

CONCRETE PRODUCTS OPERATIONS - FACT SHEET

WPDES Permit No. WI-0046507-5

March 2009

GENERAL PERMIT COVERAGE

General Permits (GP) are designed to cover discharges from a class of facilities or industries that are similar in nature. When a GP is issued, all facilities meeting its requirements are covered by the GP. GPs currently exist for groundwater remediations, quarrying operations, swimming pools and numerous other types of facilities. For facilities that are eligible for coverage under a GP, the Department sends a cover letter and a copy of the permit to the facility. The cover letter includes the Department's determination that a facility's discharge is covered under the GP.

MORE THAN ONE GP CAN APPLY

A facility may need to be covered under more than one GP, depending on the different types of wastestreams that a facility discharges. For example, if a concrete products operation has a separate discharge of noncontact cooling water, then the facility would need to be covered under two general permits: the Noncontact Cooling Water general permit and the Concrete Products Operations general permit. However, if the noncontact cooling water combines with the process wastewater prior to discharge, then the facility needs only to be covered under the Concrete Products Operation general permit.

A facility that requires an individual permit for any part of its discharge shall have all of its discharges covered under an individual permit. The only exception would be for a facility that commences a discharge that is eligible for a GP, after a specific permit has already been issued or reissued for the facility. For example, a facility that currently has an individual permit may begin a process that results in the discharge of noncontact cooling water. The noncontact cooling water discharge can be covered under a GP, as long as it meets the requirements of the GP, until the individual permit can be reissued or modified to include the noncontact cooling water discharge.

GENERAL DESCRIPTION OF OPERATIONS COVERED UNDER THIS GP

This general permit is intended to cover process wastewater discharges from concrete product operations. This general permit does not include storm water requirements. In order to meet the requirement of ch. NR 216, Wis. Adm. Code, a facility must obtain a separate storm water permit.

Facilities eligible for the Concrete Products Operations GP are listed below with their SIC code designations. Not all wastewater discharges from these operations are authorized by this GP. An individual WPDES permit may be necessary for any given operation where it is deemed necessary by the Department, such as a discharge from a facility that contains pollutants of concern not appropriately regulated by this permit.

Concrete Block and Brick (3271)

Concrete Products, N.E.C. (Not Elsewhere Covered) (3272)

Ready-Mix Concrete (3273)

The following is a description of each category.

A. Concrete Block and Brick

Production of concrete block and brick includes mixing, forming, and curing. The mixing operation usually takes place in a rotary mixer. Aggregate, cement, and water are weighed and mixed in batches of about four cubic yards (typical size). The type of aggregate being used will determine if a lightweight or heavyweight product is produced. Color may be added to the mix to produce decorative block. The mixture is formed into blocks by an automatic block molding machine. These machines will either ram, press, or vibrate the material into the desired shape. Following forming, the material is stacked onto iron framework curing cars. There are three basic methods of curing; 1) atmospheric curing, 2) low pressure steam curing, and 3) autoclave or high pressure steam curing.

Atmospheric curing produces a lower strength block than the other two methods of curing. Atmospheric curing is curing by ambient heat, ambient humidity, and heat of hydration. Atmospheric curing also includes curing within enclosures at ambient conditions. Curing usually takes place for about four hours. There are no additional wastewaters produced from this curing process.

Low pressure steam curing produces a structurally high-strength block in a reasonable time period. Low pressure steam curing is curing with steam at pressures less than 150 psi. The curing cars are placed in a chamber or kiln where steam is injected through perforated pipes for about 8 to 10 hours. Steam condensate is discharged from this operation. Typically the steam is produced in a boiler which requires periodic blowdown.

The autoclave or high pressure steam curing processes produces a higher strength block with less shrinkage in less time than the low pressure steam curing process. For this process the curing cars are placed in a large horizontal, cylindrically shaped autoclave. High pressure steam (greater than 150 psi) is injected for up to eight hours. After curing the steam is released to the atmosphere. Alternately, steam can be produced using a hot oil convection method. For this method water is placed in a trough within the autoclave and hot oil heats the water into steam. Following curing, the autoclave is allowed to cool and a portion of the steam condenses back into the trough. Periodically the trough water is discharged because the alkalinity, due to the pickup of calcium oxide, makes the water corrosive to the steel racks of the curing cars. Wastewater discharges from the autoclave curing process can include boiler blowdown, autoclave blowdown condensate, and autoclave purge.

