



COLORADO

Parks and Wildlife

Department of Natural Resources

Northeast Regional Office
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Denver, CO 80216
P 303.291.7227

April 29, 2019

Mr. Peter Hays
Minerals Specialist
Colorado Division of Reclamation, Mining & Safety
peter.hays@state.co.us

RE: CPW's Comments on the Proposed Wildlife Mitigation Measures Associated with the Amended Douglas Mountain Ranch Gravel Mine (T3S, R74W, Sec. 27-28), Town of Empire, Clear Creek County, CO (DRMS File No. M-2018-016)

Dear Peter,

Thank you for the additional opportunity for Colorado Parks and Wildlife (CPW) to comment on the proposed wildlife mitigation measures associated with the amended Douglas Mountain Mine proposed project (Project), which is currently under review with the Colorado Division of Reclamation, Mining & Safety (DRMS). It is our understanding that this proposed Empire Aggregate, Inc. (Operator) 68.2-acre gravel quarry mine (Mine) could last up to 25 years, and would be located southeast of the Town of Empire, north of Douglas Mountain, and south of the West Fork of Clear Creek and U.S. Highway 40 (US 40).

CPW appreciates the on-going consultation with DRMS and the Operator's consultant (Greg Lewicki and Associates). This proposal has been difficult for CPW to assess the immediate and long-term impacts primarily because this Project is located along and near an existing major bottleneck in the daily movement and seasonal migration route for Rocky Mountain bighorn sheep (bighorn sheep; *Ovis canadensis canadensis*) (see Attachment A). This movement bottleneck is currently constrained by Interstate 70 (I-70) to the south, the interchange with US 40 to the east, and US 40 west towards Empire to the north that currently has bighorn crossing signs for the eastbound lanes (see Attachment B).

CPW appreciates the willingness of the Operator to implement various wildlife minimization and mitigation measures, as stated in their revised (2/25/19) Exhibit H - Wildlife Information. However, after a thorough internal discussion, **CPW concludes that this Mine would cause significant impacts to this bighorn sheep herd that cannot be mitigated by the Applicant's proposed minimization and mitigation measures nor by any other measure we discussed.** The likely biological and economic consequences from this Mine are significant enough to this bighorn sheep herd to warrant caution due to the following reasons:



- **Likely Impact to Bighorn Sheep Movement - Potentially Resulting in a Decrease in the Size and Viability of this Bighorn Herd.** The primary way to protect the health and vitality of the bighorn sheep herd is to maintain a safe movement and migration corridor that is wide enough to be used by bighorn sheep to connect adjacent habitats for the herd's daily and seasonal movements. It is likely that the loss, degradation, and further fragmentation of this movement corridor would result in fewer bighorn sheep, which would lead to genetic isolation and fewer watchable wildlife and hunting opportunities for this herd.
 - CPW's recent bighorn sheep report¹ details daily movements and seasonal migration patterns would indicate that the access road could temporarily or permanently cause these east-west movements to cease, which could cause genetic isolation in this herd over time. In Attachment C are figures from that report which show that several subherds currently cross the proposed access road.
 - A reduction in the bighorn sheep population in this area would likely result in an economic loss to the Town of Georgetown and Clear Creek County. The Georgetown herd is extremely popular and one of the most visible and one of the largest bighorn sheep herds in Colorado and the U.S. This attraction brings revenue and tourism to Georgetown and Empire. Additionally, the Georgetown Bighorn Sheep Festival (now in its 14th year) brings up to 2,000 people to the area.
- **Likely Increase of Stress, Thereby Likely Increasing Bighorn Sheep Susceptibility to and Mortality from Respiratory Illness.**
 - This bighorn sheep herd (S32) has been monitored for respiratory disease since at least 2013. This herd extends from Clear Creek Canyon west of Golden to the Continental Divide. Most of the monitoring of this S32 herd has occurred between the towns of Empire and Idaho Springs, due in part to the high visibility of the animals in this area, and the large number of vehicle collisions with bighorn sheep in this area providing carcasses for evaluation. At least four bighorn sheep have been identified with respiratory disease from this area using this "passive" type of surveillance. The continued detection of respiratory disease in bighorns from 2013-2018 in this area suggests that respiratory pathogens are present at some level throughout the S32 herd, given connectivity throughout the canyon.
 - In addition to "passive" surveillance, CPW has also conducted limited "active" surveillance for respiratory disease in the S32 bighorn herd. In 2014, collared ewes were monitored with their lambs to detect possible lamb deaths related to respiratory disease. At least three bighorn lambs were found to have died from respiratory disease during one summer of active surveillance, suggesting

