



September 29, 2023

Mr. Alan Haslam, Vice President of Permitting  
Perpetua Resources Corporation  
405 South 8th Street, Ste 201  
Boise, ID 83702 Alan.haslam@perpetua.us

**Subject: Completeness Review of Stibnite Gold Project Cyanidation Facility Application for a Permit to Conduct Ore Processing by Cyanidation**

Dear Mr. Haslam:

The Idaho Department of Environmental Quality (DEQ) has reviewed for completeness the Stibnite Gold Project Cyanidation Facility Application for a Permit to Conduct Ore Processing by Cyanidation submitted by Perpetua Resources Idaho, Inc (Perpetua Resources) on August 31, 2023. As required by Part 300 of the Rules for Ore Processing by Cyanidation (CN Rule), IDAPA 58.01.13, within 30 days of receipt of an application DEQ will issue a written notice to the applicant and the Idaho Department of Lands (IDL) indicating whether the application is complete or incomplete.

While the application contains significant information to meet the requirements of the CN Rule, specific deficiencies were identified during DEQ's review such that the application is considered incomplete. As required by Part 300.01.b of the CN Rule, DEQ has provided a list of specific deficiencies and the additional information needed to meet the rule requirements in Attachment 1. In addition, during completeness review, DEQ identified deficiencies under accuracy and protectiveness. These deficiencies are included as supplemental information in Attachment 2, but do not constitute a complete accuracy and protectiveness review as required under Part 300.02 of the CN Rule.

Resubmittal of an application by Perpetua Resources for Stibnite Gold Project Cyanidation Facility will be subject to the full application processing procedure under Part 300 of the CN Rule, including a completeness review within 30 days followed by an accuracy and protectiveness review within 90 days. The application must meet the requirements in Part 100 of the CN Rule; however, DEQ will work with Perpetua to minimize the need for duplication of printed materials.

DEQ is committed to assisting Perpetua to develop an application that complies with rule requirements such that a defensible cyanidation permit can be issued which protects water quality and public health. If you have any questions, please contact Adam McMahon at (208) 373-0450.

Sincerely,

A handwritten signature in blue ink that reads "Jess Byrne". The signature is fluid and cursive, with the first name "Jess" being more prominent than the last name "Byrne".

Jess Byrne  
Director  
Idaho Department of Environmental Quality

Attachments: Completeness Checklist of Stibnite Gold Project Cyanidation Facility Application for a Permit to Conduct Ore Processing by Cyanidation, August 2023; Preliminary Accuracy and Protectiveness Review of Stibnite Gold Project Cyanidation Facility Application for a Permit to Conduct Ore Processing by Cyanidation, August 2023

cc: Mick Thomas, IDL  
Aaron Scheff, DEQ Boise Regional Office  
Michael McCurdy, DEQ State Office  
Adam McMahon, DEQ State Office

EDMS number: 2023BEV534

Attachment 1: Completeness Checklist

Stibnite Gold Project Cyanidation Permit Application August 2023

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Line	Chapter Reference	Rule Requirement	Complete (Yes or No)	Application Reference and Comment
1	100	PERMIT AND PERMIT APPLICATION.		
2	100.01	Permit Required. No person may construct a new cyanidation facility prior to obtaining a permit from the Director. No person may materially expand or materially modify a cyanidation facility prior to obtaining a modified permit for such expansion or modification pursuant to Section 750.		
3	100.02	Permit Application. The owner or proposed operator of a cyanidation facility or the owner's or operator's authorized representative must:		
4	100.02.a	Make application to the Director in writing and <u>in a manner or form prescribed herein</u> ; and		
5	100.02.b	Provide five (5) paper copies of the application to the Director, unless otherwise agreed to by the Department and the applicant.	Yes	Applicant provided five paper copies and an electronic version of the Stibnite Gold Project Cyanidation Permit Application August 2023 (Application) via SharePoint and flash drive as agreed to by the Department (DEQ).
6	100.03	Contents of Application. A permit application and its contents will be used to determine if an applicant can locate, construct, operate, maintain, close and monitor the proposed cyanidation facility in conformance with these and other applicable rules including, but not limited to: IDAPA 58.01.02, "Water Quality Standards"; IDAPA 58.01.08, "Idaho Rules for Public Drinking Water Systems"; IDAPA 58.01.05, "Rules and Standards for Hazardous Waste"; IDAPA 58.01.06, "Solid Waste Management Rules"; IDAPA 58.01.11, "Ground Water Quality Rule"; and IDAPA 58.01.25, "Rules Regulating the Idaho Pollutant Discharge Elimination System Program." The application must include all of the following information in sufficient detail to allow the Director to make necessary application review decisions concerning compliance with Sections 200 through 205 as applicable and protection of human health and the environment:		
7	100.03.a	Name, location, and mailing address of the cyanidation facility.	Yes	Application Section 1.4.1.
8	100.03.b	Name, mailing address, and phone number of the applicant, and a registered agent.	Yes	Application Section 1.4.2.
9	100.03.c	Land ownership status of the cyanidation facility (federal, state, private or public).	Yes	Application Section 1.4.3 and Fig. 1-3.
10	100.03.d	Name, mailing address, and phone number of the applicant's construction and operations manager.	Yes	Application Section 1.4.4.
11	100.03.e	The legal structure (corporation, partnership, etc.) and residence of the applicant.	Yes	Application Section 1.4.5.
12	100.03.f	The legal description, to the quarter-quarter section, of the location of the proposed cyanidation facility.	Yes	Application Section 1.4.6 and Fig. 1-4.
13	100.03.g	Evidence the applicant is authorized by the Secretary of State to conduct business in the State of Idaho.	Yes	Appendix 1.A.
14	100.03.h	A general description of the operational plans for the cyanidation facility from construction through permanent closure. This description must include any proposed phases for construction, operations, and permanent closure.	Yes	Application Section 2.3.
15	100.03.i	The design maximum daily throughput of ore through the cyanidation facility and the total projected volume of material to be processed during the life of the operation.	Yes	Application Section 2.3.2.
16	100.03.j	Cyanidation facility layouts including water management systems designed to segregate storm water from process water.	Yes	Application Section 4.4.2, Appendix 4 Drawings, Appendix 7.E: Section 4.1.6.3, Table 2-1, and supporting appendices.
17	100.03.k	A geotechnical evaluation of all process water and process chemical containment systems within the proposed cyanidation facility.	Yes	Appendix 4.J.
18	100.03.l	A preconstruction topographic site map or aerial photos extending at least one (1) mile beyond the outer limits of the cyanidation facility, identifying and showing the location and extent of the following features:	Yes	Application Fig. 3-1.
19	100.03.l.i	All wells, perennial and intermittent springs, adit discharges, wetlands, surface waters and irrigation ditches that may be affected by the cyanidation facility;	Yes	Application Fig. 3-1 and Fig. 3-4.
20	100.03.l.ii	All process water supply source(s);	Yes	Application Fig. 3-5 and Section 3.1.2.
21	100.03.l.iii	All public and private drinking water supply source(s) within at least one (1) mile of the cyanidation facility;	Yes	Application Fig. 3-5 and Section 3.1.3.
22	100.03.l.iv	Identified floodplain areas (shown on USGS sectional Quadrangle maps);	Yes	Appendix 3.A.
23	100.03.l.v	All service roads and public roads;	Yes	Application Fig. 3-8
24	100.03.l.vi	All buildings and structures within a half (1/2) mile of the cyanidation facility;	Yes	Application Fig. 3-9.

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25	100.03.l.vii	All outstanding resource waters and sensitive resource aquifers within one (1) mile of the cyanidation facility; and	Yes	Application Fig. 3-6 and Section 3.1.7.
26	100.03.l.viii	All Clean Water Act Section 303(d) listed streams, and their listed impairments, within ten (10) miles of the site boundary that may be affected by the cyanidation facility.	Yes	Application Fig. 3-7, Table 3-4, and Section 3.1.8.
27	100.03.m	To the extent such information is available, a description and location of underground mine workings and adits and a description of the structural geology that may influence ground water flow and direction.	Yes	Application Sections 3.1.1.3 and 3.2.2; Appendix 6.A.
28	100.03.n	A description of the proposed land application site. <u>The description must include a potentiometric map, surface and subsurface soil characteristics, geology, hydrogeology and ground water quality.</u> The description of these characteristics must be sufficient to determine anticipated impacts to the affected soils, associated vadose zone as well as anticipated changes in geochemistry that may affect surface and ground water quality.	NA	Land application not proposed in Application.
29	100.03.o	Siting diagram for land application sites, monitoring wells, lysimeters, surface or ground water discharge sites, or surface water monitoring locations.	NA	Land application not proposed in Application.
30	100.03.p	A description of measures to protect wildlife that may be affected by the facility.	Yes	Application Section 3.1.12.
31	100.03.q	Proposed post-construction topographic maps.	Yes	Application Fig. 3-10 and Appendix 7.H: Section 7.6.1.2.
32	100.03.r	Engineering plans and specifications for all portions of the cyanidation facility must be submitted to the Department for review and approval. Preliminary designs for future phases of the cyanidation facility may be submitted as part of the permit application, provided that, pursuant to Subsection 500.02, the Department review and approval of final plans and specifications is required before construction of those phases may begin. All cyanidation facility engineering plans and specifications must bear the imprint of an Idaho licensed professional engineer that is both signed and dated by the engineer. These plans and specifications must, at a minimum, include all of the following information applicable to the proposed facility.	No	Application Section 4.5 provides a list of specifications. However, not all listed specifications are found within the application package. The following specifications are missing from the application package: 170045-1003, 170045-5206, 170045-4600. Provide the missing specifications to meet the rule requirements.
33	100.03.r.i	Designs meeting applicable criteria in Sections 200 through 204.	No	See comments on Section 200 through 204.
34	100.03.r.ii	Any alternative design approved by the Department under Section 205.	NA	Alternative design not proposed in Application.
35	100.03.r.iii	The water balance, ore flow and processing calculations demonstrating the logic behind sizing of facilities.	No	While Appendix 7.F provides information to address these rule requirements, the following deficiencies were noted during review: <ol style="list-style-type: none"> <li>1. Processing calculations demonstrating logic behind sizing of facilities not found.</li> <li>2. Calculations on pond sizing were only found for the Pipeline Pond and not all ponds at facility.</li> <li>3. Appendix 7.F: Section 4.5 references Specification 170045-1003 for design parameters for all components in the circuit, but this specification is missing from application package.</li> </ol> Provide calculations and missing specifications to address rule requirements.
36	100.03.r.iv	The general ore processing overview and analyses of chemical compatibility of containment materials with process chemicals and wastes, including a chemical mass balance at inputs and outputs from the cyanidation facility.	No	While information was provided to address these rule requirements, the following deficiencies were noted during review: <ol style="list-style-type: none"> <li>1. Specification 170045-1003 which includes project design criteria is missing from the application package.</li> <li>2. Appendix 4.Q does not include predicted concentrations of cyanide solutions in all process circuits. Cyanide concentrations at additions points in Areas 300, 400, 470, and at decant tailings are provided; however, concentrations at addition points in strip solution tank (Area 500) and oxide leach tank (Area 480) were not included.</li> <li>3. Expected pH values only found for some circuits, not all of the circuits.</li> </ol> Provide the missing specification and updated application materials to address rule requirements.
37	100.03.r.v	Geotechnical data and analyses demonstrating the logic for plans and specifications of foundation materials and placement.	Yes	Application Section 4.4.2, 4.4.4, and referenced application package appendices.