Usually the greatest source of wastewater discharge is equipment wash-off, including: delivery trucks, conveyor belts, transport buckets, and central mixers and forms. Generally only suspended solids are a problem in this wastewater and can be handled with simple settling. Other rather innocuous sources of wastewater include: accidental spill wash-down, storm water runoff, and noncontact cooling (NCCW) of bearings and compressors. Spill wash-down and storm water runoff can be handled with other washwaters. The NCCW (and other clean wastewater) can be used for mixing water makeup, aggregate moisture control, and yard dust control. Most facilities will use either low or high pressure steam curing. Wastewaters resulting from low pressure steam curing include: ion exchange regeneration waste, boiler blowdown, and steam condensate. Wastewaters resulting from high pressure steam (autoclave) curing depends on the method of steam production. When the hot oil convection process is used the wastewater discharge includes: some autoclave blowdown condensate, autoclave purge, and ion exchange regeneration waste. When an external boiler is used the wastewater discharge includes: autoclave

blowdown condensate, boiler blowdown, and ion exchange waste. The steam that comes in contact with the product will contain suspended solids, COD, oil and grease, and have a pH greater than 9.

B. Concrete Products N.E.C. (3272)

Concrete Products N.E.C. (Not Elsewhere Covered) include concrete pipe, precast concrete products, and prestressed concrete products.

Concrete Pipe - Concrete pipe is produced by the following three basic production methods: 1) vertical packerhead (tamping) method, 2) vertical cast method, and 3) spin casting production method. The vertical packerhead method is used to produce pipe up to five feet in diameter. A moist concrete mixture is compacted and vibrated into a steel form by a machine called a packerhead. The vertical cast method is used to produce reinforced pipe. Due to labor cost and time, this method is generally limited to production of reinforced pipe over five feet in diameter. A wet concrete mixture from a central mixture is transported by buckets and poured into a vertical steel form containing a reinforcing cage. The steel forms are stripped from the pipe after the concrete sets. The spin casting production method is used to produce reinforced pipe up to four feet in diameter. The form containing a reinforcing cage is placed horizontally and rotated at a high rate, while concrete is added by a reciprocating nozzle. During rotation the concrete dewateres and becomes more dense. The inner surface of the pipe is finished by a mechanical roller. Reinforced concrete pressure pipe, produced by spin casting, uses a hydraulically tested sheet steel cylinder form that remains as part of the finished pipe.

All concrete pipe is cured at ambient conditions or spray cured, until it reaches a certain green strength, followed by low pressure steam curing in a kiln or other similar chamber. For pipe produced by the packerhead method, the forms are usually removed before steam curing, while for the vertical cast and spin casting methods the forms usually remain on the pipe during curing. In all cases, except reinforced concrete pressure pipe, a form release oil is used. In the production of reinforced concrete pressure pipe additional processes include: hydraulic testing of the cylinder, wrapping the cured pipe with high strength steel wire, and coating the steel wire wrap with concrete grout.

Precast Concrete Products - Precast concrete products are simply produced by pouring the concrete mixture into steel forms. The product is cured either at ambient conditions, with low pressure steam, or with a water spray. Curing takes place in two steps, first with the form on then off. The second curing step usually takes place at ambient conditions. For the most common production method of reinforced architectural wall panels with an exposed aggregate surface, a retarder is spread in the form bottom. When removed, the surface is washed with a weak acid solution, sandblasted, or washed with high pressure water to clean away the unset surface cement and expose the coarse aggregate. The Department has determined that retarders have an extremely high oxygen demand in addition to high levels of hydrocarbons like toluene, so retarder wastewater is not suitable for discharge without extensive treatment. Retarder wastewater cannot be discharged under this general permit.

Prestressed Concrete Products - Prestressed concrete products are produced in similar fashion as precast reinforced concrete products with the substitution of steel cables under tension instead of steel rods for reinforcement. Prestressed concrete products may be either pretensioned or post-tensioned.

