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May 13, 2016

GCC Energy LLC
6473 County Road 120
Hesperus, CO 81326
Attn: Trent Peterson

Re: Response to LSC – King II Coal Mine Supplemental Letter LSC #154580 dated April 7, 2016

Dear Trent;

The referenced LSC Supplemental letter outlines six points of analysis. For brevity, in *italics*, I have restated LSC points for discussion and followed with corresponding responses.

Point 1: *In the current situation, before any improvements, a reduction to 80 loaded trucks (160 truck trips) per day is not adequate to ensure a reasonable degree of public safety and efficient use of the roadway by all users.*

Response: GCC has implemented, or will be implementing very soon, interim mitigation measures for County Road 120 north. These measures address trucking operations so as to improve compatibility with adjacent interests, ensure a reasonable degree of public safety and the efficient use of CR 120:

Items previously completed (Month & Year implemented):

- Initial widening of the 90 degree curve just west of State Highway 140 to accommodate two-way truck traffic (November 2015).
- Trimming vegetation along numerous sections of CR 120 north to improve roadway sight distance (April 2015).
- Limiting coal truck hauling to six days per week, no hauling on Sundays (March 2015).
- Radio communication used to limit truck traffic to one direction at a time through the "narrows" (Prior to 2012).
- Adopted written policies on truck speed and expected use of the road, to include: 35 mph on the paved section and 25 mph on gravel (November 2014), and 10 mph within 200 feet of the two adjacent residences to further minimize road dust (March 2015).
- Conducting speed monitoring and management (January 2015).
- Requiring quarterly in-person driver training sessions (January 2014).
- Installed a direct phone number to report unsafe driving (November 2015).
- Dust suppression with the application of water, up to four times each day as needed (May 2015).
- The suspension of coal hauling on County Road 120 during adverse weather (March 2013).
- No stopping of coal haul trucks on County Road 120 except for emergency purposes (January 2013).

Items to be completed summer of 2016

- The installation of additional lighted/flashing advisory traffic signs at key locations (by August 2016).



- Temporary paving of approximately one mile of County Road 120 from the current end of the pavement south to help mitigate road dust and sound for two residences adjacent to County Road 120 (by July 2016).
- 80% of haul truck trips to occur between the hours of 6:00AM and 10:00PM (by June 2016).
- During CR 120N road construction, GCC’s company policy is to route employee traffic to CR 120S (Spring 2017).

By implementing mitigation measures, road safety is improved (example: widening of 90° corner, installation of flashing lights at Wiltse’s Barn & Narrows, trimming vegetation). In addition, noted improvements also affect area compatibility (example: reduction of trucking speeds, suspension of Sunday trucking, temporary paving of 5000ft of roadway).

A key indicator on whether the mitigation measures are effective is the relationship between the truck volumes and recorded accidents on CR 120. Table 1 is a summary of the data:

<u>Year</u>	<u>Average Daily Loaded Trucks¹</u>	<u>Accidents on CR 120N²</u>	<u>Accidents Involving GCC</u>
2011	69 trucks	3	0
2012	72	3	1
2013	84	3	3
2014	110	4	1
2015	93	0	0

A majority of interim mitigation measures were implemented in years 2014 / 2015 (note list page 1). Apparent from the accident records is the success achieved in the significant accident reduction, and therefore improved safety of the roadway.

This summer (2016), GCC will complete the additional interim road improvements (noted page 1 & 2). Completion of each phase of roadway construction will continue to improve the performance and efficiency of the roadway. Upon completion of Phase 5, CR 120 will then be a 6 ½ mile paved road that meets La Plata County road standards. These actions will improve on the success achieved from previously implemented mitigation measures.

Based on this data, and the construction phasing and truck limits outlined in the Road Improvement Agreement (RIA), it is my opinion is that CR 120 is safe, and will assure a reasonable degree of public safety at the anticipated traffic volumes generated by the King II mine.

Point 2: The first phase of improvements with “temporary” paving just adjacent to McCue and Hunzeker would not correct the deficient sections of the roadway with the problems of substandard horizontal curves and limited sight distance combined with narrow roadway width.

Response: Substandard roadway alignment and deficient roadway sections are to be corrected as part of Phase 2 of the Road Improvement Agreement (construction 2017). Of immediate action is improving the compatibility of the trucking operations with adjacent residents. The temporary paving mainly addresses compatibility.

¹ La Plata County Department Report – April 14, 2016

² La Plata County Records – copy attached



The temporary roadway paving is scheduled from the existing end of pavement (adjacent to McCue), west to beyond Hunzeker parcel. Total length of paving is approximately 5000lf. Pavement section will be a 3-inch mat, 24-feet wide to include additional paving adjacent to Hunzeker parcel. This additional paving at Hunzeker is to accommodate existing parallel parking adjacent to roadway. Temporary paving is to improve compatibility with adjacent neighbors by reducing dust and noise generated by vehicles traveling on the existing gravel road.

