STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

2110 Ironwood Parkway • Coeur d'Alene, Idaho 83814 • (208) 769-1422

C.L. "Butch" Otter, Governor
Curt Fransen, Director

June 5, 2014

Mr. Michael Lidgard
US Environmental Protection Agency, Region 10
1200 6th Avenue, OW-130
Seattle, WA 98101

RE: Final §401 Water Quality Certification for the Final NPDES Permit No. ID-0022853 for the City of Coeur d'Alene Wastewater Facility (Coeur d'Alene)

Dear Mr. Lidgard:

As you are aware, the Idaho Water Quality Standards rules regarding antidegradation were revised, which necessitated some changes to each of the three Spokane River dischargers certifications. In the interest of time, DEQ revised the certifications and received public comment on these changes after revision of Idaho Code but prior to the final step of rule adoption. We received no substantive comment on the changes. The rule changes became official on June 4, 2014 with no significant changes to the draft rule. We have made the necessary revisions and are submitting final certification for the City of Coeur d'Alene Wastewater Facility.

To recap the Coeur d'Alene certification process, on August 28, 2012 DEQ submitted our first draft certification. On September 18, 2012 DEQ revised the draft certification due to an error in the mixing zone section. We submitted another revised draft certification on April 26, 2013 in response to a revised draft permit. On June 25, 2013 the DEQ Director clarified the agency's interpretation of IDAPA 58.01.02.055.04 necessitating a revised draft certification.

Please direct any questions to June Bergquist at 208.666.4605 or june.bergquist@deq.idaho.gov .

Sincerely,

Daniel Redline
Regional Administrator
Coeur d'Alene Regional Office

Enclosure

C: Miranda Adams, DEQ Boise
Brian Nickel, EPA Region 10, Seattle
Sid Fredrickson, City of Coeur d'Alene

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Idaho Department of Environmental Quality

Final 401 Water Quality Certification

June 5, 2014

NPDES Permit Number(s): ID-002285-3 City of Coeur d'Alene Wastewater Facility

Receiving Water Body: Spokane 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

In March 2011, Idaho incorporated new provisions in Idaho Code § 39-3603 addressing antidegradation implementation. At the same time, Idaho adopted antidegradation implementation procedures in the Idaho WQS. DEQ submitted the antidegradation implementation procedures to the US Environmental Protection Agency (EPA) for approval on April 15, 2011. On August 18, 2011, EPA approved the implementation procedures.

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 58.01.02.052.05).
- 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; 58.01.02.052.06).

- 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; 58.01.02.052.07).

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 (Idaho Code § 39-3603(2)(b)(i)). 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 (Idaho Code § 39-3603(2)(b)(iii)). The most recent federally approved Integrated Report and supporting data are used to determine support status and the tier of protection (Idaho Code § 39-3603(2)(b)).

Pollutants of Concern

The City of Coeur d'Alene discharges the following pollutants of concern: carbonaceous biochemical oxygen demand ($CBOD_5$), total suspended solids (TSS), pH, *E. coli*, chlorine, ammonia, phosphorus, silver and zinc. Effluent limits have been developed for these pollutants of concern. Copper, lead, cadmium and nitrate + nitrite are additional pollutants of concern for which a reasonable potential analysis was performed. No effluent limits were established for these pollutants because results of the analysis indicated they had no reasonable potential to exceed water quality standards.

Receiving Water Body Level of Protection

The City of Coeur d'Alene discharges to the Spokane River assessment unit (AU) ID17010305PN004_04 (Coeur d'Alene Lake to Post Falls Dam). This AU has the following designated beneficial uses: cold water aquatic life, salmonid spawning, primary contact recreation and domestic water supply. 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 Spokane River AU is not fully supported due to excess cadmium, lead, zinc and phosphorus (2010 Integrated Report). The primary contact recreation beneficial use has not been assessed; however, *E. coli* data collected in 2007 indicate that recreation uses are fully supported. As such, DEQ will provide Tier 1 protection only for the aquatic life use and Tier 2 protection, in addition to Tier 1, for the recreation beneficial use (Idaho Code § 39-3603(2)(b)).

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 Coeur d'Alene permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS.

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.

Prior to the completion of a TMDL or equivalent process for water quality limited water bodies, IDAPA 58.01.02.055.04 requires the Department take those actions required by the antidegradation policy (section 051), the antidegradation implementation procedures (section 052), and the provisions in section 39-3610, Idaho Code.

