



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

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C.L. "Butch" Otter, Governor
John H. Tippetts, Director

July 19, 2016

Mr. Michael J. Lidgard
NPDES Permits Unit Manager
EPA Region 10
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101-3140

Subject: Final 401 Water Quality Certification for the City of Caldwell Wastewater Treatment Plant,
ID-0021504

Dear Mr. Lidgard:

The Boise Regional Office of the Department of Environmental Quality (DEQ) has reviewed the above referenced permit for the City of Caldwell WWTP. Section 401 of the Clean Water Act requires that states issue certifications for activities which are authorized by a federal permit and which may result in the discharge to surface waters. In Idaho, DEQ is responsible for reviewing these activities and evaluating whether the activity will comply with Idaho's Water Quality Standards, including any applicable water quality management plans (e.g., total maximum daily loads). A federal discharge permit cannot be issued until DEQ has provided certification or waived certification either expressly or by taking no action.

This letter is to inform you that DEQ is issuing the attached draft 401 certification subject to the terms and conditions contained therein. DEQ is requesting the following changes to the permit to ensure consistency with the Lower Boise River TMDL, other permits in the watershed, and our water quality standards:

1. Revise the interim limit from 5.8 mg/L to 3.0 mg/L.
2. Revise the annual final compliance progress reporting period to December 31, 2016 and the first reporting due date to February 15, 2017, and annually thereafter.

Please contact Kati Carberry at (208) 373-0434 to discuss any questions or concerns regarding the content of this certification.

Sincerely,

A handwritten signature in black ink, appearing to read "Aaron Scheff".

Aaron Scheff
Regional Administrator
Boise Regional Office

Enclosure

ec: Brian Nickel, EPA Region 10
Nicole Deinarowicz, DEQ State Office



Idaho Department of Environmental Quality Final §401 Water Quality Certification

July 19, 2016

NPDES Permit Number(s): ID-0021504, City of Caldwell Wastewater Treatment Plant (WWTP)

Receiving Water Body: Boise River

Pursuant to the provisions of Section 401(a)(1) of the Federal Water Pollution Control Act (Clean Water Act), as amended; 33 U.S.C. Section 1341(a)(1); and Idaho Code §§ 39-101 et seq. and 39-3601 et seq., the Idaho Department of Environmental Quality (DEQ) has authority to review National Pollutant Discharge Elimination System (NPDES) permits and issue water quality certification decisions.

Based upon its review of the above-referenced permit and associated fact sheet, DEQ certifies that if the permittee complies with the terms and conditions imposed by the permit along with the conditions set forth in this water quality certification, then there is reasonable assurance the discharge will comply with the applicable requirements of Sections 301, 302, 303, 306, and 307 of the Clean Water Act, the Idaho Water Quality Standards (WQS) (IDAPA 58.01.02), and other appropriate water quality requirements of state law.

This certification does not constitute authorization of the permitted activities by any other state or federal agency or private person or entity. This certification does not excuse the permit holder from the obligation to obtain any other necessary approvals, authorizations, or permits.

Antidegradation Review

The WQS contain an antidegradation policy providing three levels of protection to water bodies in Idaho (IDAPA 58.01.02.051).

- Tier 1 Protection. The first level of protection applies to all water bodies subject to Clean Water Act jurisdiction and ensures that existing uses of a water body and the level of water quality necessary to protect those existing uses will be maintained and protected (IDAPA 58.01.02.051.01; 58.01.02.052.01). Additionally, a Tier 1 review is performed for all new or reissued permits or licenses (IDAPA 58.01.02.052.07).
- Tier 2 Protection. The second level of protection applies to those water bodies considered high quality and ensures that no lowering of water quality will be allowed unless deemed necessary to accommodate important economic or social development (IDAPA 58.01.02.051.02; 58.01.02.052.08).
- Tier 3 Protection. The third level of protection applies to water bodies that have been designated outstanding resource waters and requires that activities not cause a lowering of water quality (IDAPA 58.01.02.051.03; 58.01.02.052.09).

DEQ is employing a water body by water body approach to implementing Idaho's antidegradation policy. This approach means that any water body fully supporting its beneficial uses will be considered high quality (IDAPA 58.01.02.052.05.a). Any water body not fully supporting its beneficial uses will be provided Tier 1 protection for that use, unless specific circumstances warranting Tier 2 protection are met (IDAPA 58.01.02.052.05.c). The most recent federally approved Integrated Report and supporting data are used to determine support status and the tier of protection (IDAPA 58.01.02.052.05).

