

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

STAFF REPORT FOR REGULAR MEETING OF MAY 13, 2005

Prepared on April 21, 2005

ITEM NO: 23

SUBJECT: Revised Waste Discharge Requirements for Davenport Cement Plant, RMC Pacific Materials, Santa Cruz County, Waste Discharge Requirements Order No. R3-2005-0038. (NPDES Permit No. CA 0048682)

KEY INFORMATION:

Treatment System Location:	Next to Davenport, Santa Cruz County
Discharge Type:	Industrial wastewater
Design Capacity:	0.4 million-gallons-per-day (MGD)
Average Flow:	0.143 MGD
Treatment:	Primary settling, pH control
Disposal:	Pacific Ocean
Reclamation:	None
Existing Orders:	NPDES Order No. 00-19

SUMMARY

RMC Pacific Materials, Davenport Cement Plant (hereafter Discharger) treats wastewater from its cement manufacturing plant (Plant) in Davenport. The Discharger adjusts pH and fluvic acid levels to ensure compliance with waste discharge requirements based on the Ocean Plan before discharging the wastewater to a pond and the Pacific Ocean. Proposed Waste Discharge Requirements (WDRs) Order No. R3-2005-0038 would renew the Discharger's NPDES Permit No. CA 0048682.

BACKGROUND

The Plant is on Highway 1 next to the community of Davenport. The Discharger submitted an application to renew its NPDES permit on October 22, 2004.

Wastewater characteristics. The discharge flowrate averages 0.143 MGD (annual average of 30-day monthly averages) but can increase to 0.4 MGD. Stormwater and groundwater, at flowrates that cannot be predicted or controlled, add to the Plant's discharge of non-contact cooling water. Runoff from excess dust control spray has

contributed up to 20,000 gpd to the discharge but improved plant operations have reduced this source.

The discharge comprises non-contact cooling water from compressors in the plant, stormwater runoff and groundwater. Leachate from the Active Cement Kiln Dust (CKD) pile has degraded the underlying groundwater, substantially increasing its pH to as much as 11.0. The groundwater reacts with natural organic substances in the soils, creating fluvic acid substances. The toxic fluvic acid substances have caused the discharge to exceed its chronic toxicity effluent limitation.

The Discharger stores iron ore, coal and other raw materials on the site. Rainfall may erode some stored material and unstable ground surfaces, and runoff can transport the sediment to Discharge No. 001. The Discharger pumps its sanitary wastewater for treatment at the Davenport Community Services District plant in Davenport.

Wastewater Treatment and Disposal.

Fluvic acid substances control. In 1997, in accordance with its NPDES permit, the Discharger

conducted a Toxicity Reduction Evaluation (TRE) to identify and eliminate the effluent's chronic toxicity to bivalves and mollusks. The TRE found fluvic acid substances caused the toxicity and electric conductivity (EC) correlates directly with the levels of chronic toxicity and fluvic acid substances. Therefore, when the effluent's EC rises to 1,500 μ mhos/cm, the Discharger, by means of an automatic controller, adds potable water to the discharge to reduce the EC, the concentration of fluvic acid substances, and effluent chronic toxicity.

To reduce effluent pH to compliance, the Discharger adds CO₂ from a dedicated facility to Discharge 001. A crude pond captures some stormwater runoff at the facility and provides some clarification before the wastewater enters the discharge pipeline. Stormwater program staff plans to require the Discharger to evaluate and upgrade this runoff collection/settling pond system.

A pipeline originating in the tunnel system underlying the plant carries the wastewater beneath Highway One to a pond, from where it discharges to the Pacific Ocean 200 feet downstream. Upstream from the pond, the Discharger samples the discharge between the point of discharge and the pond (Discharge No. 001). After transport from the Plant beneath Highway One, Discharge No. 003 empties into the ocean from the pipe's outlet in the cliff face. This discharge consists of non-contact cooling water and is currently routed to Discharge No. 001 to conserve water.

COMPLIANCE HISTORY

On April 20, 2004, the Discharger paid a \$3,000 penalty in accordance with the California Clean Water Enforcement and Pollution Prevention Act for a serious violation of the Total Suspended Solids effluent limitation. A May 5, 2004 staff inspection detected a solids violation, although its extent could not be determined. As reported in its June 23, 2004 response to the Executive Officer's May 21, 2004 Notice of Violation, the Discharger reduces effluent solids concentrations through plant sweeping and dust control programs. The Discharger's compliance continues to improve, as it has eliminated former tributyltin and chronic toxicity violations.

DISCUSSION

WASTE DISCHARGE REQUIREMENTS

The proposed Order adds superscripts to waste discharge requirements to identify their origin. The proposed Order includes requirements from the California Ocean Plan (*2001 Water Quality Control Plan for Ocean Waters of California*), the Basin Plan (*the Central Coast Region Water Quality Control Plan*), and federal regulations listed in 40CFR122 and 40CFR133. Requirements without superscripts are based on staff's professional judgment.

Discharge Prohibitions. The proposed Order's Prohibitions limit discharge to Discharges Nos. 001 and 003, and prohibit discharge except in accordance with the terms of the proposed Order.

