Beckys Plan of Operations Modification

Contents

OPERATOR INFORMATION

Corporation Information

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Claimant Information

American Colloid Company
PO Box 2010
Belle Fourche, SD 57717

American Colloid Company—Unpatented Placer Mining Claims

Claim Name	Surface/Mineral Owner	Serial Number	Section	Township (S)	Range (E)	Subdivision	Claim Acreage	Disturbance Acreage
Wade 125	BLM	MMC 212179	19	9	26	N½SW¼NE¼	20.00	0.90
Becky 1	BLM	MMC 222335	24	9	25	N½NE¼SE¼	20.00	20.00
Rob 56	BLM	MMC 227588	19	9	26	LOT 5	9.51	9.40
Mac 108	BLM	MMC 175983	24	9	25	SE¼NE¼SE¼	10.00	5.26
Becky 2 (N2)	BLM	MMC 222336	19	9	26	LOT 6	9.55	9.55
Becky 2 (S2)	BLM	MMC 222336	19	9	26	LOT 7	9.59	2.36
Becky 3 (N2)	BLM	MMC 222337	19	9	26	NE¼SW¼SW¼	10.00	8.40
Becky 3 (S2)	BLM	MMC 222337	19	9	26	SE¼SW¼SW¼	10.00	0.30
Becky 4	BLM	MMC 222338	19	9	26	S½SE¼SW¼	20.00	15.85
Becky 5	BLM	MMC 222339	30	9	26	NE¼NE¼NW¼	10.00	9.97
Becky 6	BLM	MMC 222340	30	9	26	W½NW¼NE¼	20.00	20.04
Rob 55	BLM	MMC 227587	30	9	26	NW¼SE¼NE¼	10.00	10.00

Total unpatented claim acreage: 158.65 acres.

Total unpatented claim disturbance acreage: 112.03 acres.

American Colloid Company—Patented Placer Mining Claims

Claim Name	Serial Number/Patent	Section	Township (S)	Range (E)	Subdivision	Claim Acreage	Disturbance Acreage
Ned 11	25-88-0534	24	9	25	N½SW¼NE¼	20.00	8.99
Wade 19B	25-88-0534	24	9	25	N½SE¼NE¼	20.00	5.90
Ned 11A	25-88-0534	24	9	25	SE¼SW¼NE¼	10.00	8.73
Ned 10	25-88-0534	24	9	25	S½SE¼NE¼	20.00	17.33
Wade 109	25-98-0111	19	9	26	S½ LOT 2	19.44	2.05

Claim Name	Serial Number/Patent	Section	Township (S)	Range (E)	Subdivision	Claim Acreage	Disturbance Acreage
Wade 112	25-98-0111	19	9	26	NE¼NW¼SW¼	10.00	1.02
Ned 9	25-84-0135	19	9	26	SE¼NW¼SW¼	10.00	2.68
Wade 118	25-84-0135	19	9	26	N½SE¼SW¼	20.00	6.73
Ned 7	25-84-0135	19	9	26	S½SW¼SE¼	20.00	1.50
Mac 1	25-95-0061	30	9	26	SE¼NE¼NW¼	10.00	7.51
Ned 8	25-84-0135	30	9	26	E½NW¼NE¼	20.00	12.04
Ned 4	25-84-0135	30	9	26	S½NE¼NE¼	20.00	4.98
Mac 104	25-95-0061	30	9	26	N½SW¼NE¼	20.00	9.73

Total patented claim acreage: 219.44 acres.

Total patented claim disturbance acreage: 89.17 acres.

