July 19, 2017

Mr. James Hollen, Permit Lead
Energy, Minerals and Natural Resources Department Mining and Minerals Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

RE: **Permit Tracking Number LU035MN**

Response to comments received on Submittal of Subpart 3 Minimal Impact New Mining Operations Permit Application for American Magnesium Proposed Minimal Impact Dolomite Mine near Deming, New Mexico.

Mr. Hollen:

American Magnesium LLC. (AmMg) is pleased to provide the attached response to the comments received from your agency regarding the project referenced above. Enclosed you will find two (2) copies of the Response to Comments received and two (2) copies of the revised Plan of Operations (PoO).

AmMg looks forward to working with the MMD to obtain the required permits to operate a new dolomite mine near Deming, New Mexico. Should you have any questions, please contact AmMg's permitting lead, Vickie Maranville, CHMM of Amee Foster Wheeler Environment and Infrastructure, Inc. at 505/821-1801 or by email at Vickie.maranville@amecfw.com .

Kind Regards,

David Tognoni, PE
Managing Partner
American Magnesium

CONSOLIDATED RESPONSE TO BLM AND MMD COMMENTS ON

American Magnesium Plan of Operations For Dolomite Mining, Deming, NM

MMD Comments by:	BLM Comments by:	Responses by:
James Hollen, Permit Lead New Mexico-MMD 1220 S. St. Francis Dr. Santa Fe, NM 87505 (505) 476-3400	Bill Childress, District Manager Bureau of Land Management Las Cruces District Office 1800 Marquess St. Las Cruces, NM 88005 (505) 525-4337	Amec Foster Wheeler Environment &Infrastructure 8519 Jefferson NE Albuquerque, NM 87113 (505) 821-1801 Reviewed by: Modrall Sperling 500 Fourth Street NW, Suite 1000 Albuquerque, NM 87103 (505) 848-1800
Comments: May 12, 2017 (BLM) & April 13, 2017 (MMD)		Responses: July 20, 2017

BLM Comments		
1	As required by 43 CFR 3809.401(b) (l), the BLM serial number of all unpatented mining claims where disturbance would occur must be identified. Figure 4 shows two mining claims, however only one is listed under Section 1.2. Please identify all mining claims.	The Plan of Operations (PoO) was updated to include both unpatented mining claims. Additional information related to the location of the claims was also added to the PoO. The two Lode Mining Claims are identified as follows: MAG 21 and MAG 22.
2	The plan of operations is unclear if the proposed project is an exploration project or a mining operation. The plan of operations refers to a "quarry" mining approach, yet identifies loosely a "phased drilling process" which is a potential exploratory technique. Greater detail in your proposed project must be provided in the plan of operations before a technical review can occur.	The PoO as submitted was for development and mining of a magnesium-rich dolomite deposit, and that is still the intent. Although there is some amount of resource verification drilling contemplated and described in the PoO, that is a common aspect of mining operations and is consistent with how New Mexico defines mining. The PoO is clear that the overall operation being considered for review is mining of the known dolomite deposit falling within the MAG21 and MAG22 claim boundaries using quarrying methods. To further clarify the intent, text underscoring that the permit is sought for a mining project that includes but is not limited to quarrying and some further delineation drilling has been added to the following sections of the PoO: Executive Summary and Section 2.4.
3	Cultural inventory surveys are proprietary information and incorrectly included in the plan of operations. Please remove all references to the cultural inventory.	The results of the cultural resource survey have been removed from the PoO. Although information about certain cultural resources can be considered proprietary, no such cultural resources were identified in the survey, and therefore no proprietary information was provided.

