

ID0000175
Response to Comments
Hecla
Lucky Friday Mine

EPA, Region 10
May 2019

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Table of Contents

General Information.....	3
Permit Comments.....	3
Fact Sheet Comments.....	20
Attachment A – Tables referenced in Comment # 7	29
Attachment B - Idaho DEQ Response to Comments on the Draft CWA § 401 Certification	30

General Information

EPA public noticed the draft permit with the draft Clean Water Act (CWA) § 401 Certification on February 25, 2019. The comment period was scheduled to end on March 28, 2019. The Idaho Conservation League (ICL) requested a 30-day extension of the comment period EPA did not grant an extension to the comment period; however, EPA did accept comments from ICL after the close of the comment period. Comments were received from Hecla and ICL.

EPA Region 10 has undergone an organizational realignment since the Draft Permit was issued. This has caused some name changes to groups within the organization, title changes and changes to mailstops within addresses. These updates have been made in the Final Permit.

On June 3, 2019, the Idaho Department of Environmental Quality (DEQ) provided a final CWA § 401 Certification for this permit.

Permit Comments

- Comment:** Part I.B (page 4): In the current Permit, the Lucky Friday Unit (LFU) is subject to separate effluent limits at Outfalls 001, 002, and 003, which are based on receiving water conditions at each Outfall. However, Table 2 of the draft Permit presents effluent limits applicable at Outfall 002, which are based on receiving water conditions at Outfall 002, but are also to be applied to Outfall 001. Outfall specific limits at Outfall 001 have been removed in the draft Permit. While the Water Plant #2 (WTP2) typically discharges via Outfall 002, LFU has the option to discharge treated effluent via Outfall 001. The effluent limits calculated in Table 2 applicable to Outfalls 001 and 002 are based on river flow and hardness conditions at or just above Outfall 002. Due to the distance of approximately one mile between the outfalls and different receiving water flow characteristics, application of Outfall 002 effluent limits at the Outfall 001 location is not appropriate and not representative of conditions at Outfall 001. River flow data collected upstream of Outfall 001 and upstream Outfall 002 for the 2007-2017 time period indicates flow statistics are different at each location.

Upstream Outfall 001 and 002 Flow Comparison

Flow Statistic	Upstream Outfall 001	Upstream Outfall 002
1Q10	12.3	11.7
7Q10	14.2	11.8
30Q5	22.7	13.3
Harmonic Mean	38.9	27.4
Average	95.5	55.2

The Draft 401 certification indicates (page 3) that “separate effluent limits for Outfalls 001 and 002 are no longer necessary due to consistent effluent quality from WTP2. The extra dilution offered by diverting Outfall 002 effluent to Outfall 001 is no longer necessary.” As pointed out by LFU in our comments to the draft 401 certification, the consistency of effluent quality and the need or lack of need for additional dilution is

not an appropriate basis for applying Outfall 002 limits at the Outfall 001 location. Since site specific receiving water information is available at Outfall 001, LFU suggests that effluent limits applied at Outfall 001 be based on such conditions rather than conditions one mile upstream. Therefore, although the same treated water can be discharged to the same receiving stream, effluent limits at Outfall 001 should be based on receiving stream characteristics at or above Outfall 001.

Response: As described in the Fact Sheet, the effluent that is discharged from Outfall 001 is the same as the effluent discharged from Outfall 002, both coming from Water Treatment Plant 2. See also page 3 of DEQ's Draft CWA § 401 Certification. DEQ provided the same size mixing zone at Outfalls 001 and 002. See DEQ Responses to Comments #1 and #4 in Attachment B. As a result, both outfalls have the same effluent limits.

2. **Comment:** Part I.B.1 (page 4): The text of this part references the Tables incorrectly. The first sentence should read "The permittee must limit and monitor discharges from Outfall 001 or 002 as specified in Table 2 and from Outfall 003 as specified in Table 3, below."

Response: EPA regrets this typographical error and it is corrected in the final permit.

3. **Comment:** Part I.B (page 4): The current Permit provides flow-tiered effluent limits for copper and mercury and WET. As per Idaho Administrative Rule IDAPA 58.01.02.400.05, tiered effluent limitations can be incorporated in NPDES Permits for point sources discharging to waters exhibited unidirectional flow, such as the South Fork Coeur d'Alene River (SFCdAR). Idaho Guidance (Idaho Effluent Limit Development Guidance, 2017) indicates "in some instances a discharger may request DEQ consider alternative streamflow estimates in calculating the RPTE and any associated mixing zone authorization. DEQ would consider these requests in cases where it is clear that differing sets of circumstances exist that should be considered when developing effluent limits (e.g., different effluent flows, receiving water flows, or hydrologic or climatic conditions)". The Draft Fact Sheet (pg. 13) indicates that the flow-tiered limits were included in the current Permit because LFU did not have more than basic treatment facilities. LFU does not agree that flow-tiered limits were included in the existing permit based on existing treatment in 2003. Rather, such limits were included based in IDAPA 58.01.02.400.05 and site-specific conditions. That rule is still in place and therefore flow-tiered limits should remain in the Permit. Although water treatment facilities have been installed and effluent quality has improved, LFU believes that it is still appropriate to provide flow-tiered effluent limits for copper, mercury and WET, considering the variable and seasonal river flow and the infrequent occurrence of actual critical low flows (i.e., 7Q10 and 1Q10), for which the draft permit limits are based. Attachment A of the 2002 Fact Sheet acknowledged that flow in the SFCdAR varies with precipitation and snow melt and flow-tiered limits were calculated accordingly. SFCdAR river flow characteristics and variability due to precipitation and snow melt is not significantly different since 2002 and regulations allowing for flow-tiered limits haven't changed. Therefore, LFU requests flow-tiered limits be applied for copper, mercury and WET in the draft Permit. Use of flow-tiered effluent limits provides compliance with water quality standards while providing LFU operational flexibility and control over discharges based on actual in-stream flow conditions, particularly in spring run-off and periods of excessive precipitation.

Response: In establishing flow-tiered limits, EPA relies upon DEQ to implement IDAPA 58.01.02.400.05 which states that discharge permits for point sources discharging to waters exhibiting unidirectional flow *may* incorporate tiered limitations for conventional and toxic constituents *at the discretion of the department (emphasis added)*. Here, DEQ did not include flow tiered effluent limitations in the CWA § 401 Certification. Since DEQ did not include flow-tiered limits in the CWA § 401 Certification, EPA did not include flow-tiered limits in the permit. See DEQ Response to Comment # 1 in Attachment B.

4. **Comment:** Part I.B (page 4): LFU has concerns with the approach for calculating the copper BLM based effluent limits, as presented in the Draft Permit and Fact Sheet. LFU understands the BLM-based copper effluent limits were developed using a regional classification system, as described in Statewide Monitoring for Inputs to the Copper Biotic Ligand Model (2017). However, LFU has the following concerns with the approach:
- LFU does not believe BLM-based copper limits should be included in the Permit at this time. The BLM rule is not effective for Clean Water Act purposes and therefore should not be included in the Permit. Moreover, there is inadequate data upon which to base a valid BLM limit at this time. LFU is concerned that in the unlikely event EPA approves the BLM rule prior to reissuance of the subject permit, LFU will need to overcome anti-backsliding and anti-degradation limitations no matter how much site-specific data is collected. Therefore, we believe the more efficient approach would be to require collection of the data necessary to establish site-specific BLM criteria and reopen the Permit once that data is collected and the BLM rule is approved. The copper limits in the existing permit should therefore remain in effect.
 - Alternatively, EPA guidance suggests that the BLM should not be used for calculating effluent limits if data are not available. As per Section 1.5 of EPA Training Materials on Copper BLM: Data Requirements, a minimum of one sample for each season should be collected to support site-specific BLM input values. As per IDEQ, adequate site-specific data consists of 24 samples over a two year period to capture seasonal variability of each BLM input parameter. This data should be collected prior to site-specific BLM criteria development.
 - DEQ regional default values are likely not representative of site-specific conditions at LFU. Only one data point from each state-wide sample location was collected in support of the IDEQ study, used to develop the regional input values. Collection of one data point in one season is not adequate for estimating a two year dataset and the potential variability of each of the BLM input parameters exhibited in state-wide waters over an annual period. As noted in the Statewide Monitoring for Inputs to the Copper Biotic Ligand Model (2017) on page 28, additional BLM input sampling conducted at select sites in spring confirmed “high spatial and temporal variability” of BLM input parameters, which further supports that one data point in time is not adequate for estimating regional BLM input data.
 - The draft copper BLM-based effluent limits are based on the BLM criteria for the “Mountain Stream” classification. As per the Statewide Monitoring for Inputs to the Copper Biotic Ligand Model (2017), instream data collected from a total of 31 sampling locations classified as Mountain Stream, were used to determine the

10th percentile for each input value. These sample locations are throughout the state and not limited to just the local SFCdAR watershed. Additionally, the coefficient of variation (CV) of chronic copper criteria for the Mountain Stream classification was the highest at 106%, indicating much variability between sampling sites within the Mountain Stream classification. To illustrate, the table below presents the Mountain Stream criteria compared to BLM criteria utilizing the site-specific data collected near Outfall 001 at LFU. As an example, comparison of the criteria in the table indicates that the Mountain Stream classification criteria are overly conservative as applied to the LFU site.

BLM-based Criteria Comparison

	CMC (ug/L)	CCC (ug/L)
Mountain Stream class (basis for draft limits)	1.0	0.6
Downstream 001 (ID0021296D)	1.6	1.0
Upstream 001 (ID0021296U)	1.93	1.2

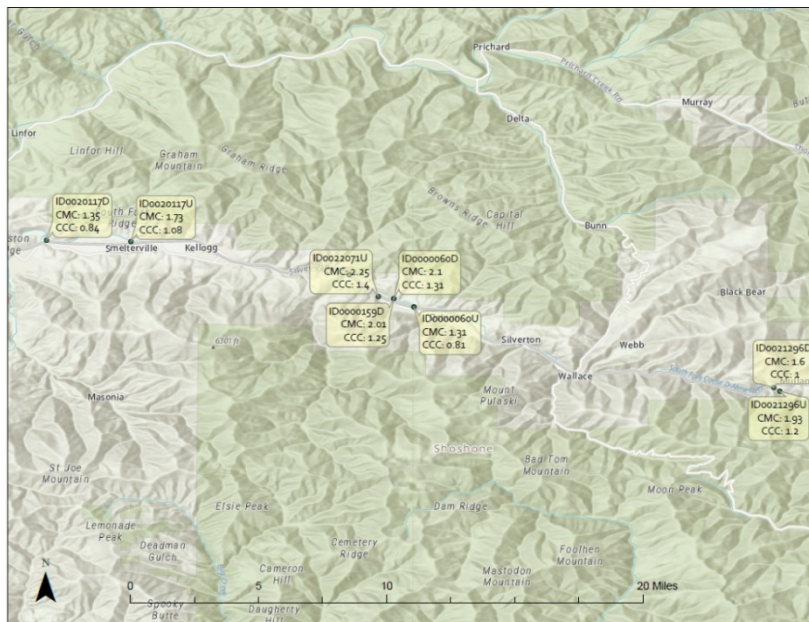
- The Mountain Stream class criteria are overly conservative for the SFCdAR near LFU. The Draft Fact sheet (pg. 71) notes that background concentrations of Cu are higher than the BLM criteria, with the average dissolved copper concentration of 1.21 ug/L above Outfall 002 and 0.69 ug/L above Outfall 003 over the monitoring period from 2012-2016. However, 10 years of site-specific bioassessment data show stream aquatic community equal to regional reference streams, indicating the Mountain Stream criteria are likely overly conservative. Based on the above discussion, LFU requests that the approach to use default regional input values for calculating the copper BLM-based effluent limits be reconsidered. LFU requests that the hardness-based copper effluent limits remain effective until after adequate site-specific data can be collected and site specific BLM criteria can be calculated during the five year compliance schedule period. Additionally, as per the Implementation Guidance for the Idaho Copper Criteria for Aquatic Life (2017), flow-tiered NPDES permit limitations are an acceptable implementation tool for copper Biotic Ligand Model (BLM)-based limits. Due to the extremely low BLM-based criteria and potential variability of BLM input parameters, LFU requests that flow-tiered limits be considered when defensible site-specific BLM based effluent limits are established in the Permit.

Response: The Fact Sheet specified that the BLM based effluent limitations would only be included in the final permit if EPA approved DEQ’s submission of the new WQS prior to EPA finalizing the permit. This approval occurred on May 2, 2019. Therefore, the applicable WQS in place for CWA purposes is the copper BLM WQS. The Fact Sheet also stated that since the ambient background concentration of copper exceeded the BLM criteria, no mixing zone could be authorized for copper.

EPA utilized the Idaho DEQ BLM Guidance rather than the EPA Guidance. The DEQ BLM guidance states that “when no data are available, DOC or pH data are absent, or available data are determined not to adequately characterize critical conditions, conservative criteria estimates should be used to estimate critical conditions of a water body or AU and ensure estimated criteria are protective of aquatic life.” Section 6 of the DEQ Guidance is titled “Estimating Criteria When Data Are Absent.”

It is expected that the “regional” or “site class with stream” conservative criteria estimates would not reflect any particular site specific condition in the watershed but

they are, by definition, conservative criteria which are protective and are to be used until site specific conditions can be determined. EPA extracted the data used in the BLM Guidance from the *Statewide Monitoring for Inputs to the Copper Biotic Ligand Model* prepared by DEQ (Aug. 2017).



The map depicts some of the stations in the SFCdA River that were used in developing the criteria for the Panhandle Region and the Mountain Streams site class. EPA utilized the conservative criteria estimates for Mountain Streams to develop the permit effluent limitations. It is appropriate to use the Mountain Stream characterization because the Guidance also states: “Site class combined with stream size, where rivers are any water with stream order ≥ 5 and streams are any water

with stream order < 5 . According to the report cited above, the SFCdA River in the vicinity of the mine has a stream order of 4 (sites further downstream are classified as stream order 5).

As explained above, the copper BLM WQS has been approved by EPA and, thus, is the applicable WQS for CWA purposes. The use of flow tier effluent limitations can only be determined when site-specific BLM effluent limits can be calculated. Since there is not site-specific information, EPA, per DEQ guidance, used conservative criteria estimates to calculate the BLM-based effluent limits. When site-specific BLM criteria are calculated, the permitting authority can then determine whether flow tiers should be utilized. If the background water quality exceeds site-specific BLM criteria then no mixing would be allowed and flow tiers would not be an option.

See DEQ Response to Comment #5 in Attachment B.

5. **Comment:** Part I.B.1. Table 3 (page 5): As discussed in Comment [#52, below], in detail, the effluent limits for copper are incorrectly calculated. The daily maximum and monthly average hardness-based limits should be 8.8 and 5.4 ug/L, respectively.

Response: EPA acknowledges that the dissolved copper criteria values were utilized rather than the total values as were used for other metals. Since the copper BLM criteria were approved by EPA on May 2, 2019, the hardness-based criteria no longer apply. See the Response to Comment # 4. Therefore, this comment is moot.

6. **Comment:** Part I.B.6 and 7 (page 7): The draft Permit does not provide direction on how compliance with the copper BLM-based effluent limits is to be assessed, given the difficulties in achieving analytical detection limits lower than the proposed BLM-

based effluent limits. Below is a summary of required or recommended analytical limits compared to the proposed effluent limits.