Pollutants of Concern

The City of Caldwell WWTP discharges the following pollutants of concern: five day biochemical oxygen demand (BOD₅), TSS, pH, *E. coli*, total phosphorus (TP), orthophosphate, ammonia, nitrate + nitrite, total Kjeldahl nitrogen (TKN), temperature (heat), arsenic, cadmium, chromium, copper, cyanide, lead, mercury, nickel, silver, zinc, and whole effluent toxicity (WET). Effluent limits have been developed for BOD₅, TSS, pH, *E. coli*, TP, ammonia, copper, nickel, and WET. No effluent limits are proposed for orthophosphate, nitrate + nitrite, TKN, temperature, arsenic, cadmium, chromium, cyanide, lead, mercury, silver, or zinc; however monitoring requirements are included in the permit to determine WQS compliance and future permit limits, where needed.

Receiving Water Body Level of Protection

The City of Caldwell WWTP discharges to the Boise River within the Lower Boise assessment unit (AU) 17050114SW005_06b (Boise River – Middleton to Indian Creek). This AU has the following designated beneficial uses: cold water aquatic life, salmonid spawning and primary contact recreation. In addition to these uses, all waters of the state are protected for agricultural and industrial water supply, wildlife habitat, and aesthetics (IDAPA 58.01.02.100).

The cold water aquatic life use in the Boise River AU is not fully supported due to excess sedimentation/siltation, temperature, total phosphorus (TP), low flow alterations, and physical substrate habitat alterations (2012 Integrated Report). The primary contact recreation beneficial use is not fully supported due to excess *E. coli* bacteria. As such, DEQ will provide Tier 1 protection only for the aquatic life use and recreation beneficial use (IDAPA 58.01.02.051.02; 58.01.02.051.01).

Protection and Maintenance of Existing Uses (Tier 1 Protection)

As noted above, a Tier 1 review is performed for all new or reissued permits or licenses, applies to all waters subject to the jurisdiction of the Clean Water Act, and requires demonstration that existing uses and the level of water quality necessary to protect existing uses shall be maintained and protected. In order to protect and maintain designated and existing beneficial uses, a permitted discharge must comply with narrative and numeric criteria of the Idaho WQS, as well as other provisions of the WQS such as Section 055, which addresses water quality limited waters. The numeric and narrative criteria in the WQS are set at levels that ensure protection of designated beneficial uses. The effluent limitations and associated requirements contained in the City of Caldwell WWTP permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS.

Ammonia

While both the current and proposed water quality effluent limits for ammonia were developed to protect cold water aquatic life from acute and chronic exposure, the proposed limits are less stringent than the 1999 permit. Three factors contributed to the change in the permit limits for ammonia: 1) The methodology for calculating ammonia criteria in Idaho's WQS was revised in 2002; and, 2) current receiving water temperature and pH data used to calculate ammonia limits varied substantially from data available in 1999; and 3) Re-evaluation of data and seasonality for low flow conditions. The proposed limits for ammonia will protect and maintain existing and designated beneficial uses in Boise River. These limits do not exceed narrative or numeric criteria in the Idaho WQS and meet the requirements for Tier 1 protection (IDAPA 58.01.02.051.01.).

Water bodies not supporting existing or designated beneficial uses must be identified as water quality limited, and a total maximum daily load (TMDL) must be prepared for those pollutants causing impairment. A central purpose of TMDLs is to establish wasteload allocations for point source discharges, which are set at levels designed to help restore the water body to a condition that supports existing and designated beneficial uses. Discharge permits must contain limitations that are consistent with wasteload allocations in the approved TMDL.

Temperature

The City of Caldwell WWTP discharges to the Boise River, which is impaired for temperature; however a TMDL has not yet been completed. Prior to the development of the TMDL, the WQS require the application of the antidegradation policy and implementation provisions to maintain and protect uses (IDAPA 58.01.02.055.04). At this time, there is not sufficient data to determine whether or not the City of Caldwell's discharge of heat to the Boise River has a reasonable potential to cause or contribute to excursions above the water quality standards for temperature. Continuous temperature monitoring of the effluent and receiving water are permit requirements. This monitoring will facilitate an assessment of whether the discharge will negatively impact the temperature of the lower Boise River.