The cold water aquatic life use in the Spokane River AU is not fully supported due to excess cadmium, lead, zinc and phosphorus (2010 Integrated Report). In addition, the 2010 Integrated Report lists the Spokane River as high priority for TMDL development. Therefore, section 055.04 is applicable to the discharges of phosphorus, lead, zinc and cadmium.

Phosphorus

Idaho Code Section 39-3610 requires that a TMDL or equivalent process be developed for high priority waters. DEQ believes a process equivalent to a TMDL has been completed for phosphorus. In order to meet Washington and Idaho WQS, EPA modeled the cumulative impact of all sources of nutrients and oxygen-demanding pollutants, both point and non-point sources, in Idaho and Washington for the Spokane River. The limits EPA has set in the draft permits for the point sources in Idaho, including the Coeur d'Alene permit, are based upon this modeling analysis. The proposed effluent limits will result in a concentration of approximately 9.1µg/L of total phosphorus (TP) in the Idaho portion of the Spokane River. This level meets Idaho's narrative criteria for excess nutrients (See IDAPA 58.01.02.200.06).

In summary, equivalent to a TMDL, EPA has calculated the loading from point and non-point sources, and set limits that will attain WQS for phosphorus in Idaho. Therefore, the phosphorus effluent limits in the draft permit meet the requirements of Tier 1 protection and are consistent with IDAPA 58.01.02 sections 051(Antidegradation Policy),052 (Antidegradation Implementation) and 055 (Water Quality Limited Waters and TMDLs).

Cadmium, Zinc and Lead

In August 2000, EPA approved a TMDL prepared by DEQ for cadmium, lead and zinc in the CDA River Basin, which included the Spokane River. The TMDL included allocations for the point source dischargers to the Spokane River, including the City of Coeur d'Alene. However, this TMDL was invalidated by the Idaho Supreme Court in 2003. Until very recently, there had been no additional effort by DEQ to develop a TMDL for metals in the Spokane River, and therefore, the river is still on the state's 303(d) list for cadmium, lead and zinc and is identified as a high priority water body for TMDL development. As previously mentioned, Idaho Code Section 39-3610 requires that a TMDL or equivalent process be developed for high priority

waters. DEQ has begun the process to develop a TMDL for cadmium, lead and zinc pollution in the Spokane River. As part of that TMDL, wasteload allocations will be developed for all point source dischargers.

In the draft NPDES permit for Coeur d'Alene, EPA has included effluent limits for zinc that ensure the effluent meets the water quality criteria at the end of pipe. These limits are more stringent than the 1999 permit based upon the results of the reasonable potential analyses. There was no reasonable potential for this discharge to exceed water quality criteria for cadmium and lead, therefore, the initial draft permit did not contain cadmium or lead limits. This level of protection meets the requirements of Tier 1 protection and therefore, is consistent with IDAPA 58.01.02 sections 051 and 052. Table 1 provides a summary of the existing permit limits and the proposed reissued permit limits. The City of Coeur d'Alene is not requesting a design flow increase.

Section 055.05 provides that once a TMDL or equivalent process is completed, the discharge of causative pollutants must be consistent with the allocations in the TMDL. Therefore, once a TMDL for metals is completed by DEQ for the Spokane River and approved by EPA, the limits for metals in the permit, including the limits discussed herein, should be adjusted to reflect the approved TMDL.

In summary, the effluent limitations and associated requirements contained in the Coeur d'Alene permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS. Therefore, DEQ has determined the permit will protect and maintain existing and designated beneficial uses in the Spokane River.

Table 1. Comparison of current and proposed permit limits.