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38	100.03.r.vi	Requirements for site preparation.	No	Section 4.4.4 of the Application references Specification 170045-5206 and Drawings 000-EN-100 thru 119 in Appendix 4.B. However, Specification 170045-5206 was not found within the application package. Provide the missing specification to address rule requirements.
39	100.03.r.vii	Pumping and dewatering requirements.	Yes	Appendix 4.A and Appendix 6.K.
40	100.03.r.viii	Procedures for materials selection and placement for backfilling foundation areas.	Yes	Specification 170045-5208.
41	100.03.r.ix	Criteria for caps and covers used as source control measures.	Yes	Application Section 6.1.4.
42	100.03.r.x	Criteria for ensuring stability of embankments for pads, ponds and tailings impoundments.	Yes	Specification 170045-5208 and Appendix 6.A: Section 8.1.
43	100.03.r.xi	Procedures to classify and modify, if necessary, excavated fill, bedding and cover materials for buildings, pads, ponds, and tailings impoundments.	No	Section 4.4.4. of the Application references Specification 170045-5206 which includes information for fill material for embankments, grading, and leveling. However, this specification was not included within the application package. In addition, specification 170045-5208 Rev 1 refers to Specification 170045-5223. Specification 170045-5223 is also missing from the application package. Further, the application package includes no discussion of materials for cover systems and Appendix 4.N Construction Quality Control Plan does not include procedures for earthen materials testing. Provide the missing specifications and updated application materials to address rule requirements.
44	100.03.r.xii	Plumbing and conveyance schematics and component specifications.	Yes	Appendix 4.1, Appendix 4.O, Appendix 5.A, Appendix 5.B, Appendix 6.A, and Appendix 6.B.
45	100.03.r.xiii	Plan views and cross-section drawings of leach pad, permanent heaps, vats, process water storage ponds, tailings impoundments and spent ore disposal areas.	No	Comprehensive cross-sections for vats and tanks are not included. For example, 400-EN-300 shows many cells and tanks throughout the flotation building but only one cross-section. Multiple cross-sections must be provided to fully capture all vats, tanks, and cells in this building. Additionally, cross-sections for 820-EN sheets are not included in the application package. Provide updated application materials to address rule requirements.
46	100.03.r.xiv	Leak detection and collection system plans and specifications including, but Not limited to, schematics and narratives describing liner and geotextile material specifications, sumping capacity and layout, location of monitoring port(s), monitoring port components, construction operation and maintenance procedures for monitoring ports and pumping systems, including backup system, triggers for containment repairs, replacement or other contingency mitigation, frequency of monitoring, and monitoring parameters.	No	While information was provided to address these rule requirements, the following deficiencies were noted during review: <ol style="list-style-type: none"> <li>Appendix 4.A Flow Sheets do not include level indicators for sumps within the plant secondary containments nor information as to where the solution collected in these sumps will be pumped to.</li> <li>No information on standby pumps for the Sodium Cyanide tanks found.</li> </ol> Provide updated application materials to address rule requirements.
47	100.03.r.xv	Provisions to protect containment systems from heavy equipment, fires, earthquakes and other natural phenomena.	Yes	Application Section 4.4.1 and Section 6.1.7. Appendix 4.P, Appendix 6.A, and Appendix 7.B: Section 3.4.1 and Section 7.3.
48	100.03.r.xvi	Quality assurance/quality control procedures.	Yes	Appendix 4.N and Appendix 6.A: Appendix I.
49	100.03.r.xvii	The identity and qualifications of the person(s) directly responsible for supervising construction and quality assurance/quality control.	Yes	Appendix 4.N and Appendix 6.A: Appendix I.
50	100.03.s	Operation and maintenance plans that include all of the following.		
51	100.03.s.i	Maintenance plans, including routine service procedures for containment systems, process chemical storage, and disposal of contaminated water or soils, including petroleum-contaminated soils.	No	While the application package includes operations, maintenance, and response plans, none of those documents include procedures for disposal of petroleum-contaminated soils. Provide updated application materials to address rule requirements.
52	100.03.s.ii	A water management plan that provides for handling and containment of process water including the methods to manage and/or treat all process water and pollutants, run-off or run-on water, emergency releases, and excess water due to flood, rain, snowmelt, or other similar events. The plan must include the basis for the designed containment volumes and estimations of the need for and operation of a land application site, injection wells, infiltration galleries or leach fields, or the need for an IPDES permit. The permittee will update the plan on a regular basis to reflect the reconciliation of the water balance changes in the project through construction, operation, maintenance, and permanent closure, including modifications to the cyanidation facility.	Yes	Appendix 7.E and Appendix 7.F.

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53	100.03.s.iii	A proposed water quality monitoring plan.	Yes	Appendix 7.G.
54	100.03.s.iv	An emergency and spill response plan that describes procedures and methods to be implemented for the abatement and cleanup of any pollutant that may be discharged from the cyanidation facility during use, handling or disposal of processing chemicals, petrochemicals and/or fuels, and any other deleterious materials.	No	While the application package includes operations, maintenance, and response plans, none of those documents include procedures for handling or disposal of petrochemicals and/or fuels and any other deleterious materials. Provide updated application materials to address rule requirements.
55	100.03.s.v	A seasonal/temporary closure plan, if applicable, that describes the procedures, methods, and schedule to be implemented for the treatment and disposal of process water and pollutants, the control of drainage from the cyanidation facility during the period of closure, the control of drainage from the surrounding area, and the secure storage of process chemicals.	No	Application Section 7.1.4 indicates that seasonal or temporary closure as defined by rule is not included in operational plans. However, this section indicates a framework has been developed to establish a seasonal or temporary closure plan. This framework was not found in the application package and should be included to completely address rule requirements.
56	100.03.t	The permanent closure plan must be the same as the plan submitted to the Idaho Department of Lands pursuant to the Idaho Mine Land Reclamation Act, Chapter 15, Title 47, Idaho Code, and the rules promulgated thereunder.	Yes	The permanent closure plan was submitted to Idaho Department of Lands on August 29, 2023.
57	100.03.u	Characterization of pollutants contained in or released from the cyanidation facility, including the potential for the pollutants to cause degradation of waters.	No	The application package includes information on baseline water quality and characterization of pollutants contained in or released from the cyanidation facility. However, this rule section was not included in the Appendix 2.A regulatory crosswalk and not specifically addressed in the application package.
58	100.04	Cost Recovery Agreement. Prior to submittal of the preliminary design report, an applicant must enter into an agreement with the Department for actual costs incurred to review the preliminary design report, process the permit application or any permit modification requests, issue a final permit or permit modification, and review final facility designs prior to construction if such designs were Not included in the permit application. The cost recovery agreement may provide for actual costs incurred by the Department for any other service rendered pursuant to these rules or a permit so long as agreed to in advance by the applicant.	Yes	Cost recovery agreement was signed by DEQ on June 19, 2018.
59	200	REQUIREMENTS FOR WATER QUALITY PROTECTION. The following design and performance standards are intended as the minimum criteria for protection of public health and waters. These standards apply to all facilities unless the Department determines that other site-specific criteria, including an alternative design approved under Section 205, are appropriate to protect water quality and the public health.		
60	200.01	Professional Engineer. Plans and specifications for construction, alteration or expansion of any cyanidation facility must be prepared by or under the supervision of an Idaho licensed professional engineer and bear the imprint of the engineer's seal. Construction must be observed by an Idaho licensed professional engineer or a person under the supervision of an Idaho licensed professional engineer.	Yes	All plan sheets and specifications included with the permit appear to be stamped by an Idaho licensed professional engineer.
61	200.02	Plans and Specifications. Final plans and specifications for the construction of a cyanidation facility must be submitted to and approved by the Department before construction may begin. All construction must be in compliance with the plans and specifications approved by the Department. Within thirty (30) days of the completion of such construction, modification or expansion, complete and accurate plans and specifications depicting that actual construction, modification or expansion does Not deviate from the original approved plans and specifications must be submitted to the Department.	Yes	Appendices 4.A - 4.Q, Appendix 5, and Appendix 6.A.

