



Environmental Management at Aggregate Operations

Waste water permits #3.01, 9/04

- Aggregate production is an important Minnesota industry, producing sand, gravel and crushed stone for construction projects and other uses throughout the state.
- The Minnesota aggregate industry recognizes the economic and public relations benefits of progressive environmental management.

This fact sheet summarizes pollution prevention opportunities and Minnesota Pollution Control Agency (MPCA) permitting requirements for aggregate operations. Some general information about permit programs administered by other agencies is also provided.

Environmental Review

If a new pit or quarry is started, or an existing one is expanded by 40 acres or more, and the pit will have a mean depth of at least 10 feet during its existence, the project needs to have an Environmental Assessment Worksheet prepared. If the new pit or expansion will cover at least 160 acres, mined to a mean depth of 10 feet or more, an Environmental Impact Statement is needed. For more information on this process, contact the Environmental Quality Board at (651) 296-8253, or visit their Web site at:

<http://www.eqb.state.mn.us/review.html>

Construction Storm Water

Construction storm water runoff at a new pit or quarry may require a construction storm water permit for the initial construction phases of operation. Construction activities, such as building roads, berms, containment devices, and grading at a new pit or quarry that involves one or more acres, may trigger the requirement to obtain a construction storm water permit, and to stabilize these initial disruptions before terminating the permit.

For more information on Construction Storm Water requirements and the publications available to help you comply, contact the MPCA Customer Assistance Center (CAC) or Small Business Assistance

Program (SBAP), or visit our Web site at: <http://www.pca.state.mn.us/water/stormwater/stormwater-c.html>

Industrial Storm Water and other Water Discharges

The aggregate industry deals with water throughout the construction season. To excavate gravel or rock, the water table may need to be lowered. Washing of sand, gravel or crushed stone may be needed to ensure it meets product specifications.

The following activities at aggregate operations require a water quality permit from the MPCA:

- Sand and gravel washing discharges that leave the mine or quarry pit, whether by gravity flow or pumping.

Often, operators can recycle their wash water and/or allow it to infiltrate the pit floor, and avoid the need for wash water overflows and other discharges. This may change their requirement to have a permit.

- Pumping or siphoning out a mine or quarry pit to create a dewatering discharge.

Good sump management to prevent accumulation of dirty water is important, particularly in quarry pits. Sometimes pit water can be reused in the plant, or for road dust control.

- The generation of wastewater by air emission control systems, particularly from the wet scrubbers used at some hot mix asphalt plants.

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- The discharge of any other water from the site.
- Storm water runoff from mine and quarry stockpiles and pit walls, as well as from equipment like rock crushers, hot mix asphalt, and concrete production plants.

A site with runoff needs to have a Pollution Prevention Plan implemented for the operations at that particular site. Good management practices such as vegetative buffers, detention ponds, covered bulk containers and hazardous material storage areas, as well as the skillful placement of stockpiles and equipment, can greatly improve storm water management and erosion control at aggregate sites.

To apply for Water Quality permit coverage for aggregate operations, use the “Water Quality Transmittal Form” and “Attachment for Construction Sand & Gravel, Rock Quarrying and Hot Mix Asphalt Production Facilities” attachment form. For more information on Water Quality permits and requirements, contact the CAC or SBAP, or visit our Web site at:

<http://www.pca.state.mn.us/water/permits/sandgravel.html>.

Fuel and Hazardous Materials Management

When equipment is refueled, maintained or repaired outside the shops, special care must be taken to prevent spills, and to quickly contain and collect accidental spills. The employees at each site should be trained under a spill control plan. Used oil, lubricants, antifreeze, paint, solvents, vehicle cleaning wastes, recovered freon, asbestos, PCBs and shop wastes should be properly contained, stored, and recycled or disposed of in compliance with MPCA requirements.

For more information on Hazardous Waste requirements and the publications available to help you comply, contact the CAC or SBAP, or visit our Web site at:

<http://www.pca.state.mn.us/waste/pubs/business.html>

Liquid (including fuel) storage tanks, whether aboveground or underground, need to have effective containment and may need to be approved by the MPCA.

For more information on tanks requirements and the publications available to help you comply, contact the

CAC or SBAP, or visit our Web site at:

<http://www.pca.state.mn.us/cleanup/tanks.html>

Air Quality Management

All facilities must meet minimum standards for dust and noise control. Facilities with crushing operations may have to meet additional federal standards for emissions of particulates from processing equipment. It is important to control dust throughout the facility, including at crushers, screens, conveyors and hoppers. Due to potential air quality problems, materials containing asbestos (which is generally found in old buildings, and has been used in older roads and concrete materials) must not be crushed.