California Ocean Plan Pollutants. In 2002, the Discharger analyzed its effluent for the pollutants listed in the California Toxics Rule and the Basin Plan, detecting nothing except some metals, which were at levels in compliance with effluent limitations. The Toxics Rule and Basin Plan list more pollutants than specified in the Ocean Plan, including more pesticides. Staff recommended the Discharger analyze for Toxics Rule pollutants because the Discharge 001 empties into a stream, albeit short and nameless. However, the existing and proposed Orders set effluent limitations and other specifications from the Ocean Plan because the discharge enters the Ocean within 200 feet of the point of discharge. In consideration of the minimum initial dilution ratio of seawater to effluent, estimated at 2:1, Effluent Limitation 2, Table B limits toxic pollutants, acute toxicity, and chronic toxicity to levels specified in the Ocean Plan.

Other Effluent Limitations. The proposed Order's Table A limits the discharge of the following pollutants: Biochemical Oxygen Demand (BOD), suspended and settleable solids, oil and grease, and pH. An effluent limitation requires the discharge to contain adequate dissolved oxygen. The effluent limitations also prohibit the discharge of materials that could cause a nuisance or impair beneficial uses, including floating matter or biostimulatory substances. Staff developed the limits based on the Basin Plan's requirements and professional judgment.

Receiving water limitations. The Proposed Order's receiving water limitations prohibit the discharge from excessively changing the Ocean's temperature, pH, and coloration, and from depleting the Ocean's oxygen. The limitations prohibit the discharge from causing the Ocean's ammonia to rise to toxic levels, turbidity to excessively increase, and nuisance algal growth. Acting with the proposed effluent limitations, the receiving water limitations comprehensively protect the Ocean's beneficial uses.

Provisions. The proposed Order includes the usual Provisions rescinding the existing Order and requiring the Discharger to comply with the MRP and the Standard Provisions. The Provisions also include requirements for the Discharger, if the effluent is consistently toxic, to conduct a Toxicity Reduction Evaluation to track down and eliminate the source.

CHANGES TO WASTE DISCHARGE REQUIREMENTS

The proposed Order specifies an acute toxicity effluent limitation based on the minimum seawater to effluent dilution ratio. That is, in accordance with the updated Ocean Plan, the proposed Order requires the Discharger to ensure the discharge causes no acute toxicity at the boundary of the zone of initial dilution, 5 meters to either side of the discharge point. The prior Order, based on the prior Ocean Plan, specified a limit for the undiluted discharge.

MONITORING AND REPORTING PROGRAM

The proposed MRP requires influent monitoring for flow, BOD and suspended solids, which allows the Discharger to determine the plant's percent BOD and solids removal. The proposed MRP requires effluent monitoring for flow and all pollutants listed in the effluent limitations noted above. The proposed MRP also requires the Discharger to monitor its effluent for all Ocean Plan pollutants in August 2008.

CHANGES TO MONITORING AND REPORTING PROGRAM

The proposed MRP specifies sampling dates specified in the existing MRP.

REASONABLE POTENTIAL ANALYSIS

Federal regulations governing the Federal and State NPDES permit program require that NPDES permits contain effluent limitations for all pollutant parameters that:

"...may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. (40 CFR sec. 122.44 (d))."

In 2002, as noted above, the Discharger analyzed its effluent for Toxics Rule pollutants and detected none. Based on knowledge of plant operations, staff concludes the effluent likely does not contain the Ocean Plan's toxic pollutants. Therefore, the discharge poses no reasonable potential to exceed effluent limitations. Nonetheless, the proposed MRP requires the Discharger to monitor its effluent in August 2008 for the Ocean Plan's toxic pollutants. The proposed Order also retains the effluent limitations, which allows the Discharger and the public to know the toxic pollutants most able to impair the ocean's beneficial uses, to demonstrate monitoring has not detected them, and to help the Discharger ensure they do not enter the discharge.

ANTI-BACKSLIDING

40CFR122.44(l) requires effluent limitations for reissued NPDES permits to be at least as stringent as the previous permit, unless certain grounds for backsliding apply. All changes to the proposed Order's effluent limitations accord with the anti-backsliding provisions.

ENVIRONMENTAL SUMMARY

The issuance of waste discharge requirements for this discharge is exempt from provisions of the California Environmental Quality Act (Division 13 of the Public Resources Code, Chapter 3 commencing with Section 21100, et. seq.) in accordance with Section 13389 of the California Water Code.

COMMENTS

1. Santa Cruz County Health Services - No response.

2. Monterey Bay National Marine Sanctuary – Sanctuary staff recommended the Board continue to vigilantly seek to ensure the Discharger complies with the proposed Order. Sanctuary staff requested the Board ensure all appropriate management practices to reduce the discharge of pollutants in stormwater. Sanctuary staff requests the Discharger report any spills that will likely enter the ocean at 1-888-902-2778. Board staff recommends the Discharger follow this practice.
3. California Department of Fish and Game - No response.

RECOMMENDATION

Adopt WDRs Order No. R3-2005-0038 and MRP No. R3-2005-0038, as proposed.

ATTACHMENTS

1. WDRs Order No. R3-2005-0038
2. MRP No. R3-2005-0038

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