The wastewater discharge from concrete products N.E.C. includes transport bucket and central mixer washout, form wash-off, condensate from steam curing, spray curing wastewater, surface finishing water,

spin cast wash-water, pre-wetting of imbedded pressure pipe, storm water, boiler blowdown, NCCW from bearings and compressors, and miscellaneous equipment wash-off. Pollutants in the wastewater discharge includes suspended solids, oil and grease, pH, and COD.

C. Ready-Mix Concrete (3273)

Ready-mix concrete is basically produced by two methods, batch mixing and central mixing. For batch mixing, the dry aggregate and dry cement are weighed and added to a mixer truck along with the appropriate amount of water. The concrete is mixed in the truck on the way to the job. For central mixing, the concrete is prepared in a central mixer, then transferred to a mixer or agitator truck for delivery.

Ready-mix concrete plants are of three general types: permanent, portable, or mobile. A permanent plant usually produces various types of concrete for numerous customers. The permanent plant may operate either as a dry batch mixing plant or central mixing plant. Approximately three-fourths of the permanent plants operate with batch mixing while the other one-fourth operate with central mixers. Portable plants are used on large highway and airport paving jobs. These plants usually operate with central mixers. Mobile plants have trucks that transport the aggregate and cement dry. At the job site, the material is custom measured and mixed. Mobile plants are primarily limited to small jobs where returning to the base plant is not necessary after each job.

In addition to aggregate and cement, ready-mix concrete typically contains admixtures and entrained air. Entrained air improves resistance to freezing and thawing. Admixtures include air entraining agents, reducing agents, retarders, accelerators, and others.

Air entraining agents include the following:

- (1) a saponified natural resin (soap) or stabilized wood resin derived from pulp and paper production, such as Vinsol,
- (2) a combination of a primary alkylolamide (i.e. ethanolamine) plus alkyl aryl sulfonate,
- (3) a saponin or keratin compound,
- (4) a triethanolamine salt of a sulfonated hydrocarbon or fatty acid glyceride,
- (5) vinyl acetate,
- (6) styrene copolymer of vinyl acetate,
- (7) triethanolamine and a calcium salt of modified lignosulfonic acid (this material is interground with Portland cement during manufacturing).

Water reducing agents, used to reduce the amount of mixing water required, include lignosulfonic acids and their salts. Retarding admixtures, used to increase the setting time, include hydroxylated carboxylic acids and their salts. Most retarders also act as water reducers, and therefore, are frequently referred to as

water-reducing retarders. Accelerating admixtures, used to accelerate setting and increase strength, include calcium chloride.

The wastewater discharge from ready-mix concrete plants includes truck washout, truck wash-off, central mixer washout, yard runoff, boiler blowdown, and NCCW from bearings and compressors. Pollutants in the wastewater discharge include suspended solids, pH, and COD.

RATIONALE OF SPECIFIC PERMIT REQUIREMENTS

A. APPLICABILITY CRITERIA

(1) Activities Covered

This permit is applicable to all concrete product operations and associated process wastewater discharges that are able to meet the applicability criteria of the permit. This would include regulation of the solid from concrete cutting operations conducted at the facility.

(2) Activities Not Covered

Ineligible Process Wastewaters

The following concrete operation discharges are not eligible for coverage under this general permit:

- Wastewater from the manufacturing of cement by the kiln dust process.
- Wash water containing halogenated hydrocarbons from degreasing agents..
- Wastewater from the washing of a precast concrete surface treated with retarder..

Facilities with these processes must haul that wastewater to a wastewater treatment facility capable of adequate treatment, or must install adequate treatment and seek coverage from the Department under an individual permit.

Biocide Water Treatment Chemicals Added by the Concrete Operation

Biocides are usually toxic and the discharge of a biocide above a level of concern would typically require regulation by an individual permit. A concrete products operation should not expect to be able to discharge wastewater that contains a biocidal water treatment additive under this general permit. However, water provided by a municipal water supply usually contains certain chlorine compounds. The levels of these chlorine compounds in the municipal water supply are usually low and the chlorine will dissipate during use of the water in the concrete products operation. Therefore, this condition of the general permit allows the discharge of water from a municipal water supply as long as biocides are not added by the concrete operation.