Analytical Requirement or Recommendation	Value (ug/L)	Outfall 001/002 Cu BLM Limits	Outfall 003 Cu BLM Limits
Minimum Level (Draft Permit Appendix A)	2 ug/L	1.0 (daily max) 0.4 (monthly avg)	0.9 (daily max) 0.5 (monthly avg)
Minimum Level (Implementation Guidance for Idaho Copper Criteria for Aquatic Life 2017)	1 ug/L		
EPA Method 200.8 common Reporting Level (same as ML)	1 ug/L		
EPA Method 200.8 common Method Detection Limit	0.4 – 0.8 ug/L		

The draft Permit indicates that analytical methods used for effluent monitoring must use a method that achieves the Minimal Level (ML) as specified in Appendix A of the Permit and that parameters with an effluent limit must use a method that achieves an ML less than the effluent limit, unless otherwise specified. Part I.B.7 states that if the value is less than the ML, the permittee is to report “less than” the ML. As shown in the table above, the proposed BLM-based copper effluent limits, which are based on the Idaho default regional input values, are either at or below the MLs. While some analytical laboratories are able to provide an ML of 1.0 ug/L, the achievable Method Detection Limit (MDL) is in the range of 0.4 – 0.8 ug/L. Laboratories will likely find it difficult to achieve an ML less than 0.4 ug/L, the lowest effluent limit, particularly if sample dilutions are required for analysis. In addition, analytical results that are between the ML and MDL are considered “estimated” due to typical instrument variability and may not be reliably quantified. Therefore, determining compliance on an “estimated” analytical result is problematic. Effluent limits based on site-specific BLM inputs, will be assessed after adequate site-specific data collection, as required in the proposed Permit. Therefore, there may not be an ML/MDL issue after calculation of site-specific BLM effluent limits. However, to clarify how compliance with BLM-based effluent limits will be assessed when limits are lower than the ML, LFU suggests language be added to Part I.B of the Permit which states the effluent is in compliance with the BLM-based copper limits if results are less than the ML of 1 ug/L. This is a common approach for instances when effluent limits are less than detection limits. For example, as per in IDAPA 58.01.02.210 the total residual chlorine (TRC) acute and chronic criteria are 19 and 11 ug/L, respectively. However, the ML is 50 ug/L which is higher than the criteria. Therefore, a compliance evaluation limit is typically applied at 50 ug/L for NPDES Permit compliance assessment.

Response: Since the effluent limitations for copper are below the detection level, a compliance level should have been included in the draft permit. A Minimum Level of 1 ug/L is included as the compliance level for copper. Any concentration value reported as less than 1 ug/L and any loading value reported as less than 0.025 lbs/day will be deemed in compliance with the effluent limitations. This change has been made to the final permit.

- Comment:** Part I.B (pages 4-6): LFU requested monitoring frequency reduction in the application for Outfalls 001, 002, and 003 for Total Suspended Solids (TSS), and total recoverable metals for cadmium, copper, zinc and mercury. The draft Permit requires monitoring for TSS, cadmium, copper, and zinc on a once per week basis

and monitoring for total mercury on a twice per month frequency. According to EPA Guidance, Interim Guidance for Performance-Based Reduction of NPDES Permit Monitoring Frequencies (1996), the LFU is eligible for monitoring frequency reduction as a result of the sites consistent performance in the past 5 years. LFU has not had any significant noncompliance for the parameters under consideration or any effluent violations of current effluent limits for cadmium, copper, mercury or zinc in the last three years. A statistical analysis of DMR data (Jan 2014 – Dec 2018), using the EPA Guidance (1996) was conducted to demonstrate that the monitoring frequency requirements for mercury can be reduced from twice per month to once every quarter. The analysis also demonstrates that monitoring frequency for TSS, cadmium, copper, and zinc can be reduced from once per week to once every two months. Probability analysis, conducted considering mass-based and concentration-based effluent limits, shows there is zero percent probability that a permit violation will occur. Therefore, Hecla requests EPA consider monitoring frequencies for these parameters be reduced in the renewed Permit.

Response: EPA, utilizing the *Interim Guidance for Performance-Based Reduction of NPDES Permit Monitoring Frequencies* (EPA 1996), has included a two-step process to reduce the monitoring frequencies for the parameters in the Tables in Attachment A except for copper. The Tables show the long-term average for copper at both Outfalls 002 and 003 exceeds the monthly average copper effluent limitation in the new permit so no reduction in monitoring can be given. Also, a reduction for lead was not requested therefore weekly monitoring will remain in the final permit for copper and lead.

Monitoring will be reduced to monthly for TSS, cadmium, mercury and zinc in the final permit. In addition, EPA has added further language that states that after 2 years, LFU may request further reductions from the permitting authority. After an evaluation of the effluent data, the final permit allows a reduction in monitoring frequency to once every 2 months (1/ 2 months). If a different frequency is determined or another parameter is evaluated, this would be considered new information and any changes would have to be done through a formal modification process.

8. **Comment:** Part I.C.2.b (page 8): The Draft Permit requires Whole Effluent Toxicity (WET) testing on a quarterly basis for all three outfalls using two test species; Fathead minnow and Ceriodaphnia dubia. After a screening period, the permittee is only required to test using the most sensitive species. Based on previous WET testing conducted during the current Permit term, LFU has already determined that C. dubia is the most sensitive test species and has been required to test only C. dubia for several years. Since the most sensitive species has already been determined, LFU request that the requirement to test fathead minnow be removed.

Response: EPA agrees and has made the requested change to the final permit.

9. **Comment:** Part I.C (pg. 8): The summary table on page 8 of the Draft Permit indicates 96-hr renewal test for fathead minnow and 48 hr status test for Daphnid. LFU believes this is a typographical error and requests table correction to refer to a 7-day chronic renewal test for fathead minnow and a 7-day renewal test for Ceriodaphnia dubia.

Response: The permittee is correct that the test in the cited Method Document is the Survival and Reproduction Test for *C. dubia*. The test timeframe is specified in the Method Document so it is not included in the permit. This change has been made to the final permit. See the Response to Comment #8 regarding the fathead minnow.

10. **Comment:** Part I.C.3 (page 9): Table 4 should include separate Flow Tier, Chronic Toxicity Trigger and Receiving water concentration for Outfall 001, which reflects the receiving water flow upstream of Outfall 001. See Comment #1 regarding missing Outfall 001 limits.

Response: As explained in the Response to Comment # 1, there are no separate requirements for Outfall 001.

11. **Comment:** Part I.C.3 (page 9): Table 4 provides Chronic Toxicity Triggers for WET testing. The triggers are based on 7Q10 flow, as provided in Table 6 of the Fact Sheet. However, LFU does not agree with the method used for calculating 7Q10 flow (see discussion in Comment [#43, below]). LFU requests that the Chronic Toxicity Triggers and Receiving Water Concentrations be revised to reflect values representative of 7Q10 flows determined by using the DFLOW program, as follows:

Chronic Toxicity Triggers

Outfall	Flow Tier (based on flow directly upstream of the outfall in cfs)	Chronic Toxicity Trigger, TU _c	Receiving Water Concentration (RWC), % effluent
001/002 Effluent Flow of 0.87 cfs	at the 7Q10 of 11.8	4.38	23%
003 Effluent Flow of 1.66 cfs	at the 7Q10 of 6.23	1.94	52%

Response: EPA has re-evaluated the flow data (see Response to Comment #43) and the Table below contains the WET triggers based on the re-evaluation. These changes have been made to the final permit.

WET Trigger Comparison

Trigger	Outfall 002		Outfall 003	
	Draft Permit	Final Permit	Draft Permit	Final Permit
% effluent	23%	22%	56%	52%
TU _c	4.29	4.5	1.8	1.8

12. **Comment:** Part I.C.4-6 (page 9-10): Since only chronic testing is required, all references to acute testing should be removed.

Response: EPA agrees and has removed any reference to acute testing from the final permit except where documents reference both acute and chronic testing information.

13. **Comment:** Part I.C.7.b (page 11): The draft Permit states the following: “The permittee must submit the results of any accelerated testing, under Permit Part I.C.6., within 2 weeks of receipt of the results from the lab. The full report must be submitted within

4 weeks of receipt of the results from the lab.” To simplify reporting requirements, LFU requests that the language be revised to indicate that the full report of accelerated testing must be submitted within four weeks of receipt of results from lab and remove requirement to submit any results within two weeks. LFU believes this will reduce confusion on what specifically is to be reported within two weeks versus the four week deadline and reduce opportunity for confusion regarding test reporting and receipt by IDEQ.

Response: Permit Part I.C.5.b) contains the information required for the 2 week report. Since any exceedance of the WET triggers during accelerated testing requires the initiation of a TRE within 2 weeks of receiving the results, this information needs to be reported prior to receipt and submission of the full report. No change has been made to this requirement.

14. **Comment:** Part I.D.1 (page 12): Considering request for outfall-specific effluent limits at Outfall 001 presented in Comment #1, surface water monitoring should continue at the current monitoring locations upstream of Outfall 001 and upstream of Outfall 002, separately. Otherwise, based on current language in the draft permit, clarification is requested as to better define “directly upstream of Outfalls 001/002” and “below Outfalls 001/002...” LFU requests clarification if the “Outfall 001/002” notation is to indicate that upstream/downstream sampling at Outfall 001 is only required when Outfall 001 is discharging.

Response: EPA has modified the permit requirement to require monitoring during the time interval upstream and downstream of Outfall 001 if discharge from Outfall 001 occurs during the time interval. Surface water monitoring will be required at Outfall 002 during every time interval (e.g. monthly, quarterly) as to avoid a break in the dataset for Outfall 002.

15. **Comment:** Part I.D (page 13): Table 5 indicates that continuous temperature monitoring is required upstream of the outfalls for a period of two years during the June through November time frame. LFU does not currently have continuous temperature monitoring devices in place. Currently, in-stream temperature measurements are collected manually. LFU does not believe that continuous temperature monitoring is necessary to assess upstream receiving water temperatures. Therefore, due to the short time period continuous in-stream monitoring is required and the cost of equipment monitoring devices and installation, LFU requests the monitoring frequency for upstream temperature be reduced to once per week instead of continuous during the June through November time frame for the two year period.

Response: The CWA § 401 Certification requires continuous monitoring. Since it is a condition of the CWA § 401 certification, EPA is required to include it in the final permit pursuant to CWA Section 401(d).

16. **Comment:** Part II.A (page 14): A compliance schedule is provided in the event the copper BLM based criteria are adopted and BLM-based effluent limits are effective. LFU appreciates the time period of the compliance schedule. However, since BLM-based limits are proposed for Outfalls 001/002 and 003, the compliance schedule should be applied to all outfalls, not just Outfall 001/002. LFU requests that the same compliance schedule be provided at Outfall 003.

Response: DEQ did not change this requirement in the final CWA § 401 Certification therefore, EPA cannot include a Compliance Schedule for Outfall 003. See DEQ Response to Comment #7 in Attachment B.

17. **Comment:** Part II.A (page14): Table 6 presents the interim requirements related to the copper schedule of compliance. Specifically, item number 3 requires that three years from the permit effective date, a preliminary engineering report must be submitted to EPA and DEQ outlining estimated costs and schedules for completing treatment upgrades to achieve final effluent limits. LFU has not yet explored compliance options for the new copper BLM-based effluent limits and would like the flexibility to evaluate all available options, which may include treatment upgrades but also other engineering and/or non-engineering options. LFU request that the language specifically requiring treatment upgrades be revised to state the following: “By three years from effective date of the final permit, the permittee must provide to EPA and DEQ a report outlining preliminary plan for compliance, which may include engineering or non-engineering options. If treatment upgrades are chosen as the proposed method for achieving compliance with final effluent limits, the permittee is to provide estimated schedule for completing treatment upgrades and pilot testing.”

Response: The final permit reflects changes made by DEQ in the CWA § 401 Certification. See DEQ Response to Comment #8 in Attachment B.

18. **Comment:** Part II.B (page 15): The draft permit indicates that the permittee must submit written notice to EPA and DEQ that the Best Management Practices Plan has been developed and implemented within 60 days of the permit effective date. As per the current Permit Condition II, LFU has already developed and implemented a BMP Plan. However, it will be updated to reflect any new requirements, as listed in the final renewed Permit. The draft Permit also states that the permittee must implement the provisions of the plan within 90 days of the permit effective date. LFU requests revision to the language so it is clear that the plan must be updated, if necessary, and implemented within 90 days of permit effective date. Suggested language revision is as follows: “The permittee must submit written notice to EPA and DEQ that the Plan has been updated and implemented within 90 days of the effective date of the permit.”

Response: Since LFU is an existing facility with a current BMP Plan (as required by the permit and stated in the comment), EPA intended that notice of Development and Implementation be submitted within 60 days.

19. **Comment:** Part II.B.4.b (page 17): Part II.B of the draft Permit addresses requirements related to Best Management Practices Plan. Part II.B.4.b lists the specific requirements that the BMP Plan must achieve and includes item (iv), which states “explore methods of reducing mercury emissions from the facility”. LFU does not generate mercury or use products containing mercury. LFU is consistently in compliance with the mercury effluent limits. Therefore, LFU requests item (iv) of this section be removed.

Response: The final permit has been changed to require that LFU document in the BMP Plan that no mercury is generated or used at the facility. This will reflect LFU’s method of reducing mercury emissions.

20. **Comment:** Part III. B. (page 19): Numbers 1 and 3 indicate that DMR data should be submitted to EPA as primary and DEQ secondarily. Due to the transfer of NPDES

authority to Idaho, LFU requests clarification if DMR submittals should actually be submitted to IDEQ only.

Response: Since EPA is the permitting authority and there are scenarios under which EPA would retain authority over this permit (e.g., in the event of an appeal), EPA has not made the requested change. The Fact Sheet describes what will be required of a Permittee when the authority to administer a permit transfers to the State of Idaho.

21. **Comment:** EPA and DEQ should also designate specific upstream and downstream monitoring locations for copper BLM inputs. It is important for the sampling to capture the conditions in the receiving waters where copper is the most bioavailable, both upstream and downstream of each outfall. At the downstream location, sampling should occur outside of the chronic mixing zone with conditions representatives of complete mixing. Sufficient sampling locations should be used in order to adequately characterize the spatial variability of the BLM input parameters within the receiving waters. EPA guidance suggests that the “collection of data outside of the chronic mixing zone both upstream and outside of the influence of the effluent discharge, and downstream of the discharge would best characterize the spatial variability of the site.” The more parameter data that can be collected, the more accurately the water chemistry of the site can be characterized, which will ultimately result in the development of more accurate criteria. EPA and DEQ should require sampling for the relevant parameters upstream of all outfalls in addition to the proposed downstream sampling. DEQ’s copper criteria guidance states: “In some instances, it may be necessary or advisable to collect samples upstream of points of discharge to capture baseline conditions.” Since the goal of the copper BLM is to protect water quality based on the bioavailability of copper in specific receiving waters, it follows that upstream sampling could help set a baseline. The baseline conditions established by upstream sampling would allow DEQ to determine if/how the effluent affects the copper bioavailability, which is an important question to answer when developing copper criteria for this facility. Additionally, the copper bioavailability of the effluent may vary on a different timeframe than that of the receiving water.

Response: The CWA § 401 Certification conditions that address BLM water chemistry data collection effort have been revised. The revised conditions specify that the permittee shall consult with DEQ who will determine the need for upstream sampling for BLM water chemistry. Additionally, DEQ will review and approve of the BLM monitoring plan and quality assurance plan prior to data collection. After the 24 months of data collection, DEQ will review and provide approval if conditions of the quality assurance plan have been met prior to the data’s use for calculating the revised copper criteria. See DEQ Response to Comment # 10 in Attachment B.

