

Concrete and Concrete Products Industry Code of Practice Policy Intentions Paper for Consultation

1. Introduction

The Ministry of Environment intends to establish a code of practice (minister's regulation) that addresses discharges to the environment from the concrete and concrete products industry as defined under provisions of the *Environmental Management Act* (EMA) and the *Waste Discharge Regulation* (WDR). A code of practice is a legally binding and enforceable set of rules that must be followed – the environmental protection measures and other actions that are expected of the industry by the ministry.

The development process for the code of practice consists of five phases:

1. **Scoping** – including a review of regulatory approaches in other jurisdictions and current best management practices.
2. **Policy Intentions Paper for Consultation** (intentions paper) – outlining the ministry's proposed policy intent for the code of practice/regulatory review, proposed content of the code/regulation and any outstanding issues or questions.
3. **Consultation** – with affected stakeholders and the general public, using the intentions paper and response forms posted on the ministry website, and other means as required.
4. **Drafting** – preparation of legal language for consideration by the Minister and/or Lieutenant Governor-in-Council.
5. **Implementation** – training of ministry staff and external stakeholders, development of best management practices.

The purpose of this intentions paper is to seek responses and comments from stakeholders and the public on the proposed code of practice. This consultation is the third phase in the code of practice development/regulatory review process.

The EMA and WDR were brought into force in July 2004. Under the legislation, introductions of waste from identified “prescribed” industries, trades, businesses, operations and activities require authorization (e.g., permit or approval) from the ministry. The WDR also contains provisions for establishing codes of practice issued by the

minister as a form of authorization for specified industries, trades, businesses, operations and activities.

This intentions paper provides a summary of the ministry's mandate and objectives, background information and potential environmental and human health concerns associated with the concrete and concrete products industry and the proposed contents of the code of practice. Section 5 of this paper describes the avenues for providing comment as the code is developed and implemented by the ministry.

The intentions paper and response form for providing comments to the ministry, as well as further information and links to related legislation, are posted on the ministry's website. The information can be accessed by clicking on the address below, or from the Ministry of Environment homepage, by following the Environmental Protection Division and Environmental Management Branch links. See: www.env.gov.bc.ca/epdiv/ema_codes_of_practice/index.

2. Ministry Objectives

The Ministry of Environment provides leadership in environmental management through innovative legislation and programs, compliance activities and shared stewardship initiatives. The ministry's mandate is to protect human health and safety, and maintain and restore the diversity of native species, ecosystems and habitats. The ministry's core business areas include environmental protection, stewardship and compliance, in support of the government's goals.¹

The development and enactment of the *Environmental Management Act* and its associated regulations facilitates implementation of outcome-based regulations that provide clear roles for governments and stakeholders, consistent performance standards, updated fee structures, decreased remedial and legal

¹ The ministry continues to support the government's objectives under three of its five Great Goals – to lead the world in sustainable management, with the best air and water quality, and the best fisheries management, bar none; to lead the way in North America in healthy living and physical fitness; and to create more jobs per capita than anywhere else in Canada (see www.bcbudget.gov.bc.ca/2006/sp/env).

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costs, and a greater focus on those not in compliance with regulatory requirements.

The ministry intends the *Concrete and Concrete Products Industry Code of Practice* to provide clear, consistent and appropriate environmental protection standards for establishments engaged in producing ready mix concrete or pre-formed concrete products.

3. Background Information

The concrete and concrete products industry includes operations which manufacture ready mix and pre-formed concrete. The industry is considered by the ministry to be appropriate for management and regulation under a code of practice.² Typical components of ready mix concrete are coarse and fine aggregates (i.e., sand and gravel and other aggregates), cement and water. The environmental issues associated with ready mix concrete and concrete products operations are very similar.

There are about one hundred ready mix concrete producers in British Columbia, operating in every region of the province and producing over three million cubic metres of ready mix concrete a year. About 80% of ready mix concrete producers belong to the B.C. Ready-Mixed Concrete Association. Pre-formed concrete producers are represented by the Canadian Precast Concrete Institute, B.C. Chapter. The concrete pipe industry is represented by the Canadian Concrete Pipe Association.