Beckys Project Area—All Lands

Claim Name	*Serial Number*/Patent	Section	Township (S)	Range (E)	Subdivision	Claim Acreage	Disturbance Acreage
Wade 125	*MMC 212179*	19	9	26	N½SW¼NE¼	20.00	0.90
Becky 1	*MMC 222335*	24	9	25	N½NE¼SE¼	20.00	20.00
Rob 56	*MMC 227588*	19	9	26	LOT 5	9.51	9.40
Mac 108	*MMC 175983*	24	9	25	SE¼NE¼SE¼	10.00	5.26
Becky 2 (N2)	*MMC 222336*	19	9	26	LOT 6	9.55	9.55
Becky 2 (S2)	*MMC 222336*	19	9	26	LOT 7	9.59	2.36
Becky 3 (N2)	*MMC 222337*	19	9	26	NE¼SW¼SW¼	10.00	8.40
Becky 3 (S2)	*MMC 222337*	19	9	26	SE¼SW¼SW¼	10.00	0.30
Becky 4	*MMC 222338*	19	9	26	S½SE¼SW¼	20.00	15.85
Becky 5	*MMC 222339*	30	9	26	NE¼NE¼NW¼	10.00	9.97
Becky 6	*MMC 222340*	30	9	26	W½NW¼NE¼	20.00	20.04
Rob 55	*MMC 227587*	30	9	26	NW¼SE¼NE¼	10.00	10.00
Ned 11	25-88-0534	24	9	25	N½SW¼NE¼	20.00	8.99
Wade 19B	25-88-0534	24	9	25	N½SE¼NE¼	20.00	5.90
Ned 11A	25-88-0534	24	9	25	SE¼SW¼NE¼	10.00	8.73
Ned 10	25-88-0534	24	9	25	S½SE¼NE¼	20.00	17.33
Wade 109	25-98-0111	19	9	26	S½ LOT 2	19.44	2.05
Wade 112	25-98-0111	19	9	26	NE¼NW¼SW¼	10.00	1.02
Ned 9	25-84-0135	19	9	26	SE¼NW¼SW¼	10.00	2.68
Wade 118	25-84-0135	19	9	26	N½SE¼SW¼	20.00	6.73
Ned 7	25-84-0135	19	9	26	S½SW¼SE¼	20.00	1.50
Mac 1	25-95-0061	30	9	26	SE¼NE¼NW¼	10.00	7.51
Ned 8	25-84-0135	30	9	26	E½NW¼NE¼	20.00	12.04
Ned 4	25-84-0135	30	9	26	S½NE¼NE¼	20.00	4.98
Mac 104	25-95-0061	30	9	26	N½SW¼NE¼	20.00	9.73

Total project claim acreage: 378.09 acres.

Total project claim disturbance acreage: 201.20 acres.

Please see the Operator Information Map for the location of unpatented and patented mining claims in the Beckys and surrounding area.

DESCRIPTION OF OPERATIONS

American Colloid Company's Beckys project covers 375.09 acres within T. 9S., R. 25E., Section 24 and T. 9S. R. 26E. Sections 19 and 30. The area consists of federal and private lands and is approximately four miles southeast of Warren, Montana. Please see Section 1 - Operator Information for a complete legal description of the area. The affected area includes 201.20 acres of proposed disturbance related to bentonite mining and associated activities.

Maps of the Project Area

Please see the Description of Operations Map for the proposed mine plan for the Beckys project.

Preliminary or Conceptual Designs, Cross Sections, and Operating Plans for Mining Areas, Processing Facilities, and Waste Rock and Tailing Disposal Facilities

Preliminary or Conceptual Designs and Cross Sections

Please see the Description of Operations Map in this section for the proposed mine plan. As relevant, additional design information and cross sections are included in the Reclamation Plan.

Equipment List

Mining activities are generally conducted with the following or similar equipment:

- D-8, D-9, D-10, D-11, and 375 dozers
- 627 and 637 scrapers
- 980, 450, 500, 972, and 966 front-end Loaders
- 140, 14, and 16 motor graders
- 300, 308, 330, and 345 excavators
- Over-the-road, belly dump haul trucks

Operating Plans for Mining Areas

The mining method used by ACC is surface mining: a sequence of small pits (generally 1-3 acres in size) are dug to access and remove the bentonite deposit. As the pits progress through a sequence, reclamation begins at the first pit and follows the active mining as overburden is backcast from the new pit to the previous pit in the series. Please see the Rock Characterization and Handling Plan subsection for more information on this mining method.

Three mining series, series T, Z, and AA/H, are associated with the Beckys project. A total of up to 219.38 acres are proposed to be disturbed by associated mining activities.

Pit Series T

Pit series T is being mined for the MOA (Canadian Bed), TG (Thick Gray Bed), and TF (Golden Bed) bentonite beds in the Thermopolis and Mowry Shales. Proposed disturbance for this series on Federal Lands includes approximately 1.6 acres of the northeast corner of Becky 4 and 0.8 acres of the northeast corner of Becky 6 to allow for continuation of active mining that has currently halted on the property boundaries of Becky 6 and Becky 4 (Please see Description of Operations Map). Additional disturbance on this series will continue the series through claims Rob 56 and Becky 1. The series will then proceed northwest into ACC private lands (Wade 112, Wade 109, Ned 10, Ned 11, and Wade 19B). Additional mining will continue to the northwest and will be applied for in the future.

