

**Ash Grove Cement Company
Exploration License #00684
AMD3**

**Clark Gulch Clay Exploration Project
Jefferson County, MT**

**Environmental Assessment
Finalized on April 23, 2021**

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**Montana Department of Environmental Quality
Air, Energy, & Mining Division
Hard Rock Mining Bureau
ENVIRONMENTAL ASSESSMENT**

COMPANY NAME: Ash Grove Cement Co.
EA DATE: April 23, 2021
PROJECT: Clark Gulch Shale Clay Exploration Project
LICENSE: #00684
AMENDMENT: AMD3
LOCATION: 46.541206°, -111.981765° **COUNTY:** Jefferson
PROPERTY OWNERSHIP: FEDERAL ☐ STATE ☐ PRIVATE ☒

COMPLIANCE WITH THE MONTANA ENVIRONMENTAL POLICY ACT

Under the Montana Environmental Policy Act (MEPA), Montana agencies are required to prepare an environmental impact statement for state actions significantly affecting the quality of the human environment. An agency may prepare an environmental assessment to determine the need to prepare an environmental impact statement. This environmental assessment (EA) will evaluate and determine the significance of potential impacts that may result from the proposed and alternative actions. DEQ will then determine the need for preparation of an environmental impact statement based on consideration of the criteria set forth in Administrative Rules of Montana (ARM) 17.4.608.

This EA tiers from the EA (EA-2020) (Appendix A) finalized on February 10, 2020 which considered DEQ's approval of amendment 1 (AMD1) to Exploration License #00684, which was a state action that would have similar potential impacts as the state action proposed and examined in this EA. EA-2020 determined that no significant impacts would occur as a result of the state action. Ash Grove Cement Company (Ash Grove) had proposed, posted bond for, and has been approved to complete AMD1. After AMD1 was approved by DEQ, Ash Grove submitted an amendment to the exploration plan (AMD2) which reduced the scope of some aspects of AMD1. Mainly, the large haul road proposed in AMD1 was cancelled, and a smaller access road and small laydown area was proposed (Figure 1). DEQ considered AMD2 and completed an EA for that change which was finalized on May 22, 2020. Ash Grove is now proposing a change to AMD1 and AMD2 that consists of improving an existing road that parallels Jackson Creek Road. The improved road proposed in AMD3 would allow Ash Grove to access the exploration area without the need to use Jackson Creek Road.

PROPOSED ACTION

DEQ would approve an amendment (AMD3) to Exploration License #00684 (license) held by Ash Grove if DEQ has found that the applicant has met the conditions set forth in Montana Code Annotated (MCA) 82-4-332. Ash Grove was issued Exploration License #00684 on June 10, 2008, and has since annually renewed the license with DEQ.

PURPOSE AND NEED FOR PROPOSED ACTION

DEQ's purpose and need in conducting the environmental review is to act upon Ash Grove's

application to conduct mineral exploration in compliance with the Metal Mine Reclamation Act (MMRA). On March 5, 2021, Ash Grove submitted a complete application for an amendment to the license. Pursuant to 82-4-332 (2), MCA, the application was:

1. Submitted in writing;
2. Included a map of sufficient detail to locate the area to be explored as well as the actual proposed disturbances, and to allow DEQ to adequately determine whether significant environmental problems would be encountered;
3. Stated the type of prospecting and excavation techniques that would be employed in disturbing the land and included a reclamation plan in sufficient detail to allow DEQ to determine whether the specific reclamation requirements of ARM 17.24.104 through 107 would be satisfied.

Figure 1. Overview Map of AMD1, AMD2 and AMD3

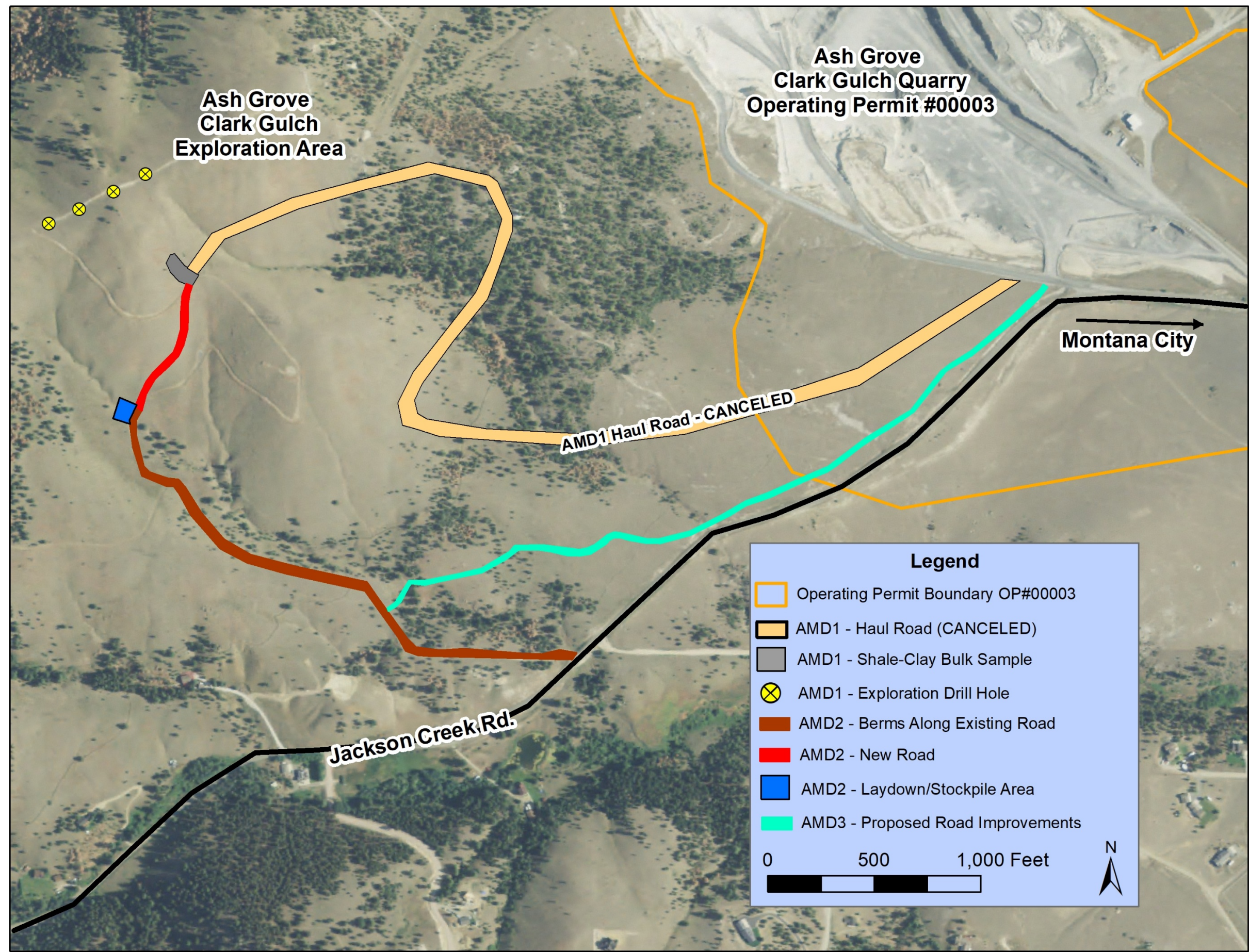


Table 1: Summary of activities proposed

	Summary of Activities Proposed in AMD1	Summary of Activities Proposed in AMD3	Highlighted Difference Between AMD1 and AMD3
General Overview	Ash Grove has proposed to extract a 10,000-ton bulk sample from a single trench for chemical testing near Clark Gulch in Jefferson County, MT. In addition to the bulk sample, Ash Grove would construct a haul road to access the test trench to access the trench area and to complete 4 core drill holes near the test trench area.	Ash Gove would complete all activities proposed in AMD1 with the exception of construction of the haul road. Under AMD3, Ash Grove would include the addition of road improvements along 3,670 feet of existing double track road. The road improvements would increase the width of the road to approximately 25 feet, which would include safety berms suitable for the vehicles that would use the road. AMD3 is proposed to reduce traffic impacts near residents, and to increase safety so that project related vehicles would not be required to turn onto/off of Jackson Creek Road at a blind corner.	The haul road proposed in AMD1 would not be constructed. AMD3 would improve 3,670 feet of existing road not included in AMD1.
	Dimensions and Quantities of Disturbance Proposed in AMD1	Dimensions and Quantities of Disturbance Proposed in AMD3	Highlighted Difference Between AMD1/AMD2 and AMD3
Drill pads (#)	0	Same as AMD1	No difference
Drill pad dimensions (xy)	n/a	n/a	No difference
Sumps (#)	0	Same as AMD1	No difference
Sump dimensions (xyz)	n/a	n/a	No difference
Trench dimension (xyz)	1 trench measuring 195’x105’x10’	No trench proposed	AMD3 would not include any disturbance from trenching.
New road (xy)	5,600’x40’ with up to 20’ of shoulder on each side	3,670 feet x 25 feet	AMD3 would result in a total reduction of road disturbance from AMD1 of 8.2 acres.
Overland travel (xy)	50’	None proposed	AMD3 would not include any disturbance from overland travel.
Laydown area (xy)	n/a	n/a	No difference
Total surface disturbance	11.2 acres	2.1 acres	AMD3 would result in a total reduction of about 8.2 acres from what was proposed but canceled under AMD1.
Drill holes (#)	4	None proposed	AMD3 does not include any drilling disturbance.
Maximum hole depth	100 feet	n/a	AMD3 does not include any drilling disturbance.
Total drilling footage	400 feet	n/a	AMD3 does not include any drilling disturbance.
	Proposed Actions in AMD1	Proposed Actions in AMD3	Highlighted Difference Between AMD1 and AMD3
Duration and timing	<ul style="list-style-type: none">- Construction would commence after approval of AMD1.- The project would last for up to 1 year.- Work would occur during weekday shifts which would generally occur between 7:00a.m. and 3:30 p.m. Tuesdays through Saturdays. Some work may occur outside of those hours and days.- Final reclamation of all surface disturbances would be required to be completed no later than 2 years following conclusion of project, unless the disturbance is incorporated into an Operating Permit.	Same as AMD1	No difference
Equipment	<ul style="list-style-type: none">- 988 Wheel Loader- CAT 769 and/or D400 End Dump Truck- D8R Dozer- Sandvik D245 Drill if blasting were required- Contractor drill for exploratory holes- Water Truck for dust control- Portable light plant with downfacing lights- Miscellaneous light vehicles (i.e. pickups and SUVs)	<ul style="list-style-type: none">- 988 Wheel Loader- CAT 769 and/or D400 End Dump Truck- D8R Dozer- Water Truck for dust control- Portable light plant with downfacing lights- Miscellaneous light vehicles (i.e. pickups and SUVs)	AMD3 would not include the use of any drilling equipment.
Location and Analysis Area	<ul style="list-style-type: none">- The proposed project would be located immediately west of the Ash Grove Clark Gulch mine site, which is operated under Operating Permit #0003.- The site would be located about 1 mile west of the town of Montana City, MT.- The area being analyzed as part of this environmental review includes the immediate project area (Figure 1) as well as immediate downstream water sources and neighboring lands surrounding the analysis area as reasonably appropriate for the impacts being considered.	Same as AMD1	No difference