¹ <https://cpw.state.co.us/Documents/WildlifeSpecies/Mammals/Bighorn-Sheep-Georgetown-TechReport.pdf>

that lamb pneumonia is a significant factor affecting lamb recruitment in the S32 herd.

- CPW's recent bighorn sheep report determined that the main cause of bighorn sheep lamb mortality was bronchopneumonia (otherwise known as the inflammation of the lungs). This illness occurred within their first few months of life (May-July) and remained high through November.
- Historical evidence from other herds suggests that any stress added to a susceptible population of bighorns can affect the sustainability of the herd. A CPW and Colorado State University study² described detrimental effects to the Waterton Canyon bighorn sheep herd caused during the construction of the Strontia Springs Dam (southwest of Denver). Specifically, this bighorn sheep herd experienced a 75-85% all-age die-off, followed by a 100% lamb mortality the summer later, and a 67% lamb die-off the second and third summers from respiratory illness related to chronic environmental stressors (human contact, vehicular traffic, atmospheric dust, noise, and harassment). In addition to direct mortality, disease events can depress lamb recruitment and population levels for many years. CPW does not want to see a similar negative effect to this bighorn sheep herd.
 - Therefore, CPW expects an unknown addition of stress to this bighorn sheep herd from the direct effects of new construction and indirect effects from noise, dust, and more workers and trucks.
- **Likely Increase of Bighorn-Vehicle Collisions**
 - Six bighorn sheep have been reported killed by vehicles on I-70, US 40, or the on/off ramps between March 2017 to October 2018. However, that number is likely low since CPW's recent bighorn sheep report observed that 44% of bighorn road strikes go unreported in this area, which would bring the number to around 14 bighorn sheep killed on these roads in 19 months.

After further evaluation of the Operator's proposed bighorn movement corridor, CPW determined that creating such a corridor would be difficult to achieve due to the following factors:

- There are multiple landowners in the vicinity, and it will likely be difficult to achieve and maintain a movement corridor.
- Such a corridor could lead to a vehicle safety issue to direct bighorn sheep herds to US 40 without leading to a wildlife overpass (which are expensive to build).
 - Furthermore, of the 42,000 annual vehicles that use westbound I-70 east of the US 40 exit, up to 17.6%³ (or 7,400) vehicles exited onto westbound US 40 in 2017.
 - Further cumulative impacts are related to the current CDOT study which proposes an I-70 westbound peak period shoulder lane. This lane will increase

² <https://www.jwildlifedis.org/doi/pdf/10.7589/0090-3558-20.4.319>

³ <http://dtdapps.coloradodot.info/otis/HighwayData>

traffic capacity and speeds potentially leading to more wildlife-vehicle collisions.

- Even more traffic is expected with the Mine's 15-24 ton haul trucks (approximately 140 trucks up to 24 hours a day, with up to 20 trucks per hour in the peak times), plus the vehicles associated with the commutes of mine workers (non-haul trucks) before the beginning and end of their shifts, being added to the roads. An increase in Mine traffic will likely lead to an increase in wildlife-vehicle collisions.
- The salts in magnesium chloride can attract bighorn sheep to both I-70 and US40, and eventually haul roads, which will likely increase the number of bighorn sheep struck by vehicles.
- Bighorn sheep can move throughout the day, versus other animals that move primarily at dawn and dusk.