These beds are typically around 25 apart stratigraphically. The MOA bed is typically two to four feet thick; the TG bed ranges from three to seven feet thick; and the TF bed ranges from one to three feet thick. The

maximum depth of mining will be approximately 50 feet. Series T will continue for approximately two miles to the northwest through the project area.

No permanent overburden feature is being proposed for the T series, as the startup and end of the series are not in the Beckys project area. Based on the positive quality of revegetation on reclaimed lands in the T series, the physical and chemical characteristics of overburden have not adversely affected revegetation. Please see Appendix I—Geology for more information on the overburden of the area.

No surface water rights of wells are present in or within 1000 feet of the proposed affected area. Series T will disturb one unnamed native ephemeral drainage that runs roughly northwest. During mining activities, surface waters will be diverted around disturbance areas using diversion ditches as necessary. Stable reclaimed channels will be constructed for the disturbed drainage that ties into the native channel. Best management practices (straw wattles, straw mat, water bars, sediment fence, etc.) will be used as additional stability measures and erosion control if determined to be necessary along diversion ditches and the reclaimed channel. Please see Appendix II—Hydrology for more information on the hydrology of the area.

The Sayles-Persayo-Youngston like Complex (4-6” topsoil/0-10” subsoil) is the main soil mapping unit that will be disturbed by mining in the T series. Other soils to be disturbed include Badlands (0” topsoil/ 0” subsoil), Stutzman silty clay (6” topsoil/6” subsoil), and Stormitt gravelly sandy loam (15” topsoil/13” subsoil). As this series is already active, it is unlikely that soil resources will need to be stockpiled. Soil will be lives spread. All soil resources salvaged will be used for seedbed replacement. Please see Appendix III for more information on soils of the area.

The vegetation communities proposed to be disturbed by Series T consists of Big Sagebrush Shrubland and Badlands. Please see Appendix IV—Vegetation for more information on vegetation of the area. After soil resources have been replaced and prepared, the disturbance will be reseeded with an appropriate, approved seed mix. Limited or no seeding will occur on areas mapped as Badlands. Instead, these areas will be contoured to blend to existing topography and then harrowed.

No endangered, threatened, proposed, or candidate species (including Greater Sage-grouse) were observed in or around the Beckys project area. The project area was put through the USFWS IPaC program (Information for Planning and Consultation). Endangered Species listed as potentially affected by activities in this location include the grizzly bear and the monarch butterfly. Both Bald and Golden Eagles were also listed as potentially present in the project area. Migratory Birds that occur on the USFWS Birds of Conservation Concern that are potentially present in the Beckys project area include Bald Eagles, Golden Eagles, Broad-tailed Hummingbirds, Calliope Hummingbirds, Cassin’s Finches, Evening Grosbeaks, Mountain Plovers, Olive-sided Flycatchers, Pinyon Jays, and Rufous Hummingbirds.

Please see Appendix V—Wildlife for more information on the wildlife of the area. A number of other species, especially migratory birds, were observed. As such, ground nest surveys will occur within 72 hours of any new surface disturbing activities scheduled to occur between April 10th and July 15th. If occupied nests are located, no activity will occur until the nest is vacated. Further, raptors were observed in and around the area; and so the area will be monitored for the presence and occupation of raptor nests between January 15th and July 31st as necessary. If new raptor nests are found in the vicinity (i.e. ½ mile for general raptors and golden eagles; 1 mile for bald eagles) of the proposed area of disturbance, ACC will consult with BLM to develop appropriate mitigation measures.

