February 23, 2011

Ms. Debra Sturdevant
Oregon Department of Environmental Quality
Water Quality Division
811 SW 6th Avenue
Portland, OR 97204

Subject: Comments on Proposed Arsenic Rules

Dear Ms. Sturdevant:

The City of Ontario's wastewater discharge of arsenic is almost entirely from natural sources from the City's surface water drinking water supply from the Snake River. The City accomplishes a net reduction in the mass of arsenic in the Snake River through a combination of drinking water treatment, water use, wastewater treatment, and seasonal land application of treated effluent. On a concentration basis, the City of Ontario's effluent wastewater discharge appears to exceed the Oregon Department of Environmental Quality (DEQ) proposed 2.1 ug/L arsenic standard. However, this is misleading since the potable water supply to the City is from the Snake River and results in the presence of arsenic in the drinking water from natural sources, which then enter the wastewater and are present in the effluent returned to the river.

Given these circumstances, the City seeks an exclusion from the proposed arsenic rulemaking for naturally occurring arsenic present in the effluent discharge. The City would like to avoid pursuing arsenic reduction plans, background pollutant allowances, intake credits, and water quality variances to account for the naturally occurring arsenic in the City's effluent discharge to the Snake River.

Proposed Arsenic Rule Amendment - OAR 340-041-0033 Toxic Substances

The proposed arsenic rule amendment establishes a threshold for considering an arsenic discharge significant. Conversely, this threshold could also be used as the basis for an insignificant discharge that returns naturally occurring arsenic to the Snake River.
The proposed arsenic rule amendment text is written from the perspective of a wastewater discharge located in a "surface water drinking water protection area" that will be likely to add a significant amount of arsenic defined as an increase of 10 percent or more after mixing with ambient waters. Alternately, DEQ proposes to determine "potential significance" based on a mass balance calculation demonstrating an increase in inorganic arsenic concentration of 0.023 ug/l in a drinking water intake. Exceeding the 10 percent threshold requires that an National Pollutant Discharge Elimination System (NPDES) discharger prepare an inorganic arsenic reduction plan and propose all feasible measures of reducing arsenic.

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The proposed rule as written fails to address the issue from the perspective of the City of Ontario where the natural background of arsenic in the surface water drinking water supply is by far the largest source of arsenic in the City's wastewater discharge. The City seeks provisions in the proposed rule amendment that specifically provide for exclusion from requirements to prepare an inorganic arsenic reduction plan or from seeking a water quality variance for discharge to surface water of the naturally occurring arsenic present in the City's surface water supply.

Specifically, the proposed rule should be revised to provide the specific pathway for intake and discharge of naturally occurring arsenic to be exempt from the rule such that unnecessary arsenic reduction plans and water quality variances are not required (proposed language):

- *"No addition of inorganic arsenic" means to intake a net mass of inorganic arsenic larger than the discharge from a point source (the mass of inorganic arsenic intake from a surface water source minus the mass of inorganic arsenic discharged from a facility). No addition of inorganic arsenic shall be based on either a concentration or mass balance calculation to determine that the discharge will not increase the watershed concentration of inorganic arsenic by 10 percent or more after mixing, or will not increase the surface water intake water of a public water system by 0.023 micrograms per liter or more. Where DEQ determines that there is no addition of inorganic arsenic, an NPDES permitted discharger shall be exempt from the rules requiring an inorganic arsenic reduction plan and shall not be required to seek a water quality variance for discharge to surface water of naturally occurring arsenic.*

DEQ Water Quality Standards Review and Recommendations: Arsenic

Oregon DEQ has prepared a draft document titled "Water Quality Standards Review and Recommendations: Arsenic" dated February 1, 2011 (DEQ, 2011) which presents DEQ's proposed surface water arsenic standard. This document raises a number of issues related to the potential requirements applicable to the City of Ontario.

Impaired Water Listings and Naturally Occurring Arsenic

The Oregon 2004/06 303(d) list of impaired waters does not include a Snake River impairment listing for arsenic. However, the proposed revision of the arsenic standard to 2.1 ug/L could result in an impairment listing for the Snake River since natural background arsenic concentrations appear to be in the range of approximately 5 to 6 ug/L. Promulgation of the proposed arsenic standard could create circumstances which unnecessarily result in administrative procedures and pursuits that target point source discharges containing arsenic which are only reflecting the natural background in the surface water supply. DEQ's Arsenic report (DEQ, 2011) states that; "*DEQ must then address the listings by developing a TMDL or*

providing some other explanation or plan for situations where the source of arsenic is natural and cannot be controlled. This is not a meaningful use of public resources." Clarification is needed to define the DEQ plan and schedule for avoiding the promulgation of arsenic standards in a way that avoids unnecessarily listing streams with natural background levels of arsenic as impaired.

Site Specific Arsenic Standards

DEQ's Arsenic report (DEQ, 2011) states that: "*Some waterbodies will have natural background levels above the proposed statewide criteria. In these cases, DEQ may pursue site specific criteria at a later date*." Developing a site specific standard which reflects the natural background of arsenic present in the Snake River would avoid the problems associated with promulgating a lower standard than natural background statewide. Clarification is needed to define the DEQ plan and schedule for the development of site specific arsenic standards for the Snake River. It would be preferable to avoid application of a statewide standard for arsenic to the Snake River when known concentrations of natural background arsenic exceed the proposed standard.

Cancer Risk Factor Assumptions

DEQ's Arsenic report (DEQ, 2011) states that; "*When EPA develops recommended human health criteria for carcinogens, it uses a cancer risk level of 10^{-6}, which it characterizes as an appropriate level of risk for the general population*." However, this is inaccurate with respect to arsenic where EPA has in fact, used a cancer risk level of 10^{-4} in establishing Safe Drinking Water Act arsenic standards for potable water. In the EPA Document 815-R-00-013 "*Proposed Arsenic in Drinking Water Rule Regulatory Impact Analysis*" prepared during development of the revised drinking water arsenic rule, EPA selected a 10 ug/L maximum contaminant level (MCL) corresponding to a 10^{-4} increased lifetime risk for this adverse health effect.