To help give context for our concerns, below is a brief explanation of how this bighorn sheep herd has declined and fluctuated significantly during the last 120 years:

- In the early 1900s, miners in the Georgetown area estimated 400 bighorn sheep. However, unregulated hunting, increasing human development, and the introduction and overgrazing of livestock likely contributed to the increased stress and disease-related die-offs that decreased the size of this herd.
- Transplants to supplement the herd were completed in the 1940s, specifically 33 bighorn sheep were introduced in 1946 and 14 were released in 1949.
- By 1968, only 32 bighorn sheep remained in this herd.
- By the early 1980s, the population fluctuated between 40-50 animals.
- In 1988, CPW learned that the U.S. Bureau of Land Management (BLM) desired to dispose of some of their lands, which included the adjacent Georgetown State Wildlife Area parcels. CPW (then called the Colorado Division of Wildlife or CDOW) was interested in obtaining these parcels (see Attachment D) for bighorn sheep for the following reasons:
 - To assure CPW's continued ability to manage the bighorn herd of 150 animals and to treat them for disease and to use the tracts that extend up to the Town of Georgetown for lands that could be used to maintain the herd as a proposed roadside watchable wildlife site.
 - The biological benefits of the preservation of these critical habitat tracts were to safeguard the bighorn sheep herd, which would likely be affected negatively if the area were to undergo additional mining activities.
- In 1999, this herd achieved the most recent highest reported population size of approximately 450 bighorn sheep.
- The 2018 post-hunt population estimate is 250 bighorn sheep, while the post-hunt population objective is between 250-350 bighorn sheep.
 - Since 2013, the population size has been at the lower end of the population objective range. This decrease has occurred despite minimal hunter harvest. It is thought that human-caused direct and indirect alterations to bighorn sheep habitat in this area and the presence of respiratory disease have contributed to

this downward trend in herd size. CPW is concerned that any nearby significant stressors and habitat alteration may cause this population to decline further.

Likely Negative Effects to Other Species of Wildlife. Finally, besides bighorn sheep, other wildlife (such as moose, elk, deer, bobcat, bear and mountain lions) use the nearby Clear Creek and the West Fork of Clear Creek as a frequently-used wildlife travel corridor, as has been evidenced by the many roadkills near this proposed Mine's location. Additional truck traffic would further exacerbate these roadkill numbers.

In summary, CPW continues to have significant concerns for this Project's effects on area wildlife and thus remains an objector to this Project. Should DRMS, the Operator, or Operator's Consultant have any questions on this letter, or if the timing or scope of this Project changes, please contact Mark Lamb (Area 1 Wildlife Manager) at 303-291-7241 or mark.lamb@state.co.us.