Personnel Onsite	Onsite personnel would vary per task, but generally would include 1-2 equipment operators, 1 truck driver, 1 quarry superintendent, and 1 driller/powderman.	Onsite personnel would vary per task, but generally would include 1-2 equipment operators, 1 truck driver, 1 quarry superintendent.	AMD3 would not include any drilling or blasting personnel.
Structures	There would be no new structures other than a temporary portable toilet	Same as AMD1	No difference
Project Water Source	Water would be used for dust suppression and would be sourced from the Ash Grove Operating Permit #0003 Clark Gulch Quarry plant water supply and hauled, and applied, by the plant water truck.	Same as AMD1	No difference
Supplemental Lighting	The need for supplemental lighting would not be anticipated. However, if needed, supplemental lighting would include a portable light plant with down facing lights.	Same as AMD1	No difference
Air Quality	<ul style="list-style-type: none"> - Dust suppression would be provided by the plant's water truck. - Original equipment manufacturer (OEM) exhaust controls would be provided on equipment used. 	Same as AMD1	No difference
Water Quality	The proposed project area would be located approximately 0.6 miles northwest of an unnamed tributary to Prickly Pear Creek. Stormwater would be managed under the Ash Grove plant's current authorization #MT000523 under the Montana Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Industrial Activity.	Same as AMD1	No difference
Erosion Control and Sediment Transport	Erosion control would be accomplished using a variety of Best Management Practices (BMP) including but not limited to: non-draining excavations, containment, diversion and control of surface run off; flow attenuation, revegetation, earthen berms, silt fences, and gravel packs. All BMPs would be identified in the Ash Grove plant's Storm Water Pollution Prevention Plan.	Same as AMD1	No difference
Solid Waste	<ul style="list-style-type: none"> - Topsoil would be salvaged and saved for reclamation. - Equipment maintenance would be performed in Ash Grove's existing facilities. - Garbage cans would be used on site to collect miscellaneous wastes and would be disposed of with Ash Grove's current Operating Permit wastes. 	Same as AMD1	No difference
Cultural Resources	A cultural resource inventory of the proposed project area has been completed. None of the resources identified during the inventory qualify for National Register of Historic Places eligibility.	A cultural resource inventory was not completed for the new area of disturbance under AMD3.	Some disturbance under AMD3 has not been included in a cultural resource inventory.
Hazardous Substances	No hazardous substances, other than equipment fuel, lubricants and potentially blasting agents, would be expected to be needed on the site.	Same as AMD1	No difference
Reclamation Plans	<p>The following procedures would be followed in the reclamation of this exploration project:</p> <ol style="list-style-type: none"> 1. All available soil and soil material would be salvaged and stockpiled. 2. All drill fluids and cuttings would be retained onsite. After drilling is completed, drill fluids and cuttings would be removed, disposed of down the drill hole, or buried. 3. All drill holes would be abandoned according to ARM 17.24.106. 4. Collar casing would be removed, or cut off below ground level. 5. If an artesian aquifer is intercepted, the Montana DEQ would be notified within 24 hours, and the hole would be plugged at depth. 6. Any compacted surfaces would be ripped, or otherwise loosened, to allow for the successful re-establishment of native vegetation. 7. All refuse associated with exploration activities would be collected, removed, and disposed of in proper disposal sites. 8. Trench walls would be reclaimed to a maximum 3:1 slope. 8. Salvaged topsoil would be applied over disturbed areas. 9. Disturbed areas would be revegetated with a Montana DEQ-approved seed mixture. 10. The notification requirements for Montana DEQ would be fulfilled if a discharge occurs. 	<p>The following procedures would be followed in the reclamation of this exploration project:</p> <ol style="list-style-type: none"> 1. All available soil and soil material would be salvaged and stockpiled. 2. Any compacted surfaces would be ripped, or otherwise loosened, to allow for the successful re-establishment of native vegetation. 3. All refuse associated with exploration activities would be collected, removed, and disposed of in proper disposal sites. 4. Trench walls would be reclaimed to a maximum 3:1 slope. 5. Salvaged topsoil would be applied over disturbed areas. 6. Disturbed areas would be revegetated with a Montana DEQ-approved seed mixture. 7. The notification requirements for Montana DEQ would be fulfilled if a discharge occurs. 	AMD3 would not require reclamation of drilling disturbance.

Table 2. Further discussion of resources and disclosure of impacts based on differences in currently proposed work and work analyzed in EA-2020.

Resource	Further Resource Discussion, if required¹	Difference in potential impacts²
1. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE	No further discussion of this resource is required.	Direct and secondary impacts to the resource would be the same as those disclosed in EA-2020.
2. WATER QUALITY, QUANTITY, AND DISTRIBUTION	No further discussion of this resource is required.	Direct and secondary impacts to the resource would be the same as those disclosed in EA-2020.
3. AIR QUALITY	No further discussion of this resource is required.	Direct and secondary impacts to the resource would be the same as those disclosed in EA-2020.
4. VEGETATION COVER, QUANTITY AND QUALITY:	No further discussion of this resource is required.	Direct and secondary impacts to the resource would be the same as those disclosed in EA-2020.
5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:	AMD3 would include less acreage of disturbance and for shorter duration at a similar location as AMD1. The reduction in disturbance would result in a decrease to area wildlife impacts.	AMD3 would result in reduced impact to terrestrial, avian and aquatic life and habitats, the impact in either amendment would not be significant.
6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:	No further discussion of this resource is required.	Direct and secondary impacts to the resource would be the same as those disclosed in EA-2020.
7. HISTORICAL AND ARCHAEOLOGICAL SITES:	No further discussion of this resource is required.	Direct and secondary impacts to the resource would be the same as those disclosed in EA-2020.
8. AESTHETICS:	AMD3 would include less acreage of disturbance for shorter duration at a similar location as AMD1. The reduction in disturbance would result in a decrease to aesthetic impacts.	AMD3 would result in less aesthetic impact to surrounding area, the impact in either amendment would not be significant.
9. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:	No further discussion of this resource is required.	Direct and secondary impacts to the resource would be the same as those disclosed in EA-2020.
10. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES:	No further discussion of this resource is required.	Direct and secondary impacts to the resource would be the same as those disclosed in EA-2020.
11. HUMAN HEALTH AND SAFETY:	No further discussion of this resource is required.	Direct and secondary impacts to the resource would be the same as those disclosed in EA-2020.
12. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION:	No further discussion of this resource is required.	Direct and secondary impacts to the resource would be the same as those disclosed in EA-2020.
13. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:	No further discussion of this resource is required.	Direct and secondary impacts to the resource would be the same as those disclosed in EA-2020.
14. LOCAL AND STATE TAX BASE AND TAX REVENUES:	No further discussion of this resource is required.	Direct and secondary impacts to the resource would be the same as those disclosed in EA-2020.
15. DEMAND FOR GOVERNMENT SERVICES:	No further discussion of this resource is required.	Direct and secondary impacts to the resource would be the same as those disclosed in EA-2020.
16. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:	No further discussion of this resource is required.	Direct and secondary impacts to the resource would be the same as those disclosed in EA-2020.
17. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:	No further discussion of this resource is required.	Direct and secondary impacts to the resource would be the same as those disclosed in EA-2020.
18. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:	No further discussion of this resource is required.	Direct and secondary impacts to the resource would be the same as those disclosed in EA-2020.
19. SOCIAL STRUCTURES AND MORES:	No further discussion of this resource is required.	Direct and secondary impacts to the resource would be the same as those disclosed in EA-2020.
20. CULTURAL UNIQUENESS AND DIVERSITY:	No further discussion of this resource is required.	Direct and secondary impacts to the resource would be the same as those disclosed in EA-2020.

1. This column provides resource analysis beyond the analysis provided in EA-2020. Additional analysis may be provided if the existing condition of a resource has changed, the affected area has increased, decreased, or changed in location, the scope of the current proposed exploration activity may require additional analysis, or any other condition exists that may warrant additional analysis.

2. This column discloses different or additional direct or secondary impacts from those disclosed in EA-2020 that may result from the current proposed exploration activity.

PRIVATE PROPERTY IMPACTS:

Are we regulating the use of private property under a regulatory statute adopted pursuant to the police power of the state? (Property management, grants of financial assistance, and the exercise of the power of eminent domain are not within this category.) If not, no further analysis is required. Does the proposed regulatory action restrict the use of the regulated person's private property? If not, no further analysis is required. Does the agency have legal discretion to impose or not impose the proposed restriction or discretion as to how the restriction will be imposed? If not, no further analysis is required. If so, the agency must determine if there are alternatives that would reduce, minimize or eliminate the restriction on the use of private property, and analyze such alternatives.

If DEQ approves AMD3, any conditions of the exploration license are either required to comply with applicable requirements of the Metal Mine Reclamation Act (including administrative rules adopted under the Metal Mine Reclamation Act) or be included in the exploration license with the consent of the licensee. DEQ is not proposing to include in the exploration license any conditions that are not required under the Metal Mine Reclamation Act or to which Ash Grove has not consented. Therefore, DEQ is not required to determine if there are alternatives that would reduce, minimize or eliminate the restriction on the use of private property, and to analyze those alternatives.

OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:

Due to the nature of the proposed exploration activities, and the limited project duration, no further direct or secondary impacts would be anticipated from this project.

ALTERNATIVES CONSIDERED:

In addition to the proposed action, DEQ also considered the "no action" alternative. The "no action" alternative would deny the approval of AMD3. The applicant would still be approved to complete AMD1 and AMD2 and to conduct casual use-level activities. Any potential impacts that would be additionally authorized under AMD3 would not occur. DEQ does not consider the "no action" alternative to be appropriate because the applicant has demonstrated compliance with all applicable rules and regulations as required for approval. The no action alternative forms the baseline from which the impacts of the proposed action can be measured.

SCOPING:

Scoping for this proposed action consisted of internal and external efforts to identify substantive issues and/or concerns related to the proposed project.

External scoping efforts included queries to the following websites/ databases/ personnel:

- Montana State Historic Preservation Office
- Montana Department of Natural Resource and Conservation
- Montana Department of Environmental Quality
- Montana Department of Transportation
- Jefferson County
- Lewis and Clark County
- US Geological Society – Stream Stats
- Montana Natural Heritage Program
- Montana Cadastral Mapping Program

- Montana Groundwater Information Center
- Montana Bureau of Mines and Geology
- United States Department of Interior Bureau of Land Management
- United States Forest Service

PUBLIC COMMENT PERIOD AND RESPONSE:

Public comment on the draft EA for this proposed action included a 14-day period which began March 24, 2021 and ended April 7, 2021. Public were notified of the opportunity to comment on the draft EA through a targeted postcard mailer to landowners within a 1-mile buffer of the project area and with a posting on the DEQ website. All substantive public comments received were considered before DEQ issued the final EA.

One public comments was received during the public comment period, and one was received after the period closed. A summary of the comments and DEQ's response are included here.

1.) Scott MacDonald

Direct Quote: As a resident in Clark Creek Loop, we want to keep visual impact to a minimum including any road construction. We would also like to keep traffic on the Jefferson Creek Road to a minimum. As of today there are a constant stream of quarry truck running from this Clark Gulch Quarry through Montana City to Ash Grove processing facility. This causes allot of dust (which does contain some asbestos) and increased traffic risk to residents all around Montana City. I oppose any further expansion of activities by Ash Grove as their impact is already being felt and impacting our property values.

DEQ Response:

Thank you for your comment. Impacts to the unique character of an area are addressed in Section 20 of EA-2020 (Cultural Uniqueness and Diversity). Additionally, the changing landscape to a more residential area was addressed throughout EA-2020.

Private property values are addressed in Section 21 of EA-2020 (Private Property Impacts) and on page 9 of this EA (Private Property Impacts). Noise is addressed in Section 8 of EA-2020 (Aesthetics). Dust is addressed in Section 3 of EA-2020 (Air Quality). Further, dust is currently being monitored, and has been since 2013, for asbestos. To date, no asbestos has been identified.

This plan proposes to complete road improvements to an existing road that parallels Jackson Creek Road. AMD3 to Exploration License #00684 would result is less disturbance to the land than what AMD1 would have authorized, and would allow mine vehicles to stay off of Jackson Creek road, resulting in a decrease in aesthetic impacts and a safer driving experience for users of Jackson Creek road.