22. **Comment:** ICL requests EPA and DEQ provide the models and any other basis for establishing and justifying the BLM monitoring locations.

Response: The final permit does not specify where the monitoring locations are but requires DEQ approval for the final locations. As such, no models currently exist for establishing the monitoring locations. See DEQ Response to Comment # 11 in Attachment B.

23. **Comment:** ICL requests EPA and DEQ require continuous pH monitoring for all sampling locations rather than weekly sampling. The implementation guidance

provides that pH may have significant diurnal variability that affects metal concentrations. Weekly grab sampling is insufficient to capture the effects of this short-term variance, and as the guidance notes, it is important to “properly capture the temporal variability of the physical and chemical parameters that are used as inputs for the BLM.” Given the diurnal variability of pH, and that the BLM is most sensitive to pH and DOC, continuous monitoring of pH would provide the best possible input parameters for the BLM.

Response: The CWA § 401 Certification contains a requirement for continuous pH monitoring downstream of the Outfalls. The final permit reflects this requirement.

24. **Comment:** Please discuss the status and seepage rates of the tailings ponds associated with the Lucky Friday facility. According to the 2001 EPA Fact Sheet, Hecla’s tailings ponds are unlined, and the current NPDES permit required Hecla to conduct a seepage study to determine if there are discharges of pollutants from the tailings ponds to the SFCDA River. EPA’s ongoing struggles to treat seepage draining out of the bottom of the unlined Central Impoundment Area in Smelterville, Idaho and into the SFCDA River makes us concerned that similar seepage and groundwater/surface water interaction may be contributing additional pollution to the SFCDA River from Hecla’s tailings ponds. Please provide and discuss the results of the seepage study. We reserve the right to provide further comment based on the contents of this study, once it is released. In addition, it is general practice that the fact sheet for a draft NPDES permit includes a table summarizing the previous seepage test dates for lagoons and ponds and indicates the deadline for the next round of seepage testing for each one. We request EPA and DEQ provide this information.

Response: A seepage study for tailings impoundments 1 and 3 was conducted under the 2003 permit. These impoundments are either closed or in the process of being closed so seepage will not be an ongoing issue. Hecla did not apply for permit coverage for any seepage discharges; therefore, the draft permit does not apply to discharges other than those from the designated outfalls. Please see DEQ Response to Comment # 13 in Attachment B.

25. **Comment:** Since at least 1998 the stretch of the SFCDA River that receives Hecla’s effluent discharges has been identified on Idaho’s 303(d) list as an impaired water body, likely due to metals contamination. And, since that time, over twenty years have passed, and the State of Idaho has been both unable and unwilling to secure approval of a metals TMDL for the SFCDA River, despite the fact that the river continues to exceed metal pollution limits. We are concerned that the SFCDA River has very little assimilative capacity for the metals pollution Hecla’s facility discharges into the river. And, although we are encouraged to see more stringent effluent limits in the draft NPDES permit, it remains concerning that the effluent limits proposed in 2019 continue to be less stringent than effluent limits proposed in 2001, according to the metals TMDL that existed at that time. See 2001 NPDES Permit Fact Sheet, Hecla Lucky Friday Mine. Despite the risks to human health from metals pollution from Hecla’s facility and others along the SFCDA River, this river and its surrounding community continue to be the victims of regulatory capture. DEQ currently labels the development of a metals TMDL for the Coeur d’Alene River Basin as a low priority, in part, because DEQ does not believe such a TMDL has the support of mining interests. See Attachment 1. This is truly a depressing state of affairs, and we

encourage EPA to utilize the full extent of its discretionary authority to revise the draft permit with the most protective effluent limits and monitoring requirements available. To be sure, further restricting Hecla's metals effluent limits will not solve the metals contamination issues in the Coeur d'Alene Basin or even the SFCDA River, but that should not be basis for allowing existing point sources to continue to discharge beyond the assimilative capacity of the river. Restoring the SFCDA River calls for an "all hands on deck" approach and attitude, and every reduction in the metals loading to the river counts.

Response: The comment is noted. However, effluent limitations in the final permit must ensure that EPA approved WQS are met. The basis for the effluent limitations are set forth in the Fact Sheet. The new metals TMDL has not been submitted to, and thus has not been approved by EPA; therefore, EPA has no basis to implement the WLAs set forth in the previous TMDL. With the removal of flow tiered effluent limitations and the use of receiving water hardness, the majority of the effluent limitations in the final permit are more stringent than those included in the previous permit. The exception is the mercury concentration effluent limitations for Outfall 002 although the loading requirements are more stringent than the previous permit. See DEQ Response to Comment # 14 in Attachment B.

26. **Comment:** The EPA should not grant the use of mixing zones to dilute waste. DEQ may authorize the use of a mixing zone. But, the EPA does not need to approve of the use of a mixing zone should DEQ recommend or authorize them. We believe that the use of mixing zones causes harm by facilitating the release of additional pollutants and creating a potential barrier to fish movement. Accordingly, we request EPA deny DEQ's proposed mixing zones and revise the draft permit with end-of-pipe limits for mercury, copper, WET, and pH. If the mixing zones proposed in the draft permit are maintained, we request DEQ provide a more detailed discussion of the analysis it used to justify its decision to permit mixing zones for mercury, copper, WET, and pH. As currently drafted, DEQ's 401 certification merely authorizes the mixing zones for mercury, copper, and WET in a single sentence, without providing any analysis or explanation showing that the mixing zones will comply with the principles of Idaho's Mixing Zone Policy. In particular, it is unclear from DEQ's analysis whether the proposed mixing zones will ensure the following:

- The mixing zone is to be located so it does not cause unreasonable interference with or danger to existing beneficial uses;
- When two (2) or more individual mixing zones are needed for a single activity, the sum of the areas and volumes of the several mixing zones is not to exceed the area and volume which would be allowed for a single zone; and
- The mixing zone is to be no closer to the ten (10) year, seven (7) day low-flow shoreline than fifteen percent (15%) of the stream width. See IDAPA 58.01.02.060.01.b, c., and e.iii. (2014).

Response: A mixing zone of 25% of the critical low flows has been authorized by DEQ for mercury and WET in the permit. As stated in the Response to Comment # 4, there is no longer a mixing zone for copper. In the 2003 Permit, a 50% mixing allowance was provided for certain flow tiers at Outfall 003 for copper and up to a 75% mixing allowance was provided for mercury. The rationale for these increased mixing zones was based on modeling that indicated that adequate fish passage remained available in the receiving stream and the larger mixing zones would not

impair beneficial uses, due to discharge configuration, mixing in the stream and plume width. This information indicates that the new, smaller mixing zone configurations provide adequate fish passage and that beneficial uses will be not impaired. Also, it should be noted that with the installation of water treatment plants at the LFU, the water quality has improved significantly so flow tiers are not a provision in the final permit. See DEQ Response to Comment #1 in Attachment B.

27. **Comment:** We are particularly concerned that relocating Outfall 003 to the north side of the SFCDA River may cause the plume created by the mixing zones for mercury, copper, WET, and pH to create a barrier to fish passage. Placing Outfall 003 on the north side of the SFCDA River puts this outfall near the inside edge of a bend in the SFCDA River, which may cause the mixing zones to extend diagonally across the width of the river, as the plume approaches the downstream bend.

Response: The CWA § 401 Certification requires LFU to complete a mixing zone analysis using Cormix for DEQ review and approval prior to moving Outfall 003. See DEQ Response to Comment # 15 in Attachment B. Since this is a condition of the CWA § 401 Certification, this provision has been added to the final permit pursuant to CWA Section 401(d).

28. **Comment:** We request DEQ further analyze the potential impacts of the proposed mixing zones and provide this analysis for public review. And, please explain why CORMIX modeling is appropriate, or not, for evaluating the impacts of authorizing a mixing zone for discharges of pollutants at the new location for Outfall 003.

Response: See DEQ's Response to Comments in Attachment B.

29. **Comment:** We request EPA explain how it concluded Hecla's discharge does not have a reasonable potential to cause or contribute to an exceedance of the water quality criteria for cold water aquatic life and salmonid spawning. Hecla discharges to a stretch of the SFCDA River that is designated for cold water aquatic life and has an existing use for salmonid spawning. At Table C-1, it appears EPA only analyzed the temperature criteria for cold water aquatic life instead of also analyzing the criteria for salmonid spawning – during times of spawning, water temperatures are not to exceed thirteen degrees C or less with a maximum daily average no greater than nine degrees C. IDAPA 58.01.02.250.02.f.ii. This is a critical oversight given that Hecla's effluent is discharged at temperatures well above these criteria, especially during the summer months. See Appendix B in EPA's Fact Sheet. Moreover, Hecla's receiving water monitoring reveals that the SFCDA River above Outfalls 002 and 003 already flows at temperatures that exceed, or nearly exceed, the temperature criteria for salmonid spawning. All this makes the receiving water in the SFCDA River vulnerable to temperature exceedances. We request the EPA and DEQ please explain why it is not appropriate to establish temperature effluent limits in Hecla's new permit.

If effluent limits for temperature are not included in Hecla's new permit, we request EPA and DEQ specifically explain what Hecla's monitoring requirements entail. DEQ's 401 certification provides that the temperature monitoring requirements for Outfall 002 and 003 must be changed so that the data is useful to DEQ in determining compliance with temperature criteria. But, DEQ fails to provide or explain the necessary monitoring frequency that would make the data analytically useful.

Furthermore, DEQ limits the temperature monitoring requirements to two years from the effective date of the permit. But, if DEQ waits another fifteen years to update Hecla's permit, that temperature data will be neither current nor useful for DEQ to determine compliance with temperature criteria. Accordingly, we request EPA and DEQ provide precise requirements for temperature monitoring and require Hecla to continue this monitoring through the life of the renewed permit.

Response: EPA regrets this oversight in using only the designated uses listed in the Idaho Water Quality Standards and agrees the recently established existing use (identified in DEQ studies) should have been considered. The salmonid spawning use contains more stringent requirements (IDAPA 58.01.02.250.01(f)) for dissolved oxygen which is not a pollutant of concern and for temperature which is addressed below.

To date only quarterly temperature data is available upstream of the outfalls and only weekly effluent monitoring of the discharge is available. Since the reissuance of the 2003 Permit, EPA decided that continuous effluent data is necessary to determine compliance with the temperature criteria. Without a more complete dataset to conduct a mixing zone analysis and a corresponding analysis under IDAPA 58.01.02.080.03 Temperature Exemption, EPA cannot determine whether there is reasonable potential to violate the temperature standard. EPA has added continuous effluent temperature monitoring to the final permit and requires continuous ambient monitoring for the full permit term. This is to ensure that the permittee is collecting adequate data to assess compliance with the temperature water quality standards. The data may also be used for development of WLAs in the TMDL. After any assessment is complete, DEQ will determine the appropriate monitoring frequency in a modified or reissued permit. See DEQ Response to Comment #16 in Attachment B.

While DEQ would like to use the collected data as soon as possible to determine a wasteload allocation, EPA has determined that ambient monitoring should continue until the next reissuance of the permit. As stated in the Response to Comment # 2, this permit will transfer to the state of Idaho in July 2019. It is the goal of the newly authorized IPDES program to reissue permits in a timely manner so it is not expected that this permit would be administratively extended in 5 years.

30. **Comment:** We also request DEQ explain, in detail, how the proposed mixing zones comply with the mixing zone principles stated above.

Response: See DEQ's Response to Comments in Attachment B.

31. **Comment:** EPA's draft fact sheet identifies temperature as a pollutant of concern. However, no temperature effluent limitations are proposed in the draft permit. We request EPA explain how it concluded Hecla's discharge does not have a reasonable potential to cause or contribute to an exceedance of the water quality criteria for cold water aquatic life and salmonid spawning.

Hecla discharges to a stretch of the SFCDA River that is designated for cold water aquatic life and has an existing use for salmonid spawning. At Table C-1, it appears EPA only analyzed the temperature criteria for cold water aquatic life instead of also analyzing the criteria for salmonid spawning – during times of spawning, water temperatures are not to exceed thirteen degrees C or less with a maximum daily average no greater than nine degrees C. IDAPA 58.01.02.250.02.f.ii. This is a critical

oversight given that Hecla's effluent is discharged at temperatures well above these criteria, especially during the summer months. See Appendix B in EPA's Fact Sheet. Moreover, Hecla's receiving water monitoring reveals that the SFCDA River above Outfalls 002 and 003 already flows at temperatures that exceed, or nearly exceed, the temperature criteria for salmonid spawning. All this makes the receiving water in the SFCDA River vulnerable to temperature exceedances. We request the EPA and DEQ please explain why it is not appropriate to establish temperature effluent limits in Hecla's new permit.

Response: See Response to Comment # 29.

32. **Comment:** ICL strongly urged the EPA delay issuing Hecla's NPDES permit until after EPA issues a decision on Idaho's copper BLM criteria. The proposed BLM-based effluent limits for copper would be much more protective of the receiving waters than the limits derived from the outdated copper hardness criteria. The South Fork of the Coeur d'Alene River's is already exceedingly impaired by cadmium, lead, and zinc, and EPA should not subject this vulnerable water body to copper loading at rates orders of magnitude greater than what the BLM model prescribes solely due to an administrative approval issue.

Given that EPA approval of the BLM criteria may be imminent (as DEQ's 401 Certification suggests), it would be reasonable for EPA to wait for a decision on Idaho's copper BLM criteria before reissuing Hecla's permit. The South Fork of the Coeur d'Alene River and the communities that live near and rely on this river should receive the benefits of the most up- to-date water quality science and research. And, we feel prioritizing science and public/environmental health by pausing the issuance of this NPDES permit until there's a final decision on the BLM criteria would align with Hecla's interest to be a good corporate neighbor and member of the Silver Valley community.

Response: EPA approved the BLM criteria on May 2, 2019, so no delay is warranted. This comment is moot.

33. **Comment:** In the event that the BLM criteria is not approved prior to the issuance of this permit, we request that EPA include a reopener clause in Hecla's NPDES permit, authorizing EPA to reopen and modify the permit to include effluent limits and monitoring requirements based on the BLM criteria, if EPA approves them.

Response: EPA has approved the BLM criteria; therefore, this comment is moot. It should be noted that permitting authority will transfer to DEQ on July 1, 2019.

34. **Comment:** We request EPA require continuous pH monitoring for all sampling locations rather than a 1/month grab sample. The proposed surface water monitoring requirements for pH in the draft NPDES permit include quarterly sampling at the upstream location and monthly sampling at the downstream location (Table 5 of Draft Permit). As noted in section 5.2 of DEQ's implementation guidance and the references cited within, the copper BLM is highly sensitive to changes in pH, and pH has significant diurnal variability:

"It is well known that pH and temperature vary cyclically throughout a single day, and these cycles can be dramatic. The BLM is highly sensitive to pH, and daily pH cycles could result in dramatic changes in the BLM-derived criteria.

Therefore, when designing monitoring programs or assessing data for derivation of BLM criteria, users should consider using continuous pH data to capture the

daily variability of pH at a given site or collecting samples early in the day when temperatures and pH are generally at their lowest. When continuous data are available, the timing of sampling should coincide with minimum daily pH values” (pg. 16, emphasis added).