The construction plans will be stamped by a professional engineer, and approved by the County engineer prior to construction. Construction will receive engineering inspection oversight. Pavement structure is designed to significantly exceed (over 2x) the estimated Equivalent Single Axle Loading (ESAL) pavement requirement. As a component of Phase 2 construction, the temporary pavement is to be roto-milled and utilized as a base component for the final improved roadway.

Point 3: The timing of Phases 4 and 5 should be accelerated.

Response: The agreed to Road Improvement Phasing Schedule, as outlined in the RIA, addresses immediate improvements in addition to providing necessary time to complete roadway improvement components such as right-of-way and environmental assessment. Typical design of roadway is iterative, adjusting roadway alignment to accommodate environmental and right-of-way conditions. The iterative process could take 6-months; it could be 2-years, dependent on project conditions. GCC Energy has committed to the diligent execution of tasks necessary for constructing the 6.5miles of CR 120. Timing as scheduled is aggressive, though also realistic. As noted in the RIA, GCC has option to move tasks to earlier date than scheduled.

Point 4: The batching/convoy system has both pluses and minuses.

Response: The advantages of truck batching is allowing for greater time durations between haul trucks, increasing headway between vehicles, providing greater gaps for traffic accessing onto CR 120N, and improved avoidance of conflicting traffic at substandard curves. Depending on traffic flows, batching may be out-weighted by difficulty to negotiate passing of a truck batch.

Batching of trucks is an option that could be implemented if shown to improved safety and operations of the roadway. At this time it is not an essential part of the interim measures.

Point 5: There would be benefits to assigning at least some, if not all entering or exiting traffic to the southern route as a temporary, interim measure.

Response: The Phased construction of CR 120 will be conducted under load; i.e. with traffic control and lane closures. During CR 120N road construction, GCC’s company policy will be to route employee traffic to an alternate route, such as CR 120S. This policy would direct the 120 or so mine personnel to utilize an alternate route during construction of phased improvements to CR 120N. During periods of no construction, or when alternate routes are unavailable, GCC employee would be allowed to utilize CR 120N. This action would improve the roadway operations during construction by reducing the daily trips served by the CR 120N roadway.

Point 6: Given the 20 percent variation, it is important to understand that ‘maximum trucks on a single day’ (GCC March 16 letter) would result in multiple days at or approaching the max volume.

<u>Trucks per day</u>	<u>Trucks per min (based on LSC counts)</u>
80	5.8 min
100	4.6 min
120	4.0 min



Response: The average duration between trucks are reflected in Table 1:

Number of trucks per day		Number of hours: 6am - 10pm		% of trucks during evaluation period	# of trucks per hour	Avg time between trucks (min)		# of trucks per hour @ 20% max		min time between trucks @ 20% max		
80	trucks	16	hrs	80%	8	trucks	7.5	min	9.6	trucks	6.25	min
100	trucks	16	hrs	80%	10	trucks	6	min	12	trucks	5	min
120	trucks	16	hrs	80%	12	trucks	5	min	14.4	trucks	4.17	min
Note:												
If 20% max trip volume occurs for one-day, there will be the sum of 16 trucks that will be reduced from associated days												

Table 1

Under the 80-truck scenario, the maximum number of trucks on a single day could increase the volume by 16 trucks. To achieve a normalization of the average 80-trucks a day, the example could result in truck volumes being reduced by 1-truck for 16-days, or 16-trucks in a single day. Multiple days at or approaching the max volume would be balanced by multiple days at a significantly reduced volume.

The main point is that a truck limit, with an allowable increase, is capable of responding to market demands. Evaluated monthly, the average truck volume is balanced to achieve agreed to limits.

Point 7: I reviewed the proposed yellow warning sign design for the Wiltse Barn curves indicating "Narrow Road" with supplemental panel and actuated flashing yellow beacon. I recommend sign wording as recommended in our January 2016 report.

Response: The language recommended in the LSC January 2016 report included: 'advance warning sign indicating "Be prepared to stop" with a supplemental panel "when flashing"'. I would support adding 'Be Prepared to Stop' as a supplemental panel in addition to 'when flashing'. Prior to installation, final sign detail will meet MUTCD requirements and be approved by La Plata County Public Works director.

The letter reflects a summary of LSC's Supplemental Letter of trucking operations on CR 120N. Summary of each of LSA's comments is provided with corresponding response.

Respectfully submitted,

Mike Olson P.E.

Cc: Jim Davis PE (La Plata County)
 Gina Nance (GCC Energy LLC)
 Trent Peterson (GCC Energy LLC)
 Brian Kimmel (Southwest Land Services)