Wetlands

Discharges covered under this permit shall meet the wetland protection requirements of ch. NR 103, Wis. Adm. Code, and shall not significantly adversely impact wetlands. For discharges that impact wetlands, a facility will need to submit information that allows the Department to determine if a discharge meets code requirements.

Outstanding And Exceptional Resource Waters

Discharges to outstanding and exceptional resource waters are not authorized by this permit. Regulation of discharges to outstanding and exceptional resource waters requires an individual permit which provides the oversight and discharge limitations necessary to protect these types of receiving waters.

Surface Water Standards, Antidegradation, and Groundwater Standards

The discharges from facilities eligible for this permit are not expected to exceed any surface water or groundwater standards. Facilities with discharges that have a reasonable potential to violate surface water quality standards or groundwater quality standards would normally require the increased oversight and monitoring found in a site-specific individual permit. If a concrete operation would proposed a new or significantly increased pollutant discharge, evaluation of the proposed increase would begin via notification to the Department in a new request for general permit coverage or via notification of a planned change under standard requirement 5.6 of the permit. Upon notification of the proposed new or increased discharge, the Department would evaluate the proposed new or increased pollutant discharge amount to insure the antidegradation requirements of NR 207 are met. In a case where significant lowering of water quality is proposed, the Department may require the permittee to evaluate a variety of options to insure there is no significant lowering of water quality occurs in the receiving water, such as improved wastewater treatment effectiveness, wastewater reuse, directing the discharge to a seepage area, an alternate discharge location, process changes to reduce the pollutant discharge level, pollutant prevention activities, etc.

- (3) Many nonmetallic mining operations include concrete products operations at the site. In these cases, the concrete products operation may be covered under the nonmetallic mining operation general permit (WPDES Permit No. WI-0046515-5). Furthermore, since the storm water control requirements will now apply to the combined nonmetallic mining and concrete operations, coverage of the concrete operation under its associated storm water general permit will cease.

B. REQUIREMENTS FOR ALL DISCHARGES

The following requirements apply to all facilities covered by this permit. Facilities discharging to either groundwaters or surface waters are required to meet the following requirements.

- (1) Dikes and Berms

Leakage through or over dikes or berms may cause sloughing or washouts; the integrity of the containment area must be maintained.

- (2) Adequate Design

Chapter NR 205 identifies the design rainfall amount and probable intensity of 10-year and 25-year, 24-hour rainfall events for locations in Wisconsin. For facilities where a wastewater

disposal or treatment facility is needed to meet permit requirements, this permit only requires that treatment systems be capable of handling the water resulting from a storm having a 10-year, 24-hour event frequency which falls within or flows into the area of the treatment/disposal system. This design parameter is common to industrial treatment facilities in Wisconsin. Treatment systems must have sufficient capacity to allow adequate retention time for settling. Precipitation must be taken into account for exposed settling systems.

(3) Requirements for Discharges to 303(d) Listed Impaired Surface Waters and TMDL allocations

If a facility discharges a pollutant of concern to an 303(d) listed impaired water body, the pollutant discharge needs to be minimized as much as possible as part of an overall state effort to reduce the pollutant loading to the water body. The 303(d) list of Wisconsin impaired water bodies may be identified by contacting the Department or by searching for the 303(d) list on the Department's Internet site. The current link to the 303(d) list is: <http://dnr.wi.gov/org/water/wm/wqs/303d/>. For an existing concrete products operation, the most common pollutant of concern may be a total suspended solids (TSS) discharge to a sediment impaired water body. The above Department internet page contains county based maps that show the location of Wisconsin waters impaired by excessive sediment/solids levels.

The permit requires that an annual check be conducted, by February 15th each calendar year, to determine whether the permittee discharges process wastewater to a section 303(d) listed impaired water body. If so, the permittee shall evaluate, within 180 days of the annual check, whether additional control measures and practices could be used to voluntarily minimize, with the goal of elimination, the discharge of pollutant(s) of concern that contribute to the impairment of the water body. The permittee should keep a record of the amount of pollutant discharge reduction that has been voluntarily achieved. The exact amount of pollutant reduction will be legally established in the State and Federal Approved Total Daily Maximum Load (TMDL) allocation established for the discharge.