The use of fuels, other volatile chemicals, and/or generators may also dictate additional air quality requirements. Depending on production capacity and processing equipment, an Air Emission Permit may be required.

For more information on Air Quality requirements and the publications available to help you comply, contact the CAC or SBAP, or visit our Web site at:

<http://www.pca.state.mn.us/air/pubs/index.html>

Solid Waste Management

Some aggregate operations store used asphalt and/or concrete, captured particulate emissions, or other demolition debris. The MPCA encourages recycling of these materials, and of scrap and trash materials, when possible. If this is not practical, used pavement must be disposed of in an approved sanitary or demolition debris landfill.

For more information on Solid Waste requirements and the publications available to help you comply, visit our Web site at:

<http://www.pca.state.mn.us/waste/pubs/solidwaste.html>, or call the MPCA at (651) 297-6300 or (800) 657-3864 to be connected to solid waste staff for your regional area.

Water Withdrawals

Surface or ground water withdrawals (such as for dewatering, washing, makeup water for scrubbers, roadbed preparation, dust control, irrigation) of more than ten thousand gallons/day or one million gallons/year require a DNR water appropriation permit. Re-use of dewatering and wash water is encouraged and may help eliminate the



need for a permit or reduce DNR water use fees. A DNR water appropriation permit is not required if the water is taken from a municipal or other source of water for which there is a valid appropriation permit.

For more information on water use permits, contact the Department of Natural Resources at (651) 297-2835, or visit their web site at: http://www.dnr.state.mn.us/waters/watermgmt_section/appropriations/index.html

Riprap and Discharge Outlets

Riprap installation for outflows to public waters does not require a DNR permit if installed according to the following requirements:

- a. The riprap consists of natural rock only.
- b. The riprap is sized according to the guidelines in practice 6.18 of the MPCA publication "Protecting water quality in urban areas". This publication is available on-line at: <http://www.pca.state.mn.us/water/pubs/sw-bmpmanual.html>
- c. The riprap conforms to the natural alignment of the shore or stream bank.
- d. No excavation occurs below the top of the stream bank or the ordinary high water level of a basin or wetland.
- e. The materials are placed less than 5 feet water ward of the ordinary high water mark.
- f. The minimum finished slope is no steeper than 3 feet horizontal to 1 foot vertical (3:1).
- g. No bank shaping or back sloping is required to achieve the 3:1 slope.
- h. The materials do not obstruct receiving water flow.
- i. The discharge is not directly to Lake Superior, DNR-designated trout waters, or a posted fish spawning area.

Trout waters are designated in Minn. R. 6264.0050, subp. 2 and 4; this list may be obtained from the DNR by calling (651) 296-3325. DNR Trout waters are also available on-line in the 'Special Waters Search' at <http://www.pca.state.mn.us/water/stormwater/stormwater-c.html> Information on DNR protected waters permits is available from the DNR at (651) 296-4800.

US Army Corps of Engineers

Activities that involve the discharge of dredged or fill material or excavation within waters and wetlands may require approval of the Corps of Engineers. Such activities

could include the construction of access roads or the creation of storage areas and building sites.

Also, activities related to the construction of pit dewatering outfall structures and the excavation of water detention/retention ponds within waters and wetlands may require Corps approval.

For more information on Corps of Engineers requirements, contact the St. Paul District Office at (651) 290-5375, or visit their web site at: <http://www.mvp.usace.army.mil/environment/>

Additional Information

If you have questions or would like more information, contact:

Environmental Quality Board

Environmental Review Process (651) 296-8253

Minnesota Pollution Control Agency

Customer Assistance Center (CAC) (651) 297-2274 or
..... (800) 646-6247

Small Business Assistance Program (SBAP)* (651) 282-6143 or
(800) 657-3938

- Construction Storm Water
- Industrial Storm Water
- Waste Water Permitting
- Storage Tanks
- Hazardous Waste Management
- Air Quality

Solid Waste Questions or Issues (651) 296-6300 or
..... (800) 657-3864

*Note that businesses with fewer than 100 employees company-wide can call our Small Business Assistance Program for free, nonregulatory, confidential environmental assistance.

Minnesota Department of Natural Resources

Water Use Permits (651) 297-2835
Protected Waters Permits (651) 296-4800
Trout Waters Information (651) 296-3325

US Army Corps of Engineers

Dredge, fill or excavation to waters/wetlands . (651) 290-5375