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62	200.03	Manufacturer’s Specifications. Manufacturer’s specifications for materials and equipment necessary to meet the requirements of Subsection 100.03.r. and Sections 200 through 205 for containment of process water must be submitted to the Department with the plans and specifications required in Subsection 200.02 before construction may begin.	No	While the application package includes manufacturer' specifications for most materials and equipment, the following deficiencies were noted during review: 1. Appendix 4.O: the EarthShield Waterstop specification is generic and needs to be customized to the facility. 2. Appendix 6: Appendix M includes liner, GCL, and draitube manufacture specifications. Recommended that the technical requirements of these documents be added to Technical Specifications. Provide updated application materials to address rule requirements.
63	200.04	Siting and Preparation. All cyanidation facilities including, but Not limited to, the process building, laboratories, process chemical storage and containment facilities, plumbing fixtures that support process water, untreated or treated process water ponds, tailings impoundments, ore stock piles, and spent ore disposal areas must be appropriately sited and prepared for construction. Siting criteria must ensure that, at a minimum, the facilities are structurally sound and that containment systems can be adequately protected against factors such as wild fires, floods, landslides, storm water run-on, erosion, migrating stream channels, high ground water table, equipment operation, subsidence of underground workings, public access and public activities. All sites must be properly prepared prior to construction of foundations and facilities. Vegetation, roots, brush, large woody debris and other deleterious materials, top soil, historic foundations and plumbing, or other materials that may adversely affect appropriate construction and long term stability, must be removed from the footprint of the cyanidation facility unless approved by the Department.	Yes	Application Sections 4.4.1, 5.2, and 6.12. Appendix 4.B, Appendix 4.J, and Appendix 6.A
64	200.05	Process Water Storage Sizing Criteria. All aspects of the cyanidation facility that entrain, utilize, treat, discharge, pump, convey, or otherwise contain process water, treated process water, or run-off water from any portion of the cyanidation facility must be included in the water balance. Each pond, tailings impoundment, and ditch containing process water must be designed to maintain a minimum two (2) foot freeboard during storage or conveyance of the design climatic events plus maximum expected Normal operating levels. Leach pad design must provide containment of the maximum expected operating flows plus storm flows from the design climatic event. At a minimum, a cyanidation facility must be designed to contain the maximum expected Normal operating water balance and the volume of run-on and run-off water associated with a climatic event that has a one percent (1%) annual exceedance probability. Snowmelt events will be considered in determining the maximum flow volume during the design climatic event. Contingency plans for managing excesses of all water included as a part of the water balance must be described in the water management strategy. Each structure that impounds process water or process-contaminated water must include a means of passing excess water unless otherwise approved by the Department.	Yes	Appendix 4.O, Appendix 6.A, Appendix 7.A, and Appendix 7.F.
65	200.06	Minimum Plans and Specifications. Unless the Department approves an alternative design under Section 205, the plans and specifications for any portion of a cyanidation facility that will contain process water must satisfy the applicable general design criteria in Subsection 200.06 and the design criteria in Sections 201 through 204 for the type of facility receiving process water. These provisions establish minimum pollutant control technologies and define the site and operating conditions that must be evaluated.		
66	200.06.a	Cyanidation facility design must:		
67	200.06.a.i	Minimize releases of pollutants into ground water or subsurface migration pathways so that any release will Not cause unauthorized degradation of waters.	Yes	Application Sections 2.3.1, 2.3.3, 4.7, and 5.0.

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68	200.06.a.ii	Preclude any differential movement or shifting of the subgrade, soil layer, liner or contained material that endangers containment integrity as a result of the proposed range of operating conditions for each component and anticipated seismic activity at the site.	Yes	Appendix 4.P and Appendix 6.A.
69	200.06.a.iii.1-3	Include additional containment of process water, as requested by the Department, in areas where ground water is considered to be near the surface. Ground water is considered to be near the surface if: <ol style="list-style-type: none"> <li>1) The depth from the surface to ground water is less than one hundred (100) feet and the top one hundred (100) feet of the existing formation has a hydraulic conductivity greater than 10-5 cm/sec;</li> <li>2) Open fractured or faulted geologic conditions exist in the bedrock from the surface to the ground water; or</li> <li>3) There is an inability to document that all borings beneath the cyanidation facility have been adequately abandoned.</li> </ol>	Yes	Application Sections 4.7 and 6.1.4 and Appendix 7.G. Additionally Application references: Midas Gold 2017 and Stewart et al. 2016.
70	200.06.a.iv	Not locate new process component containing process water within one thousand (1,000) feet of any dwelling that is occupied at least part of the year and Not owned by the permittee. This does Not apply to modifications at a facility that predates such a dwelling.	No	Appendix 2.A regulatory crosswalk indicates this is not applicable; however, no information supporting this statement is provided. Include information to address rule requirements.
71	200.06.a.v	Include measures for preventing wildlife contact with process water having a WAD cyanide concentration in liquid fraction exceeding fifty (50) mg/L. The Department may require additional measures if wildlife mortality is observed.	Yes	Application Section 3.1.12.
72	200.06.a.vi	Implement measures to protect birds, other wildlife and livestock from adverse effects of cyanide process water and other pollutants.	Yes	Application Section 3.1.12.
73	200.06.a.vii	Include a quality assurance/quality control plan for the construction of containment systems that provides a process for documenting owner acceptance of all underlying components of the containment system prior to construction of the overlying components.	Yes	Appendix 4.N and Appendix 6.A: Appendix I.
74	200.06.b	Liner systems must:		
75	200.06.b.i	Have a structurally stable subgrade for the overlying components and contained material. The subgrade should be constructed to resist consolidation, excessive differential settlement that compromises liner performance, and uplift resulting from pressures inside or outside the containment unit to prevent distortion of overlying components.	Yes	Application Section 6.1.4. Appendix 6.A: Section 7.7 - 7.7.7.
76	200.06.b.ii.1-6	Have a smooth rolled and compacted soil layer, or equivalent layer approved by the Department, in intimate contact with the overlying geomembrane liner with the following characteristics: <ol style="list-style-type: none"> <li>1) A minimum thickness of twenty-four (24) inches compacted to ninety-five percent (95%) of maximum dry density according to Standard Proctor Test ASTM D698 or Modified Proctor Test ASTM D1557;</li> <li>2) Soil placed in a minimum of four (4) lifts that each have a compacted thickness of six (6) inches and a hydraulic conductivity less than or equal to 10-6 cm/sec;</li> <li>3) An uppermost lift of soil that does Not contain particles in excess of point seven five (0.75) inches (nineteen (19) mm) in largest dimension unless larger particles are consistent with the manufacturer's specifications for the overlying liner and approved by the Department;</li> <li>4) No putrescible, frozen, or other deleterious materials.</li> <li>5) No angular, sharp material regardless of diameter; and</li> <li>6) Soil placed within two percent (2%) of optimum moisture content to achieve the specified compaction and hydraulic conductivity.</li> </ol>	No	According to the Appendix 2.A regulatory crosswalk, the proposed liner system has been designed in accordance with Part 200.06.b.ii. However, based on the submitted design, the proposed liner system is designed to meet the requirements of 200.06.b.iii. Include correct rule references.



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77	200.06.b.iii.1-5	<p>Include the following if an equivalent layer replacing the soil layer described in Subsection 200.06.b.ii. is proposed:</p> <ol style="list-style-type: none"> <li>1) A layer that is Not a geomembrane and has a liquid flow rate No greater than that of twenty-four (24) (24) inches of compact soil with a hydraulic conductivity less than or equal to 10-6 cm/sec;</li> <li>2) Materials with appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste, process water, or process-contaminated water to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;</li> <li>3) Materials that provide appropriate shear resistance of the upper and lower component interface to prevent sliding of the upper component including on slopes;</li> <li>4) Certification from an Idaho licensed professional engineer that the liquid flow rate per unit area through the equivalent layer is No greater than the liquid flow rate through two (2) feet of compacted soil with a hydraulic conductivity less than or equal to 10-6 cm/sec, considering the maximum hydraulic head anticipated on the liner system and the thickness of the equivalent layer replacing the two (2) feet of compacted soil; and</li> <li>5) 5. Plans and specifications for an equivalent layer that substantially reflect the manufacturer’s specifications and standards for construction, operation and maintenance unless otherwise approved by the Department.</li> </ol>	Yes	See previous comment on correct rule reference. The following parts of the application package appear to address the 200.06.b.iii: Application Sections 6.1.2 and 6.14; Appendix 6.A: Appendix G; Specification 02240.
78	200.06.b.iv	<p>Include geomembrane liners consisting of high density polyethylene, linear low-density polyethylene, or equivalent, rated as having a resistance to the passage of process water equal to or less than a hydraulic conductivity of 10<sup>-11</sup> cm/sec. Each geomembrane liner will be constructed of materials with appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation and permanent closure.</p>	No	While the application package includes design criteria and design calculations for geomembrane liners, there is no information or specification demonstrating the hydraulic conductivity of any of the proposed geomembrane liners at the facility. Provide additional information demonstrating proposed geomembrane liners meet the hydraulic conductivity requirements of the rule.
79	200.06.b.v	<p>Be constructed according to manufacturer’s standards, or Department-approved design standards, and protect against damage from cracking, sun exposure, ice, frost penetration or heaving, wildlife, wildfires, and damage that may be caused by personnel or equipment operating in or around these facilities.</p>	Yes	Appendix 6.A: Appendix G.
80	200.06.b.vi	<p>Have an appropriate coefficient of friction against sliding plus a factor of safety for each interface constructed on a slope.</p>	Yes	AgroSpike, textured both sides, ballast, slack.
81	200.06.b.vii	<p>Have minimum factors of safety, and the logic behind their selection, for the stability of the earthworks and the lining systems.</p>	Yes	AgroSpike, textured both sides, ballast, slack.
82	200.06.b.viii	<p>Include redundant systems for failures in primary power or pumping systems.</p>	Yes	Appendix 6.A.
83	200.06.b.ix	<p>Have liner material that meets the manufacturer’s quality assurance/quality control performance specifications.</p>	Yes	Appendix 6.A: Appendix G.
84	200.07	<p>Process Buildings, Process Chemical Storage Containment Areas and General Facility Criteria. Storage, handling and use of all process chemicals, process wastes, process water and pollutants associated with the cyanidation facility must be conducted within a clean, safe and secure work space to prevent unauthorized discharges to soils, ground water or surface water. The plans and specifications must contain sufficient detail, including pump capacity and plumbing for evacuation of collection sumps, triggering systems for sump evacuation, and monitoring and reporting requirements and, where appropriate, provide for:</p>	Yes	Application Sections 4.6.10 and 4.7.2.