Federal Statutes, 40 CFR 122.4, prohibit the issuance of a WPDES permit to a new source or new discharger that will contribute to a violation of a water quality standard in a 303(d) listed water. Also, an increased discharge of a pollutant of concern that would cause or contribute to a violation of a water quality standard in a 303(d) listed water is not to be allowed. Therefore, this general permit specifies that a permittee may not establish a new pollutant of concern discharge to a 303(d) listed impaired water body or significantly increase the discharge of a pollutant of concern to an impaired water body unless the new or increased discharge does not contribute to the receiving water impairment, or the new discharge is consistent with a Department finalized total maximum daily load (TMDL) allocation for the impaired water body. The general permit can not be used if this requirement is not met for a new discharge. For a new concrete products operation requesting coverage under this general permit, the Department will evaluate the proposed new pollutant discharge amount and receiving water to determine if the above requirement can be met. A variety of options may be available to insure any proposed new discharge does not contribute to the receiving water impairment such as on-site capture of the pollutant of concern, an alternate discharge location, wastewater reuse opportunities, directing the discharge to a seepage area, enhanced treatment options so the discharge would meet the water quality standard, etc.

If an existing concrete operation would proposed a significant increase in a pollutant of concern discharge to an impaired water body, evaluation of the proposed increase would begin via notification to the Department of a planned change under standard requirement 5.6 of the permit. Upon notification of the proposed increase, the Department would evaluate the proposed increased pollutant discharge amount and receiving water to determine if the above requirement can be met. A variety of options may be available to insure any proposed increased discharge does not contribute to the receiving water impairment such as on-site capture of the pollutant of concern, an alternate discharge location, wastewater reuse opportunities, directing the discharge to a seepage area, enhanced treatment options so the discharge would meet the water quality standard, etc.

The permit requires that a permittee conduct an annual check, by February 15th each calendar year, to determine whether its facility discharges process wastewater to a water body that has a State and Federal Approved TMDL. If so, the permittee would be required to assess whether the TMDL wasteload allocation for the facility's discharge is being met through the existing wastewater treatment controls or whether additional control measures are necessary. A proposed TMDL implementation plan would need to be submitted to the Department within 180 days of the TMDL annual check for any facilities regulated by State and Federal Approved TMDL. A permittee's assessment of whether a TMDL wasteload allocation can be met shall focus on the process wastewater treatment effectiveness and the adequacy of maintenance and implementation of any pollution prevention controls. Affected facilities are encouraged to implement any needed wastewater treatment system changes as soon as possible. However, compliance with the State and Federal Approved TMDL would not be legally required until the approved TMDL limits are included in a general or site-specific WPDES permit. The Department is not aware of any concrete product operation wastewater discharge to a State and Federal Approved TMDL allocation finalized prior to the effective date of this permit (April 1, 2009).

(4) Dust Suppression Control for Roads

Properly run dust suppression operations should not result in significant runoff from roadways that would result in erosion or overland flow that would impact area surface waters. For this reason, the permit does not require monitoring of dust suppression water.

(5) Water Treatment Additives

Water treatment additives can vary from innocuous to highly toxic. The permit allows the use of non-biocide compounds that are innocuous. Non-biocide water treatment additives are defined, for the purposes of this permit, as those additives which are primarily used to control corrosion or prevent deposition of scale, and which do not exhibit any residual toxic effects on receiving water. Facilities shall submit information regarding the toxicity of a water treatment additive, so the Department can determine if it is allowable and won't negatively impact aquatic life or groundwater. The Department shall also be informed when significant changes in additive use would raise the potential for negative impacts on aquatic life or human health. Facilities are required to maintain records of additive use for Department inspection. Recording additive use will provide documentation for the facility and the Department to verify that the wastewater additive is being used and discharged in accordance with the permit requirements.

(6) Monitoring Portable Operations

For portable operations, any required monitoring for flow, total suspended solids, oil and grease or pH may occur at any site where the unit is located during the specified sampling period. Samples shall be representative of the process wastewater discharge associated with operation of the portable unit.