2.) Richard O'Conner

Summary of Concerns:

- A. Commentor is concerned about future expansion of the Ash Grove Operating Permit as a result of this exploration project.
- B. Commentor is concerned about groundwater quality issues as a result of a drilling program. Commentor asked for clarification of what the drilling fluids could consist

of.

- C. Commentor is concerned about impacts to the local elk population and asked that no work begin before April of each year.
- D. Commentor expressed concern about blasting impacts to their property and asked if Ash Grove could limit blast yields.
- E. Commentor expressed concern about dust and noise control measures.

DEQ Response:

Thank you for your comment.

A. If approved, AMD3 to Exploration License #00684 would grant Ash Grove the approval to construct road improvements along a road on their private property that parallels Jackson Creek Road. If Ash Grove were to submit another exploration license application to conduct additional exploration, or an operating permit application, DEQ would not be committed to issuing those authorizations. DEQ would conduct an environmental review for any subsequent authorizations sought by the applicant that require environmental review. DEQ would make a permitting decision based on the criteria set forth in the Metals Mine Reclamation Act.

B. If approved, this project would grant Ash Grove the approval to construct road improvements along a road on their private property that parallels Jackson Creek Road. Drilling would not be a part of AMD3 to Exploration License #00684. Drilling 4 holes was previously approved under AMD1 to Exploration License #00684 by DEQ. The operator would be required to be in compliance with the Montana Water Quality Act, Title 75, chapter 5, et seq., MCA, and would not be allowed to contaminate groundwater.

C. Impacts to the local elk population were disclosed in the EA for AMD1 to Exploration License #00684. Impacts to elk would not be expected to be different than those disclosed in EA-2020. If approved, the operation would occur after April 23, 2021.

D. If approved, AMD3 to Exploration License #00684 would grant Ash Grove the approval to construct road improvements along a road on their private property that parallels Jackson Creek Road. Blasting would not be a part of this project.

E. Dust is addressed in Section 3 of the AMD-2020 (Air Quality). Further, dust is currently being monitored, and has been since 2013, for asbestos. To date, no asbestos has been identified.

OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION:

The proposed project would be fully located on private land owned by Ash Grove. All applicable state and federal rules must be adhered to, which, at some level, may also include other state, federal, or tribal agency jurisdiction.

CUMULATIVE IMPACTS:

Cumulative impacts are the collective impacts on the human environment within the borders of Montana of the Proposed Action when considered in conjunction with other past and present actions related to the Proposed Action by location and generic type. Related future actions must also be considered when these actions are under concurrent consideration by any state agency through preimpact statement studies, separate impact statement evaluation, or permit

processing procedures.

This environmental review analyzes the proposed project submitted by the applicant as well as prior approved overlapping projects under the applicant's exploration license. Any impacts from the project would be temporary, and would be fully reclaimed at the conclusion of the project and thus, would not contribute to the long-term cumulative effects of mining in the area. Final reclamation would be required within 2 years of completion of the project unless the project disturbance were incorporated into an Operating Permit. DEQ identified other mining or exploration projects in the area.

DEQ-regulated projects located near the proposed project site include:

- AMD3 would be within the same area as previously approved AMD1 and AMD2 under the same exploration license.
- One Hard Rock Mining Operating Permit site is located adjacent to the project site and is operated by the applicant.
- Two Open Cut (sand/gravel) Mine site are located within 2 miles of the project area.

No other DNRC, BLM, or USFS regulated projects were identified in the project vicinity.

DEQ considered all impacts related to this project and secondary impacts that may result. Cumulative impacts related to this project are identified in the Table 2. Cumulative impacts related to this project would not be significant.

NEED FOR FURTHER ANALYSIS AND SIGNIFICANCE OF POTENTIAL IMPACTS

When determining whether the preparation of an environmental impact statement is needed, DEQ is required to consider the seven significance criteria set forth in the Administrative Rules of Montana (ARM) 17.4.608, which are as follows:

1. The severity, duration, geographic extent, and frequency of the occurrence of the impact;
2. The probability that the impact will occur if the proposed action occurs; or conversely, reasonable assurance in keeping with the potential severity of an impact that the impact will not occur;
3. Growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative impacts;
4. The quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources and values;
5. The importance to the state and to society of each environmental resource or value that would be affected;
6. Any precedent that would be set as a result of an impact of the proposed action that would commit the department to future actions with significant impacts or a decision in principle about such future actions; and
7. Potential conflict with local, state, or federal laws, requirements, or formal plans.

The severity, duration, geographic extent and frequency of the occurrence of the impacts associated with the proposed exploration activities would be limited. In AMD3, the applicant is proposing to improve 3,670 feet of existing road. The road improvements in AMD3 would be conducted in conjunction with work approved under AMD1 and AMD2, which includes constructing or improving new and existing roads to access the shale-clay exploration trench, excavate an up to 10,000-ton bulk sample of shale-clay, drill 4 exploration holes, and construct a 100-foot-by-100-foot stockpile/laydown area. Under AMD3, the total measurement of potentially disturbed land would be about 2.1 acres of surface area in addition to the 4.3 acres of disturbance approved in AMD1 and AMD2. Project activity would be expected to be completed in approximately one year and would be required to be reclaimed within 2 years after completion or abandonment of exploration activities unless the project disturbance is incorporated into an Operating Permit.

DEQ has not identified any significant impacts associated with the proposed exploration activities for any environmental resource. Approving AMD3 to Exploration License #00648 does not set any precedent that commits DEQ to future actions with significant impacts or a decision in principle about such future actions. If the applicant submits another exploration license application to conduct additional exploration, or an operating permit application, DEQ is not committed to issuing those authorizations. DEQ would conduct an environmental review for any subsequent authorizations sought by the applicant that require environmental review. DEQ would make a permitting decision based on the criteria set forth in the Metals Mine Reclamation Act. Approving AMD3 to Exploration License #00648 does not set a precedent for DEQ's review of other applications for exploration licenses, including the level of environmental review. The level of environmental review decision is made based on a case-specific consideration of the criteria set forth in ARM 17.4.608.

Finally, DEQ does not believe that the proposed exploration activities by the applicant have any growth-inducing or growth-inhibiting aspects or conflict with any local, state, or federal laws, requirements, or formal plans.

Based on a consideration of the criteria set forth in ARM 17.4.608, the proposed exploration activities are not predicted to significantly impact the quality of the human environment. Therefore, at this time, preparation of an environmental assessment is determined to be the appropriate level of environmental review under the Montana Environmental Protection Act.

Environmental Assessment and Significance Determination Prepared By:



Jacob Mohrmann, P.G.

Environmental Science Specialist –Exploration Program

Appendix A. EA-2020 prepared for AMD1

**Ash Grove Cement Company
Clark Gulch Clay Exploration Project
Montana City, MT
AMD1
FINAL
Environmental Assessment**

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**Montana Department of Environmental Quality
Air, Energy, & Mining Division
Hard Rock Mining Bureau
ENVIRONMENTAL ASSESSMENT**

COMPANY NAME: Ash Grove Cement Co.
EA DATE: Finalized 02/10/2020
PROJECT: Clark Gulch Shale Clay Exploration Project
LICENSE: #00684
AMENDMENT: AMD1
LOCATION: 46.541206°, -111.981765° **COUNTY:** Jefferson
PROPERTY OWNERSHIP: FEDERAL ___ STATE ___ PRIVATE X

COMPLIANCE WITH THE MONTANA ENVIRONMENTAL POLICY ACT

Under the Montana Environmental Policy Act (MEPA), Montana agencies are required to prepare an environmental review for state actions that may have an impact on the human environment. The proposed action is considered to be a state action that may have an impact on the human environment and, therefore, the Department of Environmental Quality (DEQ) must prepare an environmental review. This environmental assessment (EA) will examine the proposed action and alternatives to the proposed action, and disclose potential impacts that may result from the proposed and alternative actions. DEQ will determine the need for additional environmental review based on consideration of the criteria set forth in Administrative Rules of Montana (ARM) 17.4.608.

PROPOSED ACTION

DEQ would approve an amendment (AMD1) to Exploration License #00684 (license) held by Ash Grove Cement Company (Ash Grove). The original license was issued on June 10, 2008 after DEQ determined that Ash Grove had met the criteria set forth in Montana Code Annotated (MCA) 82-4-332. Since that date, Ash Grove has annually renewed their license with DEQ.

PURPOSE AND NEED FOR PROPOSED ACTION

DEQ's purpose and need in conducting the environmental review is to act upon Ash Grove's application to conduct mineral exploration in compliance with the Metal Mine Reclamation Act (MMRA). On October 9, 2019, Ash Grove submitted a complete application for an amendment to the license (Appendix A). Pursuant to 82-4-332 (2), MCA, the application was:

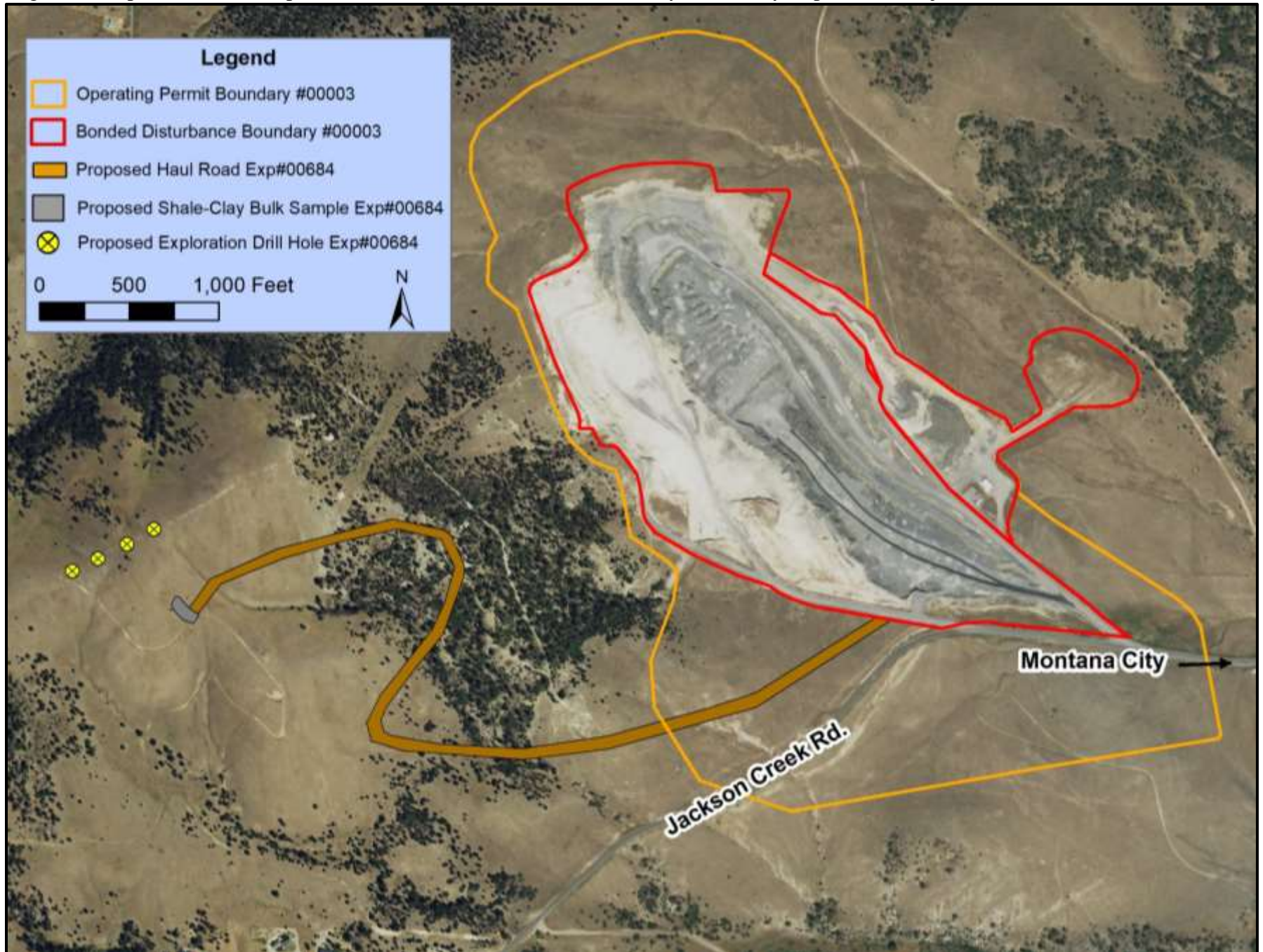
1. Submitted in writing;
2. Included a map of sufficient detail to determine whether significant environmental problems would be encountered;
3. Stated the type of prospecting and excavation techniques that would be employed.