Sincerely,



Mark Leslie
Northeast Regional Manager

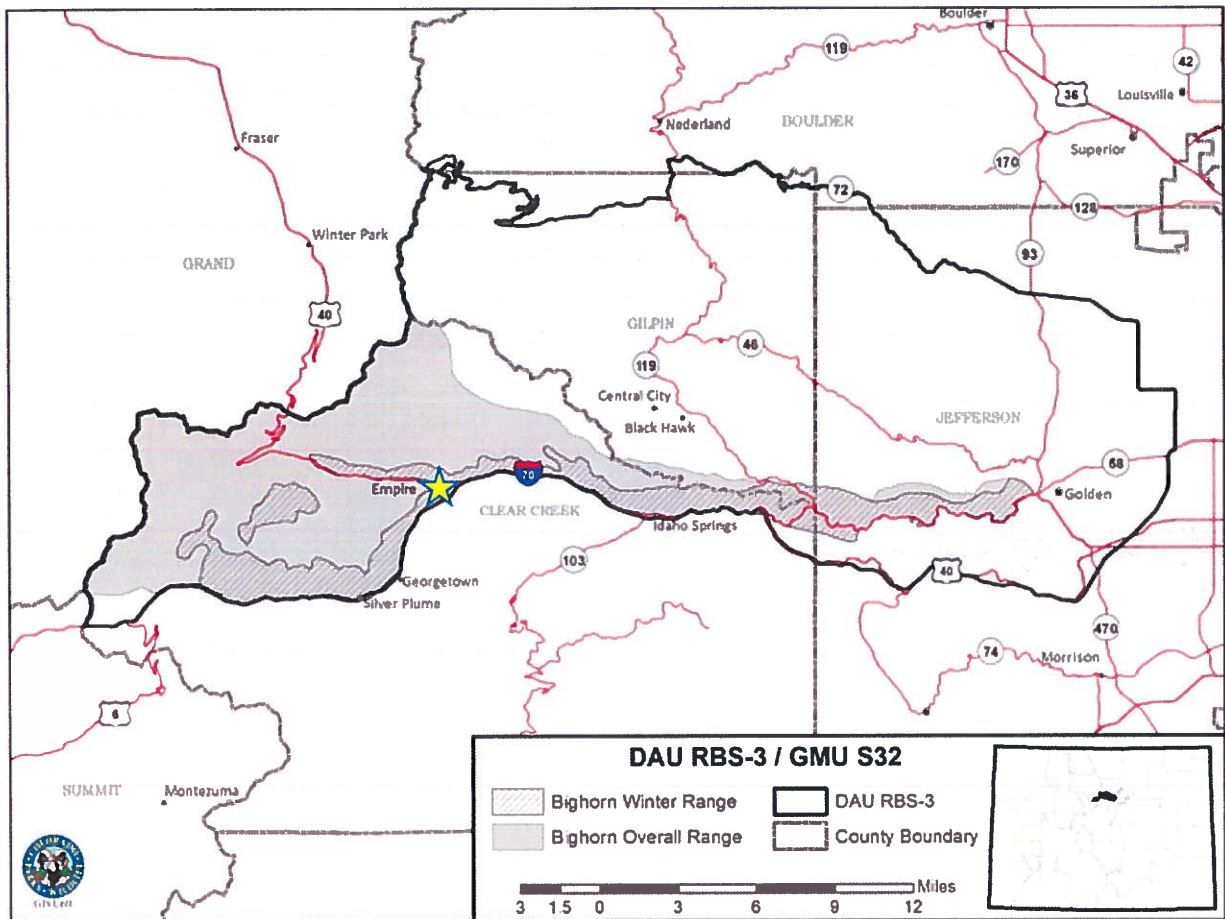
cc: Ben Kraft, Area 1 Wildlife Biologist
Brandon Marette, Northeast Region Energy Liaison
Jeffrey M. Ver Steeg, Acting Director
Jeff Spohn, Northeast Region Senior Aquatic Biologist
Joseph Walter, District Wildlife Manager (Idaho Springs)
Karen Fox, Wildlife Pathologist
Lance Carpenter, Area 1 Wildlife Biologist
Lisa Wolfe, Staff Terrestrial Veterinarian
Mark Lamb, Area 1 Wildlife Manager
Paul Winkle, Aquatic Biologist (Clear Creek)
Shannon Schaller, Northeast Region Senior Wildlife Biologist
Tom Kroening, Northeast Region Deputy Regional Manager

Attachments

Attachment A - Winter and Overall Ranges of the Georgetown Bighorn Sheep Herd
Attachment B - CDOT's Bighorn Sign on Eastbound US 40
Attachment C - Maps Showing Multiple Bighorn Sheep Sub-herds at Douglas Mountain
Attachment D - CDOW's 1989 Application to BLM for the Acquisition of the Douglas Mountain Parcel

ATTACHMENT A
Winter and Overall Ranges of the Georgetown Bighorn Sheep Herd

(Star = Project area)



(source - <https://cpw.state.co.us/Documents/WildlifeSpecies/Mammals/Bighorn-Sheep-Georgetown-TechReport.pdf>)

ATTACHMENT B

CDOT's Bighorn Sign on Eastbound US 40



ATTACHMENT C **Maps Showing Multiple Bighorn Sheep Sub-herds at Douglas Mountain**

