

July 16, 2019

Mr. David Ennis
Reclamation Specialist/Permit Lead
New Mexico Energy, Minerals and Natural Resources Department
Mining and Minerals Division
1220 South St. Francis Drive
Santa Fe, NM 87505

Re:

New Mexico Copper Corporation Copper Flat Mine

New Mine Permit S10227RN Financial Assurance Proposal

Response to Agency Comments Received January 15, 2019

Dear Mr. Ennis,

New Mexico Copper Corporation (NMCC) hereby responds to Agency comments on the December 11, 2018 financial assurance cost estimate for the Copper Flat Mine, which were provided to NMCC in a letter dated January 15, 2019. A hardcopy of our response has also been sent to you via USPS.

Please let me know any questions or additional information needs you have at this time. Also, please advise when you are ready to schedule a follow up meeting.

Sincerely

Jeff\Smith

**Chief Operating Officer** 

**New Mexico Copper Corporation** 

**Attachment** 

NMCC Response to Agency Comments, July 16, 2019



Please refer to the following notes when reading this response:

- SRCE = Standardized Reclamation Cost Estimate 2.0, SRK Consulting
- Copper Flat SRCE Version History:
  - SRCE RO: Original NMCC proposal (August 9, 2018)
  - o SRCE R1: 1<sup>st</sup> revision (December 11, 2018)
  - o SRCE R2: 2<sup>nd</sup> revision (In Progress)
- Agency comments are printed in bold italic text; NMCC response is printed in regular font

## MMD<sub>1</sub>

Tailings Tab - The surface regrade volume has been reduced due to a revised assumption in the calculation of 0.5 ft $^3$ /ft (December cost estimate) instead of 1 ft $^3$ /ft (August cost estimate). This change reduces the estimated surface regrade volume from ~492,000 cyd to ~246,000 cyd. Please provide justification for the reduction to 0.5 ft $^3$ /ft in this calculation.

Agency comments on the August 2018 estimate (SRCE R0) triggered NMCC review of engineering take-offs and calculations. One outcome of this review was NMCC recognition that regrading of the TSF top surface was overstated in the SRCE R0 estimate, which led to development of an improved estimate as outlined below.

Comparison of reclamation drawing C-12 (TSF Reclamation and Drainage Plan) to drawing C-11 (TSF at Final Buildout) shows only limited grading of the TSF top surface is needed before cover placement. The limited grading requirement is the result of the tailings deposition method, which leaves the tailings with a smooth surface draining to the middle and the rear of the TSF. Reclamation earthwork on the top surface of the TSF consists of excavation of drainage channels TSC-6 and TSC-7, knock-down and smoothing of the perimeter berm, and nominal grading of small areas of the tailings surface. Excavation costs for drainage channels TSC-6 and TSC-7 are calculated separately from general surface grading in the SRCE Sediment and Drainage Control Tab.

The cross section of the perimeter berm measures 210 square feet (reclamation drawing C-19) and extends for 16,000 linear feet (reclamation drawing C-11), which accounts for 124,000 cubic yards of earthwork. SRCE calculates top surface grading as a function of surface area; the TSF top surface is 305 acres, therefore 124,000 cubic yards of perimeter berm grading equates to 0.25 cubic feet of earthwork per square foot of surface area. Using the perimeter berm as a basis, NMCC allowed for other nominal surface grading by doubling the perimeter grading factor to 0.50 cubic feet earthwork per square foot of surface area, which calculates to 246,000 cubic yards of top surface grading posted to the December 2018 estimate (SRCE R1) and carried over to the SRCE R2 estimate.



## MMD 2

Reclamation of conveyance channel CV-1 and CV-2 at the toe of WRSP-3 appears to be missing from the revised cost estimate. Please address.

Reclamation of channels CV-1 and CV-2 at toe of WRSP-3 was inadvertently omitted from previous cost estimates. This work has been added to the SRCE R2 cost estimate. SRCE Figure 22 and tables in the *Sediment and Drainage Control* tab have been updated to reflect this addition.