EPA’s own materials regarding the copper BLM criteria also highlight the dramatic effects of pH on BLM-derived WQC (EPA Publication #820Q16001, pg. 12). EPA’s Metals Translator Guidance states:

“pH may vary over several units as a result of acidic precipitation in the watershed, photosynthetic activity in the water body (lowest pH at dawn and highest pH in early afternoon coincident with peak photosynthetic activity of phytoplankton and other aquatic vegetation), or effluent discharge to the water body.”

Moreover, the diurnal variability has been shown to impact the concentrations of metals in freshwater streams.

A 1/quarter or 1/month grab sample is insufficient to capture the effects of this short-term variance. Given the diurnal variability of pH, and the BLM’s sensitivity to pH, continuous monitoring of pH would provide the best possible input parameters for the BLM, ultimately leading to the most accurate permit limits. This monitoring can be done relatively simply and inexpensively by probe measurement.

Response: The final permit contains a requirement for continuous pH monitoring downstream of the Outfalls with the other BLM parameters. A Monitoring Plan will be developed and DEQ may require continuous pH monitoring in other locations if it deems it necessary. See Response to Comment # 23.

35. **Comment:** Please explain why EPA declined to analyze the full record of monitoring data for receiving water quality, outfall flow rate, effluent characterization, and critical low flow. EPA's Fact Sheet indicates the following analyses were based off varying date ranges of monitoring data Hecla collected pursuant to its current NPDES permit:

Receiving water quality: (2012-2016)
Outfall flow rate: (2013-2017)
Effluent characterization: (2013-2017)
Critical low flow: (2007-2017)

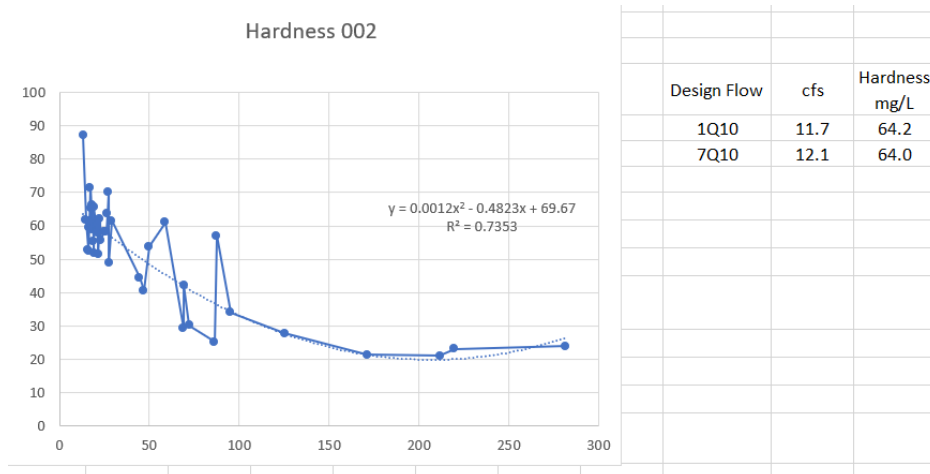
Hecla's current NPDES permit was issued in 2003. So, EPA has the benefit of well over a decade of monitoring data that should inform the development of Hecla's updated permit. For example, analyzing another year's worth of data (or more) could change EPA's calculation of the 99th percentile outfall flow rate. Similarly, another year's worth of data (or more) could reveal higher or lower potential maximum and minimum constituent levels in Hecla's effluent. And, changes to either or both of these variables could significantly affect EPA's determination of effluent limits and monitoring requirements. But rather than analyze all the data, EPA chose to limit its analysis to 4 years of data in some cases, without providing a reasonable basis for this decision.

We request EPA re-analyze receiving water quality, outfall flow rate, effluent characterization, and critical low flow based on the complete record of Hecla's monitoring data recorded since its current permit became effective.

Response: It is true that EPA did not utilize all the data from the latest permit term for the four categories listed above but there are valid reasons why this occurred. As the Fact Sheet contained the justification for several including the use of effluent data and outfall flow only since 2013 since the facility installed treatment just prior to a shutdown in 2012. EPA agreed with LFU that the data during 2012 may not be representative of the current operations and used only data after that point. Critical flows are based on 10 years (a 1Q10 being the lowest flow in a 10 year period while a 7Q10 is the lowest running 7 day average flow during a 10 year period) so using the most recent 10 years (at the time the Fact Sheet was being developed) is reasonable. As for receiving water quality, that information was required to be submitted on an annual basis and EPA did not have anything more current at the time that the Fact Sheet was being developed.

EPA has included the ambient data from 2017 and 2018. No parameter except mercury has a mixing zone so the ambient levels only affect the assimilative capacity for that parameter. The 95th percentile value that is utilized by EPA did not increase or decrease significantly enough to affect the final effluent limitations at either outfall.

EPA previously utilized the ambient hardness data for Outfall 002 from 2007 through 2017 and for Outfall 003 from late 2008 through 2017. The data from 2018 were included with the rest of the data to develop the effluent limitations in the final permit. The information for hardness changes and subsequent changes to the effluent limitations for Outfall 002 are shown below.



See Response to Comment # 51 for other changes to the hardness used for Outfall 003.

Fact Sheet Comments

NOTE: According to 40 CFR 124.8, the Fact Sheet sets forth the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit. Since the Fact Sheet provides the technical basis for the draft permit, it is a final document when it is released. Therefore, any errors are acknowledged but the document will not be changed.

36. **Comment:** Part III. (Page 8): Table 2 is missing Outfall 001 information. Although the footnote indicates WTP2 discharges through Outfalls 002 or 001, Outfall 001 should be included in the table to avoid confusion.

Response: Hecla has proposed to only discharge Water Treatment Plant (WTP) 2 wastewater through Outfall 001. This wastewater is routinely discharged through Outfall 002 so the discharge history of Outfall 001 is not pertinent to the conditions of the new permit. See Response to Comment #1.

37. **Comment:** Part III. (page 9): Under Closure of Tailings Impoundments 1 and 2 section, the Fact Sheet states the following "Once closed, the impoundment will be capped and graded to prevent the infiltration of stormwater per IDWR rules at IDAPA 37.03.05." LFU would like to clarify that the cap and grading of the impoundment will be to prevent storage of stormwater as per the IDAPA 37.03.05, not to prevent infiltration. However, the cap and grading will be designed to minimize stormwater infiltration.

Response: EPA acknowledges that the information contained in the Fact Sheet was not entirely correct.

38. **Comment:** Part III. (page 11): In the Compliance History paragraph, the effluent quality values provided for zinc use the incorrect units. The values should read 299 ug/L and 260 ug/L.

Response: EPA acknowledges that the units provided in this section for zinc were incorrect.

39. **Comment:** Part IV.D (page 12): The draft Fact Sheets notes "The SFCdA River between Canyon and Pine creeks is listed as impaired by cadmium, lead, zinc and sedimentation. The SFCdA River between Daisy Gulch and Canyon is impaired by an unknown cause but metals are suspected." LFU Outfalls 001, 002, and 003 discharge to the SFCdA River, in river segment assessment unit ID17010302PN011_03, which is the segment between Daisy Gulch and Canyon Creek. While the segment is 9.5 miles long LFU outfalls are located within the upper three miles of the segment. The 2014 EPA approved 303(d) list indicates that this segment is not meeting cold aquatic life designated use, but the cause of impairment is unknown. No specific metals are listed, particularly, cadmium, lead or zinc, as cause of impairment in this segment near LFU. Although the fact sheet indicates "metals are suspected" as cause of impairment, no data or rationale is provided for such conclusion. The 2014 Integrated Assessment Report also does not provide rationale for suspected metals impairment. LFU understands that the 2014 Integrated Report lists the downstream assessment unit, from Canyon Creek to Pine Creek as impaired for cadmium, lead, and zinc. However, this assessment unit begins approximately 6 miles downstream of LFU Outfall 001 and has other hydraulic inputs into the SFCdAR between the LFU Outfall 001 and beginning of the next assessment unit as well as other NPDES discharges within the Canyon to Pine Creek assessment units. As per the 2014 Integrated Assessment Report, the Daily Gulch to Canyon Creek (ID17010302PN011_03) assessment unit has not been evaluated since 2003. However, as per the current Permit, LFU has been collecting in-stream SFCdAR data, specifically metals and hardness data, upstream of each LFU outfall for over 10 years. This data can be used to update the segment assessment for determining if cadmium, lead and zinc exceed site-specific criteria.

Attachment B provides a summary of the SFCdAR data collected by LFU since 2012, when the LFU wastewater treatment upgrades were completed. This is the same data submitted annually to EPA as per the current Permit and also provided in the draft Fact Sheet. Site-specific chronic criteria (the chronic criterion only was used as it is most stringent and conservative) were calculated using the corresponding hardness for the date of sample collection. As shown in Attachment B, the metals results do not indicate exceedance of the site-specific criteria which would indicate this segment does not warrant a conclusion that suspected impairment is caused by cadmium, lead, and zinc. LFU does not agree with the approach for not allowing a mixing zone for cadmium, lead, and zinc based on suspected cause of impairment and the impairment listing of an assessment unit that begins six miles downstream as pointed out in our comments to IDEQ’s draft 401 certification. As indicated in Attachment B, concentrations of cadmium, lead and zinc in the SFCdAR near the LFU outfalls meets site-specific water quality criteria. Therefore, LFU requests that consideration be given to authorize a mixing zone for cadmium, lead, and zinc at Outfalls 001, 002 and 003. According to IDEQ GIS tool; <https://mapcase.deq.idaho.gov/wq2014/>

Response: DEQ did not authorize a mixing zone for cadmium, lead and zinc so the effluent limitations in the final permit do not reflect any dilution. See DEQ Response to Comment #6 in Attachment B.

40. **Comment:** Part IV.C Water Quality (page 12): Table 5 indicates that receiving water data collected from 2012 through 2016 was used to summarize receiving water quality. LFU requests clarification as to why the 2012-2016 date range was used instead of the 2013 - 2017 time-frame, as done with effluent quality data. Additionally, since receiving stream data is collected upstream of Outfall 001, that data should be included in Table 5.

Response: LFU requested that EPA use effluent data from 2013-2017 as representative of the discharge because it was collected after the site closure in 2012. The receiving water data is reported annually so in 2017, EPA did not have the 2017 data to utilize because it would not have been submitted until 2018. Also, the conditions in the receiving water would not have been affected by the site closure in the same manner as the effluent could have been. As explained in Response to Comment #37, EPA has utilized data from 2017 in determining the final effluent limits in the final permit.

41. **Comment:** Part IV.E. Low Flow Conditions (page 13): As per the current Permit, stream flow is required to be collected daily, upstream of each outfall. Using the January 2007 – December 2017 database, as specified in the Draft Permit, LFU calculated receiving water low flow statistics for each outfall using the EPA-USGS streamflow model, DFLOW 3.1. Results of the DFLOW model calculations are provided in the table below.

DFLOW vs Draft Permit Flow Comparison

Flow Statistic	LFU DFLOW Calculation			Draft Fact Sheet		
	001	002	003	001	002	003
1Q10	12.3	11.7	4.75	Not provided	10.9	3.7
7Q10	14.2	11.8	6.23	Not provided	11.46	5.3
30Q5	22.7	13.3	6.9	Not provided	13.2	5.7
Harmonic Mean	38.9	27.4	16.7	Not provided	27.0	16.7

As per the Idaho Effluent Limit Development Guidance (page 99), “to determine low-flow values where an extended record of flow data at or near the discharge point is available, the EPA Office of Research and Development’s DFLOW program (free download) may be used. The USGS SWSTAT or Idaho StreamStats may also be used.” While there are other methods for calculating low flow statistics, such as taking the lowest flow or calculating 7-day averages over a minimum 10 year period, using an EPA approved statistical probabilistic program to calculate low flow statistics is more appropriate. Probabilistic programs, such as DFLOW, take into account the variability of the dataset and determine statistically and more precisely the flow values that may occur at the low flow occurrences (e.g., 1Q10, 7Q10). Use of simpler methods which do not account for flow variability may result in overly conservative flow statistics. The footnote in Table 6 of the Fact Sheet indicates that only data from 2013 through 2017 were used to calculate the 30Q5 flow. While a minimum of five years of data to calculate a 30Q5 flow is needed, it is more statistically robust to utilize the larger database from 2007-2017 in a probabilistic program to estimate the 30Q5 flow. Therefore, LFU requests that low flow statistics be determined by utilizing the EPA-approved DFLOW program, as provided in Table 6 above. Additionally, since receiving water flow has been consistently measured upstream of Outfall 001 and should be used to determine effluent limits at Outfall 001, low flow statistics for Outfall 001 should be included in the Fact Sheet, Table 6 (page 13)

Response: USGS now manages DFlow as a rebranded product called SWToolbox. SWToolbox is built on the EPA BASINS system. The primary function of SWToolbox is to conduct n-day frequency analysis (most commonly used for computation of 7Q10) and to compute biologically-based design flows. Flow duration curves can also be computed. The software is designed to facilitate easy import of USGS NWIS streamflow data as well as user-defined data files.

EPA determined that the values calculated from SWToolbox were appropriate to use. These values are shown in the Table below:

Design Flow Comparison				
Design Flow	Outfall 002		Outfall 003	
	Draft Permit	SW Toolbox	Draft Permit	SW Toolbox
1Q10*	10.9	11.7	3.7	4.5
7Q10*	11.46	12.1	5.3	6.2
30Q5	13.3	13.9	6.9	7.8
Harmonic Mean	27.4	27.6	16.7	16.4

* The data set for Outfall 002 was not complete enough to determine a 10 year design flow so a 9 year is utilized.

Stream design flows were used in developing effluent limitations in three ways. The first is in the mixing zone authorized for mercury utilizing these flows to determine the allowable dilution. The Table below shows the difference in the effluent limitations from the Draft Permit along with those calculated using the SW Toolbox flows and contained in the final permit:

Mercury Effluent Limitation Comparison		
Limitation (units)	Outfall 002	Outfall 003

	Draft Permit	Final Permit	Draft Permit	Final Permit
AML (ug/L)	0.0342	0.0357	0.0125	0.0135
AML (lbs/day)	0.00016	0.00017	0.00011	0.00012
MDL (ug/L)	0.0949	0.0990	0.0380	0.0411
MDL (lbs/day)	0.00045	0.00047	0.00034	/.00037

The second is a change in the WET trigger levels. See the Response to Comment #11.

The third is in the hardness calculated at the design flow for use to determine the hardness-based metals criteria. The hardness for Outfall 002 was recalculated using the design flows developed in SWToolbox and the regression equation from the Fact Sheet see the Response to Comment # 37. See the Response to Comment # 51 regarding the recalculated hardness for Outfall 003.

42. **Comment:** Part IV.E. (page 13): The Fact Sheet states the following: “With the installation of wastewater treatment plants at both outfalls, it is expected that these treatment plants will be tuned to treat to the most stringent effluent limitations and, as such, tiered limitations are no longer necessary.” As pointed out on Comment#3 above, flow-tiered limits were not, and should not be based on current treatment technology. To the extent that EPA is attempting to establish a de facto technology-based effluent limits at the LFU based on current treatment technology, we are unaware of any authority for EPA to do so. Also, LFU would like to clarify that LFU strives to operate the treatment plants such that optimal treatment is achieved and effluent quality is in compliance with effluent limits. Treatment plants do not operate in such a manner that they can be “tuned” to increase treatment efficiency. LFU effluent quality has drastically improved since installation of WTP2 and WTP3, not because a treatment system was “tuned”. Treatment systems are designed for specific capacity and to meet certain design criteria and have limitations on what can be achieved. This is why EPA and IDEQ regulations and policy allow for options, such as flow-tiered effluent limits, for implementing and complying with water quality standards.