The Beckys project area is located within a Core Area for Greater Sage-grouse. However, as all of the Beckys project area is already within MTDEQ Opencut Permit 8, the project is not required to go through the formal consultation process with the Montana Sage Grouse Habitat Conservation Program. ACC does commit to comply with the following mitigation:

1. Surface disturbance will be minimized to the extent possible. Disturbance estimates were calculated using the maximum case scenario. The actual disturbance footprint is anticipated to be significantly smaller than the referenced 219.38 acres. The only active lek within the analysis area is the Bear Canyon Lek, over 3.0 miles away.
2. ACC will implement the required Stormwater Pollution Prevention Plan (SWPPP) covering ACC's mine permit for the Warren Mine Site. Erosion (off-site sediment migration) will be minimized through use of stormwater Best Management Practices (BMPs) during mining.
3. There are some existing BLM grazing allotment fences that will be affected by mining activities. These fences will be temporarily moved around disturbed areas and replaced after final reclamation. Markers will be installed on fence wires of replaced fences to enhance visibility per current guidelines from Montana Fish, Wildlife, and Parks (MFWP) and/or USDA (2012) Natural Resources Conservation Service (NRCS).
4. Noxious weed infestation may occur in and adjacent to the project area prior to mining. Visual monitoring and chemical control will be conducted for noxious weed species from the time disturbance is initiated through life-of-mine. Potential spread of noxious weeds will be managed by: seeding reclaimed lands with a native seed mix that is as weed-free as is commercially available, monitoring mine site and reclaimed lands periodically for noxious weed establishment and revegetation success (to outcompete weed species), and spraying noxious weed populations as necessary if significant infestations are noted.

Please see Appendix VI—Cultural Resources for more information on cultural resources of the area. A cultural survey of the project area was performed by Cultural Resource Analysts (CRA) during the 2023 field season.

No existing fences will be crossed by mining of the T series. No utilities or public roads will be disturbed.

Pit Series Z

Pit series Z is being mined for the MSA and MSB bentonite beds in the Muddy Sandstone. Proposed disturbance for this series on Federal Lands includes approximately 0.9 acres of the southwest corner of unpatented claim Wade 125 to allow for continuation of active mining that has currently halted on the property boundaries of that claim (Please see Description of Operations Map). Additional disturbance on this series will continue northwest through ACC patented claims Wade 126, Wade 127, and Wade 19. Additional mining will to the northwest will require an amendment to ACC's Opencut Permit 8 and will be applied for in the future.

The MSA and MSB beds are typically between four to six feet apart stratigraphically. The MSA bed is roughly two to four feet thick and the MSB bed is one to three feet thick. The maximum depth of mining will be approximately 50 feet. Series Z will continue for roughly 0.9 miles to the northwest through the project area.

No permanent overburden feature is being proposed for the Z series, as the startup and end of the series are not within the Beckys project area. Based on the positive quality of revegetation on reclaimed lands in the Z series, the physical and chemical characteristics of overburden have not adversely affected revegetation. Please see Appendix I—Geology for more information on the overburden of the area.

No surface water rights of wells are present in or within 1000 feet of the proposed affected area. Series Z will disturb two unnamed native ephemeral drainages that runs roughly to the west. During mining activities, surface waters will be diverted around active disturbance areas using diversion ditches as necessary. Stable reclaimed channels will be constructed for the disturbed drainages that tie into the native channels. Best management practices (straw wattles, straw mat, water bars, sediment fence, etc.) will be used as additional stability measures and erosion control if determined to be necessary along diversion

ditches and the reclaimed channel. Please see Appendix II—Hydrology for more information on the hydrology of the area.

The Z series will disturb soils with roughly 15" total salvage (5" topsoil/10" subsoil). As this series is already active, it is unlikely that soil resources will need to be stockpiled. Soils will be live spread. All soil resources salvaged will be used for seedbed replacement. Please see Appendix III for more information on soils of the area.

The vegetation community proposed to be disturbed by Series Z consists of Big Sagebrush Shrubland. Please see Appendix IV—Vegetation for more information on vegetation of the area. After soil resources have been replaced and prepared, the disturbance will be reseeded with an appropriate, approved seed mix.

No endangered, threatened, proposed, or candidate species (including Greater Sage-grouse) were observed in or around the Beckys project area. The project area was put through the USFWS IPaC program (Information for Planning and Consultation). Endangered Species listed as potentially affected by activities in this location include the grizzly bear and the monarch butterfly. Both Bald and Golden Eagles were also listed as potentially present in the project area. Migratory Birds that occur on the USFWS Birds of Conservation Concern that are potentially present in the Beckys project area include Bald Eagles, Golden Eagles, Broad-tailed Hummingbirds, Calliope Hummingbirds, Cassin's Finches, Evening Grosbeaks, Mountain Plovers, Olive-sided Flycatchers, Pinyon Jays, and Rufous Hummingbirds.

