



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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Ref: 8EPR-N

Mr. Michael J. Ryan  
Regional Director  
Great Plains Region  
Bureau of Reclamation  
P.O. Box 36900  
Billings, MT 59107-6900

RE: Northwest Area Water Supply  
(NAWS) Project on Water  
Treatment: CEQ # 20070545

Dear Mr. Ryan:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the proposed Northwest Area Water Supply (NAWS) Project on Water Treatment. Our comments are provided in accordance with our responsibilities under Section 102(2)(C) of the National Environmental Policy Act (NEPA), 42 U.S.C. Section 4332(2)(C), and Section 309 of the Clean Air Act, 42 U.S.C. Section 7609.

The NAWS project is a bulk water supply system that will serve the municipal and rural water needs of the project area in North Dakota, including 10 counties in northwest North Dakota. EPA acknowledges the need for this project to address water quality and quantity issues for residents in the project area. The project will withdraw 15,000 acre feet of water from Lake Sakakawea on the Missouri River. Water will be pumped 45 miles north to the city of Minot which will serve as the distribution point for city residents, other communities and rural water systems throughout the service area. The transfer of water from Lake Sakakawea (located within the Missouri River Basin) to Minot and other cities in the Hudson Bay Basin has the potential to transfer aquatic invasive species between basins and is the key environmental risk associated with operating this project.

The no action alternative included in the DEIS is based on the Bureau of Reclamation's (Bureau's) selected action alternative previously identified in the Finding of No Significant Impact (FONSI) completed for this project in 2001. As a result of subsequent litigation over the FONSI, the Bureau considered potential impacts associated with not fully treating the Missouri River water at its source, and potential impacts that could occur due to pipeline leaks and failure

of water systems. The Bureau is preparing this EIS, addressing these issues and providing further water treatment alternatives.

In the DEIS, the Bureau evaluated four biota water treatment alternatives, including the no action alternative. All alternatives, including the no action alternative, are composed of an inlet structure, the biota treatment process, and the booster pump station and treatment at Minot prior to distribution. All alternatives include upgrades in treatment at the Minot Water Treatment Plant (WTP) in the Hudson Bay Basin to provide treatment of water with ultra-violet (UV) disinfection along with softening and filtration. All alternatives also include use of the existing buried pipeline from Lake Sakakawea to Minot. Pipeline safeguards, contingencies and monitoring requirements have and will be built into this pipeline design and maintenance to further reduce risk of transferring invasive species. In addition, all alternatives address the risks of water treatment system failure through design and monitoring, contingency plans, and emergency response measures that will be described in further detail in the adaptive management plan for the project.

The action alternatives all involve construction of a new WTP that would be built in the Missouri River Basin (Max, North Dakota). The action alternatives differ in the level of biota treatment provided by the new WTP. Under the no action alternative, however, the only treatment that would occur in the Missouri River Basin would be disinfection.

EPA is concerned about this proposal due to the potential ecological consequences associated with the transfer of invasive species as a result of water treatment system or infrastructure failures. Although we believe the overall risk of biota transfer to be low, the impacts to the Hudson Bay Basin caused by potential system failure would be significant and could result in irreparable and irreversible ecological consequences. Consequently, we agree with the Bureau that development and implementation of an adaptive management plan would be necessary to minimize risks and manage uncertainties associated with the project, and we look forward to participating in the development of the plan. The monitoring and system maintenance aspects of an adaptive management plan will help ensure that ecological impacts caused by a potential system failure are avoided and minimized.

In addition, we have made specific recommendations with regard to the no-action and action alternatives in the enclosed detailed comments. We believe that with additional refinements of the treatment and design components of the no action alternative, additional facility and engineering practices and components for all of the alternatives, including added pipeline safeguards, and a robust adaptive management plan, the potential impacts of the project can be further reduced.

Pursuant to EPA policy and guidance, EPA rates the environmental impact of an action and the adequacy of the NEPA analysis. Since the Bureau has not yet identified a preferred alternative, EPA is rating each action alternative presented in the DEIS. Based on our review of the DEIS, we are rating these alternatives as "EC" (Environmental Concerns) and the overall level of analysis provided by the DEIS as "1" (Adequate). An explanation of the rating criteria is enclosed.