Total Phosphorus

The Boise River, at this location (AU 17050114SW005_06b), is also impaired for TP. The City of Caldwell WWTP discharge has the potential to cause or contribute to excursions above water quality standards for excess nutrients. Total phosphorus has been identified as the limiting nutrient. Therefore, the permit proposes water quality based effluent limits for total phosphorus. The *2015 Total Phosphorus TMDL Addendum to the Lower Boise River Subbasin Assessment and Total Maximum Daily Loads TP TMDL* was completed to address TP impairment in the Lower Boise River. Water quality monitoring and modeling completed since 2012 have determined the extent of impairment in the Boise River as well as WLAs expected to restore beneficial uses in the Boise River. The WLAs developed in the TMDL for the City of Caldwell WWTP are proposed as limits in this NPDES permit. The effluent limitations in the permit will result in a decrease of TP in the Boise River.

The Hells Canyon segment of the Snake River is also impaired due to excess nutrients. The *Snake River Hells Canyon (SR-HC) TMDL* (DEQ 2003) established a load allocation for the Boise River based upon a total phosphorus concentration of 0.07 mg/l at the mouth of the Boise

River. The TMDL for TP for the Boise River includes a target TP concentration at the mouth of the Boise River that ensures that the Boise River load allocation for the SR-HC TMDL will be achieved. DEQ believes the permit will ensure compliance with the TMDL and the applicable narrative criteria.

Sediment and *E. coli* Bacteria

The Boise River, at this location (AU 17050114SW005_06b), is also impaired for sediment and bacteria. The EPA-approved *Lower Boise River TMDL* (1999), TMDL Addendum (2008), and TMDL Addendum (2015) establish wasteload allocations for sediment and bacteria. These wasteload allocations are designed to ensure the Boise River will achieve the water quality necessary to support its existing and designated aquatic life beneficial uses and comply with the applicable numeric and narrative criteria. The effluent limitations and associated requirements contained in the City of Caldwell WWTP permit are set at levels that comply with these wasteload allocations.

In sum, the effluent limitations and associated requirements contained in the City of Caldwell WWTP permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS and the wasteload allocations established in the *Lower Boise River TMDL 2015 Total Phosphorus TMDL Addendum*, *Lower Boise River TMDL* and the *SR-HC TMDL*. Therefore, DEQ has determined the permit will protect and maintain existing and designated beneficial uses in the Boise River in compliance with the Tier 1 provisions of Idaho's WQS (IDAPA 58.01.02.051.01 and 58.01.02.052.07).

Conditions Necessary to Ensure Compliance with Water Quality Standards or Other Appropriate Water Quality Requirements of State Law

Compliance Schedules

Pursuant to IDAPA 58.01.02.400.03, DEQ may authorize compliance schedules for water quality-based effluent limits issued in a permit for the first time. City of Caldwell WWTP cannot immediately achieve compliance with the effluent limits for TP and WET; therefore, DEQ authorizes compliance schedules and interim requirements as set forth below. These compliance schedules provide the permittee a reasonable amount of time to achieve the final effluent limits as specified in the permit. At the same time, the schedules ensure that compliance with the final effluent limits is accomplished as soon as possible.

While the schedules of compliance are in effect, the City of Caldwell WWTP must meet the following interim requirements:

- 1) The City of Caldwell WWTP must comply with the interim effluent limitations (Table 1) and monitoring requirements in Part I.B. of the Permit.
- 2) Until compliance with the final effluent limitations are achieved, the City of Caldwell WWTP must complete the tasks listed below in Table 1 and Table 2, as required under the schedules of compliance.

- 3) In addition, the City of Caldwell WWTP must submit an annual progress report outlining progress made towards reaching the final compliance dates for the effluent limitations. The annual progress report based on data gathered through December 31st must be submitted to the EPA and DEQ annually by February 15th of the subsequent year. The first report through December 31, 2016 is due on February 15, 2017 and annually thereafter, until compliance with effluent limitations is achieved. See also the Permit Part III.K., "Compliance Schedules." At a minimum, the annual progress report must include:
- i) An assessment of the previous year's TP and WET effluent data and comparison to the final effluent limitations in the permit.
 - ii) A description of progress made towards meeting the final effluent limitations, including the applicable deliverables required under in Table 1 and 2. Include any exceedances of interim permit limits or anticipated challenges for compliance within the next year. This may include a technological explanation and/or a request to modify the permit.
 - iii) A description of actions and milestones targeted for the upcoming year towards meeting the final effluent limitations.
- 4) The permittee must comply with the Interim Effluent Limits, Compliance Tasks and Compliance Dates in Table 1 and Table 2:

Table 1. WET Effluent Limits and Compliance Dates.

