David Chambers

Comments are contained in the attached file. If there is any difficulty in reading this file, please contact me.

Thanks

David Chambers

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May 28, 2022

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Fm: David M. Chambers, Ph.D., P.Geop

Re: Comments on the 2022 Kensington Mine Reclamation and Closure Plan

Background

David Chambers has 40 years of experience in mineral exploration and development – 15 years of technical and management experience in the mineral exploration industry, and for the past 30+ years he has served as an advisor on the environmental effects of mining projects both nationally and internationally. He has Professional Engineering Degree in physics from the Colorado School of Mines, a Master of Science Degree in geophysics from the University of California at Berkeley, and is a registered professional geophysicist in California (# GP 972). Dr. Chambers received his Ph.D. in environmental planning from Berkeley. His recent research focuses on tailings dam failures, and the intersection of science and technology with public policy and natural resource management.

Reclamation Indirect Cost Calculations

Indirect costs are an important part of reclamation cost calculations. Indirect costs typically add 30% – 50% to the direct reclamation costs that are calculated. Both the Forest Service (USFS 2004) and the State of Alaska (ADNR 2013) have published guidelines for how to estimate both direct and indirect reclamation costs. Dowl (2015) presented a summary table of the various agency recommendations for indirect cost amounts. The direct cost calculations in the 2022 Kensington Mine Reclamation and Closure Plan are clearly presented and well documented. However, in several instances the indirect cost calculations depart from those applied in the 2013 Reclamation and Closure Plan.

Indirect Cost Category Percentage Ranges by Agency

Reclamation & Closure Work: Indirect Costs	BLM (H-3809- 1,9/2012)	BLM (AKGuide 9/2014)	USFS Guide (2004)	OSM Handbook (4/2000)	SRCE (NV)	AK DNR Guidelines (2014 draft)
Contractor Profit	10%	10%	15 - 35%	15 - 30%	10%	10 - 20%
Contractor Overhead	---	---			---	5 - 10%
Perform./Payment Bonds	3%	3%			3%	3%
Liability Insurance	1.5% labor	1.5% labor			1.5% labor	1.5% labor
Contract Administration	6 - 10%	6 - 10%	2 - 7%	2 - 7%	6 - 10%	2 - 7%
Engineering Redesign	4 - 8%	4 - 8%	2 - 10%	2.5 - 6%	4 - 8%	3 - 6%
Contingency: Scope	4 - 10%	15%	4 - 30%	3 - 5%	4 - 10%	6-20%
Contingency: Bid			10 - 20%			10-20%
Indirect Costs (BLM)	21% of Contract Admin	21% of Contract Admin	---	---	21% of Contract Admin	---
Mobilization & Demob.	---	---	1 - 10%	10%	---	---
Agency Administration	---	---	2 - 7%	---	---	---
Inflation	---	---	5 - 20%	---	---	---
Total (Overall Ranges)	**29-43.5%**	**41 - 49%**	**36-80+%**	**32.5-58%**	**29-43.5%**	**39.5 - 87%**

Mobilization/Demobilization Cost Estimates

Rather than estimate mobilization/demobilization costs as a percentage of direct costs, KC Harvey has opted to include mobilization/demobilization as a part of the direct cost calculation for the reclamation cost estimate, but not for the Long-Term Care and Maintenance costs.

Although this may be justified if rigorously applied, it also places a significant additional burden on the regulatory agency to review and confirm that adequate mobilization/demobilization costs that would be incurred under a regulatory agency conducted reclamation are accounted for in the reclamation plan cost estimates. In most regulatory agency cost estimates the mobilization/demobilization costs are estimated as a percentage of the direct costs. While this may not be as accurate an approach as calculating mobilization/demobilization for individual reclamation tasks, this was the approach selected by both federal and Alaska reclamation cost planners.

Compound interest determination

In addition, the rate used to adjust the reclamation costs inflation are understated. While the rate was determined using an average of the last five years of inflation in Anchorage, using a five-year average under existing inflation conditions is not appropriate. As can be seen from the table below, and as we are too well aware, in 2021 the rate of inflation high. This has continued into 2022, and it is not obvious when inflation will be under control, and what the new "under control" inflation rate will be. Regardless, using an inflation rate that is biased down by the first 4 years of the average is not an appropriate interest rate to apply to the reclamation cost estimate.

Additional Indirects Considered
Mobilization/ Demobilization
Agency Administration

Compounded 5 Year Inflation (Previous 5 yr Average % Change ANC CPI)		
	Year	% Change
	2021	4.9
	2020	-1.1
	2019	1.4
	2018	3.0
	2017	0.5
	2016	0.4
	2015	0.5
https://live.laborstats.alaska.gov/cpi/index.html		**1.8**

(From: KC Harvey 2022, Appendix A: Reclamation Cost Estimate – Kensington Mine)

Recommendation: an inflation rate that reflects the present high rate of inflation, and the uncertainty in future inflation rates, should be adopted for the reclamation cost calculations.

