

**BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.**

In re:)
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)
WEST BOISE WASTEWATER)
TREATMENT FACILITY,)
Permit No. Id 0023981)
)
IDAHO RIVERS UNITED,)
Petitioner.)
)
)
)
)

PETITION FOR REVIEW

Idaho Rivers United respectfully filed this petition for review by their counsel

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Dated: April 12, 2012

INTRODUCTION

Pursuant to 40 C.F.R. § 124.19(a), Petitioner Idaho Rivers United (“IRU”) petitions for review the conditions of National Pollution Discharge Elimination System (“NPDES”) Permit No. ID0023981, which was issued to the City of Boise, Idaho on March 15, 2012, by the United States Environmental Protection Agency (“EPA”). Ex. 1 (“Permit”). The Permit at issue in this proceeding authorizes West Boise Wastewater Treatment Facility (“the Facility”) to discharge effluent to the Boise River. Petitioner received notice of the issuance of the Permit by electronic mail dated March 19, 2012. Ex. 2. Petitioner contends that a certain condition of this permit is based on clearly erroneous findings of fact, and conclusions of law.

Specifically, Petitioner solely challenges the following permit condition:

- The failure of permits to set phosphorus limits on the permitted discharge from October 1 through April 30.

Petitioner does not challenge the phosphorus limit during the remainder of the year or any other term of the permit.

FACTUAL AND STATUTORY BACKGROUND

I. The Petitioner

IRU is a nonprofit corporation with its offices at 2600 Rose Hill St. #201, Boise, Idaho 83705. IRU has members across Idaho and the Pacific Northwest. The mission of IRU is to protect and restore the rivers of Idaho. IRU’s constituents are concerned with the aesthetics, recreational value, and health of the Boise River, and other waters in the watershed which are affected by changes in the water quality of Boise River. Founded in 1990, IRU has worked to protect and enhance the scenic qualities and health of Idaho’s rivers and lakes, with particular

emphasis on the rivers and lakes as valuable habitat for endangered aquatic life, including steelhead and salmon.

IRU acts to protect and enhance the environment through administrative advocacy and, when necessary, litigation to enforce environmental laws. IRU has a long history of involvement in water quality-related activities, and their members are greatly concerned about water quality. IRU's members, use, enjoy, live adjacent to or near, and otherwise benefit from waters and riparian areas that are adversely impacted by the Permit. Its members use and enjoy such waters and riparian areas for a variety of purposes, including, but not limited to, boating, sightseeing, hiking, wildlife watching, aesthetic enjoyment, and other recreational pursuits.

Discharges from the Facility cause or contribute to pollution levels in waters used by Petitioners' members that are injurious to human health, wildlife, and the aesthetic qualities of those waters, and to uses pursued and enjoyed by such members. Such discharges, and the Region's failure to adequately limit them in the Permit as further described below, threaten the health and welfare of IRU's member, impair and threaten their use and enjoyment of the Boise River and downstream waterbodies including the Snake River and Brownlee Reservoir, and deny them the level of water quality to which they are entitled under the Clean Water Act.

II. CWA Requirements for NPDES Permits

The Clean Water Act ("CWA" or "the Act") prohibits the discharge of any pollutant to waters of the United States from a point source unless the discharge is authorized under the law. The NPDES permit program is an exception to that general prohibition. 33 U.S.C. §§1311(a), 1342(a)(1). Such permits must specify technology-based effluent limitations, plus any more stringent limitations necessary to assure compliance with water quality standards in the receiving waters. 33 U.S.C. §1311(b)(1). NPDES permits must include conditions adequate to "ensure

compliance” with applicable water quality standards in receiving waters. 33 U.S.C. §§ 1311 (b)(1)(C), 1342(a), 40 C.F.R. § 122.4(d).

III. Impacts of Discharge from the Facility

The discharge subject from the West Boise Facility flows first to the Boise River, which then flows in to the Snake River, which then flows in to Brownlee Reservoir. The Boise River, the Snake River, and Brownlee Reservoir are all identified under §303(d) of the Clean Water Act as impaired waters and have been issued Total Maximum Daily Loadings (“TMDLs”) to aid in correcting this impairment.¹ TMDLs represent the maximum amount of pollutant that a water body can receive each day and meet water quality standards. 33 U.S.C. §1313.