4	Biological inventory surveys are incorrectly identified in the plan of operations. Please remove all references to the inventory. Both the Cultural and Biological Inventories are components of the National Environmental Policy Act of 1970 (NEPA), as amended, in which the BLM would evaluate the environmental impacts of the proposed action prior to making a decision.	Information related to the biological survey was provided as informational, and was not intended to serve as, nor be an outcome-determinative part of BLM's NEPA process. The biological survey included with the PoO is preliminary and not proprietary, and presumably might be useful information for the BLM and whomever BLM may employ or contract with to undertake the NEPA process.
5	In the plan of operations the "exploratory drilling" activity identifies drill hole spacing between 500 and 1,000 feet with a combined disturbance of 15 acres (Phase l) followed by 29 acres (Phase 2). The plan of operations is unclear as to whether these figures are additive or total, relative to the proposed 40-acre total disturbance. Also include any surface disturbing activities such as access (ingress/egress) to each drill site. Additionally, missing from the plan of operations is a drill hole plugging plan. Please provide a map showing drill pads, access to drill pads, and the sequence of drilling to occur along with proposed reclamation (e.g., plugging and abandonment).	The proposed drilling is intended to support both mining development and mining using quarrying methods. A small, possibly track-mounted drill rig is planned to be utilized. The type of rig proposed has a limited footprint and therefore no drill pad will be constructed. Drilling will be conducted in a 10' x 10' footprint. A tarp of high quality plastic liner will be placed on the surface and the borings will be advanced through the plastic barrier. Split samples will be collected for mine development purposes. The remainder of the cored material will be returned to the core hole, which will be only 3 ¼ -inch in diameter. The core holes will then be used during mining operations as blast holes based upon determinations of the depth of the known dolomite deposit. The core holes are not planned to be abandoned in place immediately following drilling, as they are dual purpose drillings. A map illustrating the proposed drilling/blasting locations is provided as Figure 5.
6	The plan of operations identifies Peru Industrial Park as an area for mining material processing. Please provide a map of this location along with entire proposed route from the mine site to the Peru Industrial Park.	Although the Peru Industrial Park is currently expected to be the location for processing of the dolomite ores and manufacturing of raw magnesium products, no formal agreement has been entered into with the land owner. The information provided in response to the requested information related to the trucking route and processing/magnesium manufacturing location is preliminary and is based upon the assumption that the Peru Industrial Park will be where magnesium products are derived from the dolomite ore mined from MAG21 and MAG22. A preliminary proposed trucking route map and potential manufacturing location map are provided and have been incorporated into the PoO, and those may be used by BLM to the extent they are considered relevant to American Magnesium's request for approval of its dolomite mining plan of operation for purposes of NEPA. Text has been added to the PoO in Section 2.8 and an updated figure has been included to address this comment.

7	Please identify the process(s) used to extract magnesium from the dolomite. What type products and wastes will come from the process(s)? Where will the waste be stored?	Some details related to the expected magnesium manufacturing facility are contained in the Conceptual Feasibility of Magnesium Metal Complex near Deming NM, USA (April 25, 2013). This report is confidential and will be provided to the BLM under separate cover. Because it is preliminary in nature, certain details are beyond the scope of the PoO. It remains to be determined whether American Magnesium or a third party will design and construct the facility, and in either case, it is unlikely that the facility will be constructed until American Magnesium has obtained the necessary federal and state permits allowing for mining exploitation of the dolomite deposit.
8	Please identify all equipment by type and size that is to be used in the proposed action, what the equipment will be used for, and any locations of equipment staging areas.	Equipment for the mining operation is provided in Section 2.5 of the PoO. A staging location is shown on Figures 4 and 5.
9	If mining is to occur, please identify the locations of ore stockpiles and overburden stockpiles. Along with access, what other ancillary facilities are proposed for the mine site (e.g., buildings/offices and/or equipment maintenance facilities, etc.) Additionally, the plan of operations must include a mine reclamation plan with re-establishment of soil, re-contouring, and vegetative species re-establishment.	Mining by quarrying is proposed in the PoO text. Resource verification is still planned to fully characterize the depth of the dolomite deposit and, possibly, to determine the ultimate extent of mining disturbance. A reclamation plan is being prepared, however, that assumes mining out the full extent of the existing dolomite foothill lying within the boundaries of MAG21 and MAG22 to the valley floor, as this would represent the maximum mining disturbance scenario for the proposed quarrying operation at that location. The reclamation plan will be finalized and provided under separate cover within approximately thirty days of this response submission. All facilities and planned equipment needed to support mining at the site are outlined in the Plan of Operations, Sections 2.5. 2.7 and 2.8.
10	The northern route is the boundary to the Florida Mountains (NM-030-034) Wilderness Study Area. Any modification or maintenance of this road must be identified. There is currently a gate on this route that separates two grazing allotments, will this gate need to be removed or modified to accommodate truck traffic?	A heavy-duty cattle guard will be installed in place of the gate location to accommodate truck traffic.

11	On May 2, 2017, the BLM along with the New Mexico Mining and Minerals Division, the New Mexico Environmental Department, and yourself conducted a site visit to the proposed mine site. The following are questions that came from that visit and will need to be addressed in the plan of operations: a. It was said that the use of drill holes will be twofold; they will be used for defining a resource and for blasting purposes. How long will the drill holes remain open between the resource definition and the blasting? How many holes will be open at one time? b. Between the mine site and the proposed access route is a large arroyo. How and where are you going to cross the arroyo? Will culverts be put in place to prevent the access from being washed out? c. Access to the south side of the project area goes through private property. Will you be able to obtain a legal access through this property? If not will there be an additional access route proposed?	a. Following drilling, all holes will be filled with rock chip cuttings until they are needed to be blown-out and used for blasting. No holes will remain open while awaiting use for blasting purposes. b. Properly sized and placed culverts will be used for arroyo crossings to prevent the access route from being washed out. Once the truck route to the site is finalized, a drainage plan will be developed and submitted to the required Agencies for approval. c. If southern access to the property is needed then AM will obtain an access agreement or arrange to purchase the property.