(7) Monitoring Reports for Process Wastewaters

The permittee shall submit an annual report to the Department, by February 15th each year, that summarizes the monitoring information and shows all of the sample results for all discharges of process wastewater during the previous calendar year. A Department monitoring form may be used to submit the annual data, or an alternate report format may be used that clearly shows the data collected during the previous calendar year. The report may be submitted to the office identified in the document granting coverage under this permit or it may be submitted to the nearest Department of Natural Resources office. The operator of portable equipment groups specifically covered under this permit may submit the annual reporting information, including the site and county where the monitoring data was collected, to the Headquarters of the Department Region in which the portable operation was primarily operated.

C. ADDITIONAL REQUIREMENTS FOR DISCHARGES TO GROUNDWATER

A discharge to groundwater in Wisconsin includes wastewater infiltration from irrigation, drain fields, ditches, and ponds that may impact water beneath the ground surface.

Flow: A flow estimate means a reasonable approximation of flow based on any of the following: (a) water balance, (b) an uncalibrated weir, (c) calculations from the velocity and cross section of the discharge, (d) intake water meter readings where the intake, or a specific portion of it, is discharged, (e) discharge water meter readings, and (f) any of the more complex methods listed in section NR 218.05(1), Wis. Adm. Code. The Department may approve additional methods for estimating flow.

Oil and Grease: The oil and grease daily maximum effluent limit is 15 mg/l. The oil and grease limit is based on the ability of simple oil/water separator equipment to easily remove oil and grease from the discharge to concentrations below 15 mg/l. Oil and grease may be associated with these discharges as a result of machinery and equipment used in the operation of the facility. Ch. NR 219, Wis. Adm. Code specifies that the Freon Oil & Grease test method is no longer approved and shall not be used.

Water Treatment Additives: The facility shall keep a monthly record of the daily maximum and monthly average quantity of each additive used. This will provide the necessary information to the facility and the Department to determine if additive usage is remaining within Department approved levels.

Note: Since concrete product operations may not occur year round and may not have process wastewater discharges at every site, discharge monitoring is not required during sampling periods when a discharge does not occur at a given site or in association with a given portable operation. Obtaining a representative sample of the discharge means obtaining a sample that is typical of the discharge.

Table 1 - Discharge Limitations and Monitoring Requirements for Groundwater Discharges

- (1) Solids Removal
Occasional removal of solids from seepage areas is necessary to insure that these areas can continue to absorb wastewater. Solids in wastewater can cover soils and clog spaces between soil particles, resulting in decreased seepage capacity.
- (2) Sample Frequency for Flow
The sample frequency for flow shall be quarterly, except that the permittee shall monitor flow each month for 12 months starting the month following a recorded discharge flow value greater than 200,000 gal/day. These flow estimates would allow the facility and the Department to evaluate the potential for the discharge to impact groundwater.
- (3) Sample Frequency for Oil and Grease
Oil & grease shall be monitored annually, except that the oil & grease monitoring frequency shall be once each quarter for 4 calendar quarters starting the quarter following receipt of any sample result showing an oil & grease discharge above 15 mg/L. This increased monitoring frequency is independent of the Department's enforcement response to permit noncompliance. More frequent monitoring may be specified in an order or stipulation resulting from enforcement of permit noncompliance. For portable operations, any required monitoring for oil and grease may occur at any site where the unit is located during the specified sampling period. Samples shall be representative of the process wastewater (ie, washwater or cooling water) discharge associated with operation of the portable unit.
- (4) pH of Discharges to Seepage
Any concrete product wastewater with a pH outside the range of 6.0 to 9.0 s.u. (such as concrete block curing condensate or concrete truck washwater) shall not be discharged directly to groundwater, but shall be passed through a soil zone to moderate the pH or mixed with other process or rinse waters to bring the pH to within the range of 6.0 to 9.0 Standard Units before the wastewater mixes with groundwater.

D. ADDITIONAL REQUIREMENTS FOR DISCHARGES TO SURFACE WATERS

Surface water discharges include ditches, storm sewers and pipes that convey wastewater to creeks, streams, rivers and lakes in Wisconsin.