The Snake River is subject to TMDLs for temperature, total dissolved gas supersaturation (“TDG”), and for total phosphorus.² The Boise River is subject to TMDLs for sedimentation/siltation at its upper reaches, and for temperature and total phosphorus at its confluence with the Snake River.³ Brownlee Reservoir is subject to TMDLs for total phosphorus, temperature, and dissolved oxygen.⁴

High “nutrient” levels, particularly phosphorus concentrations, stimulate the growth of excessive algae both in stream and along the beds and banks of streams and rivers, increase turbidity in streams and rivers, increase water temperatures, deplete the dissolved oxygen levels of affected waters, and remain in high concentration in silt and sediment at the bottom of lakes and reservoirs.⁵ In short, high phosphorus concentrations severely damage water quality in affected water bodies.

¹ Idaho Department of Environmental Quality, 2010 Integrated Report, Appendix A, available at: <http://www.deq.idaho.gov/media/725927-2010-integrated-report.pdf>

² *Id.* at Appendix E

³ *Id.*

⁴ *Id.*

⁵ EPA, *Snake River-Hells Canyon TMDL*, Appedix F, at pg. 3; and EPA, *Nutrient Pollution: The Effects: Environment*, available at: http://www.epa.gov/nutrientpollution/effects/effects_environment.html

Although major algal blooms do tend to take place during the summer months (May-October), phosphorus levels have remained high enough during the winter months (November-April) so that early or late season algal blooms have been documented in the Snake River.⁶ A U.S. Geological Survey Report stated that 72% of the Snake River's orthophosphate concentration comes from the Boise River, and that 30% of the Snake River phosphorus concentration came from the Boise River.⁷ These two factors combine to have a negative effect on oxygen conditions in downstream Brownlee Reservoir.⁸

Phosphorus "loading" during the winter months increases the likelihood of early or late season algal blooms, and increases the severity of algal blooms during the regulated summer months.

IV. The Permit and the Facility

The West Boise Facility serves Boise City/Ada County, West Boise Sewer District, Garden City, and Eagle Sewer District. The 2004 permit application identified a total population served as 110,000.⁹ The total population served according to the 2010 application is approximately 148,300. The West Boise Facility treats wastewater from both domestic and industrial sources. The 2010 NPDES application for the West Boise Facility identifies a total effluent limit of 24 mgd based on the facility's current design flow.¹⁰ The Facility's current permit was issued on November 2, 1999 and was modified twice thereafter.¹¹ The permit expired November 2, 2004, however the City of Boise submitted a permit renewal application on April

⁶ M. Wood and A. Etheridge, *Water Quality Conditions near the Confluence of the Snake and Boise Rivers, Canyon County, Idaho*, USGS Report 2011-5217

⁷ *Id.*

⁸ *Id.*

⁹ EPA, West Boise Facility Fact Sheet, at pg. 5, available at: http://www.epa.gov/region10/pdf/permits/npdes/id/west_boise_fs.pdf

¹⁰ *Id.*

¹¹ *Id.* at 7

28, 2004, thus extending the permit period until a new permit could be drafted.¹² The City of Boise renewed this application on January 29, 2010 and the final permit in question here is the final result.¹³

On or about October 24, 2011, the draft permit was issued by EPA proposing to issue a permit to West Boise Wastewater Treatment Facility operating part of the wastewater treatment system for the City of Boise, and surrounding areas, authorizing discharge of effluent from the Facility in to the Boise River at mile 43.5.¹⁴

At the time of the issuance of the aforementioned draft permit, EPA issued public notice of its intent to issue the permit in question and invited comments from interested persons on the terms and conditions of the draft permit.¹⁵ IRU submitted its comments on the draft permit electronically to the office of:

Kathleen Collins
EPA Region 10, OWW-1330
1200 Sixth Avenue, Suite 900
Seattle, WA 98101
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See Ex. 3. The comments were also submitted to the Idaho Department of Environmental Quality. *Id.* These comments set forth IRU's comments and objections regarding the issuance of the permit as proposed. IRU comments specifically expressed concern about a number of issues including the lack of year round phosphorus limitations:

Idaho Rivers United supports the Total Phosphorus average monthly limit of .07mg/L. We are concerned that those limits only apply from May 1 – September 30 and question the rational for setting those limits. The situation is complicated because phosphorus pollution problems commonly manifest at a temporal and geographic distance from the discharge. The argument that “phosphorus is most

¹² *Id.*

¹³ *Id.*

¹⁴ EPA, *Proposed Reissuance of Wastewater Discharge Permits for the City of Boise Idaho*, available at: <http://yosemite.epa.gov/R10/water.nsf/NPDES+Public+Notices/pn-city-of-boise>

