	

3.2.3 Sampling Point (Outfall) 003 – Scrap and Waste Storage Area Oily Water

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate – Daily Avg		gpd	**Monthly**	Estimated	
Oil & Grease (Hexane)	Daily Max	15 mg/L	Monthly	Grab	
pH	Daily Min	6.0 su	Monthly	Grab	
pH	Daily Max	9.0 su	Monthly	Grab	
BOD_5, Total	Monthly Avg	20 mg/L	Monthly	Grab	
Suspended Solids, Total	Daily Max	40 mg/L	Monthly	Grab	
BETX, Total	Monthly Avg	750 µg/L	Monthly	Grab	

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Benzene	Monthly Avg	50 µg/L	Monthly	Grab	
PAHs	Monthly Avg	0.1 µg/L	Monthly	Grab	
Benzo(a)pyrene	Monthly Avg	0.1 µg/L	Monthly	Grab	
Naphthalene	Monthly Avg	70 µg/L	Monthly	Grab	

3.2.4 Sampling Point (Outfall) 004 – Secondary Containment Water

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate – Daily Avg		gpd	**Monthly**	Estimated	
Oil & Grease (Hexane)	Daily Max	15 mg/L	Monthly	Grab	
pH	Daily Min	6.0 su	Monthly	Grab	
pH	Daily Max	9.0 su	Monthly	Grab	
BOD_5, Total	Monthly Avg	20 mg/L	Monthly	Grab	
BETX, Total	Monthly Avg	750 µg/L	Monthly	Grab	
PAHs	Monthly Avg	0.1 µg/L	Monthly	Grab	
Benzo(a)pyrene	Monthly Avg	0.1 µg/L	Monthly	Grab	
Naphthalene	Monthly Avg	70 µg/L	Monthly	Grab	

Changes from Previous Permit

The parameter type for flow rate has been changed from “Flow Rate” to “Flow Rate – Daily Avg”.

The sample frequency for flow rate have been changed from “Daily” to “Monthly”.

The Department has added Section 3.4 to explain ways to estimate or approximate the flow rate.

Explanation of Monitoring Requirements and Effluent Limitations

Flow Rate: Many of the facilities covered under this general permit are unmanned or isolated, so obtaining an estimate of the daily flow rate is not practical. Therefore, the department has changed the sample frequency for flow rate to monthly or per sampling event. This allows for an operator to take one reading of flow when the operator performs monthly or other reduced frequency sampling for all other parameters.

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4 Groundwater Discharge Requirements.

Sampling Point(s)

The discharge(s) shall be limited to the waste type(s) designated for the listed sampling point(s).

Sampling Point Designation	
Sampling Point Number	**Sampling Point Location, WasteType/Sample Contents and Treatment Description (as applicable)**
005	**Petroleum Contact Water:** Storm water runoff or other water that contacts petroleum products and becomes contaminated. An oil/water separator is the typical treatment necessary. Samples shall be taken following treatment and prior to discharge to groundwater via Outfall 005. The samples taken shall be representative of the discharge that consists solely of the treated effluent before mixing with any other water.
006	**Tank Bottom Water:** Water that collects in the bottom of petroleum storage tanks that contains dissolved or emulsified petroleum products. An oil/water separator may provide pretreatment to remove free product, followed by advanced treatment processes to remove dissolved petroleum products. Samples shall be taken following treatment and prior to discharge to groundwater vial Outfall 006. The samples taken shall be representative of the discharge that consists solely of the treated effluent before mixing with any other water.
007	**Scrap and Waste Storage Area Oily Water:** Storm water runoff from storage areas for scrap and waste materials such as salvage yards contain free product and dissolved or emulsified petroleum products that is collected. An oil/water separator may provide adequate treatment, but additional advanced treatment processes to remove dissolved substances may be necessary. Samples shall be taken following treatment and prior to discharge to groundwater via Outfall 007. The samples taken shall be representative of the discharge that consists solely of the treated effluent before mixing with any other water.
008	**Secondary Containment Water:** Water that collects in the secondary containment structures, which surrounds petroleum storage tanks to capture spills. It may be discharged without treatment if it's uncontaminated. An oil/water separator may provide adequate treatment, but additional advanced treatment processes to remove dissolved substances may be necessary. Samples shall be taken following treatment and prior to discharge to groundwater via Outfall 008. The samples taken shall be representative of the discharge that consists solely of the treated effluent before mixing with any other water.