Response: Outfalls 001 and 002 discharge the same effluent, as explained in the fact sheet. Since the effluent is identical, the same effluent limits have been applied to Outfall 001 and 002. See Response to Comment # 1 and DEQ Response to Comment #1 in Attachment B.

43. **Comment:** Water Quality-Based Effluent Limits Section, Cadmium, Lead, Zinc (page 27) and Appendix C (pages 68-69): The draft 401 Certification indicates and the Fact Sheet (page 77) indicate that while effluent hardness was used to calculate effluent limits for cadmium, lead and zinc in the 2003 Permit, a mixed hardness was used in the draft Permit for all hardness-based metals. LFU believes that the effluent hardness can be protective of water quality and should be used to calculate criteria for cadmium, lead, and zinc, as done in the 2003 Permit. The August 12, 2003 NPDES Response to 9 Comments (page 106) provides the following rationale for why using effluent hardness is protective and can be used to calculate metals criteria: “While using receiving water hardness to calculate criteria end-of-pipe effluent limits, as suggested in the comment, is certainly protective, in some situations the use of effluent hardness can also be protective. That is because as the effluent mixes with the receiving water two things happen: the hardness of the receiving water in the area of mixing increases (and therefore the hardness-based

water quality criteria increases) and, the concentration of the mixture decreases from the effluent concentration to the point where it is fully mixed at the receiving water concentration. In some situations, the decrease in the mixed effluent and receiving water concentration occurs at a faster rate than the decrease in hardness (and therefore the decrease in the criteria) such that the concentration in the receiving water never exceeds the criteria. The figures in Appendix C [of the Response to Comments] demonstrates that this is the case for cadmium, lead, and zinc in the Lucky Friday discharges.” Using the database provided in the draft Fact Sheet, the fifth percentile hardness of Outfall 002 and 003 effluents are 121 and 74 mg/L, respectively. Upstream hardness for Outfall 002 and 003 is 22.9 and 17.9 mg/L, respectively. The use of effluent hardness for end-of-pipe limits is consistent with the approach applied to municipal discharges to Spokane River. As described in the 2007 City of Coeur D’Alene Fact Sheet (NPDES #ID- 002285-3) (page 14), since effluent hardness is higher than the receiving stream, discharge of the effluent actually raises the hardness of the receiving water, effectively creating a loading capacity for the metals. Therefore, it was appropriate to use effluent hardness to calculate metals criteria for that discharge. Also, we note that IDEQ appears to rely upon IDAPA 58.01.210.03c to suggest that effluent hardness should not be used to calculate lead, zinc and cadmium limits. LFU is confused by this reference to this Rule because it was in place when the existing permit was last issued and when IDEQ provided numerous 401 certifications to the last permit which authorized the use of effluent hardness. LFU is concerned that IDEQ or EPA is reinterpreting this Rule and request that effluent hardness be again utilized to set limits for lead, zinc and cadmium. Alternatively, it appears that a mixing zone for lead, zinc and cadmium is appropriate at this time. Since there is no information to suggest that the SFCdAR immediately below where the LFU discharges is not in compliance with the site-specific water quality criteria for lead, zinc and cadmium. See Comment [#41 above]. The wastewater treatment upgrades LFU has installed and implemented since the last Permit was issued, makes it highly likely that site-specific criteria in the SFCdAR have been achieved. Moreover, we are unaware of any exceedance of the site-specific criteria for lead, zinc and cadmium in the SFCdAR below the LFU discharges. LFU understands downstream river segments are listed as impaired, as per the 2014 303(d) List, but the LFU’s discharges have no measurable impacts on water quality conditions in the impaired reach. Therefore, as pointed out in our comments to IDEQ’s draft 401 certification, LFU does not believe it is appropriate to disallow a mixing zone for lead, zinc and cadmium any longer. Based on the above discussion, LFU requests effluent hardness is used for cadmium, lead, and zinc criteria calculation in the renewed LFU Permit or that a mixing zone be authorized for lead, zinc and cadmium. In lieu of a mixing zone, LFU would not object to leaving the existing limits in place for lead, zinc and cadmium in any new permit

Response: The use of effluent hardness does not comport with the requirements of the Idaho WQS. The WQS at IDAPA 58.01.02.210.03(c)(ii) state: “The hardness values used for calculating aquatic life criteria for metals at design discharge conditions shall be representative of the ambient hardnesses for a receiving water that occur at the design discharge conditions given in Subsection 210.03.b.” This requirement has been interpreted as applying the hardness at the design discharge conditions to a criterion (1Q10 for an acute criterion and the 7Q10 for the chronic) to calculate an end-of-pipe criterion and applying a mixed hardness to calculate a criterion for a parameter with an authorized mixing zone. NPDES permits

must ensure that EPA-approved WQS are met. There is no basis to continue to use the existing limits for lead, zinc and cadmium. See Responses to Comments # 37 and # 51 as well as DEQ Response to Comment #3 in Attachment B.

44. **Comment:** Part VI.B. Effluent Monitoring (Page 30): The draft Fact Sheet indicates that monitoring frequencies are “based on nature and effect of the pollutant...” LFU requested and provided justification for reducing the monitoring frequencies for several parameters in the 2018 Renewal Application update. LFU requests that EPA consider this request and provide more information in this section as to the details for the rationale for the monitoring frequencies presented in the Draft Permit. See also Comment#7.

Response: See Response to Comment # 7.

45. **Comment:** Part VI.C. Surface Water Monitoring (Page 31): Part VI.C indicates the following “Table 2 presents the proposed surface water monitoring requirements upstream of Outfalls 001 and 002.” LFU requests the typographical errors be corrected such that the sentence actually read: “Table 16 of the Fact Sheet presents the proposed surface water monitoring requirements upstream of Outfalls 001, 002 and 003.”

Response: EPA regrets this typographical error. The final permit contains the required Surface Water Monitoring for all outfalls.

46. **Comment:** Part VI.C.1.a (page 32): See Comment#14. LFU requests clarification if the “Outfall 001/002” notation is to indicate that upstream/downstream sampling at Outfall 001 is only required when Outfall 001 is discharging.

Response: See Response to Comment # 14.

47. **Comment:** Part VI.C.4. (page 32): Table 16 of the Draft Fact Sheet provides the required MDLs for surface water monitoring. After consultation with their contract laboratory LFU has determined that the MDLs for calcium, magnesium and sodium provided in Table 16, are not attainable. Therefore, LFU requests the following MDLs be substituted for those provided in Table 16:

Requested MDLs for Select Parameters

Parameter	Requested MDL (mg/L)
Calcium	0.07
Magnesium	0.32
Sodium	0.12

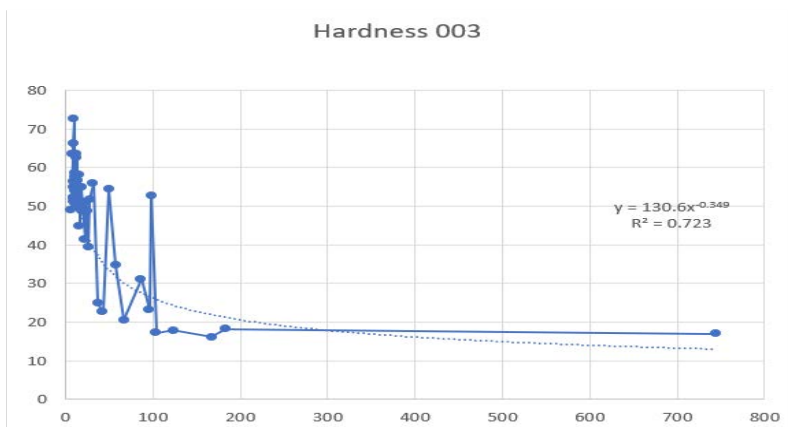
Response: EPA consulted the DEQ BLM Guidance for the required detection values necessary to determine site-specific BLM criteria since monitoring for several parameters is included specifically for criteria development. The BLM Guidance includes Reporting Limits and, these are comparable to a Minimum Level rather than an MDL. EPA has revised Table 5 in the final permit to contain a column of Reporting Limits for the parameters necessary to derive the BLM criteria.

48. **Comment:** Part VI.C.4.b (page 33): See Comment #15 regarding upstream continuous temperature monitoring.

Response: See Response to Comment # 15.

49. **Comment:** Appendix C. Part A (Page 69): As per the draft Fact Sheet, receiving stream hardness occurring at low flow conditions (i.e, 1Q10, 7Q10) was estimated based by plotting flow versus hardness data, collected upstream of Outfall 002 and 003 and is shown in Figures C-1 and C-2 of the Fact Sheet. As discussed in the Idaho Mixing Zone Implementation Guidance, use of such method is acceptable for estimating hardness at low flow for hardness-based metals criteria calculations. However, the statistical relation between hardness and flow should be determined by a nonlinear regression, as noted in the Guidance. While for Figure C-1 (Upstream of Outfall 002), low flow hardness was estimated from a regression using a polynominal trend line, a linear regression was used for Figure C-2, which was used to estimate the hardness of 49.8 mg/L at the 1Q10 and 49.7 mg/L at the 7Q10, for upstream of Outfall 003. The R2 value for this linear regression is only 0.2897, which indicate low relationship between the trend line and actual data. LFU suggests that for estimating low flow hardness upstream of 003, a non-linear regression should be used. Using upstream hardness and corresponding river flows for Outfall 003 [, Figure 1 below presents a more appropriate analysis of the relationship]. Using a power regression type provides for a much higher R2 value, indicating a more realistic estimate of hardness at low flow. Using the information in Figure 1 below results in estimated low flow hardness of 81 mg/L at the 1Q10 flow of 3.7 cfs and 72 mg/L at the 7Q10 of 10.9 cfs (low flows as per Fact Sheet). Therefore, LFU requests the Figure C-2 be revised to utilize the more appropriate regression type and resulting estimated hardness.

Response: LFU is correct that a more appropriate regression type should have been used. EPA took LFU’s suggestion of using a power regression and came up with the graph and equation, below.



Design Flow	cfs	Hardness mg/L
1Q10	4.5	77.3
7Q10	6.2	69.1

Based on the regression equation shown, EPA recalculated the hardness for the 1Q10 and 7Q10. During this exercise, it was discovered that the hardness used to calculate

the limits for Outfall 003 in the draft permit was the hardness for Outfall 002. Because the new hardnesses determined for Outfall 003 are close to those used for the draft effluent limitations for Outfall 002, the resulting effluent limitations for Outfall 003 do not vary much from those proposed in the draft permit.

50. **Comment:** Part X.A (page 77) and Part XIII (page 85): A mixing zone where 25% of the critical low flow was authorized for copper, mercury and WET in the draft Permit. However, in the current Permit, 50% mixing allowance was provided for certain flow tiers at Outfall 003 for copper and up to 75% mixing allowance was provided for mercury. The rationale for allowing the increased mixing was based on modeling that indicated that adequate fish passage remained available in the receiving stream

and the larger mixing zones would not impair beneficial uses, due to discharge configuration, mixing in the stream and plume width (see March 23, 2005 letter from IDEQ to EPA, attached for reference). Also included in the referenced letter, IDEQ found that current concentrations of mercury and copper in the SFCdAR were very low with most data at the time indicating non-detect values. IDEQ concluded that “mercury and copper are not significant factors affecting beneficial use support in SFCdAR.” Since the 2005 evaluation, receiving water quality has only improved, as indicated in the monitoring data provided by LFU and presented in the draft Fact Sheet. As per IDAPA 58.01.02.060, the current mixing zone policy, the 25% mixing allowance is one of many items that IDEQ must consider when authorizing a mixing zone. However, but if a larger mixing zone will still be protective of beneficial uses, IDEQ may authorize a larger mixing zone. Since issuance the LFU 2006 Permit, outfall configuration has not changed nor has the regulations that dictate mixing zone authorization. Therefore, LFU requests that the authorization for the increased mixing zone allowance be carried forward with the renewed Permit.

Response: EPA calculated the final effluent limitations based on 25% of the critical flows. Because DEQ has not authorized an increase in the percent mixing from the 25% included in the draft CWA § 401 Certification, the final permit does not contain changes based on this request. See DEQ Response to Comment #9 in Attachment B.

51. **Comment:** Appendix C (page 74): The acute and chronic criteria presented in Table C-5 and resulting calculations are incorrect for cadmium, lead, zinc, and copper. LFU assumes there are typographical errors related to the criteria for cadmium, lead and zinc. For example, for lead and zinc calculations, the acute and chronic criteria are the same value as the cv, sigma stats and wasteload allocations in the table. For copper, the criteria provided in the table are as dissolved but should be as total. Therefore, resulting AML should be 5.4 ug/L and the MDL should be 8.8 ug/L.

Response: EPA regrets any errors in translating the table from an excel spreadsheet into the Word file which ultimately became the Adobe Acrobat file available on the EPA website. As for the discrepancy in the copper values, EPA acknowledges that the dissolved copper criteria values were utilized rather than the total values as were used for other metals. Since the copper BLM criteria were approved by EPA on May 2, 2019, the hardness-based criteria no longer apply.

52. **Comment:** Appendix C: Footnote references the incorrect Permit number and facility.

Response: EPA regrets this typographical error.

Attachment A – Tables referenced in Comment # 7

Monitoring Frequency Reduction Analysis: Mass-based Approach

	TSS	Cadmium	Copper	Mercury	Zinc
Outfall 002					
Current Permit Monitoring Frequency	1/wk	1/wk	1/wk	2/mo	1/wk
CV Used in Probability Analysis	0.6	0.2	0.4	0.8	0.2
Average of Monthly Averages ¹ (lbs/day)	3.5	0.0003	0.0037	0.000001	0.035
Monthly Average Permit Limit ² (lbs/day)	-	0.003	0.08	0.0001	0.304
LTA/MA Limit	NA	11%	4.6%	1.0%	12%
Reduce Monitoring to:	1/ 2 mo	1/ 2 mo	1/ 2 mo	1/ qtr	1/ 2 mo
Probability of Exceedence³ (%)	0	0	0	0	0
Outfall 003					
Current Permit Monitoring Frequency	1/wk	1/wk	1/wk	2/mo	1/wk
CV Used in Probability Analysis	0.8	0.4	0.4	0.8	0.8
Average of Monthly Averages ¹ (lbs/day)	1.16	0.0005	0.005	0.000001	0.074
Monthly Average Draft Permit Limit ² (lbs/day)	-	0.013	0.04	0.0001	0.47
LTA/MA Limit	NA	4.2%	13%	0.8%	16%
Reduce Monitoring to:	1/ 2 mo	1/ 2 mo	1/ 2 mo	1/ qtr	1/ 2 mo
Probability of Exceedence³ (%)	0	0	0	0	0

Monitoring Frequency Reduction Analysis: Concentration-based Approach

	TSS	Cadmium	Copper	Mercury	Zinc
Outfall 002					
Current Permit Monitoring Frequency	1/wk	1/wk	1/wk	2/mo	1/wk
CV Used in Probability Analysis	0.4	0.2	0.2	0.8	0.4
Average of Monthly Averages ¹ (mg/L (for TSS) or ug/L)	1.01	0.10	1.12	0.0003	10.6
Monthly Average Permit Limit ² (mg/L (for TSS) or ug/L)	20	0.6	17.5	0.03	64.5
LTA/MA Limit	5.1%	17%	6.4%	1.0%	16%
Reduce Monitoring to:	1/ 2 mo	1/ 2 mo	1/ 2 mo	1/ qtr	1/ 2 mo
Probability of Exceedence³ (%)	0	0	0	0	0
Outfall 003					
Current Permit Monitoring Frequency	1/wk	1/wk	1/wk	2/mo	1/wk
CV Used in Probability Analysis	0.8	0.2	0.2	0.6	0.8
Average of Monthly Averages ¹ (mg/L (for TSS) or ug/L)	0.19	0.10	1.00	0.0002	13
Monthly Average Permit Limit ² (mg/L (for TSS) or ug/L)	20	0.8	5.4	0.010	52
LTA/MA Limit	1.0%	13%	19%	1.5%	25%
Reduce Monitoring to:	1/ 2 mo	1/ 2 mo	1/ 2 mo	1/ qtr	1/ 2 mo
Probability of Exceedence³ (%)	0	0	0	0	0

Attachment B - Idaho DEQ Response to Comments on the Draft CWA § 401 Certification

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Public Comment Period:

February 25, 2019 through April 12, 2019 for Draft Certification dated February 20, 2019

The draft 401 certification and the draft NPDES permit were advertised for public comment at the same time since one is a subset of the other. As a result, comments are received that address both permit topics and certification topics. DEQ has selected comments from the respondents that relate to 401 certification topics. EPA also develops a response to comments addressing comments specific to their permit.