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85	200.07.a	Structural integrity of the foundation, walls and roof for process and process chemical storage buildings;	No	Appendix 4.P of the application package only includes structural calculations for the flotation building. Structure calculations are required for all process and process chemical storage buildings. Provide updated application materials to address rule requirements.
86	200.07.b	Restriction of public access;	Yes	Application Sections 3.1.5 and 4.4.1.
87	200.07.c	Protection of wildlife;	Yes	Application Section 3.1.12.
88	200.07.d	Internal sumps and spill cleanup plans;	Yes	Application Section 7.1.3 and Appendix 7.C.
89	200.07.e	Grouted and sealed concrete stemmed walls and floors in the process buildings and process chemical storage and containment facilities;	Yes	Appendices 4.B - 4.L (Concrete Drawings). Water stop Specifications 170045-4110, -4111, and -4106.
90	200.07.f	Vapor barriers and frost protection;	No	Application package Appendix 4.O: Specification 4111 and Appendix 4.P do not include any discussion or criteria for vapor barriers and frost protection. Provide updated application materials to address rule requirements.
91	200.07.g	Segregation of process chemicals according to compatibility;	No	While the application package includes information to address this rule, the following deficiency was noted: 1. Drawing 00-EN-020 does not indicate to where the solution collected in the sump for the NaCN system and the sump for the Sodium Metabisulfite system will be pumped. Sodium Metabisulfite is an acid and the application needs to demonstrate that these two components will not comingle. Provide updated application materials to address rule requirements.
92	200.07.h	Communication systems;	Yes	Application Section 4.6.9.
93	200.07.i	Fire suppression systems, internal and external; and	No	Section 4.6.9 of Application includes references to fire suppression systems at the facility and Appendix 7.A includes fire extinguisher inspection. However, no specifics such as fire suppression system design, type, or location was found in the application package. Provide updated application materials to address rule requirements.
94	200.07.j	Quality assurance/quality control for construction activities and construction materials.	Yes	Appendix 4.N and Appendix 6.A: Appendix I.
95	200.08	Cap and Cover Criteria. Caps and covers used as source control measures for facilities must be designed and constructed to minimize the interaction of meteoric waters, surface waters, and ground waters with wastes containing pollutants that are likely to be mobilized and discharged to waters. Caps and covers designed for permanent closure must demonstrate permanence applicable to the permittee's designed and approved permanent closure plan.	Yes	Appendix 7.H: Section 7.5; Appendix C.
96	200.09	Plumbing and Conveyance Criteria. Plumbing and conveyance systems must:		
97	200.09.a	Be structurally sound and chemically compatible with the materials being conveyed;	Yes	Appendices 4.B - 4.M.
98	200.09.b	Provide adequate primary and secondary containment; and	Yes	Application Section 4.7 and 5.3. Appendix 4.M, Appendix 5.A, and Appendix 5.B.
99	200.09.c	Be protected against heat, cold, mechanical failures, impacts, fires, and other factors that may cause breakage and result in unauthorized discharges.	Yes	Application Section 4.5, Appendix 4.M, and Appendix 4.O.
100	200.1	Operation and Maintenance Plans. Operation and maintenance plans must be submitted to the Department for review and approval. Operation and maintenance plans must include, but are Not limited to:	Yes	Appendix 7.A.
101	200.10.a	An overall plan that includes techniques for evaluating the integrity and performance of all containment systems;	Yes	Appendix 7.A: Section 2.2.2 - 2.2.15.
102	200.10.b	Schedule for inspections of all containment systems;	Yes	Appendix 7.A: Section 2.2.2 - 2.2.15; Appendix 1.
103	200.10.c	Schedule for inspections on piping and conveyance systems that carry process water;	Yes	Appendix 7.A: Section 2.2.2 - 2.2.15; Appendix 1.
104	200.10.d	Response plans that detail specific actions that will result in mitigation of compromised or damaged containment systems; and	Yes	Appendix 7.A and Appendix 7.C.

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105	200.10.e	Response plans that detail specific thresholds identified under Subsection 200.11, the locations and frequency at which the thresholds will be monitored, and actions that will result in mitigation of an exceedance of any threshold.	Yes	Appendix 7.A.
106	200.11	Water Quality Monitoring and Reporting. The water quality monitoring plan submitted with the application must be reviewed and, if appropriate, approved by the Department. The approved water quality monitoring plan must:		
107	200.11.a	Provide for physical, chemical and biological monitoring, including measurements of surface water flow, wildlife and bird mortality, and aquatic indicator species in potentially affected surface and ground water, as appropriate;	Yes	Appendix 7.G.
108	200.11.b	Provide for sampling locations and frequency;	Yes	Appendix 7.G.
109	200.11.c	Provide an assessment of the existing surface and ground water conditions prior to construction of the proposed cyanidation facility;	Yes	Appendix 7.G.
110	200.11.d	Be site specific and dependent on location, design and operation of the cyanidation facilities included in the overall operating plan;	Yes	Appendix 7.G.
111	200.11.e	Specify compliance points and associated water quality compliance criteria;	Yes	Appendix 7.G.
112	200.11.f	Specify monitoring points and threshold concentrations that provide for early detection of discharges of pollutants;	Yes	Appendix 7.G.
113	200.11.g	Provide analytical methods and method detection limits for chemical analysis used in the determination of water quality;	Yes	Appendix 7.G.
114	200.11.h	Provide a quality assurance quality control plan for data collection and analysis;	Yes	Appendix 7.G: Appendices E and F.
115	200.11.i	Provide for appropriate and timely analytical data analyses including evaluations of water quality and quantity trends;	Yes	Appendix 7.G.
116	200.11.j	Provide an annual environmental monitoring and data analysis report of water quality and quantity trends;	Yes	Appendix 7.G.
117	200.11.k	Provide for the reporting and re-sampling of monitoring locations where detectable and statistically significant changes in water quality are found. The permittee must propose a statistical method to determine the significance of the changes in water quality; and	Yes	Appendix 7.G: Appendices I and K.
118	200.11.l	Provide for anticipated changes or modifications to monitoring plans, which may be the result of a phased approach to cyanidation facility construction, operations and permanent closure.	Yes	Appendix 7.G.
119	200.12	Monitoring Wells Siting and Construction Plans. The applicant is encouraged to submit a report describing the purpose, objectives, location and proposed construction of monitoring wells to the Department for review and comment during the initial stages of site characterization. A monitoring well siting and construction plan must be provided upon submittal of the preliminary design report under Subsection 050.02.	Yes	Appendix 7.G: Appendix A.
120	200.12.a	Monitoring well siting and construction plans must provide for the following.		
121	200.12.a.i	A quality assurance/quality control plan for well construction.	Yes	Appendix 7.G: Appendix A.
122	200.12.a.ii	A minimum of three (3) monitoring wells with one (1) located up gradient and two (2) located down gradient of primary components of the cyanidation facility to determine ground water flow direction.	Yes	Appendix 7.G.
123	200.12.b	Siting and planning for additional wells or replacement wells may be required in the permit application and final permit. Specifically, additional wells may be required for:		
124	200.12.b.i	Large areas with multiple potential sources for pollutants;	Yes	Appendix 7.G.
125	200.12.b.ii	Areas with complex geology, fractured bedrock; and	Yes	Appendix 7.G.
126	200.12.b.iii	Areas with insufficient background hydrogeology.	Yes	Appendix 7.G.