		Proposed Permit			Current Permit			Change[1]
Parameter	Units	AML	AWL	Max Daily	AML	AWL	Max Daily	
Pollutants with limits in both the current and proposed permit								
$CBOD_5$ November-January	*mg/L*	*25*	*40*	-	*25*	*40*	-	*I*[2]
	lb/day	*1251*	*2002*	-	*1250*	*2000*	-	
	% removal	*85%*	-	-	*85%*	-	-	
$CBOD_5$ February-March	*mg/L*	*25*	*40*	-	*25*	*40*	-	*D*
	lb/day	*seasonal average 226 lb/day*		-	*1250*	*2000*	-	
	% removal	*85%*	-	-	*85%*	-	-	
$CBOD_5$ April-October	*mg/L*	*25*	*40*	-	*25*	*40*	-	*D*
	lb/day	*seasonal average 203 lb/day*		-	*1250*	*2000*	-	
	% removal	*85%*	-	-	*85%*	-	-	
$CBOD_5$ Feb-Oct interim limit	*mg/L*	*25*	*40*	-	*25*	*40*	-	*nc*
	lb/day	*1250*	*2000*	-	*1250*	*2000*	-	
	% removal	*85%*	-	-	*85%*	-	-	
TSS	*mg/L*	*30*	*45*	-	*30*	*45*	-	*I*[2]
	lb/day	*1501*	*2252*	-	*1,500*	*2,250*	-	
	% removal	*85%*	-	-	*85%*	-	-	
pH Oct-June	*s.u.*	*6.3 – 9.0 all times*			*6.2 – 9.0 all times*			*D*
pH July-Sept	*s.u.*	*6.5 – 9.0 all times*			*6.3 – 9.0 all times*			*D*
E. coli	*#/100 mL*	*126*	-	*406*	-	-	-	*nc*[3]
Fecal coliform[3] *May-Sept*	*#/100 mL*	-	-	-	*50*	*200*	*500*	*nc*[3]
Fecal coliform[3] *October-April*	*#/100 mL*	-	-	-	-	*200*	*800*	*nc*[3]
Chlorine October-June	*µg/L*	*150*	-	*390*	*150*	-	*390*	nc
	lb/day	*7.5*	-	*20*	*7.5*	-	*20*	
Chlorine July-Sept	*µg/L*	*39*	-	*102*	*39*	-	*102*	nc
	lb/day	*2.0*	-	*5.1*	*2.0*	-	*5.1*	
Ammonia (July-Sept)	*mg/L*	-	-	-	*10*	-	*29*	*D*
	lb/day		*≤4mgd*	-	*350*		*1,000*	*D*
Ammonia (July-Sept)	*mg/L*	-		-	*7.4*	-	*21*	*D*
	lb/day	-	*>4.2mgd*		*370*	-	*1,100*	*D*
Ammonia July-Sept interim limits	*mg/L*	*10*	-	*29*				*nc*
	lb/day	*350*	*≤4mgd*	*1,000*		-		*nc*
Ammonia July-Sept interim limits	*mg/L*	*7.4*	-	*21*				*nc*
	lb/day	*370*	*>4.2mgd*	*1,100*				*nc*
Ammonia (March-June)	*mg/L*	-	-	-	-	-	-	-
	lb/day	*649*	-	*1547*	-	-	-	*D*
Ammonia (July-Sept)	*mg/L*	*6.59*	-	*15.7*	-	-	-	*D*
	lb/day	*330*	-	*786*	-	-	-	*D*
Ammonia (October)	*mg/L*	-	-	-	-	-	-	*nc*
	lb/day	-	-	-	-	-	-	
Ammonia (March-Oct)	*mg/L*	-	-	-	-	-	-	-
	lb/day	*Seasonal Average Limit 272lb/day*			-	-	-	*D*

Table 1 Continued…

		Proposed Permit			Current Permit		Change[1]	
Parameter	*Units*	*Average Monthly Limit*	*Average Weekly Limit*	*Maximum Daily Limit*	*Average Monthly Limit*	*Average Weekly Limit*	*Maximum Daily Limit*	
Pollutants with limits in both the current and proposed permit (continued)								
Phosphorus (March-Oct)	***percent removal***	-	-	-	***85%***	-	-	***D***
phosphorus Feb-Oct[4] interim limits	***µg/L***	***1,000***	***1,600***	-	***1,000***	-	-	***nc[4]***
	lb/day	***50***	***80***		***85% removal***	-	-	
Phosphorus February-October	***µg/L***	-	-	-	-	-	-	***D***
	lb/day	***3.17 seasonal***	***average***	-	-	-	-	***D***
Silver (Oct-June>4.2 mgd	***µg/L***	***8.01***	-	***22.5***	***16.0***	-	***31.9***	***D***
	lb/day	***0.401***	-	***1.13***	***0.80***	-	***1.60***	***D***
Zinc	***µg/L***	***135***	-	***168***	***136.2***	-	***200.8***	***D***
	lb/day	***6.76***	-	***8.42***	***6.8***	-	***10.0***	***D***

Table 1 Continued...