Flow: A flow estimate means a reasonable approximation of flow based on any of the following: (a) water balance, (b) an uncalibrated weir, (c) calculations from the velocity and cross section of the discharge, (d) intake water meter readings where the intake, or a specific portion of it, is discharged, (e) discharge water meter readings, and (f) any of the more complex methods listed in section NR 218.05(1), Wis. Adm. Code. The Department may approve additional methods for estimating flow.

pH: The pH is limited to the range of 6.0 to 9.0 standard units. This is consistent with the water quality based pH range for waters classified for fish and aquatic life. Any wastewater with a pH outside the range of 6 to 9 s.u. shall not be discharged directly to surface waters, but shall be mixed with other process wastewaters to bring the mixed water pH to within the 6 to 9 acceptable range.

Oil and Grease: The oil and grease daily maximum effluent limit is 15 mg/l. The oil and grease limit is based on the ability of simple oil/water separator equipment to easily remove oil and grease from the discharge to concentrations below 15 mg/l. Oil and grease may be associated with these discharges as result of machinery and equipment used in the operation of a facility. Ch. NR 219, Wis. Adm. Code specifies that the Freon Oil & Grease test method is no longer approved and shall not be used.

Water Treatment Additives: The facility shall keep a monthly record of the daily maximum and monthly average quantity of each additive used. This will provide the necessary information to the facility and the Department to determine if additive usage is remaining within Department approved levels.

Note: Since concrete product operations may not occur year round and may not have process wastewater discharges at every site, discharge monitoring is not required during sampling periods when a discharge does not occur at a given site or in association with a given portable operation. Obtaining a representative sample of the discharge means obtaining a sample that is typical of the discharge.

Table 2 - Discharge Limitations and Monitoring Requirements for Surface Water Discharges

- (1) Floating Solids and Foam
This is a Best Professional Judgment (BPJ) condition dating back to the Refuse Act Permit Program and the Corp of Engineer's River and Harbor Act of 1899. This condition is achievable by application of best practicable control technology.
- (2) Sample Frequency for Flow
The sample frequency for flow shall be quarterly, except that the permittee shall monitor flow each month for 12 months starting the month following a recorded discharge flow value greater than 200,000 gal/day. These flow estimates would allow the facility and the Department to evaluate the potential for the discharge to impact surface waters.
- (3) Suspended Solids Treatment and Solids Removal
Wastewater from operations covered by this permit are expected to contain suspended solids that must be removed prior to discharge to surface waters. For most of the operations, permit effluent limits for suspended solids are achievable through the use of simple gravity separation (settling) treatment technology. Over time, settling equipment fills up with settled solids, resulting in decreased volume and residence time for wastewater and ultimately, ineffective solids treatment.
- (4) Sample Frequency and Sample Type for Total Suspended Solids
Total suspended solids (TSS) shall be monitored with a grab sample each quarter, except that the TSS monitoring frequency shall be once each month for 12 months starting the month following receipt of a sample result showing a discharge TSS above 40 mg/L. When monthly sampling is required, a representative composite sample shall be created by combining at least 3 individual grab samples of equal volume, taken at approximately equal intervals over a 3 hour period. This

increased monitoring frequency is independent of the Department's enforcement response to permit noncompliance. More frequent monitoring or a different sample type may be specified in an order or stipulation resulting from enforcement of permit noncompliance.

(5) Sample Frequency for pH

The sample frequency for pH shall be quarterly, except that pH monitoring is reduced to annually if four consecutive quarterly samples are within the pH range of 6.7 to 8.3.

(6) Sampling for Oil and Grease

More frequent monitoring may be specified in an order or stipulation resulting from enforcement of permit noncompliance. For portable operations, any required monitoring for oil and grease may occur at any site where the unit is located during the specified sampling period. Samples shall be representative of the process wastewater (ie, washwater or cooling water) discharge associated with operation of the portable unit.

E. STANDARD REQUIREMENTS

The "Standard Requirements" are a group of requirements that apply to all dischargers and are included in the permit as information on the Department's rights to enter and inspect facilities, the permittee's responsibility to inform the Department of changes at a facility, sampling procedures and other general conditions typically associated with a WPDES general permit.

Respectfully submitted,



Jeffrey W. Brauer, Env. Engineer
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