Effluent Limits		
Period		Effluent Limit
For 2 years and 11 months after Effective Date of NPDES Permit (EDP)		Average Monthly Limit (year round): 8 Chronic Toxic Units (TU _c) Maximum Daily Limit (year round): 16 TU _c
3 years from EDP		See Final Permit Part I.B.1, Table 1
Task No.	Completion Date	Task Activity
1	Quarterly after EDP	Conduct WET testing per permit.
2	EDP + 0.5 Years	Update the City's Pretreatment Program Plan (<i>Pretreatment Program for the City of Caldwell, Idaho</i> ; approved by EPA in November 1993). Deliverable: The permittee will submit an amended plan to EPA and provide the EPA-approved plan to DEQ.
3	EDP + 3 Years	Implementation of City's Updated Pretreatment Program and Achieve Final Effluent Limitation Deliverable: The permittee must achieve compliance with the final effluent limitations within 3 years of the EDP.

Table 2. Total Phosphorus Effluent Limits and Compliance Dates

Effluent Limits		
Period		Effluent Limit
For 9 years and 11 months from the Effective Date of the NPDES Permit (EDP)		Interim Limit not to exceed 3.0 mg/L, Annual average
10 years from EDP		See Final Permit Part I.B.1, Table 1
Task No.	Completion Date	Task Activity
1	February 15, 2016 and annually thereafter	Deliverable: The permittee will provide DEQ and EPA with a written Progress Report.
2	EDP + 3 Years	Complete Facility Planning Study that evaluates phosphorus removal and trading or offsets and submit the Study to DEQ for approval. Deliverable: The permittee will provide EPA with written notice that the facility Planning Study has been submitted to DEQ.
3	EDP + 5.5 Years	Evaluate and Obtain Financing for Facility Improvements Recommended in Facility Planning Study Deliverable: The permittee will provide DEQ and EPA with written notice that the necessary funding has been obtained.
4	EDP + 6 Years	Complete Preliminary Design Report and submit the Report to DEQ for approval. Deliverable: The permittee will provide EPA with written notice that the preliminary design report has been submitted to DEQ.
5	EDP + 7 Years	Complete Final Design Deliverable: The permittee will submit the final design to DEQ for approval and provide EPA with written notice that the final design documents are completed.
6	EDP + 7.25 Years	Complete Bidding Deliverable: The permittee will provide DEQ and EPA with written notice that the Bid has been awarded.
7	EDP + 7.5 Years	Start Construction Deliverable: The permittee will provide DEQ and EPA with a copy of the Notice to Proceed with construction.
8	EDP + 9.5Years	Complete Construction Deliverable: The permittee will provide DEQ and EPA with written notice that the construction is completed.
9	EDP + 9 Years and 11 months	Process Optimization and Achieve Final Effluent Limitation Deliverable: The permittee must achieve compliance with the final effluent limitations and provide DEQ and EPA with written notice of compliance with final effluent limitations.

Mixing Zones

Pursuant to IDAPA 58.01.02.060, DEQ authorizes the mixing zones summarized in Table 3.

Table 3. Authorized Mixing Zones.

Pollutant	Season	Authorized % Critical Flow Mixing Zone
Ammonia	Year Round	25%
Arsenic	April-June	20%
Arsenic	July-March	10%
Chromium IV	April-June	25%
Chromium IV	July-March	13%
Copper	Year round	25%
Mercury	April-June	25%
Mercury	July-March	13%
Nickel	Year round	25%
Zinc	April-June	14%
Zinc	July-March	7%
Whole Effluent Toxicity (WET)	Year Round	25%

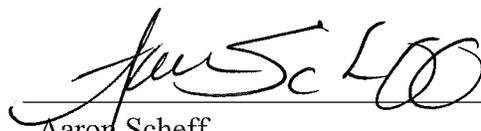
Other Conditions

This certification is conditioned upon the requirement that any material modification of the permit or the permitted activities—including without limitation, any modifications of the permit to reflect new or modified TMDLs, wasteload allocations, site-specific criteria, variances, or other new information—shall first be provided to DEQ for review to determine compliance with Idaho WQS and to provide additional certification pursuant to Section 401.

Right to Appeal Final Certification

The final Section 401 Water Quality Certification may be appealed by submitting a petition to initiate a contested case, pursuant to Idaho Code § 39-107(5) and the “Rules of Administrative Procedure before the Board of Environmental Quality” (IDAPA 58.01.23), within 35 days of the date of the final certification.

Questions or comments regarding the actions taken in this certification should be directed to Kati Carberry, DEQ Boise Regional Office, at (208) 373.0434 or kati.carberry@deq.idaho.gov.