Parameter	Units	Proposed Permit			Current Permit			Change[1]
		Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit	Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit	
Pollutants with no limits in either the current and proposed permit								
Temperature	***°C***	***Report***	-	***Report***	-	-	***Report***	***nc***
PCB	***pg/L***	***Report***		***Report***	-	-	-	***nc***
Mercury	***ng/L***	-	-	-	-	-	-	***nc***
TCDD	***pg/L***	***Report***	-	***Report***	-	-	-	***nc***
Silver	***µg/L***	***Report***	-	***Report***	-	-	-	***nc***
	lb/day	-	-	-	-	-	-	
Alkalinity	***mg/L as $CaCO_3$***	***Report***	-	***Report***	-	-	-	***nc***
Hardness	***mg/L as $CaCO_3$***	***Report***	-	***Report***	-	-	-	***nc***
Oil and Grease	***mg/L***	***Report***	-	***Report***	-	-	-	***nc***
TDS	***mg/L***	***Report***	-	***Report***	-	-	-	***nc***
Ortho-phosphate	***µg/L***	***Report***	-	***Report***	-	-	-	***nc***
Kjeldahl Nitrogen	***mg/L***	***Report***	-	***Report***	-	-	-	***nc***
Nitrate-Nitrite	***mg/L***	***Report***	-	***Report***	-	-	-	***nc***
Dissolved Oxygen	***mg/L***	***Report minimum and average***			-	-	-	***nc***
cadmium	***µg/L***	***report***			***report***			***nc***
lead	***µg/L***	***report***			***report***			***nc***

[1] ***nc*** = no change in effluent limit from current permit; ***I*** = increase of pollutants from current permit; ***D*** = decrease of pollutants from current permit;

[2]The increased loads of these pollutants in the draft permit do not exceed narrative or numeric criteria in the Idaho WQS and meets the requirements for Tier 1 protection.

[3] DEQ requested EPA replace the fecal coliform limits with *E. coli* effluent limits. See discussion under High Quality Waters section (below).

[4]Interim effluent limits for phosphorus were established based on Coeur d'Alene's current design flow and treatment levels authorized by their current permit. See discussion on page 3 regarding the use of an equivalent process.

High-Quality Waters (Tier 2 Protection)

The Spokane River is not assessed for recreation use. Monitoring data for *E. coli* collected in 2007 within the assessment unit, indicates that the Spokane River is high quality for the primary contact recreation beneficial use. As such, the water quality relevant to recreational uses of the Spokane River must be maintained and protected, unless a lowering of water quality is deemed necessary to accommodate important social or economic development.

To determine whether degradation will occur, DEQ must evaluate how the permit issuance will affect water quality for each pollutant that is relevant to recreational uses of the Spokane River (IDAPA 58.01.02.052.04). These include the following: *E. coli* bacteria, phosphorus and mercury. Effluent limits are set in the proposed and existing permit for all these pollutants except mercury.

For a reissued permit or license, the effect on water quality is determined by looking at the difference in water quality that would result from the activity or discharge as authorized in the current permit and the water quality that would result from the activity or discharge as proposed in the reissued permit or license (IDAPA 58.01.02.052.04.a). For a new permit or license, the effect on water quality is determined by reviewing the difference between the existing receiving water quality and the water quality that would result from the activity or discharge as proposed in the new permit or license (IDAPA 58.01.02.052.04.a).

Pollutants with Limits in the Current and Proposed Permit: *E. coli*, phosphorus

For Tier 2 related pollutants that are currently limited (have effluent limits) and will have limits under the reissued permit, the current discharge quality is based on the limits in the current permit or license (IDAPA 58.01.02.052.04.a.i), and the future discharge quality is based on the proposed permit limits (IDAPA 58.01.02.052.04.a.ii). For the City of Coeur d'Alene permit, this means determining the permit's effect on water quality based upon the limits for *E. coli* and phosphorus in the current and proposed permits. Table 1 provides a summary of the current permit limits and the proposed or reissued permit limits.