Table 1: Summary of activities proposed in AMD1.

Summary of Activities Proposed in AMD1	
General Overview	Ash Grove has proposed to extract a 10,000-ton bulk sample from a single trench for chemical testing near Clark Gulch in Jefferson County, MT. In addition to the bulk sample, Ash Grove would construct a haul road to access the test trench to access the trench area and to complete 4 core drill holes near the test trench area.
Dimensions and Quantities of Disturbance Proposed in AMD1	
Drill pads (#)	0
Drill pad dimensions (xy)	n/a
Sumps (#)	0
Sump dimensions (xyz)	n/a
Trench dimension (xyz)	1 trench measuring 195'x105'x10'
New road (xy)	5,600'x40' with up to 20' of shoulder on each side
Overland travel (xy)	50'
Laydown area (xy)	n/a
Total surface disturbance	11.2 acres
Drill holes (#)	4
Maximum hole depth	100 feet
Total drilling footage	400 feet
Proposed Actions in AMD1	
Duration and timing	<ul style="list-style-type: none"> - Construction would commence after approval of AMD1. - The project would last for up to 1 year. - Work would occur during weekday shifts which would generally occur between 7:00a.m. and 3:30 p.m. Tuesdays through Saturdays. Some work may occur outside of those hours and days. - Final reclamation of all surface disturbances would be required to be completed no later than 2 years following conclusion of project, unless the disturbance is incorporated into an Operating Permit.
Equipment	<ul style="list-style-type: none"> - 988 Wheel Loader - CAT 769 and/or D400 End Dump Truck - D8R Dozer - Sandvik D245 Drill if blasting were required - Contractor drill for exploratory holes - Water Truck for dust control - Portable light plant with downfacing lights - Miscellaneous light vehicles (i.e. pickups and SUVs)
Location and Analysis Area	<ul style="list-style-type: none"> - The proposed project would be located immediately west of the Ash Grove Clark Gulch mine site, which is operated under Operating Permit #0003. - The site would be located about 1 mile west of the town of Montana City, MT. - The area being analyzed as part of this environmental review includes the immediate project area (Figure 1) as well as immediate downstream water sources and neighboring lands surrounding the analysis area as reasonably appropriate for the impacts being considered.
Personnel Onsite	Onsite personnel would vary per task, but generally would include 1-2 equipment operators, 1 truck driver, 1 quarry superintendent, and 1 driller/powderman.
Structures	There would be no new structures other than a temporary portable toilet
Project Water Source	Water would be used for dust suppression and would be sourced from the Ash Grove Operating Permit #0003 Clark Gulch Quarry plant water supply and hauled, and applied, by the plant water truck.

Supplemental Lighting	The need for supplemental lighting would not be anticipated. However, if needed, supplemental lighting would include a portable light plant with down facing lights.
Air Quality	<ul style="list-style-type: none"> - Dust suppression would be provided by the plant's water truck. - Original equipment manufacturer (OEM) exhaust controls would be provided on equipment used.
Water Quality	The proposed project area would be located approximately 0.6 miles northwest of an unnamed tributary to Prickly Pear Creek. Stormwater would be managed under the Ash Grove plant's current authorization #MT000523 under the Montana Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Industrial Activity.
Erosion Control and Sediment Transport	Erosion control would be accomplished using a variety of Best Management Practices (BMP) including but not limited to: non-draining excavations, containment, diversion and control of surface run off; flow attenuation, revegetation, earthen berms, silt fences, and gravel packs. All BMPs would be identified in the Ash Grove plant's Storm Water Pollution Prevention Plan.
Solid Waste	<ul style="list-style-type: none"> - Topsoil would be salvaged and saved for reclamation. - Equipment maintenance would be performed in Ash Grove's existing facilities. - Garbage cans would be used on site to collect miscellaneous wastes and would be disposed of with Ash Grove's current Operating Permit wastes.
Cultural Resources	A cultural resource inventory of the proposed project area has been completed. None of the resources identified during the inventory qualify for National Register of Historic Places eligibility.
Hazardous Substances	No hazardous substances, other than equipment fuel, lubricants and potentially blasting agents, would be expected to be needed on the site.
Reclamation Plans	<p>The following procedures would be followed in the reclamation of this exploration project:</p> <ol style="list-style-type: none"> 1. All available soil and soil material would be salvaged and stockpiled. 2. All drill fluids and cuttings would be retained onsite. After drilling is completed, drill fluids and cuttings would be removed, disposed of down the drill hole, or buried. 3. All drill holes would be abandoned according to ARM 17.24.106. 4. Collar casing would be removed, or cut off below ground level. 5. If an artesian aquifer is intercepted, the Montana DEQ would be notified within 24 hours, and the hole would be plugged at depth. 6. Any compacted surfaces would be ripped, or otherwise loosened, to allow for the successful re-establishment of native vegetation. 7. All refuse associated with exploration activities would be collected, removed, and disposed of in proper disposal sites. 8. Trench walls would be reclaimed to a maximum 3:1 slope. 8. Salvaged topsoil would be applied over disturbed areas. 9. Disturbed areas would be revegetated with a Montana DEQ-approved seed mixture. 10. The notification requirements for Montana DEQ would be fulfilled if a discharge occurs.

Figure 1: Map of AMD1 to Exploration License #00684 Clark Gulch Clay Shale Clay Exploration Project Site.



SUMMARY OF POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS:

The impact analysis will identify and estimate whether the impacts are direct or secondary impacts. Direct impacts occur at the same time and place as the action that causes the impact. Secondary impacts are a further impact to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action ((ARM) 17.4.603(18)). Where impacts would occur, the impacts analysis will also estimate the duration and intensity of the impact. The duration is quantified as follows:

- Short-term: Short-term impacts are defined as those impacts that would not last longer than the life of the project, including final reclamation.
- Long-term: Long-term impacts are impacts that would remain or occur following project completion.

The intensity of the impacts is measured using the following:

- No impact: There would be no change from current conditions.
- Negligible: An adverse or beneficial effect would occur but would be at the lowest levels of detection.
- Minor: The effect would be noticeable but would be relatively small and would not affect the function or integrity of the resource.
- Moderate: The effect would be easily identifiable and would change the function or integrity of the resource.
- Major: The effect would alter the resource.

1. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE

Are soils present, which are fragile, erosive, susceptible to compaction, or unstable? Are there unusual or unstable geologic features? Are there special reclamation considerations?

The area of proposed exploration would be located near the active Ash Grove Clark Gulch Quarry mine site which is operated under Operating Permit #0003 by the applicant. The exploration project would target shale clay in the Morrison Formation about one mile to the west of the active mine site. Although the project area was not subject to historic mining, it is within the historic Montana City Mining District and has been explored by Ash Grove previously. Previous exploration disturbance by Ash Grove has been fully reclaimed.

Ash Grove would salvage topsoil for use in reclamation. Erosion control would be accomplished using a variety of BMPs including but not limited to: non-draining excavations, containment, diversion and control of surface run off, flow attenuation, revegetation, earthen berms, silt fences, and gravel packs. All BMPs would be identified in the Ash Grove Operating Permit #00003 mine site's Storm Water Pollution Prevention Plan.

Direct Impacts:

No unusual or unstable geologic features are present, and no fragile or particularly erosive or unstable soils are present. The exploration project could result in erosion of some disturbed soil (Table 2).

Surface soil disturbance could allow for the establishment of weeds. Weed control is a condition of an exploration license and Ash Grove would be required to control the spread of noxious weeds. Noxious weeds are further addressed in "Section 4. Vegetation Cover, Quantity and Quality" (Table 2). Impacts to the geology, soil quality, stability and moisture would be short-term and minor and therefore would not be significant (Table 2).

Secondary Impacts:

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to the geology and soil quality, stability and moisture would be expected.

2. WATER QUALITY, QUANTITY, AND DISTRIBUTION

Are important surface or groundwater resources present? Is there potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality?

The project area receives an average of 14.22 inches of precipitation annually (StreamStats, 2019). The project area would be located approximately 0.6 miles northwest of an unnamed tributary to Prickly Pear Creek. Stormwater would be managed under the Ash Grove mine site's current authorization #MT000523 under the Montana Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Industrial Activity.

The National Wetland Inventory identified several small wetlands associated with the unnamed tributary to Prickly Pear Creek near the project area. No wetlands were identified in the immediate project area. No land disturbance or work is proposed within wetland or riparian areas.

A search of the Groundwater Information Center (GWIC) indicated that 49 wells are located within the same sections as the proposed project. However, no wells are completed on land owned by Ash Grove. The nearest wells would be at least 1,000 feet from the proposed project.

Project water would be sourced from the Ash Grove Operating Permit #00003 permitted mine site located adjacent to the project area.

Direct Impacts:

Although storm water associated with the project would be managed and permitted under the Montana Pollutant Discharge Elimination System, any surface water that may leave the site during a heavy storm event could carry sediment from disturbed soils (Table 2). The nearest surface water would be a small pond located about 1,000 feet down gradient from the project area. The ephemeral unnamed tributary to Prickly Pear Creek is located about 1,000 feet down gradient from the project area in the same area as the aforementioned pond. Impacts to surface water would be short-term and minor and would not be significant as a result of this project.

The project area would be located at an elevation approximately 500 feet above the nearby Clark Gulch Quarry floor (Google Earth) operated by Ash Grove under Operating Permit #00003. The proposed exploration trench depth would be 10 feet and the proposed drilling depth would be 100 feet; as such, contact with groundwater would not be expected. Impacts to surface or groundwater resulting from this project would not be expected.

All drill holes would be plugged according to the requirements of ARM 17.24.106, which requires plugging with bentonite or similar compound from the bottom of the hole to within five to ten feet of the surface, and with cement from the top of the bentonite to the surface if specified conditions are encountered. No impacts to groundwater would be expected as a result of this project.

Secondary Impacts:

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to water quality, quantity and distribution would be expected.

3. AIR QUALITY:

Will pollutants or particulate be produced? Is the project influenced by air quality regulations or zones (Class I airshed)?

Direct Impacts:

Dust particulate would be produced or become airborne during road construction, bulk sample trenching, travel along existing roads to and from the trench, and exploration drilling (Table 2). Dust suppression would be provided by the Ash Grove mine site's water truck. OEM exhaust controls would be utilized on mechanized equipment.

Mechanized equipment would produce some exhaust fumes. Dust would also be produced while driving on/off site (Table 2). The operator would be expected to maintain compliance with Montana's law regarding the need to take reasonable precautions to control airborne particulate matter.

Impacts to air quality would be short-term and minor and therefore would not be significant as a result of this project (Table 2).

Secondary Impacts:

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to air quality would be expected.

4. VEGETATION COVER, QUANTITY AND QUALITY:

Will vegetative communities be significantly impacted? Are any rare plants or cover types present?