Although in comparison to other primary manufacturing facilities or activities, ready mix and pre-formed concrete plant operations do not generally pose high threats to the environment, there are a number of environmental risks that may be realized if appropriate environmental management practices are not followed:

- ♦ Air emissions of fine and/or coarse particulates with potential to impact human health or the environment, or cause nuisance; and

² Note that the ministry normally does not regulate storage of products, fuels or raw materials, however, operators must ensure that the storage and/or handling of chemicals used in the concrete manufacturing process does not cause pollution as per Section 6(4) of EMA.

- ♦ Contamination of ground and/or surface water by plant process water and/or storm water impacted by industrial run off – with suspended solids and/or high pH potentially harming fish or fish habitat.

4. Contents of the Proposed Code

The proposed code of practice will establish province-wide regulations for the concrete and concrete products industry. It will include general requirements and standard conditions similar to those in existing permits, addressing, for example, the bypass of treatment works and reporting of emergency conditions. The scope and specific elements of the proposed code are discussed in the following sections.

4.1 Scope

The proposed code of practice will apply to:

- ♦ **Ready mix concrete facilities** – engaged in manufacturing and delivering mixed concrete;³ and
- ♦ **Concrete products facilities** – engaged in manufacturing concrete pipe, structural concrete products and other concrete products.⁴

The code would not apply to ancillary activities involved in the use of ready mix concrete (such as construction site practices), nor to materials or activities subject to other ministry legislation (such as the *Hazardous Wastes Regulation*). The code of practice does not apply to home based businesses, educational facilities, hobbyists or artisans. These types of activities are subject to the general provisions of the *Environmental Management Act*.⁵

This code of practice will not regulate noise from operations, “light pollution” or zoning for land use, as these considerations are under the purview of local government.

³ This would include facilities engaged in both dry mix and wet mix concrete batching.

⁴ These products are identified in the North American Industry Classification System (NAISC) codes 32733 and 32739.

⁵ For example, section 6(4) of EMA states that “a person must not introduce waste into the environment in such a manner or quantity as to cause pollution.”

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4.2 Air quality management

A. Requirements

Ready mix concrete and pre-formed concrete product facilities generate and disperse air emissions during routine operations. The amounts and contents of air emissions vary with local climatic conditions and the nature of the operations. Dust and particulate emissions can be generated or arise from point and non-point (or “fugitive”) sources. Point source emissions are normally discharged through a stack and controlled with pollution control equipment such as a “baghouse” or “scrubber”. Fugitive dust sources, such as plant site traffic or aggregate stockpiles, are more dispersed and require differing management practices to control.

The code of practice will have provisions that address both point source and fugitive dust air emissions. Ready mix concrete and pre-formed concrete product facilities will be required to:

- ◆ **Maintain a particulate control system** (e.g., baghouse) for the collection of dust from batch plant operations that meets an air emission standard of 10% opacity;
- ◆ **Control fugitive dust** arising from plant operations, including storage and handling of aggregates, and traffic – in a manner that ensures that fugitive dust “does not cause pollution”; and
- ◆ **Control emissions from boilers and heaters** so that emissions from such auxiliary equipment “do not cause pollution”.⁶

B. Size and location of facilities and air quality

One issue on which the ministry is seeking comment relates to the appropriateness and feasibility of province-wide requirements (i.e., governing all concrete production facilities) for air emissions. Smaller operations, located in rural settings, may pose a lower risk to the environment and human health than operations in populated areas or sensitive airsheds.

⁶ Note that potential or suggested actions to control fugitive dust and emissions from boilers and heaters would be components of best management practices (BMPs) and not specified in the proposed code of practice.