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127	200.12.c	All monitoring well construction must also conform to the well construction rules listed in IDAPA 37.03.09, "Well Construction Standards Rules."	Yes	Appendix 7.G.
128	200.12.d	Record diagrams including well construction details, well elevation and a detailed geologic log must be provided to the Department for each monitoring well.	Yes	Appendix 7.G: Appendix G.
129	200.13	Land Applications. Plans and specifications must include:		
130	200.13.a	An operation and maintenance plan including:	NA	Application does not propose land application.
131	200.13.a.i	Water balance for the land application site;	NA	Application does not propose land application.
132	200.13.a.ii	Water balance for the land application site;	NA	Application does not propose land application.
133	200.13.a.iii	Operating season for land application;	NA	Application does not propose land application.
134	200.13.a.iv	Seasonal closeout procedures;	NA	Application does not propose land application.
135	200.13.a.v	Special soils or vegetative amendments;	NA	Application does not propose land application.
136	200.13.a.vi	Storm water run-on/run-off controls;	NA	Application does not propose land application.
137	200.13.a.vii	Best management practices for all areas impacted by the land application system; and	NA	Application does not propose land application.
138	200.13.a.viii	A topographic map of the land application site and adjacent affected areas, of sufficient scale to facilitate site-specific analysis of soils, vegetation, surface water, and ground water;	NA	Application does not propose land application.
139	200.13.b	Chemical, physical, and volumetric characteristics of the material to be land applied;	NA	Application does not propose land application.
140	200.13.c	A complete description of the chemical and physical characteristics of the soils and applicable geology of the land application site;	NA	Application does not propose land application.
141	200.13.d	Methods of process water treatment, distribution and disposal;	NA	Application does not propose land application.
142	200.13.e	Hydraulic loading capacity of the soils;	NA	Application does not propose land application.
143	200.13.f	Constituent loading capacity of the site;	NA	Application does not propose land application.
144	200.13.g	Attenuation capacity of the vegetative covers and soils;	NA	Application does not propose land application.
145	200.13.h	Evapotranspiration capacity of the site;	NA	Application does not propose land application.
146	200.13.i	Testing and analytical procedures for water quality and soils samples prior to, during, and following the land application process;	NA	Application does not propose land application.
147	200.13.j	Trend analysis of the constituent loading in the affected soils, vegetation, and water quality of the affected surface or ground water systems;	NA	Application does not propose land application.
148	200.13.k	Reporting requirements including both frequency and form; and	NA	Application does not propose land application.
149	200.13.l	Standby power and pumps sufficient to maintain all treatment and distribution works.	NA	Application does not propose land application.
150	200.14	Temporary or Seasonal Closure. Temporary and seasonal closure plans for the entire cyanidation facility must be submitted by an applicant to the Department for review and approval prior to issuance of a final permit. Temporary and seasonal closure plans may, subject to Department approval pursuant to Section 750, be modified to provide for changes in operating conditions of the facilities and must incorporate a water management plan for the period of inactivity as well as during shut down and reactivation.	No	Application Section 7.1.4 indicates that seasonal or temporary closure as defined by rule is not included in operational plans. However, this section indicates a framework has been developed to establish a seasonal or temporary closure plan. This framework was not found in the application package and should be included to completely address rule requirements.
151	200.14.a	Prior to seasonal closure, process buildings, process chemical storage, process water ponds, tailings impoundments, spent ore disposal areas and other ancillary facilities must be stabilized and/or conditioned to prevent any emergency or unauthorized discharges to surface or ground water.	No	See comment on Section 200.14.
152	200.14.b	Subsequent to seasonal closure, process buildings, process chemical storage, process water ponds, tailings impoundments, spent ore disposal areas and other ancillary facilities must be maintained to prevent any emergency or unauthorized discharges to surface or ground water. Cyanidation facilities must be conditioned and maintained to provide:	No	See comment on Section 200.14.
153	200.14.b.i	Material stabilization for all solids affected by process waters;	No	See comment on Section 200.14.
154	200.14.b.ii	Optimum freeboard in all ponds, as dictated by the water management plan;	No	See comment on Section 200.14.

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155	200.14.b.iii	Fully functional power and pumping systems that are ready for use; both power and pumps are to incorporate redundant systems to allow for failure of either power or a pumping system. A failed power supply or pump is Not an acceptable reason for an unauthorized discharge;	No	See comment on Section 200.14.
156	200.14.b.iv	Protection of all containment; and	No	See comment on Section 200.14.
157	200.14.b.v	Sufficient availability of qualified staff to restrict public access, fully implement the water quality monitoring plan, and initiate the emergency and spill response plan.	No	See comment on Section 200.14.
158	200.15	Employee Education Program. Operators and staff of facilities must be properly oriented and trained to operate, maintain, and protect containment systems; waste disposal and discharge systems; and to implement monitoring and emergency and spill response plans. An applicant must submit an employee orientation and continuing training plan to the Department for review prior to issuance of a final permit. The plan must provide the format and contents for training, the general qualifications of the person(s) responsible for training and testing, and the person(s) or positions who must receive such training.	Yes	Appendix 7.D.
159	201	DESIGN CRITERIA FOR LEACH PADS AND OTHER NONIMPOUNDING SURFACES THAT CONTAIN AND PROMOTE HORIZONTAL FLOW OF PROCESS WATER. Plans and specification for leach pads and other nonimpounding surfaces that temporarily contain, not impound, process water and promote the horizontal flow of process water must provide for all of the following.		
160	201.01	Minimal Hydraulic Head. Process water is limited to twelve (12) inches or less hydraulic head pressure on the liner systems.	NA	Application does not propose leach pads and other nonimpounding surfaces that contain and promote horizontal flow of process water.
161	201.02	Engineered Liner System. In addition to meeting the general liner requirements in Subsection 200.06.b., the engineered liner system plans and specifications are to provide for geomembrane liners with a minimum thickness of eighty (80) milli-inches (two point zero (2.0) mm) or equivalent liners approved by the Department.	NA	Application does not propose leach pads and other nonimpounding surfaces that contain and promote horizontal flow of process water.
162	201.02.a	If leach pads or other Non-impounding surfaces are located above areas where ground water is considered near the surface pursuant to Subsection 200.06.a.iii., the Department may require a liner system with a higher level of engineered containment.	NA	Application does not propose leach pads and other nonimpounding surfaces that contain and promote horizontal flow of process water.
163	201.02.b	When a material or system that provides hydraulic relief is installed, beneath a single liner, including, but Not limited to, sand, French drains and geotextiles, regardless of the intent of its design, it is to function as a leak detection system and include a means for recovering process water.	NA	Application does not propose leach pads and other nonimpounding surfaces that contain and promote horizontal flow of process water.
164	201.02.c	Depending on the methods and materials used for their construction, the Department may require all open channels that routinely transport process water to be traced by a leak detection system.	NA	Application does not propose leach pads and other nonimpounding surfaces that contain and promote horizontal flow of process water.
165	201.03	Ore Loading Procedures. Procedures for loading ore onto the leach pads that minimize tensile stresses in the containment liners that may result in failure of the liners.	NA	Application does not propose leach pads and other nonimpounding surfaces that contain and promote horizontal flow of process water.
166	201.04	Monitoring. Monitoring points that will provide for early detection of any discharge.	NA	Application does not propose leach pads and other nonimpounding surfaces that contain and promote horizontal flow of process water.
167	201.05	Process Water Containment. Where appropriate, process water containment calculations at the leach pad perimeter should include the potential for drainage constrictions, including constrictions due to talus or washouts at the ore pile toe. Ore pile setbacks from the leach pad perimeter should be calculated based on local climatic conditions, ore properties, and site specific operating conditions. Solution collection ditches in which the liner is contiguous with the leach pad may be used to satisfy perimeter containment requirements.	NA	Application does not propose leach pads and other nonimpounding surfaces that contain and promote horizontal flow of process water.
168	202	DESIGN CRITERIA FOR PROCESS PONDS.		
169	202.01	Engineered Liner System. In addition to meeting the general liner requirements in Subsection 200.06.b., the engineered liner system plans and specifications must provide for all of the following.		

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Line	Chapter Reference	Rule Requirement	Complete (Yes or No)	Application Reference and Comment
170	202.01.a	Lower geomembrane liners with a minimum thickness of eighty (80) milli-inches (two point zero (2.0) mm) or equivalent liners approved by the Department.	No	Appendix 5.8, Sheet 600-EN-135 shows 60 mil HDPE liners in the TSF Pipeline Pond and the specifications referenced in the Appendix 2.A regulatory crosswalk (5260 and 5263) do not specify liner thickness. Provide updated application materials to address rule requirements.
171	202.01.b	Leak detection and collection system that provides material between the lower geomembrane liner and the upper liner system to collect, transport and remove all process water that passes through the upper liner at such a rate as to prevent hydraulic head from developing on the lower geomembrane liner to the level at which it may be reasonably expected to result in leaks through the lower liner system.	No	The Appendix 2.A regulatory crosswalk references Appendix 5.B, 600-EN-132 and 600-EN-135. These drawings show a leak detection system for the ore process pipeline. However, the TSF Pipeline Pond does not include a leak detection system. Provide updated application materials to address rule requirements.
172	202.01.c	Upper geomembrane liners with a minimum thickness of eighty (80) milli-inches (two point zero (2.0) mm) or equivalent liners approved by the Department.	No	Application package Appendix 5.B, 600-EN-135 shows only one 60 mil HDPE liner for the TSF Pipeline Pond. Provide updated application materials to address rule requirements.
173	202.01.d	Routines and schedules for the evaluation of the efficiency and effectiveness of the removal of process water from the leak collection system. The properly working system will continually relieve head pressures on the lower geomembrane liner.	No	The Application regulatory crosswalk references Appendix 5.B, 600-EN-132 and 600-EN-135. These drawings show a leak detection system for the ore process pipeline. However, the TSF Pipeline Pond does not include a leak detection system. Provide updated application materials to address rule requirements.
174	202.01.e	Monitoring points that will provide for early detection of any discharge.	Yes	Appendix 7.G.
175	202.01.f	Specific triggers for maintenance routines to address inadequate performance of liner systems.	No	Appendix 7.A: Appendix 1 provides Standard Operating Procedures. This appendix includes liner inspection forms for visual inspection, but does not list specific triggers for repair, such as those that may be detected by a leak detection system. Provide updated application materials to address rule requirements.
176	202.01.g	Specific operation and maintenance procedures to address inadequate performance of containment or leak detection and collection systems.	No	Appendix 7.A: Appendix 1 provides Standard Operating Procedures. This appendix discusses leak detection for the TSF pipeline but not the TSF Pipeline Pond, which has no leak detection system. Provide updated application materials to address rule requirements.
177	202.02	Temporary Containment. Ponds for temporary containment of excess quantities of process water as a result of storm events may be constructed with a single liner if approved by the Department.	No	Appendix 7.E: Section 7.2.1 indicates that the North Plant Pond and Central Plant Pond will be lined with 80-mil HDPE. No design drawings showing this liner system found in application package. Provide updated application materials to address rule requirements.
178	203	DESIGN CRITERIA FOR CONTAINERS THAT CONFINE PROCESS WATER. Vats, tanks, or other containers that are partially buried and cannot be visually inspected must have a system providing secondary containment and leak detection. If visual inspection is possible and an area for secondary containment equal to one hundred ten percent (110%) of the largest container is provided, a double liner is Not required.	Yes	Application Section 4.7 and 5.3. Appendix 4.M, Appendix 5.A, and Appendix 5.B.
179	204	DESIGN CRITERIA FOR TAILING IMPOUNDMENTS.		
180	204.01	Engineered Liner System. In addition to meeting the general liner requirements in Subsection 200.06.b., the engineered liner system plans and specifications must provide for the following.		
181	204.01.a	Geomembrane liners with a minimum thickness of sixty (60) milli-inches (one point five (1.5) mm) or equivalent liners approved by the Department.	Yes	Appendix 6.A: Section 7.7.1 and Appendix 6.L.
182	204.01.b	A system to limit hydraulic head over the geomembrane liner that preserves the integrity and long-term performance of the liner system and includes the following:		
183	204.01.b.i	A system to reduce excess pore pressure within the tailings; and	Yes	Appendix 6.A.
184	204.01.b.ii	A plan for managing the depth, area, and volume of process water occurring above the tailings surface and in direct contact with the liner, including thresholds and contingency measures to manage excess accumulation of process water in the facility.	Yes	Appendix 6.A.
185	204.01.c	Monitoring points that will provide for early detection of discharges of pollutants.	Yes	Appendix 7.G.
186	204.02	Enhanced Containment Criteria. An enhanced level of containment may be required by the Department for all of the tailings impoundment or for a portion thereof after considering the following factors:		
187	204.02.a	The anticipated characteristics of the material to be deposited;	Yes	Appendix 6.A.
188	204.02.b	The characteristics of the soil and geology of the site;	Yes	Application Section 3.2 and supporting references.