E. coli

The existing permit for the City of Coeur d'Alene contains effluent limits for fecal coliform and *E. coli*. In 1986, EPA updated its criteria to protect recreational use of water by recommending an *E. coli* criterion as a better indicator than fecal coliform of bacteria levels that may cause gastrointestinal distress in swimmers. In 2000, DEQ changed its bacteria criterion from fecal coliform to *E. coli.* The *E. coli* limits are in the existing permit to reflect the bacteria criterion that DEQ adopted to protect the contact recreation beneficial use (IDAPA 58.01.02.251.01). The fecal coliform limits are in the current permit because at the time the permit was issued, IDAPA 58.01.02.420.05 established a disinfection requirement for sewage wastewater treatment plant effluent. This requirement specified that fecal coliform concentrations not exceed a geometric mean of 200/100 mL based on a minimum of five samples in one week. This section of the Idaho WQS was revised in 2002 to reflect the change in the bacteria criterion from fecal coliform to *E. coli*. The *E. coli* limits are as or more protective of water quality than the old fecal coliform limits. The proposed final permit contains *E. coli* effluent limits that comply with previous and current numeric "end-of-pipe" criteria.

Because the fecal coliform criterion has been replaced with an *E. coli* criterion, DEQ is requesting that EPA remove the fecal coliform effluent limits, consistent with how EPA has handled other NPDES permits for wastewater treatment plants in Idaho. Retaining the *E. coli* limits will ensure that the receiving water quality will not be degraded even when the fecal coliform limits are removed. Even with the omission of fecal coliform limits, DEQ believes the discharge will not cause or contribute to a violation of the bacteria criteria because the permit incorporates "end-of-pipe" limits for *E. coli*. The City of Coeur d'Alene is not requesting a design flow increase and therefore, there will be no change from the discharge as authorized in the current permit. Thus, removal of the fecal coliform limits coupled with no design flow increase, complies with both the Tier 1 and Tier 2 components of Idaho's antidegradation policy.

Phosphorus

The proposed permit for Coeur d'Alene includes a new final effluent limit for phosphorus (draft permit Table 1). Tier 2 waters are waters in which the quality of the water is better than necessary to support beneficial uses. The Tier 2 antidegradation policy provides that pollutants relevant to recreational uses may be significantly increased only if socially or economically justified. However, while the Spokane River is Tier 2 for recreational uses, its aquatic life uses are impaired due to excess total phosphorous (TP). Because TP is relevant to both uses, and the water quality standards require both uses be protected, the use with the more stringent requirement limits the TP levels. Thus, the phosphorus levels must be reduced to get the water body back into compliance with criteria for support of aquatic life uses. This needed reduction is reflected in the proposed permit limits. Because the Spokane River is impaired for phosphorus in Idaho, and because the Coeur d'Alene permit must ensure compliance with Washington WQS, the limits in the permit require a significant reduction in phosphorus. Specifically, the draft permit final effluent limits for the three Idaho dischargers will reduce phosphorus concentrations in the Idaho portion of the Spokane River to approximately 9.1µg/L at the state line. These limits meet the Tier 2 requirement under the antidegradation policy because there will be no degradation in water quality, but rather an improvement in TP levels.

Pollutants with No Limits: Mercury

Mercury is a pollutant relevant to Tier 2 protection of recreation that currently is not limited and for which the proposed permit also contains no limit (Table 1). For such pollutants, a change in water quality is determined by reviewing whether changes in production, treatment, or operation that will increase the discharge of these pollutants are likely (IDAPA 58.01.02.052.04.a.ii). With respect to mercury, there is no reason to believe this pollutant will be discharged in quantities greater than those discharged under the current permit. This conclusion is based upon the fact that there have been no changes in the design flow, influent quality or treatment processes that would likely result in an increased discharge of this pollutant. Additionally, whole effluent toxicity testing, using three different organisms will be required twice per year to detect toxic pollutants in toxic amounts. A toxicity reduction evaluation is required in the event of an excursion above a trigger value. Mercury monitoring will be required three times over a five year period as part of the expanded effluent testing requirements in Part D of the NPDES application Form 2A (EPA Form 3510-2A, revised 1-99). Because of these provisions, the proposed permit does not allow for any increased water quality impact from this pollutant, DEQ concludes that the proposed permit should not cause a lowering of water quality for mercury. As such, the proposed permit should maintain the existing high water quality in the Spokane River.

Compliance Schedule

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 Coeur d'Alene cannot immediately achieve compliance with the effluent limits for ammonia, $CBOD_5$ and phosphorus; therefore, DEQ authorizes a compliance schedule and interim requirements as set forth below.