Aaron Scheff

Regional Administrator

Boise Regional Office

RESPONSE TO COMMENTS

Caldwell WWTP NPDES Permit # ID-0021504

Idaho Department of Environmental Quality

On July 23, 2015, the U.S. Environmental Protection Agency issued a public notice for the reissuance of the City of Caldwell Wastewater Treatment Plant National Pollutant Discharge Elimination System (NPDES) permit No. ID-0021504, including the draft Clean Water Act (CWA) Section 401 certification and antidegradation analysis prepared by Idaho Department of Environmental Quality (DEQ). This Response to Comments provides a summary of significant comments received by DEQ on the 401 certification of this NPDES permit and provides corresponding DEQ responses.

Comments were received by:

1. Justin Hayes, Program Director, Idaho Conservation League (ICL), received August 11, 2015.
2. Liz Paul, Idaho Rivers United (IRU), received October 19, 2015.

Commenter: Justin Hayes, Idaho Conservation League (ICL)

Comments submitted to EPA (and cc'd to DEQ) that are related to DEQ's 401 certification:

Comment:

Total Phosphorus Limits

Thus, Caldwell's TP effluent mass loading limit needs to be based on effluent concentration and discharge volume. It is not appropriate to only articulate this limit in terms of lb/day loading. Rather, Caldwell's limit needs to be expressed such that their discharge does not exceed a concentration of either 0.1 mg/l in the May 1 – September 30 period or 0.35 mg/day in the October 1 – April 30 time period and also does not exceed a total load discharge of 7.1 lb/day TP during May 1 – September 30 and 24.8 lb/day during the October 1 – April 30 period (expressed as a monthly average and corresponding weekly average). To be consistent with the TMDL, the concentration limits cannot be exceeded.

Response:

The TP limits in the permit that are expressed as mass loads (lbs/day) were derived specifically from the mass WLAs in the *Lower Boise River Total Phosphorus Addendum TMDL*. EPA has the discretion to issue the permits in question with TP mass limits (lbs/day), while not specifying TP concentration limits and or weekly averages.

Commenter: Liz Paul, Idaho Rivers United (IRU)

Comments submitted to EPA (and cc'd to DEQ) that are related to DEQ's 401 certification:

TSS Limits

Comment:

The Fact Sheet reviews existing and pending TMDLs of relevance to the Caldwell WWTP, but fails to include the 2015 Sediment and Bacteria Addendum TMDL that was submitted to EPA for approval on June 18, 2015. That TMDL has since been approved by EPA (on September 18, 2015). This TMDL applies to Indian Creek that enters the Boise River immediately downstream of the Caldwell WWTP discharge. Idaho Rivers United believes that the NPDES permit for the Caldwell WWTP should be consistent with this TMDL and that the proposed effluent limits for TSS.

Response:

The proposed effluent concentration and load for sediment support the existing, cold water aquatic life and secondary contact recreation uses in the Boise River. The limits in the permit are consistent with the sediment load allocations in the 1999 *Lower Boise River TMDL* and 2015 *Lower Boise River Sediment and Bacteria Addendum TMDL* which were designed to ensure the Boise River and its tributaries, including Indian Creek, will achieve the water quality necessary to support their existing and designated aquatic life beneficial uses and comply with the applicable numeric and narrative criteria.

Total Phosphorus Limits

Comment:

Idaho Rivers United does not support the proposed schedule of compliance for Total Phosphorus and especially the lack of interim effluent reductions. Federal regulations generally require that interim effluent limits be at least as stringent as the final limits in the previous permit (40 CFR 122.44(l)(1)). There were no Total Phosphorus limits in the previous permit (only because no new permit has been issued for 17 years), but interim limits should certainly not be higher than current Total Phosphorus discharge.

EPA is also showing poor judgement in allowing Caldwell 9 years and 11 months to comply with the Total Phosphorus limits. That's longer than a full permit cycle. Caldwell has had more than a decade to figure out how to decrease phosphorous discharge, something that has been accomplished in less than 10 years by hundreds of WWTPs across the nation including some in the Treasure Valley. These permit limitations are no surprise to anyone, and there's no reason to give them 7 years to complete final design.

Response:

The City's interim limit was changed from 5.8 mg/L to 3.0 mg/L, as an annual average in the proposed Final Permit. In order for Caldwell to meet the final TP effluent limits, the WWTF will need to undergo major upgrades to the treatments system, which will require time for engineering and construction activities. DEQ believes that the current compliance schedule will require the City of Caldwell to meet compliance as soon as possible.