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Line	Chapter Reference	Rule Requirement	Complete (Yes or No)	Application Reference and Comment
189	204.02.c	The methods employed and degree to which the hydraulic head on the liner is minimized:	Yes	Appendix 6.A.
190	204.02.d	The extent of and methods used for material stabilization and recycling or neutralization of process water;	Yes	Appendix 6.A.
191	204.02.e	Area and volume of process water;	Yes	Appendix 6.A.
192	204.02.f	The depth from the surface to all ground water;	Yes	Appendix 6.A.
193	204.02.g	The methods employed in depositing the impounded material; and	Yes	Appendix 6.A.
194	204.02.h	The proximity to surface water and the ground water interactions with surface water.	Yes	Appendix 6.A and Appendix 7.G: Appendix H.
195	204.03	Tailings Treatment. Tailings impoundments are restricted to a maximum of fifty (50) mg/L WAD cyanide concentration in the liquid fraction unless otherwise approved by the Department.	Yes	Application Section 4.6.8.
196	205	ALTERNATIVE PLANS AND SPECIFICATIONS FOR FACILITIES THAT CONTAIN PROCESS WATER. An applicant may propose an alternative to the requirements identified in Sections 200.06, 201, 202, 203, or 204 based on site-specific conditions and best management practices to protect water quality and human health. All other requirements in Section 200 apply to alternative design proposals.	NA	Application does not propose alternative plans and specifications for facilities that contain process water.
197	205.01	Alternative Design Proposal. The applicant must demonstrate that the alternative design will protect water quality and human health by confirming that the alternative to the minimum design criteria is appropriate based on the WAD cyanide concentration and chemical characteristics of materials contained; the physical characteristics of the materials contained; site-specific soil, geology, hydrology, and hydrogeology characteristics; degree to which hydraulic head on the liner is minimized; area and volume of the facility; depth to ground water; methods employed in depositing the impounded material; potential for leaks and impacts to water quality; and risk to human health and the environment. The alternative design must provide an evaluation based on site-specific data, supported by best available science, and consistent with best management practices demonstrating that process water and process-contaminated water are contained and controlled or treated as necessary to protect public safety and the environment, prevent unauthorized degradation of waters, and achieve all applicable water quality and ground water quality standards. The alternative design must include all applicable elements listed below.	NA	Application does not propose alternative plans and specifications for facilities that contain process water.
198	205.01.a	A hydrogeology assessment of site characteristics including depth to ground water; distance to surface water; hydrogeology and stratigraphy of the site; ground water and surface water interaction; and the quality, characteristics and existing and future beneficial uses of ground water and surface water that may be potentially affected by the facility.	NA	Application does not propose alternative plans and specifications for facilities that contain process water.
199	205.01.b	An engineering assessment detailing the design of each component of the containment system, including type and thickness of each component of the liner system; types of materials to be used and methods of placement of those materials; structures, devices and techniques for controlling drainage and minimizing solution loss; and method to control internal hydraulic head.	NA	Application does not propose alternative plans and specifications for facilities that contain process water.
200	205.01.c	A water quality assessment providing an analysis of potential for the facility to cause degradation of waters including the effect of ground water and surface water interactions, the potential for process water to reach waters, and the potential impact of process water on waters.	NA	Application does not propose alternative plans and specifications for facilities that contain process water.
201	205.02	Preliminary Design Submittal. Alternative design proposals must be provided to the Department upon submittal of the preliminary design report required in Section 050.	NA	Application does not propose alternative plans and specifications for facilities that contain process water.
202	205.03	Department Review. In evaluating alternative design proposals, the Department will consider the WAD cyanide concentration and other materials contained in facilities receiving process water, site hydrogeology, advances in liner technology, alternative designs implemented at other facilities receiving process water, and other site-specific factors in determining if an alternative is appropriate to protect water quality and the public health.	NA	Application does not propose alternative plans and specifications for facilities that contain process water.

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Line	Chapter Reference	Rule Requirement	Complete (Yes or No)	Application Reference and Comment
203	205.04	Cost Recovery Agreement. As provided in Subsection 100.04, the applicant must enter into an agreement with the Department for actual costs incurred to process an alternative design proposal under this subsection. The Department may utilize a third-party to support Department review of the alternative design proposal.	Yes	Cost recovery agreement was signed by DEQ on June 19, 2018.



**Attachment 2: Preliminary Protectiveness and Accuracy Review on Stibnite Gold Project Cyanidation Permit Application August 2023**

During completeness review of the Stibnite Gold Project Cyanidation Permit Application, August 2023 (Application) under Part 300 of the Rules for Ore Processing by Cyanidation (CN Rule), IDAPA 58.01.13, the Idaho Department of Environmental Quality (DEQ) noted deficiencies which would apply under accuracy and protectiveness review. To facilitate development of a complete, accurate, and protective application, DEQ is providing these deficiencies as general and specific comments. However, since the Application has been determined to be incomplete, these comments do not represent the full 90-day accuracy and protectiveness review as required by rule. The applicant may choose to address these comments when developing materials for a complete application. Regardless, any complete application submitted to DEQ will still undergo an accuracy and protectiveness review as required by rule.

**General Comments**

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1. IDAPA 58.01.13 200.06.a.iii.: Allows DEQ to request additional containment of process water in areas where ground water is considered to be near the surface. Near the surface is defined as within 100 feet of the ground surface. The proposed tailings storage facility (TSF), pipeline corridor, and process areas are all in areas where ground water is much closer than 100 feet from the surface. In many of these areas the water is within less than 10 feet of the surface even during operational dewatering. Based on this section of the rule, DEQ could request additional containment of all process areas. It is recommended that they request additional containment including secondary containment and leak detection in the pipeline pond and request better definition of inspections of secondary containment of the pipeline corridor where it is buried based on proximity to the open stream and ground water. Other jurisdictions have determined that buried secondary containment does not meet the requirements of regular inspections for deficiencies and have moved away from allowing fully buried secondary containment except in small road crossing areas. The reasoning for this determination is the lack of inspection cannot provide adequate protection of the environment.
2. IDAPA 58.01.13 204.01.c.: Monitoring points that will provide for early detection of the discharges of pollutants. Typically, drain systems placed under tailings liner systems (sometimes referred to as toe drains) are intended to drain condensation or potential leaks from under the TSF liner and are collected in an underdrain or process pond to allow for testing. It appears that any potential fluid from these means would comingle with the known ground/surface water being collected from current seeps under the TSF. Mixing of the potential leak and the ground water would dilute the stream to a point that early detection would not be possible, and by the time threshold limits were met, a large leak would have occurred. It is recommended that the dewatering activity (seep water/ground water) be separated from liner underdrain and potential leak collection.
3. IDAPA 58.01.13 204.02.: Enhanced Containment Criteria (in Tailings Impoundments). This section of the rule allows DEQ to require an enhanced level of containment when key factors are at play, including (f) the depth from surface to all ground water, and (h) the proximity of surface water and ground water interactions with surface water. In most cases, the ground water in the

TSF basin area is within less than 10 feet of the liner. It is recommended that the ground water be separated from the liner system by natural or synthetic means.