## <u>MMD 3</u>

Proposed channel PC-4 for construction upon reclamation of the Evaporation Pond appears to be missing from the associated figure and does not appear to be included in the revised cost estimate. Please address.

Construction of channel PC-4 during reclamation of the TSF evaporation pond was inadvertently omitted from previous cost estimates. This work has been added to the SRCE R2 cost estimate. SRCE Figure 16 and tables in the *Sediment and Drainage Control* tab have been updated to reflect this addition.

## MMD 4

EWRSP-4-MB7 is identified in the SRCE cost estimate as 1,000 feet, but there does not appear to be a figure showing the location of EWRSP-4-MB7. Is this midbench slope the north edge of EWRSP-4?

Line EWRSP-4-MB7 traces the north edge of EWRSP-4 at the mine haul road as suggested by MMD. Line EWRSP-4-MB7 has been added to SRK Figure 9.

# <u>MMD 5</u>

MMD has compared the equipment unit costs used by NMCC (Appendix E of the cost estimate) against the Equipment Watch database and finds that the majority of the unit costs utilized in the cost estimate are reasonable.

Where retail rental rates from Wagner Equipment were not available, NMCC utilized Blue Book Rates from Equipment Watch (Appendix E4; provided by Kiewit), however, the Blue Book Rates for a Caterpillar 992K and 777G provided in Appendix E4 vary significantly from the rental rates that are available in Equipment Watch:



Equipment	Equipment Watch Rental Rate	Blue Book Costs Used in SRCE Model	Difference in SRCE Model
992K	\$25,527 .98/month	\$41 ,068.00/month	+ \$15,400.20/month
777G	\$56,160.00/month	\$37,226.00/month	- \$18,934.00/month

The Caterpillar 992K and 777G are primary pieces of equipment in the cost estimate, based on the number of hours of proposed use during reclamation. MMD believes the Equipment Watch Rental Rates, rather than the Blue Book Rates, for these two pieces of equipment should be utilized in the cost estimate. Please address.

NMCC notes that "EquipmentWatch" and "Blue Book" are synonymous in the context of this discussion. EquipmentWatch (<a href="www.equipmentwatch.com">www.equipmentwatch.com</a>) produces and maintains a database of generalized regional rates for construction equipment, including publication of the <a href="mailto:Rental Rate Blue Book">Rental Rate Blue Book</a> that may be used to estimate equipment owning and operating costs when specific and known data is unavailable.

NMCC feels that actual rental rates, when available and obtained from a reputable equipment source, are preferred for estimating equipment costs versus relying on generalized regional rates. Wagner Equipment is the Caterpillar equipment dealer for New Mexico and owner of a large fleet of rental equipment that is directly applicable to the Copper Flat reclamation plan. Additionally, Wagner Equipment staff have direct knowledge of the Copper Flat Mine, including site conditions that will be encountered during reclamation.

NMCC has revised the SRCE R2 estimate to reflect current rental rates provided by Wagner Equipment. The following table summarizes rental rates for 992 loaders and 777 trucks for SRCE R1 and SRCE R2. Backup documentation for the current rental rates is provided with the SRCE attachments.

SRCE 992 and 777 Rental Rates

Equipment	SRCE R1 Blue Book Rental Rates	SRCE R2 Wagner Equipment Rental Rates			
992K	\$41 068/month	\$47 500.00/month			
777G	\$37,226/month	\$37,750.00/month			

# MMD 6

Technical comments on the cost estimate from the New Mexico Environment Department are attached to this letter. Please address.

NMED comments are provided with this document.



## MMD 7

Technical comments on the cost estimate from Kuipers & Associates, dated January 8, 2019, are included with this letter. Please address.

MMD and NMED jointly proposed including Kuipers & Associates in discussions of the NMCC financial assurance proposal in order to receive outside input and reach mutually acceptable resolutions to concerns from non-agency interests. NMCC agreed to this proposal, and MMD and NMED have offered to arrange a meeting between NMCC and Kuipers & Associates. NMCC is therefore holding response to Kuiper's & Associates comments for discussion at the meeting.