1. Hecla Limited Comment 1

Comment #1 Discharge Information (page 3) – Flow-tiered Limits

The current Permit provides flow-tiered effluent limits for copper and mercury and WET. As per Idaho Administrative Rule IDAPA 58.01.02.400.05, tiered effluent limitations can be incorporated in NPDES Permits for point sources discharging to waters exhibiting unidirectional flow, such as the South Fork Coeur d'Alene River (SFCdAR). Idaho Guidance (Idaho Effluent Limit Development Guidance, 2017) indicates “in some instances a discharger may request DEQ consider alternative streamflow estimates in calculating the RPTE and any associated mixing zone authorization. DEQ would consider these requests in cases where it is clear that differing sets of circumstances exist that should be considered when developing effluent limits (e.g., different effluent flows, receiving water flows, or hydrologic or climatic conditions)”.

The draft 401 Certification states that seasonal dilution and flow-tiered effluent limits are no longer needed due to the installation of water treatment. Although water treatment facilities have been installed and effluent quality has improved, LFU believes that it is still appropriate to provide flow-tiered effluent limits for copper, mercury and WET, considering the variable and seasonal river flow and the infrequent occurrence of actual critical low flows (i.e., 7Q10 and 1Q10), for which the draft permit limits are based. Attachment A of the 2002 Fact Sheet acknowledged that flow in the SFCdAR varies with precipitation and snow melt and flow-tiered limits were calculated accordingly. SFCdAR river flow characteristics and variability due to precipitation and snow melt is not significantly different since 2002 and regulations allowing for flow-tiered limits haven't changed. Therefore, LFU requests flow-tiered limits be applied for copper, mercury and WET in the draft Permit. Use of flow-tiered effluent limits provides compliance with water quality standards while providing LFU operational flexibility and control over discharges based on actual in-stream flow conditions, particularly in spring run-off and periods of excess precipitation.

DEQ Response to Comment 1

IDAPA 58.01.02.400.05 provides that a NPDES permit “may” incorporate flow-tiered limits at DEQ’s discretion; it does not require flow-tiered limits. The Lucky Friday Unit’s (LFU’s) ability to treat its effluent has improved dramatically. Today, the LFU’s water treatment plants are capable of treating the effluent to a consistent quality regardless of flow in the South Fork Coeur d’Alene River.

Because the effluent can be treated to a level that meets final effluent limitations at times when the South Fork Coeur d’Alene River provides minimal dilution, DEQ has determined that flow-tiered limits are no longer necessary for this permit. Removal of the flow-tiered limits also simplifies the permit.

DEQ has authorized mixing zones for mercury and WET. DEQ’s decision to authorize these mixing zones for LFU discharges was guided by several factors. First, DEQ authorized the mixing zones under the currently applicable mixing zone policy, found in the 2014 version of the WQS. However, the new but as yet unapproved mixing zone policy in the current WQS, while not effective for CWA purposes, assist in DEQ’s interpretation and application of the applicable mixing zone policy. Provisions of IDAPA 58.01.02.060.e.iv in the 2014 WQS, IDAPA 58.01.02.060.c. in the current WQS, section 4.3.2 in the Technical Support Document for Water Quality Based Toxics Control (EPA, 1991), and the impaired status of the river at this location for unknown pollutants, were considered to guide and inform DEQ’s decision to authorize the minimum size mixing zone necessary for the LFU that allows the facility to meet the effluent limits in the permit.

This analysis resulted in mixing zones for WET and mercury equal to 25% of the critical low flow volume. However, installation of water treatment plants and the resultant improvement in effluent quality have made it unnecessary to authorize additional dilution for these pollutants in the form of either flow tiers or excess mixing zone size. DEQ did not authorize a mixing zone for copper BLM-based effluent limits. Using conservative BLM inputs in lieu of in-stream data, there is no remaining assimilative capacity for dilution.

2. Hecla Limited Comment 2

Comment #2 Discharge Information (page 3) - Outfall 001 Limits

The Draft 401 certification indicates that “separate effluent limits for Outfalls 001 and 002 are no longer necessary due to consistent effluent quality from WTP2. The extra dilution offered by diverting Outfall 002 effluent to Outfall 001 is no longer necessary.” The consistency of effluent quality and the need or lack of need for additional dilution is not an appropriate basis for applying Outfall 002 limits at the Outfall 001 location. The effluent limits calculated for the Draft Permit (provided in Table 2 of the Draft Permit) applicable to Outfalls 001 and 002 are based on river flow and hardness conditions at or just above Outfall 002. Due to the distance of approximately one mile between the outfalls and different receiving water flow characteristics, application of Outfall 002 effluent limits at the Outfall 001 location is not appropriate. River flow data collected upstream of Outfall 001 and upstream Outfall 002 for the 2007- 2017 time period indicates flow statistics are different at each location, as indicated in Table 1 below.

Table 1. Upstream Outfall 001 and 002 Flow Comparison

Flow Statistic Upstream Outfall 001 Upstream Outfall 002

1Q10	12.3	11.7
7Q10	14.2	11.8
30Q5	22.7	13.3
Harmonic Mean	38.9	27.4
Average	95.5	55.2

Since site-specific receiving water information is available at Outfall 001, LFU suggests that effluent limits applied at Outfall 001 be based on such conditions rather than conditions one mile upstream.

Therefore, although the same treated water can be discharged to the same receiving stream, effluent limits at Outfall 001 should be based on receiving stream characteristics at or above Outfall 001.

DEQ Response to Comment 2

See DEQ Response #1 for information related to need for dilution. Additionally, Outfall 002 is upstream of Outfall 001 with less dilution available at critical flows. Therefore, Outfall 002 is the most limiting location for a discharge. Given that effluent from WTP2 directs water of the same quality and quantity to either Outfall 001 or Outfall 002 pollutant load and concentration will be the same at either Outfall. LFU can meet effluent limits using dilution available at the most limiting location (Outfall 002) therefore, additional dilution is unnecessary.

3. Hecla Limited Comment 3

Comment #3 Discharge Information (page 3) – Hardness

The draft 401 Certification indicates that while effluent hardness was used to calculate effluent limits for cadmium, lead and zinc in the 2003 Permit, a mixed hardness was used in the draft Permit for all hardness-based metals. LFU believes that the effluent hardness can be protective of water quality and should be used to calculate criteria for cadmium, lead, and zinc, as done in the 2003 Permit. The August 12, 2003 NPDES Response to Comments (page 106) provides the following rationale for why using effluent hardness is protective and can be used to calculate metals criteria:

“While using receiving water hardness to calculate criteria end-of-pipe effluent limits, as suggested in the comment, is certainly protective, in some situations the use of effluent hardness can also be protective. That is because as the effluent mixes with the receiving water two things happen: the hardness of the receiving water in the area of mixing increases (and therefore the hardness-based water quality criteria increases) and, the concentration of the mixture decreases from the effluent concentration to the point where it is fully mixed at the receiving water concentration. In some situations, the decrease in the mixed effluent and receiving water concentration occurs at a faster rate than the decrease in hardness (and therefore the decrease in the criteria) such that the concentration in the receiving water never exceeds the criteria. The figures in Appendix C [of the Response to Comments] demonstrates that this is the case for cadmium, lead, and zinc in the Lucky Friday discharges.”

Using the database provided in the draft Fact Sheet, the fifth percentile hardness of Outfall 002 and 003 effluents are 121 and 74 mg/L, respectively. Upstream hardness for Outfall 002 and 003 is 22.9 and 17.9 mg/L, respectively.

The use of effluent hardness for end-of-pipe limits is consistent with the approach applied to municipal discharges to Spokane River. As described in the 2007 City of Coeur D’Alene Fact Sheet (NPDES #ID- 002285-3) (page 14), since effluent hardness is higher than the receiving stream, discharge of the effluent actually raises the hardness of the receiving water, effectively creating a loading capacity for the metals. Therefore, it was appropriate to use effluent hardness to calculate metals criteria for that discharge.

IDAPA Administrative rules have not changed since current Permit issuance in 2003 and the basis for using effluent hardness have not changed. Based on the above discussion, LFU requests effluent hardness be used for cadmium, lead, and zinc criteria calculation in the renewed LFU

Permit or that IDEQ authorize a mixing zone for cadmium, lead and zinc as set forth in comments 6 and 9 below.

DEQ Response to Comment 3

The WQS at IDAPA 58.01.02.210.03.c.ii require that ambient hardness of the receiving water be used to calculate the criteria. DEQ will be consistent with this rule. The commenter notes that effluent hardness was used for end of pipe limits for three municipal dischargers in the Spokane River. This error is in the process of being corrected. A TMDL for cadmium, lead, and zinc impairments is under development for the Spokane River which will likely result in wasteload allocations (WLAs) for these metals for each of the three dischargers. If a WLA for a metal is not authorized by the TMDL, the next permit renewal will contain effluent limits that are consistent with the WQS. Additionally, water quality criteria are evaluated for compliance in the fully mixed portion of the river, not within a zone of initial dilution (acute mixing zone) or the chronic mixing zone.

4. Hecla Limited Comment 4

Comment #4 Discharge Information (page 3) – Mixing Zone Policy

The current Idaho Mixing Zone Policy was effective in 2014. LFU understands that IDEQ has a proposed revised mixing zone policy, but has not yet been approved by EPA. Therefore, the proposed mixing zone policy should not be used for application of mixing zone provisions in the Draft Permit. Until the revised rule is approved by EPA, it is not enforceable and should not be used to dictate NPDES Permit effluent limits or requirements.

DEQ Response to Comment 4

DEQ is authorizing mixing zones for this permit under the version of the mixing zone policy in the 2014 WQS, which is applicable for Clean Water Act purposes. See Response #1 for additional details.

5. Hecla Limited Comment 5

Comment #5 Discharge Information (page 4) – Copper Criteria

LFU has concerns with the approach for calculating the copper BLM-based effluent limits, as presented in the Draft 401 Certification and Permit and Fact Sheet. LFU understands the BLM-based copper effluent limits were developed using a regional classification system, as described in *Statewide Monitoring for Inputs to the Copper Biotic Ligand Model* (2017). However, LFU has the following concerns with the approach:

- LFU does not believe BLM-based copper limits should be included in the Permit at this time. The BLM rule is not effective for Clean Water Act purposes and therefore should not be part of IDEQ's certification conditions. Moreover, there is inadequate data upon which to base a valid BLM limit at this time. LFU is concerned that in the unlikely event¹ EPA approves the BLM rule prior to reissuance of the subject permit, LFU will need to overcome anti-backsliding and antidegradation limitations no matter how much site-specific data is collected. Therefore, the better approach would be for IDEQ to require collection of the data necessary to establish site-specific BLM criteria and reopen the Permit once that data is collected and the BLM rule is approved. In light of IDEQ taking over the LFU Permit (and any related permit modifications),

LFU believes this is a much more efficient approach. Until a defensible BLM limit is put in place in the Permit, the copper limits in the existing permit should remain in effect.

- EPA guidance suggests that the BLM should not be used for calculating effluent limits if data are not available. As per Section 1.5 of EPA *Training Materials on Copper BLM: Data Requirements*, a minimum of one sample for each season should be collected to support site-specific BLM input values. As per IDEQ, adequate site-specific data consists of 24 samples over a two year period to capture seasonal variability of each BLM input parameter. This data should be collected prior to site- specific BLM criteria development.
- DEQ regional default values are likely not representative of site-specific conditions at LFU. Only one data point from each state-wide sample location was collected in support of the IDEQ study, used to develop the regional input values. Collection of one data point in one season is not adequate for estimating a two year dataset and the potential variability of each of the BLM input parameters exhibited in state-wide waters over an annual period. As noted in the *Statewide Monitoring for Inputs to the Copper Biotic Ligand Model* (2017) on page 28, additional BLM input sampling conducted at select sites in spring confirmed “high spatial and temporal variability” of BLM input parameters, which further supports that one data point in time is not adequate for estimating regional BLM input data.
- The draft copper BLM-based effluent limits are based on the BLM criteria for the “Mountain Stream” classification. As per the *Statewide Monitoring for Inputs to the Copper Biotic Ligand Model* (2017), instream data collected from a total of 31 sampling locations classified as Mountain Stream, were used to determine the 10th percentile for each input value. These sample locations are throughout the state and not limited to just the local SFCdAR watershed. Additionally, the coefficient of variation (CV) of chronic copper criteria for the Mountain Stream classification was the highest at 106%, indicating much variability between sampling sites within the Mountain Stream classification. To illustrate, the table below presents the Mountain Stream criteria compared to BLM criteria utilizing the site-specific data collected near Outfall 001 at LFU. As an example, comparison of the criteria in the table indicates that the Mountain Stream classification criteria are overly conservative as applied to the LFU site.

Hecla Comment 5 Footnote 1 IDEQ submitted the BLM rule to EPA for approval in January, 2019. We note IDEQ has compiled a list of water quality standards that have been submitted to EPA but have not yet been approved. See “EPA Actions on Proposed Standards.” Many of the proposed standards have been under review by EPA for many years and in some instances, over a decade.

Accordingly, we believe it is improbable that EPA will approve the BLM rule prior to issuance of the LFU Permit and therefore IDEQ should not recommend a speculative limit based on inadequate data at this time.

A. Table 2. BLM-based Criteria Comparison

	CMC (ug/L)	CCC (ug/L)
Mountain Stream class (basis for draft limits)	1.0	0.6
Downstream 001 (ID0021296D)	1.6	1.0
Upstream 001 (ID0021296U)	1.93	1.2

- The Mountain Stream class criteria are overly conservative for the SFCdAR near LFU. The Draft Fact sheet (pg. 71) notes that background concentrations of Cu are higher than the BLM criteria, with the average dissolved copper concentration of 1.21 ug/L above Outfall 002 and

0.69 ug/L above Outfall 003 over the monitoring period from 2012-2016. However, 10 years of site-specific bioassessment data show stream aquatic community equal to regional reference streams, indicating the Mountain Stream criteria are likely overly conservative.