#### **Specific Comments on Appendix 6.A, TSF Design Report**

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4. Underdrain sizing:
  - a. Appendix 6.A, TSF Design Report, Appendix J, Underdrain Design Memo, Section 5.1: Primary underdrains. This section discusses sizing but does not discuss a factor of safety or redundancy in the underdrain piping. Please discuss this as the system cannot be monitored or repaired after installation.
5. Underdrain system monitoring and discharge:
  - b. Appendix 6.A, TSF Design Report, Appendix J, Underdrain Design Memo, Section 7.0: This section states that the sump will be 1,500 gallons in size and will be installed with a pipe discharging to downstream locations (specific location not listed or found in design plan) if water quality meets standards. These standards are not listed here nor is a reference to the location of those standards given. Based on the size of the sump and the design flow rate given in section 5.1, Table 5.1 of 2.48 cubic feet per second (cfs) or approximately 1,100 gallons per minute (gpm), the sump will contain less than 2 minutes of flow. It is then stated that if the underdrain solution does not meet water thresholds, it will be pumped to a process pond or tank but mentions that the secondary pipe will be installed as a stub only without a pipe attached. This would mean the solution that is now determined to contain contaminants would continue running into the stream discharge location until a pipe could be installed to the process area. This is not protective of the environment and needs to be reevaluated.
  - c. Appendix 6.A, TSF Design Report, Section 7.5.2, Bullet 5: This bullet states that water quality will be monitored at the sump **prior to discharge**. It is unclear how the 1,500-gallon sump discussed above will hold all of the underdrain water between weekly tests and laboratory results being returned. Will the sampled solution be stored separately from the 'new' incoming solutions? Please clarify how the solution will be handled for monitoring prior to discharge.
  - d. Suggested changes could include, but are not limited to, separation of the dewatering (spring/seep/ground water) system from the liner underdrain system, redirection of all underdrain water to process uses (treat all as process water, including containment), much larger sumps with divided cells to allow for segregation while awaiting laboratory analysis, and continuous water quality monitoring upstream of the sump with automated valving based on instrument readings.

### **General Comments on Appendix 7.G, Water Quality Monitoring Plan (WQMP)**

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6. Clearly state what wells and surface water monitoring location are considered “up-valley” or “down-valley” and the reason for the designations. The reasoning behind these designations is not initially obvious and can lead to misleading conclusion by the reader. For example, calling location YP-T-35 located down topography from the TSF and most if not all Meadow Creek locations as “up-valley” is not readily apparent from the provided figures or the text. Having these locations with designations specifically called out in a table with elevation and drainage/waterbody would be helpful.

### **Specific Comments on Appendix 7.G, WQMP**

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7. Appendix 7.G, Section 1.2.2, Page 1-6, paragraph 1, sentence 3: Replace the word “at” with “upgradient of”, so that the sentence reads “...within the mining boundary for POC constituents and degradation of ground up gradient of designated POC wells.” Add a following statement “At determined POC locations groundwater standards must be met as described in the POC determination letter.”
8. Appendix 7.G, Section 1.2.2, Page 1-6, paragraph 3: Revise this paragraph to reference the final DEQ POC determination information.
9. Appendix 7.G, Section 1.2.2, Page 1-6 to 1-7, paragraph 4: Revise this paragraph to reference the current POC determination. Ex: Revise the first sentence to state “...standards are allowed upgradient of determined POC locations.”, etc. Also clarify that the POC determination does not authorize variance from cyanidation rules regarding TSF releases, and that effective BMPs will be in place and functional as required by the cyanidation permit rules, and remove the final sentence.
10. Appendix 7.G, Section 1.2.2, Page 1-7, paragraph 5: Revise to clarify the POC determination has been established by DEQ and may be revised in future through application by Perpetua or as initiated by DEQ
11. Appendix 7.G, Section 1.2.3, second paragraph, first sentence: This sentence should be revised to state, “No process water or process-contaminated water containing cyanide is anticipated to be treated and discharged during construction and routine operations.” It should be clarified in this paragraph that water treatment and discharge may be necessary during upset conditions, in which case, Perpetua will be required to apply for and receive the appropriate IPDES discharge permits.
12. Appendix 7.G, Section 2.3.2, Page 2-6, second paragraph: TSF leaks entering the underdrain could cause degradation of Meadow Creek if the leak is not detected until the next underdrain sampling event. Please describe how sampling of the underdrain will be effective in preventing discharge of impacted water to Meadow Creek.
13. Appendix 7.G, Section 3.2, Page 3-8, last paragraph: The number of total baseline surface water locations described in this section (10) is not consistent with the number of locations presented in Figure 3-9 (13 total). Please revise.
14. Appendix 7.G, Section 3.3, Table 3-8: It is recommended that surface water monitoring location SW-17 be moved upstream outside of the mine area footprint.

15. Appendix 7.G, Section 3.4.1, Page 3-26, OPS-1 and OPS-2: Please describe the process to be used to monitor for a “measurable discharge” and the frequency that this will be performed to ensure that OPS pond monitoring is performed as required.
16. Appendix 7.G, Section 3.4.1, Page 3-26, SW-23 and SW-24: These locations are described as being sampled quarterly but are listed in Table 3-8 as being monthly. Please revise for consistency.
17. Appendix 7.G, Section 3.5, Table 3-9: The method reporting limits must be at or below the applicable water quality standard. Revise each analytical method as needed.
18. Appendix 7.G, Section 3.5, Table 3-9, row “Selenium”: The most conservative water quality standard for selenium is 0.0031 mg/L in lotic water and 0.0015 mg/L in lentic water, revise the table accordingly.
19. Appendix 7.G, Page 3-27, Table 3-9: Several of the footnote flags appear to be incorrect (correspond to seemingly unrelated footnotes) or missing. Please revise.
20. Appendix 7.G, Page 3-27, Table 3-9: The title of the table indicates that Method Detection Limits are presented. However, the column header indicates that Method Reporting Limits are presented. These values are not interchangeable and MRLs will be significantly higher than MDLs. Please clarify which are presented in this table and revise accordingly. DEQ recommends using MDLs.
21. Appendix 7.G, Sections 3.5 and 3.6.1, Tables 3-9 and 3-10 rows “Cyanide” and “Thallium”, and Appendix 7.G Appendix C\_3 Cyanide Facility SW\_2012-2019.xlsx: BCLs appear to be developed using datasets with a large number of censored data points with detection limits (DLs) above Idaho’s Water Quality standard for total cyanide and dissolved thallium. These data should not have met project DQOs or used in the development of BCLs. BCLs should be reassessed using data with DLs below the water quality standards. This applies to all BCLs if developed using data with DLs above a water or groundwater quality standard.
22. Appendix 7.G, Section 3.6.1, page 3-30: BCL comparison locations must be clearly identified. Discuss and provide justification for which compliance monitoring locations will be compared to which baseline location BCLs.
23. Appendix 7.G, Section 4.6.1, Page 4-15, second bullet, last sentence: This sentence states, “The spatial distribution of antimony concentrations is similar to arsenic, with concentrations decreasing northward downstream of the cyanidation facility.” This statement is incorrect and should be revised. With the exception of arsenic in MWH-A04, antimony and arsenic concentrations are generally significantly higher in wells MW-05 through MW-13, which are northward and downgradient, compared to concentrations in MW-01 through MW-04, in both alluvial and bedrock wells.
24. Appendix 7.G, Page 4-21, Table 4-2: The monitoring frequency of GW-S1N is not provided. Please add.
25. Appendix 7.G, Section 4.8.1, Page 4-27, MWH-A01: This paragraph references MWH-B01 as a bedrock well paired with MWH-A01. However, MWH-B01 is not shown in Table 4-2 or Figure 4-12. Please revise.
26. Appendix 7.G, Section 4.8.1: This section continually refers to wells GW-10 and GW-10A. If these are the same well correct accordingly. If these are different wells please locate GW-10A on Figure 4-11 and make it clear in the text that these are different wells.

27. Appendix 7.G, page 4-26, Section 4.8.1, GW-24 final sentence.: The level of certainty expressed in this statement is not reflected in the data provided, nor are modeling predictions 100% accurate. Please revise text to reflect the level of uncertainty in the data and modeling. For example, *Groundwater flow directions do not appear to change seasonally and are not predicted to change through the construction, operation, and closure phases. There are no predicted changes in the effectiveness of the monitoring locations over the duration of the project.*
28. Appendix 7.G, Section 4.9, page 4-28, last paragraph on page: Missing the reference to Table 4-3. Please correct.
29. Appendix 7.G, Page 4-28, Table 4-3: The title of the table indicates that Method Detection Limits are presented. However, the column header indicates that Method Reporting Limits are presented. These values are not interchangeable and MRLs will be significantly higher than MDLs. Please clarify which are presented in this table and revise accordingly. DEQ recommends using MDLs.
30. Appendix 7.G, Section 4.9, Table 4-3: The method reporting limits must be at or below the applicable groundwater quality standard. Revise each analytical method as needed. Analytical methods unable to detect an analyte at or below the applicable water or groundwater quality standard should not meet project DQOs and the resulting data should not be used in the development of BCLs.
31. Appendix 7.G, Section 4.8.1, Page 4-28, GW-S1 N/S through GW-S4/5 N/S Embankment Wells: Please provide additional detail about what constitutes a well pair for the embankment wells – are they located in slightly different locations, screened in different material, etc.?
32. Appendix 7.G, Section 4.9, Page 4-29, first paragraph, second sentence: Please fix the broken link in this section.
33. Appendix 7.G, Section 4.10.1.1: Use a consistent naming convention when referring to site wells. MWH-A09 not MWH-09 and MWH-A10 not MWH-10.
34. Appendix 7.G, Section 4.10.1.1 and Table-4: It is not acceptable to develop BCLs for MWH-A09 and MWH-A10 separately then choose the largest of the two BCLs for each analyte and apply that value to the compliance wells. Either demonstrate the water quality at each baseline location (MWH-A09 and -A10) is statistically similar and merge/pool the datasets to produce a single BCL for each analyte or apply the BCLs developed for wells MWH-A09 and MWH-A10 only to those wells that are directly down hydraulic gradient. It must be clearly stated, with justification, which wells are being compared to which set of BCLs.
35. Appendix 7.G, Section 4.10.1.2: Clarify how the method(s) provided in this section can provide adequate leak detection capabilities for the TSF liner. What is the expected water quality in the TSF? How big will the leak have to be to be detectable in the underdrain outfall and is this acceptable? How much dilution is expected when mixed with the already impacted groundwater? Which water source is providing the dilution/enrichment for which COI? How much leaching is expected/predicted for the SODA and Hecla heap leach materials once they are in place and effectively capped by the TFS liner, and how will this affect the groundwater quality initially and over time? Would identifying water quality in the TSF underdrain of similar quality to the SODA and Hecla seeps indicate a leak in the TSF liner, as the SODA and Hecla materials will be isolated from meteoric water and potentially groundwater (based on Figure 4-133)? Is an upper bound BCL the appropriate measure in all cases?