¹⁵ *Id.*

likely to adversely impact the receiving water” during this time period is weak and **needs to be explained in more detail.**

EPA fails to account for the fact that a TMDL for phosphorus for the Boise River is long overdue and is scheduled to be developed during the term of this permit. The TMDL will have great bearing on the WLA for the West Boise Facility and other dischargers. **EPA needs to explain how they will incorporate the Boise River phosphorus TMDL into this permit.**

Climate change was not addressed in establishing any of the effluent limits. According to the *NATIONAL WATER PROGRAM STRATEGY: RESPONSE TO CLIMATE CHANGE* KEY ACTION UPDATE FOR 2010-2011, NPDES permit writers need to consider changes to water quality standards, effluent guidelines and standards, and TMDLs resulting from climate change. **The discussion should be presented via the Fact Sheet and the conclusions should be reflected in the permit.**

Ex. 3 at 2-3

On November 22, 2011, IRU requested that EPA conduct a public hearing of this Permit.

Ex. 4. This request was not granted.

On March 15, 2012, EPA issued its Notice of Final Permit Decision on the permit application of the Facility, and issued the final draft permit to the City of Boise along with responses to the comments made by IRU in the draft stage. *See* Ex. 1. In its response to comments, EPA did not deny the validity of the concerns raised by IRU in its written comments, but actually admitted that year round limits were necessary to protect water quality:

High levels of nutrients such as phosphorus and nitrogen can excessively stimulate the growth of algae, both in the water column and attached to the streambed as periphyton. The nutrients also encourage growth of aquatic weeds (macrophytes), resulting in severe water quality problems. In the Snake River (of which the Boise River is a tributary), phosphorus has been identified as the primary nutrient causing water quality degradation. Phosphorus takes many forms in the aquatic environment, and phosphorus pollution is not readily attenuated by physical, chemical, and biological processes (i.e., phosphorus does not degrade in the aquatic environment). The persistence of phosphorus is particularly problematic in reservoirs. When a river enters a reservoir, the water velocity slows and the surface temperatures increase due to thermal stratification. This provides an ideal environment (abundant nutrients, warm temperatures) for rapid and excessive growth of floating and/or suspended algae. When algae die they

sink, decaying and drawing oxygen from the middle and lower depths of the reservoir creating an environment that is harmful to aquatic life. In simple terms, phosphorus pollution is converted to oxygen demanding algae. In addition, when the dissolved oxygen at the bottom of the reservoir is very low (typically < 2 mg/L), chemical reactions in the sediments release the previously-sequestered phosphorus in a dissolved form. This dissolved phosphorus mixes into the overlying water column and becomes available for uptake by algae. This “internal loading” (recycling) process is a common, long-term problem in lakes and reservoirs impacted by human activities.

Water quality problems associates with high nutrient levels (e.g., excessive algae levels, low DO) are often most severe during spring and summer conditions. However, due to the complex cycling processes between water column phosphorus, algae, macrophytes and reservoir sediments, it is important to consider the potential impacts of phosphorus discharge throughout the year:

1. While algae growth is greatest in the late spring and summer, algae can grow and even bloom (i.e., the rapid, excessive growth of algae) in winter and early spring, and fall blooms are common after reservoir turnover, when phosphorus released from sediments is mixed into the surface layer.
2. Travel time for upstream discharges and long residence times in a reservoir may result in a significant delay effect from the time of discharge to the time of effect. For example, winter discharges in a watershed can affect spring algae growth in a downstream reservoir.
3. Periphyton and macrophyte biomass from year-round growth can slough and float downstream to the reservoir in any season. Again, this may link a discharge in one season to an effect in another.
4. Phosphorus can bind to particulate matter in the water column. As a result, even when algae growth is low in the winter, some portion of the phosphorus discharged to the reservoir will settle to the bottom of the reservoir, either attached to sediment or as dead algal cells, and increase the mass available for re-cycling from the sediments to the water column.