Land cover in the project area generally includes Rocky Mountain Lower Montane, Foothill, and Valley Grassland; Big Sagebrush Steppe; Montane Sagebrush Steppe; and Rocky Mountain Ponderosa Pine Woodland and Savanna (MTNHP, 2019). A search of the MTNHP identified potential habitat for 12 vascular plant species of concern (SOC), three of which are also US Forest Service (USFS) sensitive species (Beaked Spikerush, Flatleaf Bladderwort, and Missoula Phlox). Lesser Rushy Milkvetch, another species of concern, was observed in 1992 about 0.8 miles to the northwest of the project area, but does not have identified habitat within the immediate project area.

Spotted Knapweed and Dalmation Toadflax, both listed noxious weeds, have been identified in the immediate project area.

Direct Impacts:

Land disturbance at the site may result in propagation of noxious weeds (Table 2). Any surface disturbances would be reclaimed and seeded with an appropriate seed mix. If AMD1 were approved, weed control during and after exploration activities would be a requirement. The project area would be subject to the 2017 Montana Noxious Weed Management Plan and the 2016 Jefferson County Weed Management Plan. Impacts to vegetative cover, quantity or quality resulting from this project would be short-term and minor and would therefore not be significant (Table 2).

Secondary Impacts:

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to vegetation cover, quantity and quality would be expected.

5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:

Is there substantial use of the area by important wildlife, birds or fish?

Common wildlife such as elk, mule deer, bobcats, and mountain lions may utilize the project area and may be temporarily displaced while machinery and equipment are operating. Several DEQ Hard Rock Mining Bureau inspections in the Clark Gulch Quarry area have noted a resident elk population in and around the proposed project area.

In a public comment from Montana Fish Wildlife and Parks (FWP) (Appendix B), FWP noted that the proposed project area would be located within elk winter range. According to FWP, approximately 100-300 elk may use the site during the winter. FWP has documented elk use within 400 ft of the existing Clark Gulch Quarry mine site and associated roads, and has documented elk use within 150 feet of the proposed project area. FWP has documented elk use of the area from at least 2002 through winter 2018-2019. In January 2019, during a survey conducted by FWP, 295 elk were observed within 0.75-1.5 miles of the existing Clark Gulch Quarry mine site, and within 0.25-1 miles of the proposed project area.

Direct Impacts:

Impacts to terrestrial, avian and aquatic life and habitats would potentially include temporary displacement of animals, although habitat found within the project area is common throughout the larger ecosystem (Table 2). Any displaced animals could find other suitable habitat nearby and return to the project area shortly after the project conclusion. Although some elk and other wildlife habitat may be impacted until the project disturbance is reclaimed, as FWP noted in their public comment, elk have been documented to currently use land within 400 feet of the existing active Clark Gulch Quarry mine site. Ample room exists within the remainder of Ash Grove's undeveloped property for the elk to relocate if operations at the proposed exploration site temporarily displace the animals. Impacts to terrestrial, avian, amphibious, and aquatic life and habitat would be short term and minor and would not be significant.

Secondary Impacts:

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to terrestrial, avian and aquatic life and habitats stimulated or induced by the direct impacts analyzed above would be expected.

6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:

Are any federally listed threatened or endangered species or identified habitat present? Any wetlands? Species of special concern?

A search of the MTNHP identified potential habitat for 73 mammal, reptile, invertebrate, bird, and amphibian SOC, potential SOC, sensitive, or threatened species. Habitat for these species is common and not unique to the project area. Spotted Bat, a SOC, is likely to occur in or near the project area. Eastern Bluebird, a potential SOC, was observed in 2007 about 0.85 miles to the southeast of the project area.

The MTNHP identified potential habitat within the project area for Grizzly Bear, Canada Lynx, Black-footed Ferret, and Wolverine, all federally-listed proposed, threatened, or endangered species. There are wetlands located about 1,000 feet down gradient of the project area, however there are no wetlands located within the immediate project area.

Direct Impacts:

The project area is located within a developing rural-urban interface. While potential habitat for threatened and endangered species may exist, the surrounding residential neighborhoods would diminish habitat potential within the project area.

Impacts to unique, endangered, fragile or limited environmental resources would potentially include temporary displacement of birds or mammals (Table 2), although habitat within the project area is common throughout the larger ecosystem and any animals displaced could find other nearby suitable habitat and return to the project area shortly after the project conclusion. Impacts to unique, endangered, fragile or limited environmental resources would be short-term and minor and would not be significant.

Secondary Impacts:

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to unique, endangered, fragile, or limited environmental resources that could be stimulated or induced by the direct impacts analyzed above would be expected.

7. HISTORICAL AND ARCHAEOLOGICAL SITES:

Are any historical, archaeological or paleontological resources present?

The Montana Cultural Resource Database under the State Historic Preservation Office indicates that inventoried areas are present and that historical sites are present within the greater project area. The proposed exploration area is just outside of the Montana City Archeological District. The Montana City Archeological District encompasses approximately 2,300 acres on both sides of Interstate 15 and contains 31 separate archaeological sites. Site types are generally described as lithic quarries, stone features, lithic scatters, and open occupation sites. Ash Grove contracted Tetra Tech in November 2019, to complete a cultural resource inventory at the project site. The inventory identified one archaeological site and three additional isolated finds. The Hope Lode & Mills mine (24JF2100) is not eligible for listing on National Register of Historic Places (NRHP). The three isolated finds are not eligible for consideration for the NRHP. The proposed project would have no effect on Historic Properties, thus clearance is recommended for the project.

Direct Impacts:

The proposed exploration activities would occur on private land owned by Ash Grove. Some non-qualifying resources may be impacted as part of this project, the impact would be long-term and minor and would not be considered significant or adverse (Table 2).

Secondary Impacts:

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to historical and archaeological sites would be expected.

8. AESTHETICS:

Is the project on a prominent topographic feature? Will it be visible from populated or scenic areas? Will there be excessive noise or light?

The proposed exploration activities would occur on private land owned by Ash Grove. The project area would be located near a topographic high point and would be visible to nearby populations (Figure 2). Although the daily work schedule would consist of work occurring during the day shift (Table 1), some operations could take place during evening/dusk hours and may require a portable

light plant with down facing lights to be used. Reclamation would be required to be completed within two years of the end of the proposed project unless the project disturbance were incorporated into an Operating Permit. If limited blasting would be determined to be necessary, associated noise may be heard by nearby receptors. If required, any blasting would be preceded by the sound of a horn.

Direct Impacts:

The proposed project would likely be visible to the surrounding population and to viewers located at observation points that are unobstructed by topography or forested vegetation (Table 2). The bulk sample trench location and drill holes would be located below a topographic high point, and would not disrupt the ridge/skyline interface. If limited blasting would be determined to be necessary, associated noise may be heard by nearby receptors (Table 2). Aesthetic impacts from exploration activities would not be excessive to receptors in the area. Final reclamation would be required within 2 years of completion of the project unless the project disturbance were incorporated into an Operating Permit. Impacts to aesthetics would be short-term and moderate and therefore would not be significant (Table 2).

Secondary Impacts:

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to area aesthetics would be expected as a result of the proposed work.



Figure 2: Viewshed Analysis (Google Earth, 2019). Pin represents highest topographic proposed disturbance, which represents the maximum extent of visibility. Green shading represents land that may view project site if a viewer is located at an observation point that is unobstructed by topography or forested vegetation

9. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:

Will the project use resources that are limited in the area? Are there other activities nearby that will affect the project?

The proposed project would use water sourced at the existing mine site operated by Ash Grove under Operating Permit #00003. No other local resources would be used.

Direct Impacts:

Any impacts on the demand on environmental resources of land, water, air or energy would be short-term and minor and would therefore not be significant as a result of this project.

Secondary Impacts:

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated or induced by, or otherwise result from a direct impact of the action. No secondary impacts to environmental resources of land, water, air or energy would be expected.

10. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES:

Are there other activities nearby that will affect the project?

DEQ searched the following websites or databases for nearby activities that may affect the project, however no other projects were identified:

- Montana Department of Natural Resource and Conservation
- Montana Department of Environmental Quality
- Montana Department of Transportation
- Jefferson County
- Lewis and Clark County
- United States Department of Interior Bureau of Land Management
- United States Forest Service

Direct Impacts:

Impacts on other environmental resources are not likely to occur as a result of this project.

Secondary Impacts:

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated or induced by, or otherwise result from a direct impact of the action. No secondary impacts to other environmental resources would be expected as a result of the proposed work.

11. HUMAN HEALTH AND SAFETY:

Will this project add to health and safety risks in the area?

The applicant would be required to adhere to all applicable state and federal safety laws. Industrial work such as the work proposed by the applicant is inherently dangerous. The Occupational Safety and Health Administration (OSHA) has developed rules and guidelines to reduce the risks associated with this type of labor. Few, if any, members of the public would be in the general project proximity during exploration operations.

Direct Impacts:

Impacts to human health and safety would be short-term and minor and would not be significant as a result of this project.

Secondary Impacts:

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated or induced by, or otherwise result from a direct impact of the action. No secondary impacts to human health and safety would be expected as a result of the proposed work.

12. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION:

Will the project add to or alter these activities?

Direct Impacts:

As noted in the cumulative impacts analysis below, this project would add to the impacts of mining in the greater project area, however all disturbance related to this project would be reclaimed at the conclusion of the project. Final reclamation would be required within 2 years of completion of the project unless the project disturbance were incorporated into an Operating Permit. Impacts on the industrial, commercial, and agricultural activities and production in the area would be minor and short-term, and would not be significant.

Secondary Impacts:

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated or induced by, or otherwise result from a direct impact of the action. No secondary impacts to industrial, commercial and agricultural activities and production would be expected as a result of the proposed work.

13. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:

Will the project create, move or eliminate jobs? If so, estimated number.

Ash Grove employs approximately 80 workers throughout the Montana City area. Of those, approximately 70 would be either directly or indirectly involved with this exploration project (Ash Grove statement, 2019).

Direct Impacts:

Significant positive or negative impacts on quantity and distribution of employment would not likely result from this project. The project plan calls for several limited-duration contracted and otherwise employed people at the site. No lasting positive or negative impacts to employment would be expected from this project.

Secondary Impacts:

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to quantity and distribution of employment would be expected as a result of the proposed work.

14. LOCAL AND STATE TAX BASE AND TAX REVENUES:

Will the project create or eliminate tax revenue?

Ash Grove listed a payroll of approximately \$8.6 Million and paid approximately \$682,000 in local taxes in 2018 (Ash Grove statement, 2019).

Direct Impacts:

Some positive, yet limited, benefit to the local and state economy could result from this project. However, due to the nature of the exploration project, minimal tax revenue from income or expenses would be expected from this project. The impact to local and state tax base and tax revenue would be short-term and negligible and would not be significant.

Secondary Impacts:

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. Minor beneficial secondary impacts to local and state tax base and tax revenues would be expected as a result of the proposed work.

15. DEMAND FOR GOVERNMENT SERVICES:

Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc.) be needed?

Jackson Creek Road (a Jefferson County maintained paved road) is located just to the south of the project location. However, all traffic related to the project would be confined to property owned by Ash Grove if the new haul road were constructed. Montana City School (K-8) is located approximately 1.5 miles to the east of the project area. Fire protection is provided by the Montana City Volunteer Fire Department and is located about 1.2 miles east of the project area. The Jefferson County Sheriff's Department provides law enforcement presence throughout Montana City, including Jackson Creek Road. Emergency Medical Services would be based at St. Peters Hospital located approximately 5 miles to the north of the project area in Helena, MT.

Direct Impacts:

The project would be located on private land owned by Ash Grove and would be adjacent to the existing mine site. No offsite traffic would be necessary. Impacts would not be expected on the demand for government services. All operations would be subject to local, seasonal restrictions as they apply.