Based on the above discussion, LFU requests that the approach to use default regional input values for calculating the copper BLM-based effluent limits be reconsidered. LFU requests that the hardness-based copper effluent limits remain effective until after adequate site-specific data can be collected and site-specific BLM criteria can be calculated during the five year compliance schedule period.

Additionally, as per the Implementation Guidance for the Idaho Copper Criteria for Aquatic Life (2017), flow-tiered NPDES permit limitations are an acceptable implementation tool for copper Biotic Ligand Model (BLM)-based limits. Due to the extremely low BLM-based criteria and potential variability of BLM input parameters, LFU request that flow-tiered limits be considered for the site-specific BLM-based effluent limits once a robust data-set is available upon which a defensible BLM-based limit can be established.

DEQ Response to Comment 5

The permit appropriately includes effluent limitations for copper designed to meet Idaho's new BLM-based aquatic life criteria for copper. EPA approved the BLM-based copper criteria on May 2, 2019 making those criteria applicable for Clean Water Act purposes, including the permit and section 401 water quality certification for the LFU. In addition, DEQ has adopted *Implementation Guidance for the Idaho Copper Criteria for Aquatic Life (2017)* ("*Copper Guidance*") to guide implementation of the new criteria. Because the old hardness-based criteria have been superseded and do not apply to this permit or certification, those criteria cannot be used as a basis for copper effluent limits in the reissued permit for the LFU.

IDAPA 58.01.02.210.03.c.v(1) provides two options for deriving BLM-based copper criteria. The first option for deriving BLM-based copper criteria is to calculate the criteria using BLM software consistent with EPA guidance. As discussed in section 5 of the *Copper Guidance*, this option requires site-specific data sufficient to characterize spatial and temporal variability of the BLM inputs and the most bioavailable conditions for copper. In the absence of sufficient site-specific data, the second option is to use an estimate derived from BLM outputs. Under IDAPA 58.01.02.210.03.c.v(4), site-specific criteria derived using the first option supersede estimated criteria derived using the second option.

DEQ agrees there is insufficient site-specific data to use the first option for developing effluent limits for the LFU at this time. DEQ's final certification includes conditions requiring a monitoring plan and a quality assurance plan for collecting the data necessary to derive site-specific criteria using the BLM. Until sufficient site-specific data are available, IDAPA 58.01.02.210.03.c.v(1) requires the use of an estimate derived from BLM outputs. Under IDAPA 58.01.02.210.03.c.v(1)(b), the estimate must be based on a scientifically sound method and protective of the designated aquatic life use. Section 6.1 of the *Copper Guidance* identifies several potential criteria estimates but emphasizes "conservative criteria estimates should be used to estimate critical conditions of a water body or AU and ensure estimated criteria are protective of aquatic life."

To develop copper effluent limits, EPA used criteria estimates from Table 2 of the *Copper Guidance*. As discussed in Section V.C of EPA's Fact Sheet, EPA considered two sets of estimated

copper criteria in Table 2—i.e., the estimates Panhandle Basin and Mountains Stream. The LFU is located in the Panhandle Basin and the South Fork Coeur d’Alene River in the vicinity of the LFU outfalls is classified as a mountain stream. Section 6.1 of the *Copper Guidance* indicates that stream orders that are less than 5 are to be considered streams for the purposes of estimating conservative criteria. The South Fork Coeur d’Alene River in the vicinity of Outfalls 001/002 and 003 is a 4th order stream. Therefore, the site class+ river/stream regional classification for the South Fork Coeur d’Alene River is a Mountains Stream until it reaches the Pinehurst area where it becomes a 5th order stream and classified under the Guidance as a Mountains River. Ultimately, EPA selected the Mountains Stream estimate as the more conservative of the two options considered. This was appropriate, as it reasonably assures the estimated criteria are protective of aquatic life in the South Fork Coeur d’Alene River.

Once sufficient data are available to derive site-specific copper criteria under IDAPA 58.01.02.210.03.c.v(1)(a), the site-specific criteria would, as noted above, supersede the estimated criteria used to develop the copper limits for this permit. Thus, it is expected that future copper effluent limits will be based on the location specific criteria. The comment indicates that this change could raise anti-backsliding and antidegradation concerns. These concerns are unfounded.

Fact Sheet section V.D addresses anti-backsliding. EPA determined that copper effluent limitations based on the estimated BLM criteria are more stringent than the copper limits in the previous permit for all outfalls. Therefore, as the Fact Sheet explains, including copper limits based on the estimated BLM criteria does not create a backsliding issue. However, future copper effluent limits based on site-specific BLM results may be somewhat less stringent than those based on EPA’s conservative criteria estimates.¹

The Fact Sheet addresses this situation as well, noting that Clean Water Act section 303(d)(4)(B), 33 U.S.C. § 1313(d)(4)(B), provides an exception to the general anti-backsliding rule. Under this exception, when water quality meets or exceeds applicable water quality standards for a specific parameter, a permit can contain less stringent effluent limits than the previous permit if the revision is consistent with the State’s approved antidegradation policy. In the section 401 certification, DEQ determined that the change from hardness-based copper limits to limits based on conservative BLM criteria estimates in this permit is consistent with the antidegradation policy. At this time, DEQ anticipates that a transition from copper limits based on conservative BLM criteria estimates to limits based on location specific BLM criteria would require an antidegradation review similar to the review for mercury. Under IDAPA 58.01.02.051.04, the antidegradation review for such a transition would be triggered by an application to reissue the permit with copper limits based on the site-specific BLM results.

6. Hecla Limited Comment 6

¹ Appendix A to DEQ’s *Statewide Monitoring for Inputs to the Copper Biotic Ligand Model* (2017) presents five paired data sets collected along the SFCdA River where copper BLM site-specific data was collected in 2016. Criteria calculated from each set of data indicate that there is little variation in criteria by location from Pinehurst to Mullan (DEQ 2017, Appendix B). These data were collected in early October, a timeframe near low flow conditions. Although this study was a preliminary investigation, the resulting copper BLM criteria are revealing. The average chronic and acute criteria for these five paired data sets are 1.11µg/L and 1.78µg/L, respectively. In contrast, the permit’s copper effluent limitations are based on conservative estimates for the chronic and acute criteria of 0.6µg/L and 1.0µg/L, respectively.

Comment #6 Receiving Water Body Level of Protection (page 4-5) – Impairment

LFU Outfalls 001, 002, and 003 discharge to the SFCdAR, in river segment assessment unit ID17010302PN011_03, which is the segment between Daisy Gulch and Canyon Creek. While the segment is 9.5 miles long, LFU outfalls are located within the upper three miles of the segment. The 2014 EPA approved 303(d) list indicates that this segment is not meeting cold aquatic life designated use, but the cause of impairment is unknown. No specific metals are listed, particularly, cadmium, lead or zinc, as cause of impairment in this segment near LFU. Although the draft 401 certification indicates “metals are suspected” as cause of impairment, no data or rationale is provided for such conclusion. The 2014 Integrated Assessment Report also does not provide rationale for suspected metals impairment. LFU understands that the 2014 Integrated Report lists the downstream assessment unit, from Canyon Creek to Pine Creek as impaired for cadmium, lead, and zinc. However, this assessment unit begins approximately six miles downstream of LFU Outfall 001 and has other hydraulic inputs into the SFCdAR between the LFU Outfall 001 and beginning of the next assessment unit as well as other NPDES discharges within the Canyon to Pine Creek assessment units.

As per the 2014 Integrated Assessment Report, the Daily Gulch to Canyon Creek

(ID17010302PN011_03) assessment unit has not been evaluated since 2003. However, as per the current Permit, LFU has been collecting in-stream SFCdAR data, specifically metals and hardness data, upstream of each LFU outfall for over 10 years. This data can be used to update the segment assessment for determining if cadmium, lead and zinc exceed site-specific criteria. Attachment A provides a summary of the SFCdAR data collected by LFU since 2012, when the LFU wastewater treatment upgrades were completed. This is the same data submitted annually to EPA as per the current Permit and also provided in the draft Fact Sheet. Site-specific chronic criteria (the chronic criterion only was used as it is most stringent and conservative) were calculated using the corresponding hardness for the date of sample collection. As shown in Attachment B, the metals results do not indicate exceedance of the site-specific criteria which would indicate this segment does not warrant a conclusion that suspected impairment is caused by cadmium, lead, and zinc.

The draft 401 certification states that a mixing zone is not authorized for cadmium, lead, and zinc because IDEQ believes metals “are not pollutants that dissipate; nor are metals assimilated into other processes that render them less harmful; and, because the SFCdAR has pronounced seasonal high flow, settling of particulate bound metals and retention at the point of outfall is unlikely.” However, the 401 certification does not provide and LFU is unaware of scientific basis for the conclusion of metals-bound particulate movement in the SFCdAR. LFU does not agree with the approach for not allowing a mixing zone for cadmium, lead, and zinc based on suspected cause of impairment, the impairment listing of an assessment unit that begins six miles downstream and because of seasonal high flow which may or may not impact a river segment that begins six miles downstream. As indicated in Attachment B, concentrations of cadmium, lead and zinc in the SFCdAR near the LFU outfalls do not exceed site-specific water quality criteria. Therefore, LFU requests that consideration be given to authorize a mixing zone for cadmium, lead, and zinc at Outfalls 001, 002 and 003. In lieu of authorizing a mixing zone for lead, zinc and cadmium, LFU would not object to keeping the existing limits in place for lead, zinc and cadmium. As pointed out in Comment #3, above, this is also a defensible approach.

DEQ Response to Comment 6

The 2014 Integrated Report indicates that the South Fork Coeur d'Alene River in the vicinity of LFU Outfalls (between Daisy Gulch and Canyon Creek) is impaired for unknown causes and that metals are a suspected cause of that impairment. DEQ's analysis of LFU's bioassessment data and bioassessment data that DEQ collected in 2013 and 2014, indicate that this segment continues to be impaired and will remain on the 2016 Integrated Report (not yet approved by EPA) as not fully supporting beneficial uses (April 8, 2019 Summary from Kajsa Van de Riet, Water Quality Analyst, DEQ Coeur d'Alene Regional Office). Similarly, DEQ's March 23, 2008 letter to EPA regarding mixing zones for LFU also indicate that an impairment of beneficial uses exist immediately downstream of the LFU. The path to determining what pollutants are causing the impairment is to conduct a Subbasin Assessment/Total Maximum Daily Load and develop wasteload allocations and load allocations that will, when achieved, recover beneficial uses. See Response 14 for additional information.

A Draft Technical Memorandum D-1 titled, *Enhanced Conceptual Site Model (ECSM) – Hydraulics and Sediment Transport of the Lower Basin of the Coeur d'Alene River (OU3)*, (CH2MHill, April 17, 2009) among other studies related to the Bunker Hill Superfund site describes principles of sediment transport in the Coeur d'Alene River and its tributaries. Metals bound to sediment particles were just one example provided in the Draft 401 Certification to describe the various ways metals from LFU Outfalls might be transported downstream. The point is that once the metals are in the water they are carried downstream, possibly bound to sediment particles or dissolved in the water column to the next segment of the South Fork Coeur d'Alene River (Canyon Creek to Placer Creek). This downstream segment is listed in the 2014 Integrated Report as impaired due to cadmium, lead, and zinc.

Under IDAPA 58.01.02.070.08, all waters shall maintain a level of water quality at their pour point into downstream waters that provides for the attainment and maintenance of the water quality of those downstream waters. In addition, the WQS require the protection and maintenance of existing uses and thus prohibit degradation or lowering of water quality that would cause or contribute to a violation of water quality criteria (IDAPA 58.01.02.051.01, 58.01.02.052.07, 58.01.02.055.04). The increased load of cadmium, lead, and zinc due to LFU's increased effluent flow over the current permit cycle, is, at a minimum, contributing to the existing violation of WQS in the downstream assessment unit. Therefore, LFU was limited to their current permit limits for these three metals to prohibit further impairment of the downstream segment. No mixing zone was authorized for these three metals in the existing permit and the 401 Certification for this permit likewise does not authorize a mixing zone for these three metals. Further, as explained in Response #1, dilution is not necessary for LFU to meet the effluent limits for cadmium, lead, and zinc.

7. Hecla Limited Comment 7

Comment #7 Compliance Schedule (page 10)

As per Comment #5 above, LFU does not believe BLM-based copper limits should be included in the Permit at this time. The BLM rule is not effective for Clean Water Act purposes and therefore should not be part of IDEQ's certification conditions. Moreover, there is inadequate data upon which to base a valid BLM limit at this time. However, a compliance schedule is provided in the event the copper BLM-based criteria are adopted and BLM-based effluent limits are effective. LFU appreciates the time period of the compliance schedule. However, once BLM-based limits

are included in the Permit, any compliance schedule should be applied to all outfalls, not just Outfall 001/002.

DEQ Response to Comment 7

Effluent data for copper from Outfall 003 (Fact Sheet Appendix B) was examined to determine if a compliance schedule for copper BLM effluent limits was required. Data from January 2, 2013 through April 4, 2015 had nine samples that were above detection and, of these nine, only one value exceeded $2\mu\text{g/L}$. More recent data from April 15, 2015 through February 28, 2019, show no detection of copper, reported by LFU as $-1.00\mu\text{g/L}$, <1 , or NODI 9. Thus, LFU's optimization of WTP3 and subsequent monitoring has demonstrated that WTP3 is very efficient at removing copper and that the need for a compliance schedule for Outfall 003 for further improvements is unnecessary. Also see Response #1 and #5.

8. Hecla Limited Comment 8

Comment #8 Compliance Schedule (page 10-11)

On page 10, it is noted that "due to limited space at that location and the need to add filters or other upgrades, time is necessary to design, install and test the equipment and process." LFU suggests this sentence be revised to indicate that LFU will need time to determine best approach, whether engineering or non-engineering, for meeting new copper BLM limits. LFU does not yet know if adding filters specifically will provide adequate treatment and therefore, specifics on how LFU will achieve compliance with the new copper BLM limits should not be dictated in the 401 certification.

The sentence should be revised as follows: "~~due to limited space at that location and the need to add filters or other upgrades~~, LFU requires time to evaluate engineering and nonengineering options for achieving compliance with copper BLM limits as well as to design, install and test the equipment and process, if engineering solutions are chosen."

The compliance schedule Interim requirement #3 requires that three years from the permit effective date, a preliminary engineering report must be submitted to EPA and DEQ outlining estimated costs and schedules for completing treatment upgrades to achieve final effluent limits. LFU has not yet explored compliance options for the new copper BLM-based effluent limits and would like the flexibility to evaluate all available options, which may include treatment upgrades but also other engineering and/or non-engineering options. LFU request that the language specifically requiring treatment upgrades be revised to state the following:

"By three years from effective date of the final permit, the permittee must provide to EPA and DEQ a report outlining preliminary plan for compliance, which may include engineering or non-engineering options. If treatment upgrades are chosen as the proposed method for achieving compliance with final effluent limits, the permittee is to provide estimated schedule for completing treatment upgrades and pilot testing."

DEQ Response to Comment 8

The 401 Certification has been modified to include LFU's suggested language.