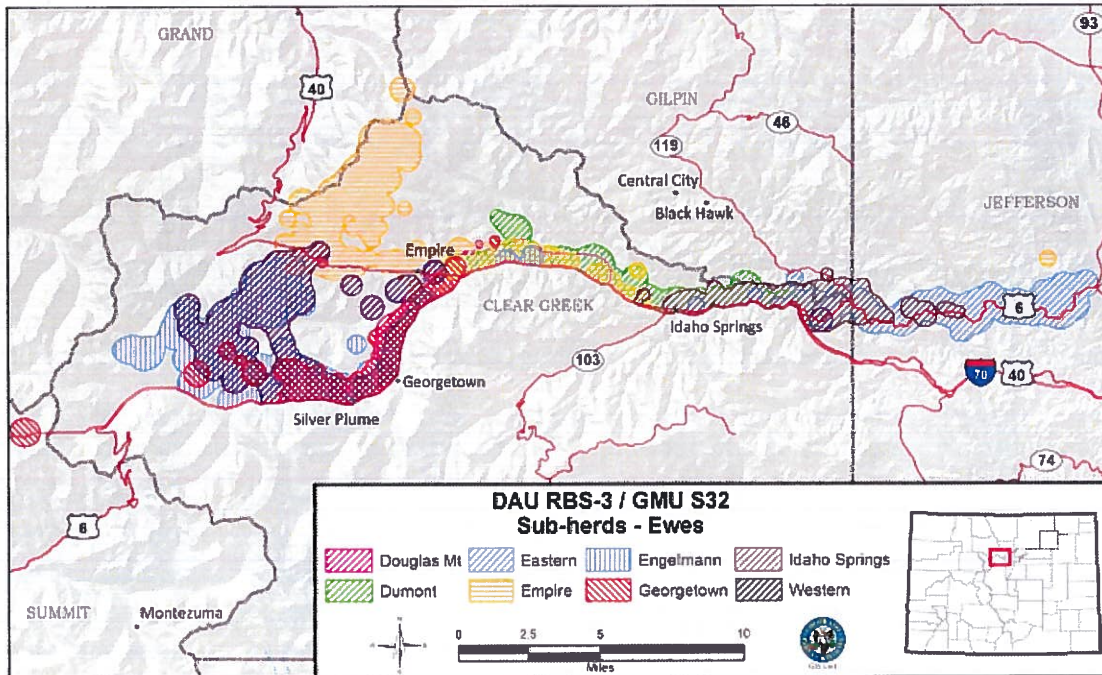


Figure 20. Ranges of Georgetown bighorn sheep ewe subherds.