# NMED 1

NMCC's FA proposal includes costs associated with expansion of the TSF Underdrain Collection Pond ("UCP") for closure water management as an evaporation pond. Based on Attachment E2 of Appendix E in Revision I of the Updated Mining Operation and Reclamation Plan dated July 2017, the operational TSF UCP will be expanded by adding additional lined capacity. A new synthetic liner system will be seam-sealed to the existing liner system. NMED is concerned that the integrity of the operational TSF UCP liner may become compromised after approximately 15-17 years of use as an operational impoundment plus an additional 25 years of closure water management. The "Process Ponds" tab in the Copper Flat SRCE model appears to include a section for Liner Repair, which totals \$1,549,084. However, this appears to be the cost for installation of the expanded liner system at closure, not the cost for liner repair or replacement. Additional costs for periodic liner maintenance, repair, and replacement of the TSF evaporation pond need to be added to the FA proposal.

NMED correctly identified the \$1.55 M in the process ponds tab as supply and installation of HDPE liner at the expanded TSF underdrain collection pond (UCP). NMCC agrees to include a cost allowance for repair or replacement of liner at the operational UCP; after consideration, NMCC has included the cost of full replacement of the operational UCP primary liner in the SRCE R2 estimate.

HDPE liner quantity and costs are evaluated in the SRCE R2 estimate as outlined in the following discussion. Liner sizing is calculated using measurements taken off the Copper Flat reclamation plans, plus 10% additional material to account for seam overlap, trenching, pond embankments, material loss at pond corners, etc. Unit costs for supply and installation of the liners were obtained from an established NM HDPE liner contractor, and the supplier quote is included with the SRCE R2 backup documentation. Costs to deliver the liner to Copper Flat are included in the SRCE R2 estimate. Takeoff and cost data from the SRCE R2 estimate are summarized in the following table.



#### **SRCE R2 Liner**

Activity	Measured Area	Liner	Supply & Install
	Acres	SF	\$
Replace Existing <sup>1</sup>	4.0	191,400	\$151,972
Add New <sup>2</sup>	18.3	876,700	\$1,419,377
Total Lined Area	22.3	1,068,100	\$1,571,349

<sup>&</sup>lt;sup>1</sup> primary liner at existing operational pond

## NMED 2

NMED understands that a few access roads will be maintained following closure. Based on a review of the "Roads", "Monitoring", and "Reclamation Maintenance" tabs in the Copper Flat SRCE model, it appears that there are no costs for long-term access road maintenance. Costs associated with long-term access road maintenance need to be added to the FA proposal.

During periods of active reclamation, road maintenance is included in the SRCE construction management tab. NMCC feels that long-term road maintenance is adequately covered in the SRCE R1 estimate. Most roads associated with the Copper Flat Mine will be closed and reclaimed and costs for this activity is included in the estimate. Only a very small number of roads will be left for site monitoring activities. Experience with existing roads at the Copper Flat site, which have been in active use for decades, demonstrate that long-term maintenance requirements will be minimal. NMCC therefore feels the cost of maintaining access roads through the long-term monitoring period is satisfactorily covered by the indirect costs that are included in the estimate through the long-term monitoring period.

## NMED 3

NMCC has proposed applying a 20% markup for removal of utilities and equipment based on demolition costs of the Concentrator Building located in the Process Facility Area. In the "User 24" tab in the Copper Flat SRCE model, the Concentrator Building, Grinding Area and Concentrator Building, Flotation Area are designated as the demolition areas where the 20% markup will be applied. Based on a review of the "Foundations and Buildings" tab, it is unclear why other buildings or significant structures located in the Process Facility Area including, but not limited to the Primary Crusher Control/Mechanical Building, the Concentrate Handling and Storage Area, the Ball Bins, and the Mine Shop/Warehouse are also not included in the cost estimate for equipment removal costs. NMCC should provide justification why demolition costs of these structures are not part of the equipment removal markup. In addition, the costs shown for demolition of the Concentrator Building, Grinding

<sup>&</sup>lt;sup>2</sup> double liner with drain layer at expanded evaporation pond



Area and Concentrator Building, Flotation Area in the "User 24" tab do not match the total demolition costs shown in the "Foundations and Buildings" tab for the same areas.