Table 3. Interim Limits

Parameter	Units	Average Monthly Limit	Average Weekly Limit
Ammonia (March-June)	mg/L	report	report
Ammonia July-Sept	mg/L	10	29
≤4.2 mgd	lb/day	350	1000
Ammonia July-Sept	mg/L	7.4	21
>4.2 mgd	lb/day	370	1100
$CBOD_5$ (February-October)	mg/L	25	40
	lb/day	1250	2000
	% removal	85% (min)	-
Phosphorus (February-October)	mg/L	1.0	1.6
	lb/day	50	80

The proposed compliance schedule allows Coeur d'Alene time to upgrade their facility to tertiary treatment, which will reduce effluent loads and concentrations of ammonia, phosphorus and $CBOD_5$ to levels necessary to meet the final effluent limits. In addition, Coeur d'Alene will have to make certain modifications to their existing treatment plant to accomplish the upgrade (Appendix A). During this time, final $CBOD_5$ limits will not be achievable. The $CBOD_5$ interim limits identified in Table 3 maintain the currently permitted load and concentration (Table 1). A compliance schedule provides the permittee a reasonable amount of time to achieve the final effluent limitations as specified in the permit. At the same time, the schedule ensures that compliance with the final effluent limits is accomplished as soon as possible.

1. The permittee must comply with all effluent limitations and monitoring requirements in Part I.B and I.C beginning on the effective date of the permit, except those for which a compliance schedule is specified in Part I.D.

2. The permittee must achieve compliance with the final effluent limitations for phosphorus, ammonia and $CBOD_5$ as set forth in Part I.B of the permit, not later than ten (10) years after the effective date of the final permit.

3. While the schedules of compliance specified in Part I.D are in effect, the permittee must complete interim requirements and meet interim effluent limits and monitoring requirements as specified in Part I.E of the permit.

4. All other provisions of the permit, except the final effluent limits for phosphorus, $CBOD_5$ and ammonia as described in Table 3 of this certification, must be met after the effective date of the final permit.

Interim Requirements for Compliance Schedules

1. By one (1) year after the effective date of the final permit, the permittee must provide a preliminary engineering report to EPA and IDEQ outlining estimated costs and schedules for completing capacity expansion and implementation of technologies to achieve final effluent limitations. This schedule must include a timeline for pilot testing and results of any testing conducted to date.

2. By three (3) years after the effective date of the final permit, the permittee must provide written notice to EPA and IDEQ that pilot testing of the technology that will be employed to achieve the final limits has been completed and must submit a summary report of results and plan for implementation. If pilot testing is determined to be unnecessary by the permittee, the summary report shall include the reasons for this decision.

3. By five (5) years after the effective date of the final permit, the permittee must provide EPA and IDEQ with written notice that design has been completed and bids have been awarded to begin construction to achieve final effluent limitations.

4. By eight (8) years after the effective date of the final permit, the permittee must provide EPA and DEQ with written notice that construction has been completed on the facilities to achieve final effluent limitations.

5. By ten (10) years after the effective date of the final permit, the permittee must provide EPA and DEQ with a written report providing details of a completed start up and optimization phase of the new treatment system and must achieve compliance with the final effluent limitations of Part I.B. The report shall include two years of effluent data demonstrating that final effluent limits can be achieved (the two years of data do not have to consistently meet final effluent limits but demonstrate that at the end of this period final limits can be met).

6. By year six (6), seven (7), and eight (8) after the effective date of the final permit, the permittee must submit to EPA and IDEQ progress reports, which outline the progress made toward achieving compliance with the phosphorus, $CBOD_5$ and ammonia effluent limitations. At a minimum, the reports must include:
   a) An assessment of the previous year of effluent data and comparison to the interim effluent limitations.
   b) A report on progress made toward meeting the final effluent limits.
   c) Further actions and milestones targeted for the upcoming year.

7. When the schedules of compliance specified in Part I.D are in effect, the permittee must comply with interim effluent limitations and monitoring requirements as specified in Part I.E of the permit.

Mixing Zones

Pursuant to IDAPA 58.01.02.060, DEQ authorizes the use of mixing zones as described in Table 3 of the critical flow volumes of the Spokane River for the following pollutants: pH, TSS, silver, copper, chlorine, nitrate + nitrite and ammonia.