EPA has been a cooperating agency on this project along with several other local, state and federal agencies, as well as the Three Affiliated Tribes. Given the importance of the long-term effectiveness of the biota water treatment, and its associated risk reduction regarding successful establishment of invasive species, EPA is prepared to continue working with the Bureau and the State of North Dakota during the engineering phase and adaptive management process. EPA looks forward to participating in the consultation with the Secretary of the Interior and the Secretary of State regarding the adequacy of treatment to meet the requirements of the Boundary Waters Treaty of 1909, in accordance with the Dakota Water Resources Act of 2000. In addition, if a Clean Water Act section 404 permit will be required, we recommend that the Bureau continue to coordinate efforts with the U.S. Army Corps of Engineers and EPA in order to avoid potential data gaps later in the permitting process.

We have enclosed further comments on this document. Please feel free to contact me at 303-312-6308 or Larry Svoboda at 303-312-6004 to discuss these comments or the next steps in this process.

Sincerely,



Robert E. Roberts *for*  
Regional Administrator

Enclosures

cc: Dennis Breitsman, Bureau of Reclamation  
Richard Nelson, Bureau of Reclamation  
Alicia Waters, Bureau of Reclamation

## Detailed Comments on Northwest Area Water Supply DEIS

### **General:**

EPA is concerned about any project involving the inter-basin transfer of water due to the potential ecological consequences associated with the transfer of invasive species as a result of water treatment system or infrastructure failures. Consequently, EPA recognizes the importance of selecting an effective biota water treatment process that reduces the risks of successful establishment of invasive species for any project involving the inter-basin transfer of water. Below, we offer several comments related to the treatment alternatives analyzed in the Draft Environmental Impact Statement (DEIS) and the ability of the alternatives to minimize the risk of transfer.

We agree with the Bureau of Reclamation's (Bureau's) assessment that the risk associated with failure in the pipeline conveyance component of the control system designed to deliver water to Minot is minimal and may not be a useful factor in discriminating among the NAWS alternatives. In reaching this conclusion, we have reviewed the following pipeline design reports and recognize the efforts that were made to reduce the pipeline vulnerabilities through design applications, contingencies and monitoring:

- Northwest Area Water supply Project Biota Transfer and Control Measures Update, April 2001
- Garrison Consultative Group, NAWS Breach Analysis, 2001

In addition, we have reviewed the July 2007 Analysis of Risks of Inter-basin Biota Transfer Potentially Linked to System Failures in the Northwest Area Water Supply Project. This report analyzes the potential biological consequences of biota transfer linked to control system and infrastructure failures as well as the potential adverse effects linked to unintended biota transfer. We agree that such biota transfer could potentially have ecological effects in the Hudson Bay Basin. Once a species becomes established in a new area, complete eradication is not biologically practicable, and this is especially true for aquatic systems. While we agree that the biota treatment approaches included in the NAWS alternatives provide a low probability of a biota transfer, a successful invasion may have irreparable and irreversible ecological consequences.

### **Analysis of risks associated with inter-basin biota transfer:**

EPA agrees with the Bureau's assessment in the DEIS supporting documentation that no control system will be 'risk free', regardless of technology of choice. We also agree that the Missouri River Basin water treatment action alternatives (developed to reduce risk of invasion caused by pipeline breach) accomplish increasing logs of reduction (3.5 logs to 5.5 logs) required by the Long Term 2 Enhanced Surface Water Treatment Rule (LT2 Rule) prior to transfer to the Hudson Bay Basin. As such, we believe that the optimal way to decrease the potential for

transfer of invasive species that could result from a pipeline breach between the basin divide and Minot would be to select one of the three action alternatives in the Missouri River Basin.