36. Appendix 7.G, Section 5.3.2, Page 5-1: Assuming the exceedance reporting described here is regarding exceedances of compliance limits, please describe reporting procedures and response actions for exceedances of early detection thresholds.

#### **Specific comments WQMP, Appendix A**

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37. Appendix 7.G, Appendix A, Section 2, page 6, Table 2: Existing water table fluctuation data do not demonstrate the appropriateness of 20-foot screens on each alluvial monitoring well at the site, as shown in baseline alluvial hydrographs presented in Figures 4-7 and 4-8 in the WQMP. Revise this table to include screen intervals ranging from 5 to 20 feet which are sized appropriately to screen the expected range in groundwater elevation at each monitoring well location. It is expected that screen intervals will increase based on increased distance from the stream centerline. For example, GW-5 is screened from 90-110 feet below ground surface (ft bgs), while the estimated depth to groundwater ranges from 73-74 ft bgs. Similarly, GW-26 is screened from 7-27 ft bgs, while the estimated depth to groundwater ranges from 4-7 ft bgs.
38. Appendix 7.G, Appendix E, Section 2, page 6, Table 2: For existing monitoring wells, provide both predicted and measured minimum and maximum depth to groundwater (ft bgs). Predicted elevations, while derived from a calibrated model, may differ from measured elevations at individual monitoring locations by up to 10 feet.

#### **Specific Comments WQMP, Appendix E**

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39. Appendix 7.G, Appendix E, Page 1-10, Table 1-3: Please add ammonia, total nitrogen, and total suspended solids to the list of analyses. These analyses are included in Table 4-1 (page 4-2) but are not included in Table 1-3.
40. Appendix 7.G, Appendix E, Page 1-10, Table 1-3: The following comments pertain to Table 1-3:
- a. Please check whether this table is reporting MDLs or MRLs and revise the column heading, if appropriate.
  - b. MDLs should be below the Idaho Water Quality Standard. Please revise.
41. Appendix 7.G, Appendix E, page 2-1, Table 2-1, DQO Step 3, last sentence: This sentence states, "Action levels are based on the strictest regulatory criteria for each COI." The referenced table shows the Idaho Water Quality Standard. According to the WQMP, Upper Prediction Limits (UPLs) were calculated using baseline data, and action levels (Early Detection Thresholds, EDTs) are the higher of either the UPLs or the Water Quality Standard. It is not correct to state that the strictest criteria are used, and this statement should be removed and the section should be revised to explain how action levels were determined (or provide a section reference for this information).
42. Appendix 7.G, Appendix E, Section 4.2, page 4-2, Table 4-1: There are many inconsistencies in analyses and analytical methods between Table 4-1 and Table 1-4. There are also inconsistencies between the analytical methods provided in these tables and those listed in the Laboratory Quality Assurance Manual (Appendix D, Section 7.1). Please reconcile so that all analytes and analytical methods are consistent throughout the QAPP (and its appendices) and WQMP.
43. Appendix 7.G, Appendix E, Section 4.4.1, pages 4-3 through 4-4,: Please add field blanks and trip blanks to the list of field QC checks to be performed and specify the frequency at which they will be collected. One trip blank should be included in each cooler containing VOC samples.

44. Appendix 7.G, Appendix E, Section 4.4.1.1, page 4-4: Please specify if duplicates will be “replicates” or “splits.”
45. Appendix 7.G, Appendix E, Section 10.2, page 10-2, first paragraph, first and second sentences: The EPA reference should be revised to “EPA-542-R-20-006”.
46. Appendix 7.G, Appendix E, Appendix C, SOP-5: Based on surface water sampling procedures described in the SOP, it is unclear how the stabilization parameters presented in QAPP Table 2-2 will be used. Parameters should either be removed from Table 2-2 or text should be added to the QAPP or SOP to detail how stabilization parameters are used in surface water sampling.
47. Appendix 7.G, Appendix E, Appendix C, SOP-5: The surface water flow sheet attachment should be moved from SOP-5 to SOP-6.

#### **Specific Comments WQMP, Appendix F**

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48. Appendix 7.G, Appendix F, page 1-10: The title of the table indicates that Method Detection Limits are presented. However, the column header indicates that Method Reporting Limits are presented. These values are not interchangeable and MRLs will be significantly higher than MDLs. Please clarify which are presented in this table and revise accordingly. DEQ recommends using MDLs.
49. Appendix 7.G, Appendix F, page 2-1, Table 2-1, DQO Step 3, second paragraph: The sections referenced are not correct. Please revise.
50. Appendix 7.G, Appendix F, page 2-1, Table 2-1, DQO Step 3, first paragraph, last sentence: This sentence states, “Action levels are based on the strictest regulatory criteria for each COI.” The referenced table shows the Idaho Water Quality Standard. According to the WQMP, Upper Prediction Limits (UPLs) were calculated using baseline data, and action levels (Early Detection Thresholds, EDTs) are the higher of either the UPLs or the Water Quality Standard. It is not correct to state that the strictest criteria are used, and this statement should be removed and the section should be revised to explain how action levels were determined (or provide a section reference for this information).
51. Appendix 7.G, Appendix F, page 2-1, Table 2-1, DQO Step 5, second sentence: This sentence states, “Compliance Thresholds do not exceed IDAPA groundwater quality standards.” This is not true, as compliance thresholds are either the IDAPA GW quality standard or the UPL, whichever is higher. Therefore, compliance thresholds exceed standards in many instances. Please revise.
52. Appendix 7.G, Appendix F, Section 4.2, page 4-3, Table 4-1: pH is shown on QAPP Table 1-3 and WQMP Table 4-3 but not on QAPP Table 4-1. Please reconcile.
53. Appendix 7.G, Appendix F, Section 4.4.1.1, page 4-4: Please specify if duplicates will be “replicates” or “splits.”
54. Appendix 7.G, Appendix F, Section 4.4.1, pages 4-4 through 4-6: Please add field blanks and trip blanks to the list of field QC checks to be performed and specify the frequency at which they will be collected. One trip blank should be included in each cooler containing VOC samples.
55. Appendix 7.G, Appendix F, Appendix B, SOP-5, Section 6.2: Please provide additional information for the “3 to 5 Well Volume Sampling,” including better differentiating it from low-flow sampling and describing under which specific conditions this method will be used.
56. Appendix 7.G, Appendix F, Appendix B, SOP-5, Section 6.2.3.1: Please provide a unit of measure for the temperature stabilization criteria (i.e., degrees or percent).

57. Appendix 7.G, Appendix F, Appendix B, SOP-5, Section 6.2.3.1: There are two sets of groundwater stabilization parameters listed. Please either remove one or specifically list the situation(s) in which each will be used.
58. Appendix 7.G, Appendix F, Appendix B, SOP-5, Section 6.2.3.3: This method for calculation of purge volume is not consistent with the method provided in Section 6.2.1.2. Please select one method and present it in this SOP.
59. Appendix 7.G, Appendix F, Appendix B, SOP-4, Section 5: Pace Analytical is referenced in the eighth bullet. However, according to QAPP Appendix D, SVL is the lab for this project. This reference should be removed or replaced.
60. Appendix 7.G, Appendix F, Appendix B, SOP-5, Section 6.2.3.3, third paragraph: Please revise to state that water quality parameters will be measured once purging begins, not once the optimal flow rate has been achieved. Monitoring of groundwater quality parameters should be performed throughout the entire duration of purging.
61. Appendix 7.G, Appendix F, Appendix B, SOP-5, Section 6.2.4.1: Please state the conditions under which a well would be purged with a pump and then sampled with a bailer. DEQ strongly recommends against doing this, as deployment and retrieval of the bailer will stir up the water column and may cause significant turbidity.

#### **Specific Comments WQMP, Appendix I**

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62. Appendix 7.G, Appendix I: Attachments are labeled alphabetically (Attachment A, Attachment B, etc.) and are referenced in the main body of the text numerically (Attachment 1, Attachment 2, etc.). Correct accordingly.

#### **Specific Comments WQMP, Appendix K**

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63. Appendix 7.G, Appendix K: Attachments are labeled alphabetically (Attachment A, Attachment B, etc.) and are referenced in the main body of the text numerically (Attachment 1, Attachment 2, etc.). Correct accordingly.
64. Appendix 7.G, Appendix K, Section 3.1.2, page 7, fourth paragraph on the page: Replace “MWH-09” and “MWH-10” with “MWH-A09” and “MWH-A10” for consistency in the report.
65. Appendix 7.G, Appendix K, Section 3.1.3, Table 3: It is recommended that COI concentrations be reported in consistent units where practicable.
66. Appendix 7.G, Appendix K, Section 3.6.1, page 18, last paragraph: This paragraph states that the BCLs developed for MWH-A09 and -A10 COIs will be used for compliance monitoring/testing at nine wells. The identity of these additional wells is not disclosed, nor has it been demonstrated that COIs from these nine wells are comparable to MWH-A09 and -A10 COIs. Identify the nine wells or refer the reader to section in the WQMP that discusses these wells and justify both hydraulically and chemically the use of MWH-A09 and -A10 as representative of these wells water quality.
67. Appendix 7.G, Appendix K, Attachment A [Attachment 1]: Time concentrations plots for many of the COIs display an apparent increase in the detection limit around 2018, see below for one example. Please clarify how this apparent change in detection limits affects data comparability and the development of BCLs or cite where this discussion can be found.