Table 4: Mixing Zones

Pollutant	Mixing Zone (%)
pH	25
TSS	25
silver	25
copper (October – June)	25
copper (July – September)	25
chlorine	25
nitrate + nitrite	25
ammonia acute (March – October)	2.5
ammonia chronic	25

Pollutant Trading

Pursuant to IDAPA 58.01.02.055.06, DEQ authorizes pollutant trading for phosphorus and other oxygen demanding pollutants. Trading must be conducted in a manner that is consistent with the most recent version of DEQ's *Water Quality Pollutant Trading Guidance*, available at: http://www.deq.idaho.gov/media/488798-water_quality_pollutant_trading_guidance_0710.pdf. The use of pollutant offsets is authorized for purposes of compliance with antidegradation rules and IDAPA 58.01.02.055.

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 regarding the actions taken in this certification should be directed to June Bergquist, Coeur d'Alene Regional Office at 208.666.4605 or via email at june.bergquist@deq.idaho.gov .

Daniel Redline
Regional Administrator
Coeur d'Alene Regional Office

Appendix A

Compliance Schedule Justification Letters
dated
April 3, 2013 and April 22, 2013
from
City of Coeur d'Alene Wastewater Facility

CITY OF COEUR D'ALENE

WASTEWATER UTILITY DEPARTMENT

CITY HALL, 710 E. MULLAN
COEUR D'ALENE, IDAHO 83814-3958
208/769-2277– FAX 208/769-2338
E-mail: sidf@cdaid.org

April 3, 2013

Sent via E-mail to: Daniel.Redline @ deq.idaho.gov

Daniel Redline
Regional Administrator
Coeur d'Alene Regional Office
Department of Environmental Quality
State of Idaho
2110 Ironwood Parkway
Coeur d'Alene, ID 83814

Re: Revised Draft §401 Water Quality Certification for City of Coeur d'Alene WTP
NPDES Permit Number ID-002285-3 – CBOD Compliance Schedule Request

Dear Mr. Redline,

The City of Coeur d'Alene requests that the section 401 water quality certification for its NPDES permit include a compliance schedule for meeting new CBOD5 effluent limits. As an existing discharger, the City of Coeur d'Alene is entitled to a compliance schedule to meet new effluent requirements for CBOD, ammonia, and phosphorus that result from the Washington Ecology dissolved oxygen TMDL. Washington dischargers have been afforded compliance schedules and interim discharge permit limits for CBOD, ammonia, and phosphorus in order to provide adequate time to make facility improvements necessary to ensure compliance with new effluent limitations. For example, the City of Spokane NPDES permit maintains existing limits at 30 mg/L BOD in the interim and requires new treatment process facilities to be installed by March 1, 2018 and compliance with the TMDL limits for BOD to begin March 1, 2021.

Although historical effluent CBOD performance at the Coeur d'Alene treatment plant have been excellent, it should be recognized that this has been the result of utilizing the existing infrastructure at the treatment plant to comply with both CBOD and ammonia effluent limits, when the original design was intended only to meet secondary treatment requirements and effluent BOD of 30 mg/L.

The new facilities intended for compliance with the TMDL based limits have yet to be constructed and until they are completed, the City runs the risk of being unable to sustain very low levels of CBOD in a plant designed for effluent BOD of 30 mg/L. This has been recognized for ammonia and phosphorus and interim limits have been provided for these parameters.

Transition to Tertiary Treatment

The City plans extensive improvements to the liquid stream treatment processes for compliance with the new limits for CBOD, ammonia, and phosphorus. These improvements will be

designed and constructed in phases over a number of years to take advantage of the important treatment technology developments resulting from the City's pilot testing program. In order to prove out findings from the pilot program at full-scale, initial improvements will be constructed at less than full plant capacity and operated to confirm final design and sizing criteria for the tertiary facility. This progression of implementation steps is provided for in the compliance schedule for phosphorous and ammonia.

The City will endeavor to maintain excellent effluent CBOD performance in the interim, however full compliance with the new effluent limits will not be assured until the transition to tertiary treatment is completed.

Interim Compliance Risk

The City will carry an unreasonable risk of non-compliance absent a compliance schedule and interim limits for CBOD. The City will need sufficient time to implement improvements to meet the new TMDL requirements. During that time the City should not be required to meet the final CBOD limits that are beyond the design capacity of the existing facility.

This will not result in additional water quality protection for the Spokane River, only the risk of noncompliance if the City is unable to maintain treatment performance in the interim until the required improvements are constructed. On average at design flow, the effluent CBOD concentration associated with the TMDL driven seasonal mass load limit of 203 pounds per day would fall to 4.06 mg/L compared to the current permit limits of 25 mg/L. This is an 84% reduction in the allowable effluent CBOD effective the date of issuance of the NPDES permit without an opportunity to implement the required treatment improvements.