However, EPA has also evaluated the risks of biota transfer under the no action alternative and we believe that the treatment upgrades that will be made at the Minot WTP will ultimately result in this alternative achieving the maximum reduction of chlorine resistant spore forming protozoa required by the LT2 Rule (at least 5.5 logs of reduction-or maximum reduction). Although the maximum level of treatment reduction will not be achieved until the water reaches Minot, EPA agrees with the Bureau that there is a low risk of biota transfer between the basin divide and Minot for the no action alternative. This determination is based on the low risk of pipeline failure resulting from the engineering and design safeguards, monitoring and contingencies that have been built into this system.

### **Treatment Alternatives Considered:**

#### **Action Alternatives:**

All of the proposed alternatives would be able to achieve 5.5 logs of reduction, meeting the maximum reduction required by the LT2 Rule but the reductions would occur at different locations (either Max or Minot). The levels of reduction increase as treatment processes are added. EPA notes that the purpose of adding increasing logs of removal is to reduce risks of biota transfer associated with pipeline failures, not to meet drinking water standards which would already be met through upgraded treatment in Minot. For the two advanced treatment options at Max (Dissolved Air Flotation and Microfiltration), EPA notes that redundant treatment at Minot may not be necessary. The water treatment at Max would not only adequately reduce the risk of biota transfer but would also meet drinking water standards. EPA recommends that the FEIS consider the necessity of Minot treatment under these action alternatives.

#### **No Action Alternative:**

The no action alternative limits treatment at Max to disinfection and will provide no additional logs of removal *prior* to conveyance over the basin divide. Rather, biota reduction for the no action alternative would occur at Minot, approximately 20 miles over this divide. Despite the lack of additional treatment prior to the basin divide, EPA's analysis of the no action alternative concludes that this alternative adequately reduces the risk of transfer of invasive species from the Missouri River Basin to the Hudson Bay Basin. This conclusion is based on an evaluation of design reports that describe additional pipeline safeguards, monitoring, and contingencies and the upgraded final treatment at Minot prior to distribution.

#### ***Recommendations***

For the no action alternative, we suggest a minor treatment design change to provide additional safeguards and risk reduction for the pipeline between Max and Minot and to further manage the risk uncertainties. The application of ultraviolet treatment (UV) technology at Max, instead of Minot, would provide additional safeguards at minimal additional cost and would result in a

further reduction of biota prior to transfer over the basin divide. This design change would further reduce risks associated with breach of the pipeline.

EPA recommends that the FEIS elaborate on the Bureau's commitments to address the development of the following facility and engineering practices and components. While we understand that the specifics of these practices and components will be addressed in design documents (post ROD), it is important that the Bureau include additional information in the FEIS in order to disclose some of the more important operations, response measures and contingencies that would mitigate biota transfer. We recommend that the FEIS include information on the following:

- appropriate engineering controls and fail-safe systems to prevent delivery of inadequately treated water;
- facility inspection, operation, maintenance, and capital replacement plans to minimize potential for facility degradation and future breakdowns;
- implementation of contingency plans, emergency response procedures, and periodic exercises to address response to accidental releases of untreated water;
- adequate controls to contain and prevent the release of any accidental spills of recycled backwash or softening clarification supernatant; and
- treatment of sludge resulting from the filter backwash and softening clarification processes to inactivate disinfectant-resistant pathogen spores or transport of this material off-site for disposal at an appropriate facility within the Missouri River Basin.

#### **Risk Management/ Adaptive Management Plan:**

We commend your agency's commitment to develop an adaptive management plan for this project. An adaptive management plan is a critical management tool for this project. Adaptive resource management that includes monitoring and mitigation planning plays a significant role in resource management and in managing risk and uncertainty.

#### ***Recommendations***

EPA has previously suggested that the Bureau identify stakeholders who would be involved in the adaptive management process. We recommend that a general outline of the scope of the adaptive management plan be included in the FEIS. EPA remains willing to assist in the process of developing and implementing the adaptive management plan.

We recommend that the adaptive management plan developed during the design phase include, at a minimum, the following:

- the facility and engineering practices and components
- an appropriate water quality monitoring plan and program components focused on minimizing the risk of biota transfer.
- a plan to mitigate the ecological effects on aquatic habitats if biota transfer occurs as a result of accidental releases of untreated water.

- a list of potential stakeholders who could assist in this process.
- a draft timeline for implementation.