Secondary Impacts:

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to the demand for government would be expected as a result of the proposed work.

16. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:

Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?

The proposed exploration activities would occur entirely on private land owned by Ash Grove. The project area would be subject to the 2017 Montana Noxious Weed Management Plan and the 2016 Jefferson County Noxious Weed Management Plan. The project area is zoned in Jefferson County as "Basic Resources", where "mining" is a permitted use.

Direct Impacts:

DEQ is not aware of any other locally-adopted environmental plans or goals that would impact this proposed project or the project area. Impacts from or to locally-adopted environmental plans and goals would not be expected as a result of this project.

Secondary Impacts:

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to the locally-adopted environmental plans and goals would be expected as a result of the proposed work.

17. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS

ACTIVITIES:

Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational potential within the tract?

The proposed exploration activities would occur entirely on private land owned by Ash Grove, with no access to public recreational opportunities. Bureau of Land Management land and Helena-Lewis and Clark National Forest land are located approximately three and five miles west of the project area respectively. Jackson Creek Road provides access to BLM managed land. However, it does not provide access to the National Forest boundary. There are no designated wilderness or recreational areas in the vicinity of the project area.

Direct Impacts:

Impact to the access or quality of recreational and wilderness activities would not be expected to result from the project.

Secondary Impacts:

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to access and quality of recreational and wilderness activities would be expected as a result of the proposed work.

18. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:

Will the project add to the population and require additional housing?

Montana City is an unincorporated community in Jefferson County, Montana. The population was 2,715 at the 2010 census. The project area is within the peri-urban landscape or urban transition area of Helena, Montana. As noted above in “Section 13. Quantity and Distribution of Employment”, the project would not be expected to add to or decrease the local Montana City population or company employment of Ash Grove.

Direct Impacts:

Due to the short-term project duration and the temporary nature of the activity, no impact to population density and housing would be expected from this project.

Secondary Impacts:

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the

human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to density and distribution of population and housing would be expected as a result of the proposed work.

19. SOCIAL STRUCTURES AND MORES:

Is some disruption of native or traditional lifestyles or communities possible?

Direct Impacts:

The proposed exploration activities would occur entirely on private land owned by Ash Grove. Due to the low population density nearby, the short-term project duration, no disruption of native or traditional lifestyles would be expected.

Secondary Impacts:

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated or induced by, or otherwise result from a direct impact of the action. No secondary impacts to social structures and mores would not be expected as a result of the proposed work.

20. CULTURAL UNIQUENESS AND DIVERSITY:

Will the action cause a shift in some unique quality of the area?

Direct Impacts:

The proposed project is adjacent to the applicant's existing mine site and the proposed project would be a similar activity as that of the adjacent mine site. Due to the short-term project duration and the temporary nature of the activity, no impacts to cultural uniqueness and diversity would be expected from this project.

Secondary Impacts:

Based on the definition in ARM 17.4.603(18), secondary impacts are further impacts to the human environment that may be stimulated, or induced by, or otherwise result from a direct impact of the action. No secondary impacts to cultural uniqueness and diversity would be expected as a result of the proposed work.

21. PRIVATE PROPERTY IMPACTS:

Are we regulating the use of private property under a regulatory statute adopted pursuant to the police power of the state? (Property management, grants of financial assistance, and the exercise of the power of eminent domain are not within this category.) If not, no further analysis is required. Does the proposed regulatory action restrict the use of the regulated person's private property? If not, no further analysis is required. Does the agency have legal discretion to impose or not impose the proposed restriction or discretion as to how the restriction will be imposed? If not, no further analysis is required. If so, the agency must determine if there are alternatives that would reduce, minimize or eliminate the restriction on the use of private property, and analyze such alternatives.

The proposed project would take place on private land owned by the applicant. DEQ's approval of AMD1 would affect the real property of nearby private landowners. DEQ has determined, however, that the license conditions are reasonably necessary to ensure compliance with applicable requirements

under the Metal Mine Reclamation Act and demonstrate compliance with those requirements, or have been agreed to by the applicant. Therefore, DEQ's approval of AMD1 would not have private property-taking or damaging implications.

22. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:

Due to the nature of the proposed exploration activities, and the limited project duration, no further direct or secondary impacts would be anticipated from this project.

ALTERNATIVES CONSIDERED:

In addition to the proposed action, DEQ also considered the "no action" alternative. The "no action" alternative would deny the approval of AMD1. The applicant would lack the authority to conduct exploration for minerals on their private land. The applicant would still be allowed to conduct casual use-level activities, but would not be able to dig into the ground with mechanized equipment. Any potential impacts that would be authorized under AMD1 would not occur. However, DEQ does not consider the "no action" alternative to be appropriate because the applicant has demonstrated compliance with all applicable rules and regulations as required for approval. The no action alternative forms the baseline from which the impacts of the proposed action can be measured.

PUBLIC INVOLVEMENT:

Scoping for this proposed action consisted of internal and external efforts to identify substantive issues and/or concerns related to the proposed project. Internal scoping consisted of internal review of the environmental assessment document by three DEQ environmental specialists including Jacob Mohrmann, Millie Olsen, and Whitney Bausch, and a DEQ MEPA specialist, Jen Lane.

External scoping included a public comment period which began December 10, 2019 and ended January 3, 2020. External scoping efforts also included queries to the following websites/ databases/ personnel:

- Montana State Historic Preservation Office
- Montana Department of Natural Resource and Conservation
- Montana Department of Environmental Quality
- Montana Department of Transportation
- Jefferson County
- Lewis and Clark County
- US Geological Society – Stream Stats
- Montana Natural Heritage Program
- Montana Cadastral Mapping Program
- Montana Groundwater Information Center
- Montana Bureau of Mines and Geology
- United States Department of Interior Bureau of Land Management
- United States Forest Service

PUBLIC COMMENT PERIOD AND RESPONSE:

Public comment on the draft EA for this proposed action included a 24-day period which began December 10, 2019 and ended January 3, 2020. Public were notified of the opportunity to comment on the draft EA through a DEQ-issued press release and posting on the DEQ website. The Helena Independent Record newspaper also included a "community brief" announcement regarding the

opportunity for public to comment on the draft EA in a newspaper published on December 20, 2019. All substantive public comments received were considered before DEQ issued the final EA.

Three public comments were received. A summary of the comments is included here.

1.) Christine Weaver

"I periodically walk along a right-of-way road that parallels the quarry on the northeast side (called Quarry Rd) and have seen elk numerous times over the years. In fact, at least 60 were gathered to the northeast of the quarry this fall. I think Ash Grove downplayed the importance of the elk habitat; perhaps not such a worry for the exploration, but definitely if it goes into full -scale production.

Do you have any ability to require habitat off-setting? Or requiring purchasing or rehabbing X acres for X acres disturbed? Also, I have no idea if they have their babies in this area but seasonal restrictions for elk calving seasons might be considered?

*Let me know if talking to you (or showing my cellphone elk pictures) would be beneficial.
Thanks,
Christine"*

DEQ Response:

Thank you for your comment. Please see Section 5 in the EA for discussion on Terrestrial, Avian and Aquatic Life and Habitats, including discussion on the area elk population.

DEQ has no authority to require habitat off-setting, habitat banking, nor can DEQ set seasonal operational restrictions without the consent of the applicant. DEQ does require that all project disturbance be fully reclaimed within two years of the end of the proposed project, unless the project disturbance were incorporated into an Operating Permit. DEQ reached out to Ash Grove to ask if they would be willing to cease operations in the project area during elk calving season, or May 15-June 15, Ash Grove responded on January 13, 2020, stating, "Ash Grove will make efforts to minimize disturbance of elk and other wildlife at all times; however, given the small area planned for disturbance, the larger remaining undisturbed areas, fact that the current operating quarry does not deter elk in the area, and the short construction window in Montana, we cannot commit to ceasing operations during this period."

2.) Susan Emery

"We have lived about a half mile from the Ashgrove quarry (on South Hills Rd.) for over 25 years. We have lived with the noise from heavy equipment and the periodic blasting, telling ourselves that they were here before us. But since we built, the area has become increasingly residential and the character of the area has changed to residential. We are opposed to any actions that could lead to expansion of the quarry. Expansion would affect our property values and bring increasing noise and dust to our homes, not to mention the eyesore an expanded pit would bring. Hundreds of area residents would be adversely affected.

*Thank you for taking comments about this.
Susan and Richard Emery"*

DEQ Response:

Thank you for your comment. Impacts to the unique character of an area are addressed in Section 20 of the Final EA (Cultural Uniqueness and Diversity). Additionally, the changing landscape to a more residential area is addressed throughout the Final EA.

Private Property values are addressed in Section 21 of the Final EA (Private Property Impacts). Noise is addressed in Section 8 of the Final EA (Aesthetics). Dust is addressed in Section 3 of the Final EA (Air Quality). The concern of “Eyesore” is addressed in Section 8 of the Final EA (Aesthetics).

3.) Montana Fish Wildlife and Parks (FWP)

Condensed comment – Full comment is included as Appendix B.

“The project location is within functional and highly utilized elk winter range. Winter range is critically important to ungulates, and as you are already aware, the Ash Grove property is the largest block of intact and undeveloped land in the area. Elk are targeting it. Our comments and recommendations specific to this project, and objectives with respect to winter range, are listed below. FWP would like to know, what is the purpose of taking the sample? Depending on results, could there be ongoing disturbance and loss of functional winter range habitat? ... There are 100-300 elk that use this site during winter. FWP has documented elk use within 400 ft of the existing pit and associated roads and 150 ft from the proposed sampling/exploration area and proposed haul route... FWP recommends:

- That any surface disturbance occur outside this critical time period, December 1st – May 15th. Continued loss of winter range in this area is not only detrimental to elk, it is also likely to result in more human-wildlife (elk) conflicts in this area. Disturbance during the winter period would also be likely to increase human-wildlife (elk) conflicts.*
- That the area disturbed for sampling is fully reclaimed, including the haul route.*
- Cluster the area to be disturbed/developed on as small a footprint as possible, as far from winter range as possible, and as close to existing development as possible (e.g., other houses, roads, residential utilities).*
- Locate areas of proposed open space immediately adjacent to existing winter range or open space on adjacent lands, in order to maintain the functional connection with other open space and winter range on public and private lands.*
- Provide or maintain linkage within a winter range patch, between isolated patches of winter range, or between summer range (or other seasonal habitat) and winter range. Recommended linkage widths are a minimum of one (1) mile for elk and one-half (1/2) mile for other species. For white-tailed deer, mule deer, and moose, linkage should be along riparian corridors where present.”*

DEQ Response:

A. Thank you for your comment. Table 1, “General Overview” describes the project as proposed by Ash Grove. FWP questions are further answered below in Ash Grove’s response to FWP comments below. Section 5 of the Final EA (Terrestrial, Avian and Aquatic Life and Habitats) identified potential impacts to common area wildlife including elk. The section has been updated to include information provided by FWP.

B. DEQ has no authority to impose operational conditions upon an applicant for an exploration license amendment that would include seasonal restrictions or other operational

modifications. However, DEQ communicated the FWP concerns to Ash Grove and Ash Grove responded on January 13, 2020. That response is included as “C” below.

C. Ash Grove Response to FWP comment:

FWP-“What the purposed of the sample was and if there would be ongoing disturbance?”

Ash Grove- “As identified in the initial proposal, the purpose is to determine the viability of the low-alkali shale in the area and its effects on plant operations. If the source proves viable, it is anticipated that this area will be incorporated into the plant’s Operating Permit and would provide approximately 20 years of raw materials for the plant.”