The ministry is seeking comment on whether it may be appropriate to establish differing air emission and fugitive dust control provisions in the proposed code of practice for concrete and concrete products facilities that are small in size, located in rural or remote locations, and do not entail a significant risk to air quality from facility emissions. Any such provisions would have to maintain environmental and human health protection objectives, and be feasible to implement and monitor for assurance of compliance.

4.3 Water use and runoff management

Concrete production plants use fresh or recycled water for a range of operations, including mix water for batching concrete loads, truck and equipment washing (including acid washing of trucks), boiler feed water, filling truck-mounted water tanks, and dust suppression.

Discharged water resulting from these activities can contain or carry fine or coarse particles, and/or have elevated alkaline properties (i.e., a high pH) – and have the potential to be detrimental to the environment. Water management tools and practices include site drainage systems, washout pits, pH adjustment mechanisms and reclaim ponds.

The code of practice will include effluent standards for any process water or storm water runoff arising from a ready mix concrete or pre-formed concrete product facility that is discharged to the environment. The following requirements are being proposed for the code. Any discharges to surface water must:

- ◆ Have a pH of no less than 6.5 and no more than 9.0;⁷
- ◆ Have a limit of suspended solids of 75 mg/l;⁸
- ◆ Have an oil and grease limit of 15 mg/l total extractable hydrocarbons (TEH);⁹ and

⁷ This requirement is based on acute toxicity to aquatic life.

⁸ This limit is based on practical control technology that does not rely on chemical flocculents for particulate removal. Adding flocculents adds complexity to the treatment process and too much flocculent can have a negative impact on fish habitat

⁹ This is the standard used in the *Petroleum Storage and Distribution Regulation* and can be achieved through proper

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- ◆ Be non-acutely lethal to fish, as defined using a 96 hour LC 50 rainbow trout bioassay.¹⁰

There are a number of issues related to water management on which the ministry is seeking comment prior to establishing the code of practice:

1. Should all concrete production facilities be required to have **water containment and recycle measures** in place? If yes, what requirements would be appropriate? If no, how could the ministry ensure that environmental and human health protection objectives related to water discharges and runoff are achieved?
2. What is an appropriate field measure for **assessing the amount of suspended solids in-water prior to discharge** to a receiving body of water? Provincial standards for total suspended solids (TSS) requires a lab analysis (with an associated delay in reporting results), while assessment or measure of turbidity is not generally undertaken by concrete plant workers. It may be possible to develop a site specific turbidity/TSS correlation that could be used as a surrogate for TSS.
3. What are appropriate means for **monitoring and assessing the potential impacts on ground water** from concrete plant operations such as truck washing or unlined settling ponds?

These questions are presented for public comments and suggestions in the response form that accompanies this intentions paper.

4.4 Waste solids management

Waste solids associated with concrete production facilities include sludges from the cleanout of settling basins and returned concrete. Best management practices (BMPs) will be developed with industry to provide operators with guidance in this area (see section 4.6 of this intentions paper).

installation and use of an oil/water separator system (if needed).

¹⁰ This standard is based on requirements set out in the federal *Fisheries Act*.

Slurry or sludge from concrete production operations, for example, should be dried and recycled at the operation – or disposed offsite in accordance with local and provincial regulations (e.g., in an approved landfill). Returned concrete may be re-used in succeeding batches, used to produce pre-cast products, discharged to a mechanical reclaimer, or discharged at designated site (with appropriate containment provisions).

4.5 Registration, monitoring and record keeping

A. Registration

Operators of ready mix concrete and pre-formed concrete product facilities will be required to register with the ministry and pay an annual fee.

B. Monitoring and record keeping

The proposed code of practice will require an operator to monitor specified activities and maintain current records on the site of operations (i.e., at the production facility), readily available for review and inspection by ministry staff (or other designated monitoring or enforcement officer) within 48 hours of written request. Required monitoring and records will include:

- ◆ Dust collection system inspection records (e.g., pulse air and agitation mechanism inspections, fabric bag or cartridge inspection and replacement, silo pop valve inspection) – following a documented inspection schedule (e.g., based on manufacturers' recommendations and/or best management practices for the industry);
- ◆ Opacity readings taken and recorded during each silo filling; and
- ◆ pH and turbidity (or TSS) and estimated quantities of discharged water prior to discharge of any water to the receiving environment (i.e., outside of a closed containment system).