NMCC agreed to apply a 20% markup of building demolition costs to specific buildings in order to provide for removal of large fixed equipment such as the ore grinding mills. After review of NMED's comment, NMCC agrees to extend the 20% markup to demolition of the concentrator building maintenance area and the concentrate handling and storage area, both of which are located within the concentrator building (NMCC will continue to apply the 20% large equipment markup to the concentrator building grinding and concentrator building flotation sections). The primary crusher control room, ball bins, and mine shop/warehouse are separate structures that will not house equipment requiring special handling procedures. Demolition of the primary crusher and the mine shop/warehouse require only a standard crane and standard demolition equipment; the ball bins will be emptied with a wheel loader and then dismantled with standard demolition equipment.

## NMED 4

Section 20.6.7.33.G NMAC of the Copper Mine Rule requires a process solution reduction plan to be submitted as part of the closure plan. The process solution reduction plan describes the modifications to the process water management system required to create an efficient process water reduction system following cessation of mining and milling operations, and the operations and maintenance requirements for the system with material take-offs of sufficient detail to prepare an engineering-level cost estimate equivalent to the cost estimate to be provided with the closure plan. NMED understands that there will be some period of time following closure when the TSF collection pond will be expanded, and therefore, process solutions from draindown of the TSF will need to be managed in addition to any process solutions left in the process circuit. A process solution reduction plan cost estimate was not included in the FA proposal. Costs associated with management and reduction of process solutions following closure need to be added to the FA proposal.

NMCC's solution reduction plan is described in NMCC's reclamation plan and solution reduction costs are presented in the solution management section of NMCC's proposal. NMED clarified the concern expressed in this comment relates more specifically to management of TSF draindown solutions, specifically solutions reporting to the TSF underdrain collection pond (UCP) during tie-in of the expanded passive evaporation pond.

The UCP and tailings solution pumping system, including backup power, will be maintained post operation and will be used to manage TSF draindown after tailings delivery to the TSF ends. Process solutions at the TSF will initially be reduced by active evaporation using mechanical evaporators, and draindown flow to the UCP will steadily decline over time. Pumping and active evaporation will continue until solution flows reach a sustained level that can be properly managed by surface evaporation from the expanded UCP.



TSF draindown will continue during expansion of the UCP. Most of the work needed to complete the expansion will be accomplished before the physical connection to the operational UCP is made and the time needed to complete the tie-in will be relatively short. Solutions will be managed during the expansion tie-in using temporary diversion and containment structures and portable pumps to keep process solutions contained in lined areas. Personnel and equipment will be onsite during the tie-in to monitor solution flows and to take action to prevent a solution release to the environment. This method of solution management during expansion of active facilities is common practice and has been implemented without issue under similar circumstances.

## NMED 5

The FA proposal includes an estimate for field work included in the "Monitoring" tab and revegetation maintenance and growth media maintenance in the "Reclamation Maintenance" tab in the Copper Flat SRCE model. The approximate estimate for these line items totals \$1.1 million. NMED assumes that the field work will include inspection of all diversions around the perimeter of the open pit, including the Grayback Arroyo diversion, in addition to reclamation and erosion inspections of the cover and drainage control systems. A portion of the costs accounted for in the "Reclamation Maintenance" tab, also should be earmarked for any required maintenance of the diversions.

NMED is correct that field work shown in the Monitoring tab includes inspection of all diversions around the perimeter of the open pit, including the Grayback Arroyo diversion. As suggested by NMED, diversion inspection and maintenance are now separated in the SRCE model for clarity.