MMD Comments		
1	The permit application and the accompanying Mine Plan of Operation ("MPO") refer to the mine as the "Foothills Dolomite Quarry" however, no details describing a quarry or how AMG intends to develop an actual quarry or how it plans to extract either dolomite or magnesium are presented in the Minimal Impact New Mine Permit Application or the MPO. For example, descriptions of the exploration drilling activity within the application describe a phased drilling approach, not a mining approach. The first phase of drilling will include approximately 15 acres of disturbance, the second phase will include "stepping out" from the first phase of drilling and then initiating the next phase of drilling on drill hole spacing that is between 500 and 1,000 feet, which will result in approximately 29 acres of disturbance, but this statement provides no description of how these two phases of drilling will ultimately result in 15 to 29 acres of mining disturbance through drilled holes only. AMG should amend this section of the application to include a more complete description of a mining and reclamation plan to include the actual mining activity and how it intends to ultimately create up to 40 acres of surface disturbance, and a description of how the mining disturbance will be reclaimed. AMG should also address whether any open pits or highwall features will be created as the quarry is developed and mining advances toward the valley floor, and describe reclamation of these features	As discussed in the plan, the proposed mining at the site will be quarrying. Blasting will be conducted utilizing the boreholes proposed in the Plan of Operations. A phased resource verification plan has been incorporated into the MMD permit application package (Figure 5). Since the proposed method of operation is quarrying, the resource will be blasted and hauled offsite to the manufacturing facility. The location of this facility is expected to be Peru Hill Industrial Park. A map of the location is provided in the revised Plan of Operations and has also been attached to the MMD permit application. No open pits or highwall features are planned. The quarry will involve blasting material at the surface and transporting the blasted material offsite. Blasting will occur using a staged approach and will progress from the higher elevation to the valley floor. The end result of mining will produce a surface that is contoured to approximate the existing grade of the valley floor. No depressions or pits will be left once mining is complete (see revised Figure 6). Reclamation is planned following mining in each phase of operation. A reclamation plan for the quarry mining operation will be prepared and submitted to MMD within approximately 30 days of this response submission.
2	Subsection D (§304.D.7(a)) requires that an application for a minimal impact new mine permit provide a general description of how the mining operation will meet performance standards, including a requirement for the mining and reclamation operation to be designed and operated using the most appropriate technology and best management practices. Toward this end, the application does not provide a plan for cover and revegetation. A general reclamation plan should be included in the application that includes a seed mix along with rate and any soil amendments that might be applied. Additionally, the application states that during mining operations AMG plans to salvage as much overburden and soil material (cover, reclamation media or growth media) as can be safely and practically recovered; however, the application provides no description of where AMG intends to store this material over the long term so that it remains undisturbed and viable for use during final reclamation.	A reclamation Plan will be submitted under separate cover. AmMg will work with a landscape professional to develop a local seed mixture that will be properly spread at the site as part of reclamation. AmMg intends to salvage overburden during quarrying. The overburden will be stored at the planned laydown area (see Figure 5). Based on site surveys, the overburden available will be limited, however, there is sufficient room at the proposed laydown area to store the excavated overburden.