This is inconsistent with the much larger loading from the City of Spokane which will be allowed to continue to discharge BOD at 30 mg/L until 2021 at a flow rate an order of magnitude larger than the City of Coeur d'Alene at a location much closer to Lake Spokane, which is the water body intended to be protected by the TMDL driving the new BOD limits.

I appreciate your consideration of this letter.

Sincerely,

H. Sid Fredrickson
Wastewater Superintendent

cc: June Bergquist, Idaho DEQ (june.bergquist@deq.idaho.gov)

4825-5215-6179, v. 1

CITY OF COEUR D'ALENE

WASTEWATER UTILITY DEPARTMENT

CITY HALL, 710 E. MULLAN
COEUR D'ALENE, IDAHO 83814-3958
208/769-2277– FAX 208/769-2338
E-mail: sidf@cdaid.org

April 22, 2013

Mr. John Tindall, PE
Idaho DEQ
2110 Ironwood Parkway
Coeur d'Alene, ID 83814

Dear John,

In further enhancement of our justification for a $CBOD_5$ compliance schedule, our engineers and us have looked at the proposed construction schedule for the various 5C sub-phases. We note that there will be disruptions to the existing secondary treatment process that will have a negative effect on the $CBOD_5$ removal rates. The following outlines the process disruptions that will lower CBOD removal rates:

Phase 5C.1

- Tie-in to secondary effluent line for transfer pumping station.
  - Impact: Requires stopping plant flow at trickling filters.
  - Potential Upset: potential loss of some biomass in trickling filters resulting in reduced CBOD removal.
- Tie-in to secondary effluent line for permeate return.
  - Impact: Requires stopping plant flow at trickling filters.
  - Potential Upset: potential loss of some biomass in trickling filters resulting in reduced CBOD removal.
- Tie-in to trickling filter effluent line for trickling filter effluent transfer pumping.
  - Impact: Requires stopping plant flow at trickling filters.
  - Potential Upset: potential loss of some biomass in trickling filters resulting in reduced CBOD removal.
- Tie-in to existing return tertiary sludge line for return tertiary sludge pumping to expanded solids contact tank.
  - Impact: Require existing return secondary sludge system for both clarifiers to be taken offline.
  - Potential Upset: potential anoxic conditions in secondary clarifiers resulting in floating sludge and increased TSS when brought back online.
- Tie-in to existing solids contact tank for expanded solids contact tank drain return.
  - Impact: Requires solids contact tank to be taken offline.
  - Potential Upset: reduced solids contact volume potentially resulting in increased effluent BOD and ammonia.
- Connection to and modification of existing tank drain and secondary scum piping.

- Impact: Will require secondary clarifiers to be taken offline (one at a time).
- Potential Upset: Increased hydraulic and solids loading to on-line clarifier potentially resulting in increased effluent TSS and BOD.

- Replacement of secondary aeration blowers with turbine blowers of higher capacity
  - Impact: Requires shutting down aeration tankage
  - Potential Upset: Reduced nitrification and CBOD removal
- Upsizing of scour air supply for IFAS nitrification modules
  - Impact: Requires shutting down aeration tankage
  - Potential Upset: Reduced nitrification and CBOD removal

Phase 5C.2

- Construction of third primary clarifier split structure and primary clarifier.
  - Impact: Requires several shut downs for process tie-ins, possibly diverting flow around existing split structure.
  - Potential impact: Potential decrease in TSS and BOD removal.
- Reconstruction of existing secondary clarifier splitter box.
  - Impact: Requires stopping plant flow at trickling filters for piping modifications.
  - Potential Upset: potential loss of biomass in trickling filters (see above).
- Construction of third secondary clarifier.
  - Impact: Requires several shut downs of plant flow at trickling filters for multiple tie-ins to secondary influent and effluent lines and return secondary sludge line.
  - Potential Upset: potential loss of biomass in trickling filters (see above).

We hope you will take these issues under consideration for issuing the city a $CBOD_5$ compliance schedule. Feel free to contact me if you have additional questions.

Sincerely,

H. Sid Fredrickson
Wastewater Superintendent

C: June Bergquist, DEQ
Dave Clark, PE, HDR Engineering
Don Keil, Asst. Wastewater Supt.
James Tupper
Kris Holm

2