

[Mining and Reclamation Plan of Operations Submittal Review]

To BLM Reviewers:

Please complete the MSWord comment matrix (a template is provided at the end of these instructions) by saving this file with a new file name including your last name (for example, name your comment matrix “Cmt-Matrix_SDNM-RMPA-Monger.doc”), and then fill out your comments in the document.

The deadline for comments is [INSERT DATE AND TIME].

How to Provide Valuable Feedback

Commenting:

For each comment, please fill in the following information under the appropriate column heading in the matrix:

- ✓ Page and line number on which you are commenting. **The page and line numbers MUST be used!**
- ✓ Your comments:
 - Your comments should be specific and provide exact changes to the text. Please be unambiguous, clear, and directive, with exact, proposed wording changes. Ambiguous comments, such as “What?,” “Poor,” or “Is this right?,” are not clear, so please be specific.
 - If you have the same comment more than once, please copy and paste your comment to a new row in the matrix and provide the specific page number, instead of just referring back to a previous comment. This will help us to more efficiently address the comments and make any necessary changes.
 - If you need additional space for comments, click in the table cell where you would like to comment, select the *Table* menu, *Insert*, and either *Rows Above* or *Rows Below*.

Comments on [Kirkland Mining and Reclamation Plan of Operations 041817 Draft]

Cmt #	Page #	Line #	BLM Commentor	Comment	Response
1.	5	19	Cave	It may be good to clarify and add “as defined by Federal Land Policy and Management Act of 1976 (FLPMA) Section 302(b)” for a reference for the definition of the term ‘unnecessary or undue degradation’ here	
2.	6	6		Also, other names listed in the Arizona Geological Survey reference cited here actually included Kirkland Tuff Quarry and Maverick Mine as well...	
3.	6	15		The results of the mineral examination report can now be updated	
4.	6	16-28		Not necessary for MPO? Some comments could be construed as subjective if not referenced, also could introduce some politicization into public review. I have no issue with any particular point in this paragraph but broader statements related to use of pozzolan and environmental impact are extraneous for specific environmental analysis for Site...	
5.	6	30		First and only mention of Homestead placer claim, not on maps either, please clarify location and relevance for reader	
6.	7	20		Quartz in tuff is mostly phenocrysts and part of the unit composition, not foreign, entrained substrate lithics	
7.	8	13-20		Section should be rewritten, scientifically inaccurate, please see guidance below:	
8.	8	15		The ‘porosity’ in the volcanic rocks does not influence groundwater flow (porosity is void space, permeability is connection of void space, unlike sedimentary rocks volcanic porosity is typically not connected), only permeability is from fractures. Volcanic rocks are inherently impermeable except for fractures, except for intercalated volcanoclastic lenses that contain sand and rounded gravel. Occasionally volcanic rocks make good aquifers because of fracture density, usually basalts (there several basalt sections documented in drill hole #514426 shown on Dewitt et al., 2008, one mile northeast of Site). Rhyolites typically have low permeability to begin with, and tend to alter to devitrification clays that degrade permeability even along fractures, but could potentially have groundwater flow strongly localized along larger fractures or faults	

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9.	8	17		Sand is permeable, clay is 'confining'	
10.	8	19		(Just FYI, volcanics is not actually a word even though often used informally, volcanic rocks or units is preferred)	
11.	8	20		Pathways of groundwater occur via [fractures and] faults in granite, metamorphic, [and volcanic rocks]. [add]	
12.	9	3		Probably mean December instead of 'winter', also may want to reword sentence, repeating stats without clarifying here that these are historical stats vs current may be confusing	
13.	12	12		Should there be a 'crushing/screening to 2"minus' step before loading here?	
14.	13	15		Water well on private property (55-505179) collar is probably between 4000' and 4040' based on 7.5 minute topo map, current static water level reported as 25 ft bls (page 20, line 29), i.e. somewhere between 3975'-4015' elevation. Ultimate pit depth is projected here at 3870', well below reported water table, may need a pit dewatering component to mine design. Pit may also influence behavior of any springs on north side of Copper Basin Wash (potentially from NW/SE trending steep Tertiary fracture and faults crossing pit), so dewatering could potentially be used both for operations and perhaps also to offset any degradation of mature tree stands in wash? Need to clear with USACE.	
15.	13	16		Extra 'and'	
16.	13	31		Ninyo and Moore, 2015, geologic map possibly underestimates basalt overburden (based on BLM inspectiosn, aerial photo, Dewit et al, 2008, etc.) will no blasting be done on basalt? Just FYI, basalt cap is notoriously difficult to strip (hard) or blast (fractured)	
17.	16	2		...is 'freeboard volume' used correctly here?	
18.	16	5		All sumps and retention basins should be sloped enough at least on one side to allow a trapped person/wildlife a safe egress route	
19.	16	14		Perc may degrade with time as clays coat basin floor and fractures, may need maintenance to meet 36 hour requirement	
20.	17	16		May want to clarify that non-potable water 'trucked to site' can mean either from private parcel 800 ft away or from well to south	

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21.	18	10		May want to mention fuel tank traffic barricade here as well for clarification, along with double sided container and secondary containment (mentioned on page 25, line 22)	
22.	26			50 round trips = 100 haul truck ingress/egress + light vehicles (how many anticipated employees? Will use 6 as a minimum, 12 ingress/egress) + possible multiple water truck round trips, in 8-12 hour time frame (~120 vehicles/~480 minutes= equals potentially on average one vehicle every 4 minutes? (clustered and fluctuating). Site will need traffic control measures on SR 89 once operating, based on '30-50 daily truck round trips' figure, caution signs and lower speed limit as a minimum (turn lanes and caution light ideal)	
23.	27	21		Need to coordinate after-hours access and safety protocols with local sheriff and fire department (trespass and potentially fire events can occur even if all safety and security protocols are followed, through gate malfunctions, willful breaches, electrical malfunctions, lightning, etc.)	
24.	27	27		Will do EA analysis for 24 hour operation since 24 operation is possible, unless operator volunteers an illuminated hours cap, seasonal restrictions, etc.	
25.	31	8		Mike Langley at USACE is a good contact for this permitting	
26.	33	5		FiberQuant found no fibers related to asbestos, but did not test for erionite specifically. BLM tested independently and found no fibers related compositionally to asbestos minerals or erionite at KMC property. Will recommend monitoring which should include periodic bulk testing for airborne carcinogens, and testing of layers exposed as pit progresses by Operator, please include with MPO. Also BLM will occasionally test as part of site inspections.	
27.	34	18		Should we define 'vicinity'?	
28.	35	11		To be MSHA compliant, there will need to be a fence that can sustain a person's weight (not snow fencing) around the open pit. Good practice for ATV traffic/wildlife/security/etc. as well.	

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29.	35	14		To be MSHA compliant, all drivers on site should have current MSHA 5000-23 certification and site-specific pit-driver training. Any driver who does not have that training should be escorted.	
30.	Maps			There appears to be multiple small, steep, NW-SE trending faults crossing proposed pit. Will be conduits for groundwater, and can be sources of topple, sloughing, wedge failures, etc. Mine plan should include daily inspection and monitoring of slope stability.	