The USGS recently released a report with new water quality data for the Boise River at Parma and Snake River at locations upstream and downstream of the Boise River confluence (Wood, M., and Etheridge, A. Water Quality Conditions near the Confluence of the Snake and Boise Rivers, Canyon County, Idaho. USGS Report 2011-5217). Several findings in this report indicate that October

through April discharges of phosphorus to the Boise River affect dissolved oxygen conditions in Brownlee Reservoir, including:

1. Algae blooms have been observed in March in the Snake River.
2. The Boise River contributes 30% of the phosphorus to the Snake River at the confluence, and 72% of the orthophosphate, which is the form of phosphorus that directly fuels algae growth.
3. High chlorophyll-a concentrations were observed in both the Boise and Snake Rivers in the winter and spring. In the Boise River, it is likely that this chlorophyll-a spike is caused by sloughed phytoplankton from upstream river reaches.

With these facts in mind, EPA has reviewed the basis for the dissolved oxygen portion of the SR-HC TMDL, which is focused on conditions in Brownlee Reservoir. The reservoir analysis involved the use of a water quality model to evaluate whether phosphorus allocations and targets for the mainstem Snake River (and tributaries including the Boise River) would be sufficient to meet dissolved oxygen standards in the reservoir. The analysis found that upstream river controls would not be sufficient, and the TMDL required that the dam owner, Idaho Power, augment the oxygen levels in the reservoir. This responsibility was expressed as a required increase in oxygen tonnage per day in the middle depths (metalimnion) of the reservoir (See SN-HC TMDL, page 449). The model analysis supporting the TMDL involved continuous, year-long simulations of dissolved oxygen in Brownlee Reservoir using the CE-QUAL-W2 model. Boundary inputs of phosphorus loading to the reservoir (i.e., inputs of phosphorus from the Snake River and its tributaries and other external sources of phosphorus) were set to reduced levels (40-70 ug/L) consistent with the TMDL target level (<70 ug/L). Importantly, these reduced levels were assumed for the entire year, not just the months of May through September (see SR-HC TMDL, Appendix F, page 12). The allocations established in the SR-HC TMDL for the mainstem and tributaries did not align with these assumptions of the underlying modeling analysis. Instead, the TMDL established May-September allocations only, and included no allocations (reductions) for the October-April period, based on a qualitative view that only summer discharges of phosphorus contribute to water quality problems in the system. **Given the discrepancy between the supporting modeling analysis which assumed year-around reductions, and the seasonal nature of the TMDL allocations, the adequacy of the oxygenation requirement established for Idaho Power and other components of the TMDL allocations are not supported.**

Furthermore, as discussed above, October-April loadings have an effect on the long-term quality of the sediments in the reservoir. The TMDL assumptions for future sediment quality established an implicit and ambitious future goal of near-zero sediment enrichment. Specifically, the model simulation

that established Idaho Powers oxygenation requirement assumed pristine sediment conditions in the reservoir in the future (0.1 mg O₂/m²-day² in the lacustrine zone of the reservoir) compared to highly enriched sediments today (2-8 mg O₂/m²-day in the lacustrine zone of the reservoir, see SR-HC TMDL, Appendix F, page 14). For the suite of allocations in the TMDL to meet water quality standards, this pristine sediment condition must be viewed as a target condition necessary to meet water quality standards (in conjunction with tributary allocations and Idaho Power's oxygenation requirement). **In this light, it would be inconsistent to allow high phosphorus loadings from tributaries during October to April, which could contribute to enriched sediments either directly or via algal growth and die-off.**

Response to Comments, Ex. 5 at 27-29 (emphasis added). Despite admitting that "October-April loadings have an effect on the long-term quality of the sediments in the reservoir," the Permit failed to adopt year round phosphorus limits or otherwise contain measures to ensure that such measures would be adopted.

This Petition for EAB Review and Adjudication is filed within the thirty day period for petition for review as provided by 40 C.F.R. § 124.19(a).

THRESHOLD PROCEDURAL REQUIREMENTS

Petitioner satisfies the threshold requirements for filing a petition for review under Part 124, to wit:

Petitioner has standing to petition for review of the permit decision because it participated in the public comment period on the permit. *See* 40 C.F.R. § 124.19(a). A copy of the written comments and EPA's response thereto is included as Exhibits 3 & 5 hereto. The issues raised by Petitioner in its petition were raised during the public comment period and therefore were preserved for review. *Id.*

STANDARD FOR REVIEW

Pursuant to 40 C.F.R. § 124.19(a), the Board grants a petition for review if it appears from the petition that the permit condition that is at issue is based on (1) a clearly erroneous

finding of fact of conclusion of law, or (2) involves and important policy consideration which the Board, in its discretion, should review.