9. Hecla Limited Comment 9

Comment #9 Mixing Zone (page 11)

A mixing zone of 25% of the critical low flow was authorized for copper, mercury, and WET in the draft 401 Certification. However, in the current Permit and previous 401 Certification, 50% mixing allowance was provided for certain flow tiers at Outfall 003 for copper and up to 75% mixing allowance was provided for mercury. The rationale for allowing the increased mixing was based on modeling that indicated that adequate fish passage remained available in the receiving stream and the larger mixing zones would not impair beneficial uses, due to discharge configuration, mixing in the stream and plume width (see March 23, 2005 letter from IDEQ to EPA, attached for reference). Also included in the referenced letter, IDEQ found that current concentrations of mercury and copper in the SFCdAR were very low with most data at the time indicating non-detect values. IDEQ concluded that "mercury and copper are not significant factors affecting beneficial use support in SFCdAR." Since the 2005 evaluation, receiving water quality has only improved, as indicated in the monitoring data provided by LFU and presented in the Fact Sheet. As per IDAPA 58.01.02.060, the current mixing zone policy, the 25% mixing allowance is one of many items that IDEQ must consider when authorizing a mixing zone. However, but if a larger mixing zone will still be protective of beneficial uses, IDEQ may authorize a larger mixing zone. Since issuance the LFU 2006 Permit, outfall configuration has not changed nor has the regulations that dictate mixing zone authorization. Therefore, LFU requests that the authorization for the increased mixing zone allowance be carried forward with the renewed Permit.

DEQ Response to Comment 9

See Response #1.

ICL Comment 10

Copper BLM Monitoring

EPA and DEQ should require sampling for the relevant parameters upstream of all outfalls in addition to the proposed downstream sampling. DEQ's copper criteria guidance states: "In some instances, it may be necessary or advisable to collect samples upstream of points of discharge to capture baseline conditions."¹ Since the goal of the copper BLM is to protect water quality based on the bioavailability of copper in specific receiving waters, it follows that upstream sampling could help set a baseline. The baseline conditions established by upstream sampling would allow DEQ to determine if/how the effluent affects the copper bioavailability, which is an important question to answer when developing copper criteria for this facility.

Additionally, the copper bioavailability of the effluent may vary on a different timeframe than that of the receiving water.

EPA and DEQ should also designate specific upstream and downstream monitoring locations for copper BLM inputs. It is important for the sampling to capture the conditions in the receiving waters where copper is the most bioavailable, both upstream and downstream of each outfall. At the downstream location, sampling should occur outside of the chronic mixing zone with conditions representatives of complete mixing. Sufficient sampling locations should be used in order to adequately characterize the spatial variability of the BLM input parameters within the

receiving waters. EPA guidance suggests that the “collection of data outside of the chronic mixing zone both upstream and outside of the influence of the effluent discharge, and downstream of the discharge would best characterize the spatial variability of the site.”² The more parameter data that can be collected, the more accurately the water chemistry of the site can be characterized, which will ultimately result in the development of more accurate criteria.

¹ DEQ. 2017. Implementation Guidance for the Idaho Copper Criteria for Aquatic Life Using the Biotic Ligand Model at 19, *available at* <http://www.deq.idaho.gov/media/60180840/58-0102-1502-implementation-guidance->

² EPA. June 2018. Questions and Answers on the Establishment of Site-Specific Freshwater Criteria using the Copper Biotic Ligand Model.

DEQ Response to Comment 10

The Final 401 Certification conditions that address BLM water chemistry data collection effort have been revised. The revised conditions specify that the permittee shall consult with DEQ who will determine the need for upstream sampling for BLM water chemistry. Additionally, DEQ will review and approve of the BLM monitoring plan and quality assurance plan prior to data collection. After the 24 months of data collection, DEQ will review and provide approval if conditions of the quality assurance plan have been met prior to the data’s use for calculating the revised copper criteria.

ICL Comment 11

In addition, we request EPA and DEQ provide the models and any other basis for establishing and justifying the BLM monitoring locations.

DEQ Response to Comment 11

DEQ will determine details of the BLM monitoring locations based on analysis of existing data, knowledge of the site, DEQ rules and guidance, and any other studies or information that can assist with the BLM water chemistry data collection. See revised conditions in the 401 Certification.

ICL Comment 12

Finally, we request EPA and DEQ require continuous pH monitoring for all sampling locations rather than weekly sampling. The implementation guidance provides that pH may have significant diurnal variability that affects metal concentrations. Weekly grab sampling is insufficient to capture the effects of this short-term variance, and as the guidance notes, it is important to “properly capture the temporal variability of the physical and chemical parameters that are used as inputs for the BLM.” Given the diurnal variability of pH, and that the BLM is most sensitive to pH and DOC, continuous monitoring of pH would provide the best possible input parameters for the BLM.

DEQ Response to Comment 12

Provisions for DEQ to consider requiring continuous instream pH monitoring for BLM water chemistry data collection has been added to the 401 Certification.

ICL Comment 13

Please discuss the status and seepage rates of the tailings ponds associated with the Lucky Friday facility. According to the 2001 EPA Fact Sheet, Hecla's tailings ponds are unlined, and the current NPDES permit required Hecla to conduct a seepage study to determine if there are discharges of pollutants from the tailings ponds to the SFCDA River. EPA's ongoing struggles to treat seepage draining out of the bottom of the unlined Central Impoundment Area in Smelterville, Idaho and into the SFCDA River makes us concerned that similar seepage and groundwater/surface water interaction may be contributing additional pollution to the SFCDA River from Hecla's tailings ponds. Please provide and discuss the results of the seepage study. We reserve the right to provide further comment based on the contents of this study, once it is released.

In addition, it is general practice that the fact sheet for a draft NPDES permit includes a table summarizing the previous seepage test dates for lagoons and ponds and indicates the deadline for the next round of seepage testing for each one. We request EPA and DEQ provide this information.

DEQ Response to Comment 13

LFU's current NPDES permit required a seepage study and hydrological analysis of tailings pond 1 and 3 and if there was a discharge from Outfall 002 for more than 6 months, it was to be included in the study. The *Seepage Study and Hydrological Analysis* (Water & Natural Resource Group, Inc. dated March 14, 2008) was submitted to EPA and DEQ as fulfillment of the permit requirement. It is available from DEQ by request. Briefly, the study concluded that "Seepage from the tailings impoundments appears to be minimal." Subsequent to this study and as a result of investigations by EPA, a Stipulation of Settlement and Judgment regarding *United States of America v. Hecla Limited* (U.S. District Court for the District of Idaho, 2015) was finalized, for in part, diversion of seepage water from Tailing Pond No. 3 to Harris Creek. Also in 2015, DEQ entered into a Voluntary Consent Order (VCO) with Hecla Limited to implement Hecla's Closure Plan for Tailings Pond No. 3 (also known as TP3). The Closure Plan was to assess whether TP3 contributes to any exceedances of a ground water or surface water standard that would impair existing beneficial uses and to remediate any release of contaminants from the tailings impoundment to ground water. DEQ continues to work with Hecla Limited on details of the Closure Plan and has made significant progress towards a final plan.

DEQ is not aware of a general practice for NPDES permits of providing seepage test dates and scheduling. You might be referring to DEQ's Wastewater Rules IDAPA 58.01.16.493 which is specific to municipal wastewater treatment or disposal facilities.

ICL Comment 14

Since at least 1998 the stretch of the SFCDA River that receives Hecla's effluent discharges has been identified on Idaho's 303(d) list as an impaired water body, likely due to metals contamination. And, since that time, over twenty years have passed, and the State of Idaho has been both unable and unwilling to secure approval of a metals TMDL for the SFCDA River, despite the fact that the river continues to exceed metal pollution limits.

We are concerned that the SFCDA River has very little assimilative capacity for the metals pollution Hecla's facility discharges into the river. And, although we are encouraged to see more

stringent effluent limits in the draft NPDES permit, it remains concerning that the effluent limits proposed in 2019 continue to be less stringent than effluent limits proposed in 2001, according to the metals TMDL that existed at that time. *See* 2001 NPDES Permit Fact Sheet, Hecla Lucky Friday Mine.

Despite the risks to human health from metals pollution from Hecla's facility and others along the SFCDA River, this river and its surrounding community continue to be the victims of regulatory capture. DEQ currently labels the development of a metals TMDL for the Coeur d'Alene River Basin as a low priority, in part, because DEQ does not believe such a TMDL has the support of mining interests. *See* Attachment 1.

This is truly a depressing state of affairs, and we encourage EPA to utilize the full extent of its discretionary authority to revise the draft permit with the most protective effluent limits and monitoring requirements available. To be sure, further restricting Hecla's metals effluent limits will not solve the metals contamination issues in the Coeur d'Alene Basin or even the SFCDA River, but that should not be basis for allowing existing point sources to continue to discharge beyond the assimilative capacity of the river. Restoring the SFCDA River calls for an "all hands on deck" approach and attitude, and every reduction in the metals loading to the river counts.

DEQ Response to Comment 14

In 2000, DEQ completed a metals TMDL for the South Fork Coeur d'Alene River, which EPA approved. However, in the case *Asarco v. State*, 69 P.3d 139 (Idaho 2003), the Idaho Supreme Court later declared that TMDL void because it was not developed using rulemaking procedures. As ICL identifies in the September 28, 2018 letter from DEQ to ICL, Idaho Code § 39-3611(4) now requires that any development of TMDLs for metals in the Coeur d'Alene River Basin must go through the rulemaking process. Such a TMDL would therefore need to be approved by the Idaho Board of Environmental Quality and the Idaho Legislature, in addition to the EPA, before it could take effect. As ICL is aware, this rulemaking requirement is unique to metals TMDLs in the Coeur d'Alene River Basin; rulemaking is not required for development of any other TMDL in the state. DEQ believes that without the support of the community and mining interests in the Coeur d'Alene River Basin, a metals TMDL rule for the South Fork Coeur d'Alene River is not likely to garner the necessary approvals at this time. DEQ is therefore dedicating its limited resources to other priorities.

ICL Comment 15

The EPA should not grant the use of mixing zones to dilute waste.

DEQ may authorize the use of a mixing zone. But, the EPA does not need to approve of the use of a mixing zone should DEQ recommend or authorize them. We believe that the use of mixing zones causes harm by facilitating the release of additional pollutants and creating a potential barrier to fish movement. Accordingly, we request EPA deny DEQ's proposed mixing zones and revise the draft permit with end-of-pipe limits for mercury, copper, WET, and pH.

If the mixing zones proposed in the draft permit are maintained, we request DEQ provide a more detailed discussion of the analysis it used to justify its decision to permit mixing zones for mercury, copper, WET, and pH. As currently drafted, DEQ's 401 certification merely authorizes the mixing zones for mercury, copper, and WET in a single sentence, without providing any analysis or

explanation showing that the mixing zones will comply with the principles of Idaho's Mixing Zone Policy. In particular, it is unclear from DEQ's analysis whether the proposed mixing zones will ensure the following:

- The mixing zone is to be located so it does not cause unreasonable interference with or danger to existing beneficial uses;
- When two (2) or more individual mixing zones are needed for a single activity, the sum of the areas and volumes of the several mixing zones is not to exceed the area and volume which would be allowed for a single zone; and
- The mixing zone is to be no closer to the ten (10) year, seven (7) day low-flow shoreline than fifteen percent (15%) of the stream width.

See IDAPA 58.01.02.060.01.b, c., and e.iii. (2014).

We are particularly concerned that relocating Outfall 003 to the north side of the SFCDA River may cause the plume created by the mixing zones for mercury, copper, WET, and pH to create a barrier to fish passage. Placing Outfall 003 on the north side of the SFCDA River puts this outfall near the inside edge of a bend in the SFCDA River, which may cause the mixing zones to extend diagonally across the width of the river, as the plume approaches the downstream bend. We request DEQ further analyze the potential impacts of the proposed mixing zones and provide this analysis for public review. And, please explain why CORMIX modeling is appropriate, or not, for evaluating the impacts of authorizing a mixing zone for discharges of pollutants at the new location for Outfall 003. We also request DEQ explain, in detail, how the proposed mixing zones comply with the mixing zone principles stated above.

DEQ Response to Comment 15

The final permit will require LFU to complete for DEQ review and approval, a mixing zone analysis using Cormix prior to moving Outfall 003. DEQ supports the relocation of Outfall 003 to improve mixing. Currently, there is not enough information regarding the design and location of the proposed outfall to model the discharge. As part of the modeling effort, deficiencies in the proposed location of the outfall will be revealed and corrected if needed to comply with the DEQ mixing zone rules.

DEQ authorized a 25% critical flow mixing zone for Outfall 001/002 for WET which is the same as the current permit. WET testing results have consistently shown no toxicity to test species. DEQ significantly reduced the mixing zone size for mercury at all Outfalls from 75% to 25% for each flow tier and final effluent limits allow no mixing for copper.

Outfalls 001 and 002 are side bank discharges. Flows from these Outfalls have not significantly increased from the current permit. In weighing the value of requiring the side discharges to be moved to the thalweg of the river, DEQ must consider the benefits versus the long term negative consequences of the change. In examining the location at each of these Outfalls, considering the width of the river, channel alignment, bottom configuration, results of WET testing, lower effluent limits for some metals, and the value of a mature riparian zone, DEQ determined that movement of the Outfalls would permanently degrade the river at these locations and that the small benefit gained in relocating the discharge to minimize shore hugging plumes would not outweigh the negative effects of moving the pipes.

ICL Comment 16

EPA's draft fact sheet identifies temperature as a pollutant of concern. However, no temperature effluent limitations are proposed in the draft permit. We request EPA explain how it concluded Hecla's discharge does not have a reasonable potential to cause or contribute to an exceedance of the water quality criteria for cold water aquatic life and salmonid spawning.

Hecla discharges to a stretch of the SFCDA River that is designated for cold water aquatic life and has an existing use for salmonid spawning. At Table C-1, it appears EPA only analyzed the temperature criteria for cold water aquatic life instead of also analyzing the criteria for salmonid spawning – during times of spawning, water temperatures are not to exceed thirteen degrees C or less with a maximum daily average no greater than nine degrees C. IDAPA

58.01.02.250.02.f.ii. This is a critical oversight given that Hecla's effluent is discharged at temperatures well above these criteria, especially during the summer months. *See* Appendix B in EPA's Fact Sheet. Moreover, Hecla's receiving water monitoring reveals that the SFCDA River above Outfalls 002 and 003 already flows at temperatures that exceed, or nearly exceed, the temperature criteria for salmonid spawning. All this makes the receiving water in the SFCDA River vulnerable to temperature exceedances. We request the EPA and DEQ please explain why it is not appropriate to establish temperature effluent limits in Hecla's new permit.

If effluent limits for temperature are not included in Hecla's new permit, we request EPA and DEQ specifically explain what Hecla's monitoring requirements entail. DEQ's 401 certification provides that the temperature monitoring requirements for Outfall 002 and 003 must be changed so that the data is useful to DEQ in determining compliance with temperature criteria. But, DEQ fails to provide or explain the necessary monitoring frequency that would make the data analytically useful.

DEQ Response to Comment 16

DEQ specifically conditioned the 401 Certification so that we are able to work directly with the permittee to achieve the quality of data necessary for the assessment of temperature in this segment of the South Fork Coeur d'Alene River. To date we only have quarterly temperature data upstream of the outfalls and weekly effluent monitoring. DEQ is working on a temperature Subbasin Assessment/Total Maximum Daily Load for the South Fork Coeur d'Alene River and this effort requires high quality instream continuous temperature data and daily effluent temperature. Rather than develop effluent limits on inadequate data, it is prudent to use this opportunity to have LFU collect continuous data so we can prepare a comprehensive accounting of temperature sources and develop meaningful wasteload allocations for point source dischargers, as necessary.