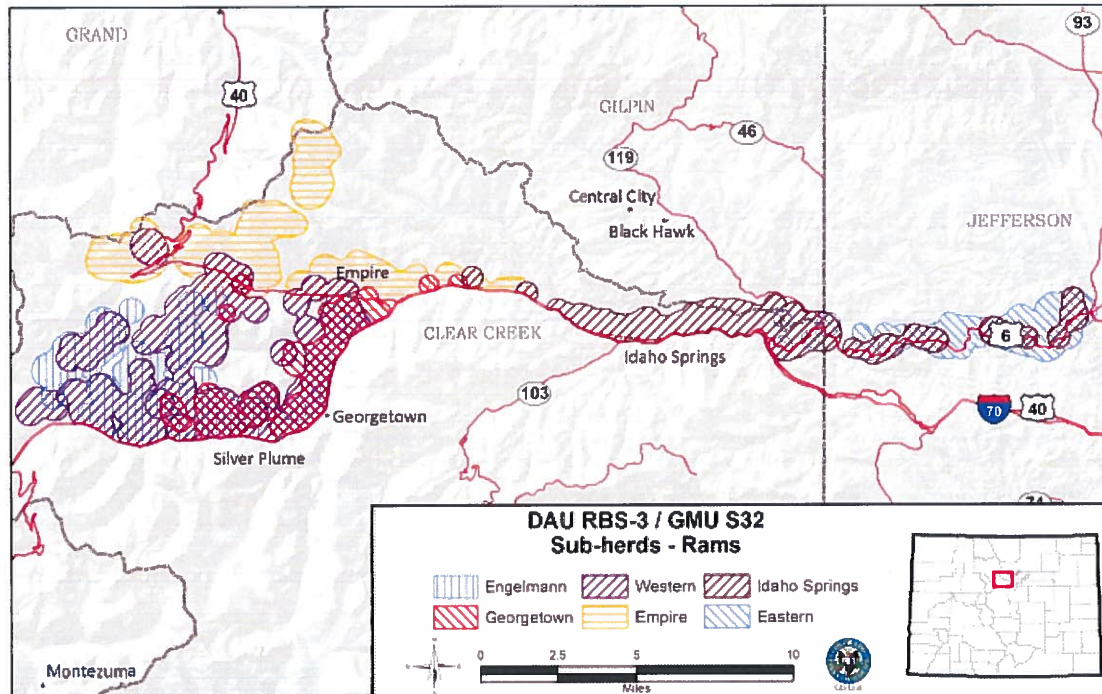


Figure 21. Ranges of Georgetown bighorn sheep ram subherds.

(source - <https://cpw.state.co.us/Documents/WildlifeSpecies/Mammals/Bighorn-Sheep-Georgetown-TechReport.pdf>)

ATTACHMENT D

CDOW's 1989 Application to BLM for the Acquisition of the Douglas Mountain Parcel

Form 2740-1 (December 1984)		UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT		FORM APPROVED OMB NO. 1004-0012 Expires: October 31, 1987	
		Date 4-19-89		Serial Number (BLM use only)	
		Home phone (include area code)			
APPLICATION FOR LAND FOR RECREATION OR PUBLIC PURPOSES (Act of June 14, 1926, as amended; 43 U.S.C. 869; 869-4)					
1a. Applicant's name State of Colorado, Dept. of Natural Resources, Division of Wildlife		b. Address (include zip code) 6060 Broadway		Business phone (include area code) (303) 291-7458	
2. Give legal description of lands applied for (include metes and bounds description, if necessary)					
SUBDIVISION	SECTION	TOWNSHIP	RANGE	MERIDIAN	
Portion of	28, 32 & 33	3 South	74 West	6th PM	
Portions of	5, 8 & 17	4 South	74 West	6th PM	
*See Attached map					
County of Clear Creek		State of Colorado		Containing (acres) 1200 acres†	
3a. This application is for <input type="checkbox"/> Lease <input type="checkbox"/> Purchase (If lease, indicate years)					
b. Proposed use is <input checked="" type="checkbox"/> Public Recreation <input type="checkbox"/> Other Public Purposes					
4. Attach three (3) copies of the completed application and the statement required by 43 CFR 2741.3(h) (Specifically identify type of					
<p><u>Proposed Use:</u> A main use of these tracts would be as wildlife habitat. The tracts would be open to public use for hunting, hiking, and watchable wildlife activities. Another primary use of the tracts would be as a formal watchable wildlife site. We plan a roadside pull-off site and observation station from which to watch the sheep herd. In addition, part of this site is currently used as a baiting/trapping station at which the bighorns are captured and treated for diseases. We would anticipate that this activity would continue into the future.</p> <p><u>Habitat and Species Identification:</u> The tracts consist primarily of very rocky, rugged, steep mountainsides characterized by grasses, shrubs, and scattered conifer trees. Some of the tracts have denser coniferous forest present. The main species of interest is the bighorn sheep herd, which consists of about 150 animals and is resident year-round in the area. Other wildlife present includes mule deer, marmots, coyotes, mountain lion, and a variety of mountain birds.</p> <p><u>Biological Benefits:</u> Preservation of these tracts in their current condition will safeguard the bighorn sheep herd, which would likely be affected negatively if the area were to undergo additional mining activities. The other wildlife present will similarly benefit from maintenance of their habitat. Additionally, maintaining this site in public hands will assure our continued use of the baiting/trapping site for capturing and treating the animals for disease prevention.</p>					
5. If applicant is State or Political subdivision thereof, cite your statutory or other authority to hold land for these purposes. Colorado Revised Statutes Title 33 (33-1-105)					
6. Attach a copy of your authority for filing this application and to perform all acts incident thereto.					
7. If land described in this application has not been classified for recreation and/or public purposes pursuant to the Recreation and Public Purposes Act, consider this application as a petition for such classification.					
(Continued on reverse)					