ISSUES FOR REVIEW

1. THE PERMIT UNLAWFULLY FAILS TO ENSURE COMPLIANCE WITH WATER QUALITY STANDARDS.

All NPDES permits must ensure compliance with water quality standards. A failure to ensure such compliance is a violation of the Clean Water Act. If compliance cannot be ensured immediately, a permit may, in certain appropriate cases, include a schedule for compliance with these fundamental requirements. The Permit at issue here neither ensures immediate compliance with these requirements nor includes a lawful schedule designed to achieve compliance. Rather, it explicitly acknowledges that year round phosphorus limits are required to ensure water quality standards and fails to adopt any such standards. This approach is clearly erroneous and violates the mandates of the Clean Water Act.

It is beyond dispute that the record in this matter supports the need for year round phosphorus limits to meet water quality standards. The Region admits the shortcomings of its permit:

Furthermore, as discussed above, October-April loadings have an effect on the long-term quality of the sediments in the reservoir. The TMDL assumptions for future sediment quality established an implicit and ambitious future goal of near-zero sediment enrichment. Specifically, the model simulation that established Idaho Powers oxygenation requirement assumed pristine sediment conditions in the reservoir in the future (0.1 mg O₂/m²-day² in the lacustrine zone of the reservoir) compared to highly enriched sediments today (2-8 mg O₂/m²-day in the lacustrine zone of the reservoir, see SR-HC TMDL, Appendix F, page 14). For the suite of allocations in the TMDL to meet water quality standards, this pristine sediment condition must be viewed as a target condition necessary to meet water quality standards (in conjunction with tributary allocations and Idaho Power's oxygenation requirement). **In this light, it would be inconsistent to allow high phosphorus loadings from tributaries during October to April, which could contribute to enriched sediments either directly or via algal growth and die-off.**

Ex. 5 at 28-29 (emphasis added).

The applicable federal regulations also are not ambiguous: those regulations require that the Permit the Region issues “shall include” water quality-based effluent limits to “[a]chieve water quality standards.” 40 C.F.R. § 122.44(d)(1). Specifically, “[l]imitations must control all pollutants” that may cause, contribute to, or have a reasonable potential to cause a violation of water quality standards. *Id.* § 122.44(d)(1)(i). There is no legal authority for the Region to ignore these clear requirements of the federal NPDES permitting regulations and water quality standards.

The condition present for the Facility, which sets phosphorus limits on the permitted effluent only from May 1 through September 30, is based on a clearly erroneous finding of act of conclusion of law and warrants remand of this Permit to the Region.

2. THE REGION FAILED TO CONSIDER THE ISSUES RAISED IN THE COMMENTS AND ADOPTED A PERMIT THAT IS NOT RATIONAL IN LIGHT OF THE INFORMATION IN THE RECORD.

In reviewing actions of the Regions, the Board reviews the record to determine whether that record demonstrates that the Region duly considered the issues raised in the comments and whether the approach ultimately adopted by the Region is rational in light of the information in the record. *See In re Gov’t of DC Mun. Separate Storm Sewer Sys.*, 10 E.A.D. 323, 342 (EAB 2002).

Here, EPA, in responding to Petitioner’s comments and concerns, failed to articulate evidentiary support for the adequacy of the seasonal phosphorus limit at question in this petition. Indeed, EPA acknowledged that year round phosphorus limits were needed, and that the seasonal limits were not sufficient to protect the affected waters from the problems associated with high total phosphorus concentration. Ex. 5 at 28-29. EPA’s response to IRU’s comment, in fact, goes

on for several paragraphs about the inadequacy of seasonal phosphorus limits in the Snake River-Hells Canyon TMDL, and consequently, the inadequacy of the limit set in the permit in question, which was based, in part, on the Snake River-Hells Canyon TMDL. *Id.* EPA, therefore, has failed to articulate any reason for the setting of the permit condition in question and has, instead, offered very compelling evidence in support of modifying the permit condition in question to include a year round phosphorus limit. In short, there is no rational connection between the information in the record, the Region's response to comments, and what ultimately was included as terms in the Permit. Accordingly, the Permit should be remanded to the Region to adopt year round phosphorus limits.

RELIEF REQUESTED

Idaho Rivers United respectfully requests that Permit No. ID0023981 be remanded and that the Region be directed to develop phosphorus limits for the time period between and including the months of October and April. Petitioner also respectfully requests that any and all provisions of the Permit not directly challenged by this petition continue to remain in effect, pursuant to 40 C.F.R. § 124.16(a)(2)(i).

Dated this 12th day of April, 2012.

Respectfully submitted,



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