FWP- recommends Ash Grove does not operate during the time period of December 1st – May 15th

Ash Grove-intends to begin construction of a road to allow access to the site as soon as the permitting and final design are completed with the intention of obtaining the sample during campaign hauling in 2020. While Ash Grove will likely minimize operations during this time period, it is unlikely we could agree to not operate in the area during essentially 6 months of the year.

FWP- Recommend the area disturbed be fully reclaimed, including the haul route.

Ash Grove- Full reclamation is a condition of the exploration permit. If the area is incorporated into the plant’s operating permit, additional analysis will be completed.

FWP- Cluster the area on as small a footprint as possible.

Ash Grove- Minimizing land disturbance is also a top priority for Ash Grove

FWP- Locate areas of open space immediately adjacent to existing winter range.

Ash Grove- Significant areas of open space are available on Ash Grove property north and west of the proposed disturbance.

FWP- Provide or maintain linkage within a winter range, between isolated patches of winter range, or between winter and summer range.

Ash Grove- This project will occur in the southeast corner of Ash Grove’s undisturbed area and adjacent to the current permit boundary. It will not sever any linkages between ranges.

OTHER GOVERNMENTAL AGENCIES WITH JURSDICTION:

The proposed project would be fully located on private land owned by Ash Grove. All applicable state and federal rules must be adhered to, which, at some level, may also include other state, federal, or tribal agency jurisdiction.

CUMULATIVE IMPACTS:

Cumulative impacts are the collective impacts on the human environment within the borders of Montana of the Proposed Action when considered in conjunction with other past and present actions related to the Proposed Action by location and generic type. Related future actions must also be considered when these actions are under concurrent consideration by any state agency through preimpact statement studies, separate impact statement evaluation, or permit processing procedures.

This environmental review analyzes the proposed project submitted by the applicant. Any impacts from the project would be temporary, and would be fully reclaimed at the conclusion of the project and thus, would not contribute to the long-term cumulative effects of mining in the area. Final reclamation would be required within 2 years of completion of the project unless the project disturbance were incorporated into an Operating Permit. DEQ identified other mining or exploration projects in the area.

DEQ-regulated projects located near the proposed project site include:

- One Hard Rock Mining Operating Permit site is located adjacent to the project site and is operated by the applicant.
- Two Open Cut (sand/gravel) Mine site are located within 2 miles of the project area.

No other DNRC, BLM, or USFS regulated projects were identified in the project vicinity.

DEQ considered all impacts related to this project and secondary impacts that may result. Cumulative impacts related to this project are identified in the Table 2. Cumulative impacts related to this project would not be significant.

NEED FOR FURTHER ANALYSIS AND SIGNIFICANCE OF POTENTIAL IMPACTS

When determining whether the preparation of an environmental impact statement is needed, DEQ is required to consider the seven significance criteria set forth in the Administrative Rules of Montana (ARM) 17.4.608, which are as follows:

1. The severity, duration, geographic extent, and frequency of the occurrence of the impact;
 - “Severity” is analyzed as the density of the potential impact while “extent” is described as the area where the impact is likely to occur. An example could be that a project may propagate ten noxious weeds on a surface area of 1 square foot. In this case, the impact may be a high severity over a low extent. If those ten noxious weeds were located over ten acres there may be a low severity over a larger extent.
 - “Duration” is analyzed as the time period in which the impact may occur while “frequency” is how often the impact may occur. For example, an operation that occurs throughout the night may have impacts associated with lighting that occur every night (frequency) over the course of the one season project (duration).
2. The probability that the impact will occur if the proposed action occurs; or conversely, reasonable assurance in keeping with the potential severity of an impact that the impact will not occur;
3. Growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative impacts;
4. The quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources and values;
5. The importance to the state and to society of each environmental resource or value that would be affected;
6. Any precedent that would be set as a result of an impact of the proposed action that would commit the department to future actions with significant impacts or a decision in principle about such future actions; and
7. Potential conflict with local, state, or federal laws, requirements, or formal plans.

Table 2: Summary of potential impacts that could result from AMD1.

Potential Impact	Affected Resource and Section Reference	Severity ¹ , Extent ² , Duration ³ , Frequency ⁴ , Uniqueness and Fragility (U/F)	Probability ⁵ impact will occur	Cumulative Impacts	Measures to reduce impact as proposed by applicant	Significance (yes/no)
Erosion of disturbed soil	Soil 1.) Geology	S -high: Of the under 12 acres of ground that would be disturbed, all could be susceptible to erosion. E -medium: Total surface disturbance would be under 12 acres; as compared to the over 100 acres of disturbance at the adjacent Clark Gulch Quarry mine site. D -Up to 2 years after completion or abandonment of exploration activities plus growing seasons, unless the disturbance were incorporated into an Operating Permit. F -During occasional storm events. U/F -Not unique or particularly fragile.	Possible	Erosion would add to cumulative impacts associated with potential erosion on existing roads, mined surfaces, neighborhoods, and other historical disturbances in the proposed project area.	Ash Grove would manage erosion control using a variety of Best Management Practices (BMP) including but not limited to non-draining excavations, containment, diversion and control of surface run off, flow attenuation, revegetation, earthen berms, silt fences, and gravel packs. All BMPs would be identified in the Storm Water Pollution Prevention Plan for the Clark Gulch Quarry mine.	No
Weed propagation associated with surface disturbance	Soil & Vegetation 1.) Geology 4.) Vegetation	S -high: All disturbed surfaces would be susceptible to weed propagation. E -small: Total surface disturbance would be less than 12 acres. Land owned by the applicant in the immediate project area that would also be susceptible to weed propagation is approximately 1,154 acres. D - Up to 2 years after completion or abandonment of exploration activities plus growing seasons, unless the disturbance were incorporated into an Operating Permit. F -Twice: After excavation and after reclamation. U/F -Not unique or particularly fragile.	Possible	Weed propagation from this project would add to any other area weeds that already exist within and near the proposed project area.	Weed control would be a requirement of an exploration license. The project would be subject to the 2017 Montana Noxious Weed Management Plan and 2016 Jefferson County Weed Management Plan	No
Dust and equipment exhaust	Air 3.) Air Quality	S -medium: Dust and other particulate would be generated during construction/reclamation and driving on/off site. Engines would produce some exhaust fumes. E -medium: Dust and exhaust fumes would be generated in proximity of moving/working equipment, and from dry exposed soil associated with new haul road and trench area. D - Up to 2 years after completion or abandonment of exploration activities plus growing seasons, unless the disturbance were incorporated into an Operating Permit. F -Daily: During exploration and reclamation operations. U/F -Not unique or particularly fragile.	Certain	Dust and exhaust would add to the cumulative impacts from other vehicles/engines operating in the area, and to potential natural wildfire smoke moving through the area.	Dust suppression would be provided by the Clark Gulch Quarry mine site’s water truck. OEM exhaust controls would be utilized on mechanized equipment. Wet drilling would be used to reduce air particulates during the drilling process.	No
Displacement of animals (mainly elk)	Animals 5.) Terrestrial, avian and aquatic life.	S -medium: Just under 12 acres of ground would be impacted. Elk migration corridors may become more restricted. E -medium: Total surface disturbance would be just under 12 acres. D -Reclamation would be required within 2 years after completion or abandonment of exploration activities plus growing seasons, unless the area is incorporated into an Operating Permit. F -During construction activity, which is expected to occur during weekday shifts for 1-year. U/F -Not unique or particularly fragile.	Probable	Displacement of animals as a result of this project would add to the cumulative impacts associated with the adjacent Clark Gulch Quarry mine site and with the increasing urban population surrounding the project area.	None proposed	No

Potential Impact	Affected Resource and Section Reference	Severity ¹ , Extent ² , Duration ³ , Frequency ⁴ , Uniqueness and Fragility (U/F)	Probability ⁵ impact will occur	Cumulative Impacts	Measures to reduce impact as proposed by applicant	Significance (yes/no)
Impacts to aesthetics	8.) Aesthetics	<p>S-medium: Most disturbed surfaces would be visible to nearby permanent residents or other population using the county road (Jackson Creek Rd.). Viewers at closer distances would be more impacted than viewers located further away. Approximately 50% of the area within a 1-mile radius could view project disturbances. Receptors nearer the project site may hear blasting if limited blasting would be determined to be necessary.</p> <p>E-medium: Total surface disturbance would be just under 12 acres and would be visible to receptors located at observation points that are unobstructed by topography or forested vegetation. If blasting were required, noise may be heard by receptors located in an area where sound related to the project has not been fully diminished by distance or another sound dampening feature.</p> <p>D-Reclamation would be required within 2 years after completion or abandonment of exploration activities plus growing seasons; unless the area is incorporated into an Operating Permit.</p> <p>F-Daily: until reclamation is complete</p> <p>U/F-The viewshed would be diminished; however, the viewshed is not particularly unique or fragile in the greater project area.</p>	Certain	Impacts to area aesthetics as a result of this project would add to the cumulative impacts associated with the adjacent Clark Gulch mine site and with the increasing urban population surrounding the project area.	Downfacing lights would be used if operations take place during dark hours.	No
Impacts to Historical and Archaeological Sites	7.) Historical and Archaeological Sites:	<p>S -low: of the 12 acres of project disturbance, less than 0.5 acres of historical and archaeological sites would be disturbed.</p> <p>E – low: less than 0.5 acres of archaeological sites would be disturbed</p> <p>D – long-term, any disturbance to archaeological sites would be permanent</p> <p>F- Once</p> <p>U/F-The archaeological sites that would be disturbed are not particularly unique to the Montana City area. The archaeological inventory identified one archaeological site and three additional isolated finds. The Hope Lode & Mills mine (24JF2100) is not eligible for listing on National Register of Historic Places (NRHP). The three isolated finds are not eligible for consideration for the NRHP. The proposed project would have no effect on Historic Properties, and clearance was recommended for the project.</p>	Certain	Impacts to historical and archaeological sites associated with the project would add to the cumulative impacts associated with the surrounding private land that has been developed for residential use and for mining uses.	None proposed	No

1. Severity describes the density at which the impact may occur. Levels used are low, medium, high.
2. Extent describes the land area over which the impact may occur. Levels used are small, medium, and large.
3. Duration describes the time period over which the impact may occur. Descriptors used are discrete time increments (day, month, year, and season).
4. Frequency describes how often the impact may occur.
5. Probability describes how likely it is that the impact may occur without mitigation. Levels used are: impossible, unlikely, possible, probable, certain

The severity, duration, geographic extent and frequency of the occurrence of the impacts associated with the proposed exploration activities would be limited. The applicant is proposing to construct a 5,600-by-40-foot haul road to access the shale-clay exploration trench, excavate a 10,000-ton bulk sample of shale-clay, and drill 4 exploration holes. The total measurement of potentially disturbed land would be under 12 acres of surface area. Project activity would be expected to be completed in approximately one year, and would be required to be reclaimed within 2 years after completion or abandonment of exploration activities unless the project disturbance is incorporated into an Operating Permit.

DEQ has not identified any significant impacts associated with the proposed exploration activities for any environmental resource. Approving AMD1 to Exploration License #00648 does not set any precedent that commits DEQ to future actions with significant impacts or a decision in principle about such future actions. If the applicant submits another exploration license application to conduct additional exploration, or an operating permit application, DEQ is not committed to issuing those authorizations. DEQ would conduct an environmental review for any subsequent authorizations sought by the applicant that require environmental review. DEQ would make a permitting decision based on the criteria set forth in the Metals Mine Reclamation Act. Approving AMD1 to Exploration License #00648 does not set a precedent for DEQ's review of other applications for exploration licenses, including the level of environmental review. The level of environmental review decision is made based on a case-specific consideration of the criteria set forth in ARM 17.4.608.

Finally, DEQ does not believe that the proposed exploration activities by the applicant have any growth-inducing or growth-inhibiting aspects or conflict with any local, state, or federal laws, requirements, or formal plans.