The director may also request additional information from the operator or the registered owner of the concrete production facility, as required to assess whether regulatory requirements for protection of human health and the environment are being adequately fulfilled.

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4.6 Best management practices

The proposed code of practice may be supported by guidelines and/or “best management practices” (BMPs) that would provide recommendations or options related to meeting or achieving the objectives and meeting the requirements of the proposed code of practice. The BMPs would be developed jointly by the ministry working with other stakeholders, and would reflect, to the extent possible, existing BMPs developed by or for the involved industry sectors. BMPs would not have the force of law but should be viewed as assistance to persons governed by a code of practice in meeting their legal obligations

4.7 Assuring compliance

A. Compliance promotion

The ministry will develop a strategy for the promotion of voluntary compliance with the requirements of this code of practice, in cooperation with industry association and other interests. Compliance promotion may entail training for ministry staff, as well as information and education for the industry sector.

B. Compliance verification

The concrete and concrete products industry is considered to be a low to medium environmental risk. The ministry’s approach to inspections and audits will involve random compliance audits and inspections, in response to identified or potential issues or concerns regarding protection of the environment or health.

The ministry is committed to utilizing the compliance verification data to guide the ongoing management of the sector and assure the goals for environmental protection are being met.

C. Enforcement

The ministry response to non-compliance will entail written advisories and warnings, directives and prosecutions. The choice of response will be based on standard ministry-wide policy, the compliance history for the industry and the significance of the impact from the non-compliance occurrence.

5. Development and Implementation of the Code of Practice

The *Concrete and Concrete Products Industry Code of Practice* will be implemented as a minister’s regulation under the *Environmental Management Act*, and will complement existing legislation, including the:

- ♦ *Environmental Management Act* and associated regulations, including *Waste Discharge Regulation*, *Hazardous Waste Regulation*, *Contaminated Sites Regulation*, and *Spill Reporting Regulation*; and
- ♦ *Water Act*; *Ground Water Protection Regulation* and *Drinking Water Protection Act*.

5.1 First Nations consultation

Information concerning consultation with First Nations will be developed in accordance with ministry policy and government direction, as well as legal requirements.

5.2 Providing comment on the proposed code of practice

The ministry is intending to finalize and implement the *Code of Practice for the Concrete and Concrete Products Industry* in 2006. Comments regarding the proposed intentions of the ministry are being solicited and will be carefully considered in development of the code. The ministry welcomes all suggestions with respect to any or all sections of the proposed code of practice.

Submissions will be compiled and summarized, without specific attribution, by an independent contractor and the summary posted on the ministry website. Following review of comments and submissions, the ministry will complete legal drafting of the code of practice for legislative review and implementation.

This intentions paper and a response form with questions based on the proposed contents of the code have been posted on the ministry’s web site: www.env.gov.bc.ca/epdiv/ema_codes_of_practice/index.

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Those interested are invited to submit comments on the proposal – using the instructions and questions provided on the response form. Individuals or organizations may also make written submissions to the ministry without following the format set out in the response form – as desired.

Comments to the ministry should be made on or before June 30th, 2006.

All submissions will be reviewed for inclusion in a consultation summary report. Comments received will be treated with confidentiality by ministry staff and contractors when preparing consultation reports. Please note that comments you provide and information that identifies you as the source of those comments may be publicly available if a freedom of information (FOI) request is made under the *Freedom of Information and Protection of Privacy Act*.

If you have any questions or comments regarding the consultation process, review the information posted on the ministry website, or contact Cindy Bertram of C. Rankin & Associates, who has been contracted to manage consultation comments, at:

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Thank you for your time and comments!