Monitoring Requirements and Effluent Limitations

The permittee shall comply with the following monitoring requirements and limitations.

4.2.1 Sampling Point (Outfall) 005 – Petroleum Contact Water

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate – Daily Avg		gpd	**Monthly**	Estimated	
Oil & Grease (Hexane)	Daily Max	15 mg/L	Monthly	Grab	
BETX, Total	Monthly Avg	750 µg/L	Monthly	Grab	
PAHs	Monthly Avg	0.1 µg/L	Monthly	Grab	

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Benzo(a)pyrene	Monthly Avg	0.02 µg/L	Monthly	Grab	
Naphthalene	Monthly Avg	10 µg/L	Monthly	Grab	

4.2.2 Sampling Point (Outfall) 006 – Tank Bottom Water

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate – Daily Avg		gpd	**Monthly**	Estimated	
Oil & Grease (Hexane)	Daily Max	15 mg/L	Monthly	Grab	
BETX, Total	Monthly Avg	750 µg/L	Monthly	Grab	
Benzene	Monthly Avg	0.5 µg/L	Monthly	Grab	
Ethlybenzene	Monthly Avg	140 µg/L	Monthly	Grab	
Toluene	Monthly Avg	160 µg/L	Monthly	Grab	
PAHs	Monthly Avg	0.1 µg/L	Monthly	Grab	
Benzo(a)pyrene	Monthly Avg	0.02 µg/L	Monthly	Grab	
Naphthalene	Monthly Avg	10 µg/L	Monthly	Grab	

4.2.3 Sampling Point (Outfall) 007 – Scrap and Waste Storage Area Oily Water

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate – Daily Avg		gpd	**Monthly**	Estimated	
Oil & Grease (Hexane)	Daily Max	15 mg/L	Monthly	Grab	
BETX, Total	Monthly Avg	750 µg/L	Monthly	Grab	
Benzene	Monthly Avg	0.5 µg/L	Monthly	Grab	
Ethlybenzene	Monthly Avg	140 µg/L	Monthly	Grab	
Toluene	Monthly Avg	160 µg/L	Monthly	Grab	
PAHs	Monthly Avg	0.1 µg/L	Monthly	Grab	
Benzo(a)pyrene	Monthly Avg	0.02 µg/L	Monthly	Grab	
Naphthalene	Monthly Avg	10 µg/L	Monthly	Grab	

4.2.4 Sampling Point (Outfall) 008 – Secondary Containment Water

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate – Daily Avg		gpd	**Monthly**	Estimated	
Oil & Grease (Hexane)	Daily Max	15 mg/L	Monthly	Grab	
BETX, Total	Monthly Avg	750 µg/L	Monthly	Grab	
PAHs	Monthly Avg	0.1 µg/L	Monthly	Grab	
Benzo(a)pyrene	Monthly Avg	0.02 µg/L	Monthly	Grab	
Naphthalene	Monthly Avg	10 µg/L	Monthly	Grab	

Changes from Previous Permit

The parameter type for flow rate has been changed from "Flow Rate" to "Flow Rate – Daily Avg".

The sample frequencies for flow rate have been changed from "Daily" to "Monthly".

The Department has added Section 4.4 to explain ways to estimate or approximate the flow rate.

Explanation of Monitoring Requirements and Effluent Limitations

Flow Rate: Many of the facilities covered under this general permit are unmanned or isolated, so obtaining an estimate of the daily flow rate is not practical. Therefore, the department has changed the sample frequency for flow rate to monthly or per sampling event. This allows for an operator to take one reading of flow when the operator performs monthly or other reduced frequency sampling for all other parameters.

5 Secondary Containment Water

Changes from Previous Permit

No changes were made to Section 5 for this permit modification.

6 Standard Requirements

Changes from Previous Permit

Changes to the standard requirements section include:

- SR Section 6.3.7: The Department has changed the requirement to obtaining an operator certification for an oil/water separator. If wastewater treatment consists solely of an oil/water separator, operators of these types of systems are excluded from the need of operator certification under ch. NR 114, subch. IV, Wis. Adm. Code. The Department does not consider an oil/water separator under the definition of wastewater treatment facility in s. NR 114.52(22), Wis. Adm. Code.

7 Summary of Reports Due

No changes were made to Section 7 for this permit modification.

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