Based on a consideration of the criteria set forth in ARM 17.4.608, the proposed exploration activities are not predicted to significantly impact the quality of the human environment. Therefore, at this time, preparation of an environmental assessment is determined to be the appropriate level of environmental review under the Montana Environmental Protection Act.

Environmental Assessment and Significance Determination Prepared By:



Jacob Mohrmann, P.G.

Environmental Science Specialist –Exploration Program

Appendix A. AMD1- Plan of Operation as originally Submitted by Ash Grove



State of Montana
Department of Environmental Quality
Application for Exploration License – Supplemental
Information

SUBMITTED BY:

NAME: Ash Grove Cement Company DATE: October 11, 2019

ADDRESS: 100 Highway 518
Clancy, Montana 59634

PRIMARY LICENSE CONTACT (attach authorization letter):

NAME: Jeff Briggs TITLE: Environmental Manager

E-MAIL: jeff.briggs@ashgrove.com PHONE: (406) 444-7128

LEVEL OF AUTHORITY (describe): Plant Environmental Operations

OTHER AUTHORIZED COMPANY AGENT(s) (attach authorization letter for each/all)

NAME: Chris Hines TITLE: Plant Manager

E-MAIL: chris.hines@ashgrove.com PHONE: (406) 444-6100

LEVEL OF AUTHORITY (describe): All Plant Operations

NAME: Kelvin Gebhardt TITLE: Quarry Superintendant

E-MAIL: kelvin.gebhardt@ashgrove.com PHONE: (406) 444-7133

LEVEL OF AUTHORITY (describe): All Quarry Operations

Use Additional Pages if Necessary

Please include additional pages if necessary

NAME OF PROJECT: Clark Gulch Clay Bulk Sample Pit

TYPE OF APPLICATION (circle one):

New License — New Site to Existing License — Modification to Existing License
(License # 000684)

TYPE OF EXPLORATION ACTIVITY (circle all that apply)

Trenching — Drilling — Underground — Other Open Pit

PROPOSED START UP DATE OF OPERATION (mm/dd/yy): As soon as permits obtained

ANTICIPATED PROJECT DURATION (not including time for reclamation): 1 year

ANTICIPATED DURATION OF RECLAMATION: 1 year

ANTICIPATED DAILY WORK SCHEDULE: Weekdays Dayshift

PROPOSED END DATE OF OPERATION (mm/dd/yy): 12/31/2021 (Including
Reclamation, unless area is
included in Operating Permit)

LANDOWNER (circle all that apply):

Private – own

Private – lease from _____

USFS — BLM — State — County

If on Federal Land: Name/Phone Number/E-mail for Related Federal Contact

The exploration license does not convey a right to occupy land not owned by the licensee. A licensee is responsible for obtaining a lease or other authorization from the landowner to occupy the land on which the licensee is to conduct exploration activity. DEQ does not confirm whether the licensee has obtained such authorization and does not resolve any disputes regarding access between a licensee and the landowner.

PROJECT LOCATION

NEAREST CITY/TOWN: Montana City

LATITUDE: 46.541405 LONGITUDE: -111.981534

TOWNSHIP: 9N RANGE: 3W SECTION: 16 ¼ SECTION: NE

MAP: Please include two maps. The target for these maps is something of higher quality than a sketch or drawing. Maps created on GoogleEarth or a marked up USGS 1:24,000 map are sufficient.

- 1.) A broad overview map clearly showing project location in reference to nearest town/city.
- 2.) A detailed map of project site showing and labeling all project disturbances including but not limited to new roads, overland travel routes, drill pads (and labels), sumps, drill holes (and labels), new temporary and permanent buildings, camp area, laydown/loadout area, fuel storage area, and water crossings.

PROJECT DESCRIPTION:

Please briefly describe the project including exploration methods, and total volume of material to be taken for testing.

Ash Grove Cement Company's Montana City plant currently uses an alumina source (clay) mined on the plant-site under Operating Permit #00003. This clay is high in alkali, which is detrimental to the cement manufacturing process. Ash Grove previously did some exploration (trench and drill holes) on our property near the Clark Gulch quarry under Exploration Permit #000684 and located some clay with lower, but not optimal, alkali content.

Ash Grove proposes to perform additional testing of a bulk sample of this material by: 1) Constructing approximately 1 mile of road from the Clary Gulch Quarry to the site; 2) Extracting up to 10,000 tons of material. Material will be campaign hauled to the Clark Gulch Quarry then hauled to the plant. Material will be used in the cement manufacturing process to determine the effects on usage of other raw materials; and, 3) Drill 4 additional test holes to determine the extent and chemistry of this deposit.

If the project is successful, Ash Grove will apply to include this area in the permit area and disturbance area for Operating Permit #00003 and continue mining under this permit.

DIMENSIONS

Drill Pads: Quantity: _____ L x _____ W x _____ avg depth of material moved and/or compacted

Drill Sumps Quantity: _____ L x _____ W x _____ avg depth of material to be excavated

Trenches/Pits Quantity: 1 195' L x 105' W x 10' avg depth of material to be excavated

Roads 5600' L x 40' W x 6' avg depth of material moved and/or compacted

Overland Travel _____ L x _____ W

Laydown _____ L x _____ W x _____ avg depth of material moved and/or compacted

Drill Holes:

Area 1: _____ Number 4 Max Depth 100(ft) Total depth (all holes added) 400 (ft)

Area 2: _____ Number _____ Max Depth _____(ft) Total depth (all holes added) _____(ft)

Area 3: _____ Number _____ Max Depth _____(ft) Total depth (all holes added) _____(ft)

Other: (camp, culverts, waste piles, slash piles, heli pads, etc.) describe and include dimensions

Please included additional pages if necessary

EQUIPMENT AND VEHICLES—*Please list all heavy and light equipment (drill rigs, water trucks, fuel trucks, excavators and other heavy equipment and their sizes, ATVs, UTVs, light vehicles, portable generators, lights, etc...)*

988 loader
CAT 769 and/or D400 end dump
D8R dozer
Sandvik D245 drill if blasting is required
Contractor drill for exploratory holes
Misc light vehicles (i.e. pickups and SUVs)

STRUCTURES—*please list and include quantity of all temporary and permanent structures (core sheds, containers, campers, tents, warehouses, saw shacks, water lines, tanks, portable toilets, etc...)*

No additional structures other than a portable toilet are anticipated for the project

ONSITE PERSONNEL—*please list number of personnel and title or position?*

Personnel onsite will vary depending on the tasks required but would include 1 - 2 equipment operators, 1 truck driver, 1 Quarry Superintendent, 1 driller/powderman.

Please included additional pages if necessary

CREW LODGING PLANS – *please describe lodging plans, ie: onsite or offsite, and give specific details about accommodations (hotels, tents on site, etc.)*

No crew lodging will be required

PROJECT WATER SOURCE – *please describe source, ownership, and method of transport of project water and how much water use is anticipated.*

Water would be used for dust suppression and would come from the plant water supply, hauled with the plant water truck

WILL SUPPLEMENTAL LIGHTING BE REQUIRED, *if so, for what hours of the day/night, and how will light pollution be controlled ie: down facing lights, shrouds, etc...?*

It is anticipated that the pit will only be in operation during daylight hours. If additional light is needed, a light plant with down facing lights would be used.

AIR QUALITY – *please describe measures proposed to minimize impacts on air quality, including dust suppression, slash burning, exhaust controls, etc...*

Dust suppression will be provided with the plant's water truck. OEM exhaust controls will be provided on equipment used.

Please included additional pages if necessary

WATER QUALITY – *please list and describe nearest surface water sources including distance to any/all streams, ponds, wetlands to the exploration activities (drill pads, trenches, campsite, laydown area, etc...). Please describe measures proposed to minimize impacts to surface water, and list applicable permits.*

Project is approximately 0.6 mi NW of an unnamed tributary to Prickly Pear Creek. Stormwater will be managed under the plant's current authorization #MT000523 under the Montana Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Industrial Activity. This authorization will need to be modified to incorporate this new area.

EROSION CONTROL AND SEDIMENT TRANSPORT – *Please describe all erosion control measures that will be utilized, including type of product and location of installation.*

Erosion control will be accomplished using a variety of Best Management Practices (BMP) including but not limited to: Non-draining excavations; Containment, diversion and control of surface run on; Flow attenuation; Re-vegetation; Earthen berms; Silt Fence; and Gravel packs. All BMPs will be identified in the plants Storm Water Pollution Prevention Plan.

SOLID WASTE – *Describe the quantity and physical and chemical characteristics of all solid waste that may be produced by the operation. Describe how solid waste will be stored, and disposed of including location and design of storage facility and location of disposal site.*

No appreciable solid waste will be produced from this operation. Topsoil will be saved for reclamation. Equipment maintenance will be performed in Ash Grove's current facilities. Garbage cans will be used on site to collect miscellaneous wastes and will be disposed with Ash Grove's current wastes.

Please included additional pages if necessary

SCENIC VALUES – *Describe protection of scenic values such as screening, slash disposal, and timely reclamation.*

No slash will be produced from the operation. Total area to be disturbed, not including road construction will be 0.4 acres and is on Ash Grove property. The site is at least 0.5 miles from the nearest public access and will be reclaimed according to the schedule above.

FISH AND WILDLIFE—*Please list any threatened, endangered and sensitive species that may be affected by this project, and describe measures to maintain and protect fisheries and wildlife, and their habitat affected by the operations.*

An Environmental Impact Statement was completed in 1978 for the Clark Gulch Quarry. While the proposed area is not within the area studied by the EIS, it is in the same topographical area, approximately 0.5 miles to the west of the current quarry. An updated species of concern report, which did include this area, was obtained for a minor revision to Operating Permit #00003 and showed no threatened or endangered species in the area.

CULTURAL RESOURCES – *Describe measures for protecting known historic and archeological values, or new sites in the project area.*

If significant cultural materials are discovered during this project we will contact the State Historical Preservation Office for investigation.

HAZARDOUS SUBSTANCES – *Identify the type and volume of all hazardous materials and toxic substances which will be used or generated in the operations including cyanide, solvents, petroleum products, mill, process and laboratory reagents*

No hazardous substances, other than equipment fuel and lubricants, are expected to be needed on the site.

RECLAMATION PLAN—*Describe the ongoing, end of season, and final reclamation that will occur. Include such items as the removal of structures identified above. Include regrading plan, weed control plan and revegetation plan (including seed mix to be utilized).*

The following procedures will be used in the reclamation of this exploration project:

1. All available soil and soil material will be salvaged and stockpiled.
2. All drill fluids and cuttings will be retained onsite. After drilling is completed, drill fluids and cuttings will be removed; disposed of down the drill hole; or buried.
3. All drill holes will be plugged at the surface (-5 to -10 feet) with cement. If two aquifers are intercepted, or if one aquifer is intercepted and a beneficial use is nearby, the hole will be plugged at depth with cement or bentonite.
4. Collar casing will be removed, or cut off, below ground level.
5. If an artesian aquifer is intercepted, the Montana DEQ will be notified within 24 hours, and the hole will be plugged at depth.
6. Any compacted surfaces will be ripped, or otherwise loosened, to allow for the successful re-establishment of native vegetation.
7. All refuse associated with exploration activities will be collected, removed and disposed of in proper disposal sites.
8. Pit walls will be reclaimed to a maximum 3:1 slope.
8. Salvaged topsoil will be applied over disturbed areas.
9. Disturbed areas will be re-vegetated with a Montana DEQ-approved seed mixture.
10. The notification requirements for Montana DEQ will be fulfilled if a discharge occurs.
11. The Montana DEQ will be contacted 30 days prior to initiation of the exploration project to arrange a mutually-agreeable time for an on-site inspection and the establishment of a reclamation bond amount.