It appears that DEQ has selected different Risk Factors for "water + fish" (10^{-4}) and freshwater "fish consumption only" (10^{-5}) in order to result in the same at 2.1 ug/L arsenic criterion for both categories. It may be more appropriate and consistent to select the same Risk Factor for both categories at 10^{-4}. Recalculating the resulting water quality criteria for the freshwater "fish consumption only" category using the 10^{-4} Risk Factor for arsenic that EPA used for the Safe Drinking Water Act (SDWA) would result in an arsenic criteria of approximately 21 ug/L. It should be noted that this criterion would provide the same level of human health protection as EPA provided in the SDWA arsenic rule and would avoid setting a surface water criterion below natural background levels in the Snake River.

DEQ Proposed Rule Language Package, Human Health Toxics Rulemaking

Oregon DEQ has prepared a document titled "Attachment B, Proposed Rule Language Package, Human Health Toxics Rulemaking" dated December 9-10, 2010 (DEQ, 2010) which introduces provisions for Variances, Background Pollutant Allowance, and Intake Credits. Each of these provisions is of potential interest to the City of Ontario should arsenic rulemaking not directly provide relief from the application of water quality standards to the City's effluent discharge.

Variances

The proposed rule revisions provide for point source variances when naturally occurring pollutant concentrations prevent the attainment of a use. In the case of the Snake River, naturally occurring arsenic concentrations will prevent compliance with the proposed water quality standard for arsenic. However, the naturally occurring levels of arsenic in the Snake River are not preventing attainment of beneficial uses. Therefore, it is difficult to understand how the proposed variance provisions will apply specifically to arsenic in the Snake River. The Oregon 2004/06 303(d) list includes many parameters for the Snake River, but does not include an impairment listing for arsenic, despite the fact that the existing water quality standard is lower than the proposed standard.

The conditions to grant a variance are outlined in the proposed rule revisions and provide for the circumstance when the background concentration of a pollutant exceeds the underlying water quality standard. While this may provide a pathway to obtaining a variance for the City of Ontario, this is a less than favorable outcome of the proposed rulemaking due to the burden of pursuing a variance and the fact that variances are temporary and must be periodically reviewed and extended. Further, the proposed rulemaking language for variances includes requirements for a demonstration that attaining the standard is infeasible, submittal of a proposed pollutant reduction plan, annual progress reporting, etc. From the perspective of the City of Ontario, natural background concentrations of arsenic result in the potential need for a regulatory solution to an issue not caused by the City's wastewater discharge. In fact, the combination of the City's drinking water treatment, water use, wastewater treatment, and seasonal land application of treated effluent actually reduces arsenic in the Snake River.

Background Pollutant Allowance

The proposed rule revisions provide for a background pollutant allowance for an increase of less than 3 percent from ambient conditions with a number of caveats. While this provision might provide relief for the City of Ontario, the qualifying conditions may be unnecessarily restrictive. The 3 percent threshold for an allowable increase in the Background Pollutant Allowance appears inconsistent with the Proposed Arsenic Rule Amendment (OAR 340-041-0033) which proposes an increase of 10 percent or more after mixing with ambient waters as a threshold for significance for arsenic.

The proposed Background Pollutant Allowance conditions include a restriction that the background concentration is less than 97 percent of the value that represents a 10^{-4} human health risk. This appears to significantly limit the potential utility of providing a Background Pollutant Allowance by establishing restrictions on the background conditions that are uncontrollable due to natural conditions.

While this 97 percent restriction might turn out to be the case in the Snake River if DEQ were to recalculate the freshwater "fish consumption only" arsenic standard based on using the 10^{-4} Risk Factor, the qualifying restriction for use of a background pollutant allowance seems inconsistent with the problem that the allowance was intended to address.

The condition in the proposed rule that "*The Department may require the discharger to use any technologically and economically feasible pollutant reduction measures that are known to be available to prevent or minimize a pollutant concentration increase in the receiving water body…*" seems especially restrictive as a potential consequence to pursuit of a background pollutant allowance. By focusing narrowly on a concentration basis solely on the City of Ontario's effluent outfall, the discharge would appear to exceed DEQ's proposed 2.1 ug/L arsenic standard. However, this is misleading since on a system wide mass basis, the City actually reduces arsenic in the Snake River. The City would not expect to be subject to a narrowly focused analysis based on concentration that results in a DEQ requirement "*to use any technologically and economically feasible pollutant reduction measures*" as a condition to qualify for a background pollutant allowance.

Intake Credits

The proposed rule revisions provide for intake credits in establishing water quality based effluent limits. The proposed rule states: "*An intake pollutant is considered to be from the "same body of water" as the discharge if the Department finds that the intake pollutant would have reached the vicinity of the outfall point in the receiving water within a reasonable period had it not been removed by the permittee.*" However, the proposed rule language does not define "vicinity" or "reasonable period" in a specific way that allows the City of Ontario to be certain that these provisions would be beneficial. The City's drinking water supply intake is located approximately 3 miles upstream of the City's wastewater discharge. The City considers that their intake and discharge are in fact, from the same body of water and in the same vicinity.

Please call if you have any questions or if you would like to discuss any of these comments on the proposed arsenic rulemaking.

Sincerely,
HDR ENGINEERING, INC.

David L. Clark
Senior Vice President, National Director Wastewater

Cc: Mike Murray, HDR Engineering, Inc.
File 103-148141.001