3	Subsection D (§304.D.l) requires that an application for a minimal impact new mine permit must provide the name and address of the applicant; however, within the permit application there is an apparent discrepancy in the Post Office Box address of the Mineral Owner as being located at P.O. Box 684, while the Operator information is indicated as being located at P.O. Box 644. AMG must provide the correct address of the Mineral Owner and Operator, please clarify.	The correct address is PO Box 684. The reference to PO Box 644 is a typographic error.
4	Subsection D (§304.D.2) requires among other things, that an application for a minimal impact new mine must include the location of the proposed operation as shown on a topographic map providing the location of the areas to be disturbed including existing and proposed roads and other access routes. AMG's permit application provides no locations or layout of any proposed overland access routes and locations of individual drill hole locations or drill pads within the proposed permit area. All proposed disturbance including quarry areas, staging or equipment laydown areas, ore stockpiles, overburden stockpiles, overland access routes and drill hole locations must be shown on a topographic map.	The location of the proposed quarrying operation within the MAG21 and MAG22 claims are shown in three shades of color on the topographic map (C-3) that includes the three phases of delineation, and within approximately 30 days of this response submission, a further topographic map reflecting the quarrying operations more specifically will be provided. In addition to the map of drill hole locations within the areas to be mined (Figure 5), a proposed trucking route map and a manufacturing location map are provided and have been incorporated into the PoO. Text has been added to the PoO in Section 2.8.
5	The application should also provide a detailed schematic showing typical layout and configuration of the drill pads, as well as their dimensions. The schematic should provide the location within each drill pad of any enclosed tanks, mud pits, sumps, equipment layout or other surface disturbance that may be required for developing each drill pad disturbance area. Drill pad disturbance areas, staging or equipment laydown areas, as well as overland access routes to each drill pad area, must also be considered within your application and financial assurance ("FA") calculations; additionally, any surface disturbance associated with existing roads that are to be widened, bladed or otherwise improved must also be accounted for within your disturbance calculations and FA estimate.	A small, possibly track-mounted drill rig is planned to be utilized. The type of rig proposed has a limited foot print and therefore no drill pad will be constructed. Drilling will be conducted in a 10' x 10' footprint. A tarp of high quality plastic liner will be placed on the surface and the boring will be advanced through the plastic barrier. Split samples will be collected for mine development purposes, and the remainder of the cored material will be temporarily returned to the core hole until they are used for blasting. The drill holes will be only 3¼-inch in diameter. It is expected that all of the core holes will be used during mining operations as blast holes. The core holes are not planned to be abandoned in place, as they have a dual purpose. A map illustrating the proposed drilling/blasting hole locations is provided as Figure 5 Road disturbances have been included in the application and the provided disturbance estimates.

6	Subsection D (§304.D.4) requires that an application for a minimal impact new mine permit must provide a general description of the minerals sought, the methods of extraction, and any processing to be conducted on site. Within the application, it is difficult to differentiate between the minerals of interest and the minerals sought as, throughout the application, the authors refer interchangeably to both magnesium and dolomite as the targeted materials. MMD's 40-acre maximum disturbance allowance for Minimal Impact New Mines applies to dolomite but not magnesium.	Dolomite is the mineral to be mined using quarrying methods from the MAG21 and MAG22 claims. The dolomite deposit is the target of interest, however, because the dolomite is considered to be rich with magnesium. The processing of the dolomite ore that will likely occur at the Peru Industrial Park will be to manufacture magnesium products. No waste is expected to be generated as a result of the manufacturing process. The remaining byproduct resulting from manufacturing magnesium products will be used for other industrial or agricultural purposes. Some details related to the proposed magnesium manufacturing facility are contained in the Conceptual Feasibility of Magnesium Metal Complex near Deming NM, USA (April 25, 2013). This report is confidential and will be provided to the BLM under separate cover. No processing of the dolomite ore to extract magnesium will occur at the site of the quarry on the MAG21 and MAG22 claims.
7	The application includes no specific mention of proposed diameter or depth of drilling or any specific plugging and abandonment ("P &A") procedures that are to be completed for any drill holes that are not to be used for blasting purposes or are inadvertently left improperly disposed of or exposed if the operator abandons the drill holes without properly plugging and abandoning them. MMD requires that any drill holes that are not being used for blasting purposes must be properly plugged and abandoned; therefore, AMG should amend its application to describe the diameter and total depth of each of the drill holes in addition to more accurately describing methodology for P&A of these drill holes pursuant to 19.10.3.302.L NMAC should any drill holes require P&A. MMD will require that each drilling phase be supported by FA deemed adequate to support P &A of drill holes pursuant to 19.10.3.302.L NMAC; AMG should revise its FA estimate to include the cost of P&A for each drill hole during each phase of exploration.	The proposed drilling is intended to support mine planning. A small, track-mounted drill rig is planned to be utilized. Split samples will be collected for mine development purposes, and the remainder of the cored material will be returned to the core holes, which will be only 3¼-inch in diameter. All of the core holes are then expected to be used during mining operations as blast holes. The core holes are not planned to be abandoned in place, as they are dual purpose. A map illustrating the proposed drilling/blasting location is provided as Figure 5.
8	Subsection D (§304.D.5) requires that an application for a minimal impact new mine permit must provide an estimate of total dissolved solids ("TDS") concentration; however, the application provides no information on the total TDS content of the groundwater. TDS concentration in groundwater under the permit area is important for determining minimal impact status and the application should be revised to include this information.	TDS information, from the City of Deming 40-year Water Plan was provided in Section 7 of the MMD Permit application.

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