Long-Term Care and Maintenance Trust Calculation

Unlike the indirect cost analysis for the reclamation financial assurance, and unlike established procedure for estimating indirect costs for a financial assurance, KC Harvey/Coeur has not applied the indirect costs uniformly across all of the activities to be performed in Long-Term Care and Maintenance Trust Calculation. They have selectively reduced the amount of indirect costs for selected categories. (see Table 1, Indirect Cost Percentages). The guidance provided by the USFS (2004) and the State of Alaska (ADNR 2013) do not differentiate the application of indirect costs to the different elements of the Long-Term Care and Maintenance Trust Calculation.

Table 1 - Long-Term Care and Maintenance Trust Calculation
(From: KC Harvey 2022, Appendix E: Long Term Care and Maintenance Plan)

Kensington Mine
Borough of Juneau Alaska
Table 1 - Long-Term Care and Maintenance Trust Calculation
1/3/2022

Nominal Interest Rate 30-Year[1]	5.4%	Annual
Inflation Rate[2]	1.1%	Annual
Real Interest Rate[3]	4.0%	Annual, used for NPV

Basic Total Cost by Recurrence Interval					
LTCM Direct Cost	Annual	3 Year	5 Year	100 Year	Non-recurring Cost
Trust Fund Administrative Fee	$ 5,000				
Dam Safety Inspection - Table 3		$ 17,582			
Dam/Spillway Routine Inspection and Maintenance - Table 3	$ 18,702				
Road Maintenance - Table 2			$ 35,930		
Dam/Spillway Special Event Inspection - Table 3					$33,256
Refurbish Spillway - Table 4				$1,863,852	

Indirect Cost Percentages					
	Dam Safety Inspection	Dam/Spillway Inspection and Maintenance	Road Maintenance	Refurbish Spillway	Dam/Spillway Special Event Inspection
Mobilization/Demobilization				5%	
Scope Contingency	8%	8%	8%	6%	8%
Bid Contingency	4%	4%	4%	4%	4%
Engineering				3%	
Liability Insurance	1.5%	1.5%	1.5%	1.5%	1.5%
Performance Bond	1.5%	1.5%	1.5%	1.5%	1.5%
Payment Bond	1.5%	1.5%	1.5%	1.5%	1.5%
Agency Contract Admin.	7%	7%	7%	7%	7%
Contractor Overhead		8%	8%	8%	
Contractor Profit		10%	10%	10%	
Total Indirect Cost (%)	23.5%	41.5%	41.5%	47.5%	23.5%

Indirect costs, including mobilization/demobilization, were developed as general guidelines to cover all mobilization/demobilization costs during closure. Applying the recommended indirect cost percentages to different Long-Term Care and Maintenance categories defeats the purpose that the indirect costs were developed for.

It is also noted that the 1.1% interest rate was back-calculated downward from the 1.8% used in the reclamation financial assurance calculation in order to yield the 4% Real Rate of Return agreed by the regulatory agencies (KC Harvey 2022).

Recommendation: ***The indirect costs should be applied uniformly across all Long-Term Care and Maintenance activities. The departure from standard procedures in determining mobilization/demobilization costs in the 2022 Reclamation Plan should either be applied to all of the direct costs, or the costs should be moved into the direct cost calculation. Applying indirect costs to only some of the direct costs violates the assumptions under which the indirect cost recommendations were made.***

Thank you for the opportunity to comment on this reclamation plan.

Sincerely;

David M. Chambers, Ph.D., P.Geop

References:

ADF&G 2018. Fish and Fish Habitat Investigations at Kensington Gold Mine, Technical Report No. 17-12, Greg Albrecht, Alaska Department of Fish and Game Division, February 2018

ADNR 2013. Mine Closure and Reclamation Cost Estimation Guidelines, State of Alaska, Department of Natural Resources & Department of Environmental Conservation, December 2013

Dowl 2015. Mine Closure and Reclamation Cost Estimation Guidelines: Indirect Cost Categories, prepared for the Alaska Department of Natural Resources and the Alaska Department of Environmental Conservation, DOWL Engineering, Fairbanks, AK, April 2015

KC Harvey 2022. Kensington Mine Reclamation and Closure Plan POA 1, KC Harvey Environmental, LLC, March 2022

USFS 2004. Training Guide for Reclamation Bond Estimation and Administration for Mineral Plans of Operation Authorized and Administered under 36 CFR 228A, USDA – Forest Service, April 2004