Please see Appendix V—Wildlife for more information on the wildlife of the area. A number of other species, especially migratory birds, were observed. As such, ground nest surveys will occur within 72 hours of any new surface disturbing activities scheduled to occur between April 10th and July 15th. If occupied nests are located, no activity will occur until the nest is vacated. Further, raptors were observed in and around the area; and so the area will be monitored for the presence and occupation of raptor nests between January 15th and July 31st as necessary. If new raptor nests are found in the vicinity (i.e. ½ mile for general raptors and golden eagles; 1 mile for bald eagles) of the proposed area of disturbance, ACC will consult with BLM to develop appropriate mitigation measures.

The Beckys project area is located within a Core Area for Greater Sage-grouse. However, as all of the Beckys project area is already within MTDEQ Opencut Permit 8, the project is not required to go through the formal consultation process with the Montana Sage Grouse Habitat Conservation Program. ACC does commit to comply with the following mitigation:

1. Surface disturbance will be minimized to the extent possible. Disturbance estimates were calculated using the maximum case scenario. The actual disturbance footprint is anticipated to be significantly smaller than the referenced 219.38 acres. The only active lek within the analysis area is the Bear Canyon Lek, over 3.0 miles away.
2. ACC will implement the required Stormwater Pollution Prevention Plan (SWPPP) covering ACC's mine permit for the Warren Mine Site. Erosion (off-site sediment migration) will be minimized through use of stormwater Best Management Practices (BMPs) during mining.
3. There are some existing BLM grazing allotment fences that will be affected by mining activities. These fences will be temporarily moved around disturbed areas and replaced after final reclamation. Markers will be installed on fence wires of replaced fences to enhance visibility per current guidelines from Montana Fish, Wildlife, and Parks (MFWP) and/or USDA (2012) Natural Resources Conservation Service (NRCS).
4. Noxious weed infestation may occur in and adjacent to the project area prior to mining. Visual monitoring and chemical control will be conducted for noxious weed species from the time disturbance is initiated through life-of-mine. Potential spread of noxious weeds will be managed by: seeding reclaimed lands with a native seed mix that is as weed-free as is commercially available,

monitoring mine site and reclaimed lands periodically for noxious weed establishment and revegetation success (to outcompete weed species), and spraying noxious weed populations as necessary if significant infestations are noted.

Please see Appendix VI—Cultural Resources for more information on cultural resources of the area. A cultural survey of the project area was performed by Cultural Resource Analysts (CRA) during the 2023 field season.

The existing fences in the area will be crossed as the Z series progresses. These fences will be replaced as necessary after the area has been reclaimed. Temporary fences may be installed prior to reclamation if necessary. No utilities or public roads will be disturbed.

Pit Series AA/H

Pit series AA/H is being mined for the MOB and MOC (Double D) bentonite beds in the Mowry Shale. Proposed mining on this series will begin on unpatented mining claim Rob 55 and proceed to the northwest through federal and private lands (Please see Description of Operations Map). This mining will continue an open series to the southeast. Additional mining will to the northwest will require an amendment to ACC's Opencut Permit 8 and will be applied for in the future.

The MOB and MOC beds are typically between fourteen to eighteen feet apart stratigraphically and are both two to four feet thick. The maximum depth of mining will be approximately 50 feet. Series AA/H will continue for roughly 3.1 miles to the northwest through the project area.

No permanent overburden feature is being proposed for the AA/H series, as the startup and end of the series are not within the Beckys project area. Based on the positive quality of revegetation on reclaimed lands in another MOB/MOC series to the southeast (ML-59, D series), the physical and chemical characteristics of overburden have not adversely affected revegetation. Please see Appendix I—Geology for more information on the overburden of the area.

No surface water rights of wells are present in or within 1000 feet of the proposed affected area. Series AA/H proposes to minimally disturb unnamed native ephemeral drainages running into a shallow pond within the project area. ACC does not propose to disturb the pond, and the drainages will be avoided as much as possible. During mining activities, surface waters will be diverted around active disturbance areas using diversion ditches as necessary. Stable reclaimed channels will be constructed for the disturbed drainages that tie into the native channels. Best management practices (straw wattles, straw mat, water bars, sediment fence, etc) will be used as additional stability measures and erosion control if determined to be necessary along diversion ditches and the reclaimed channel. Please see Appendix II—Hydrology for more information on the hydrology of the area.

The AA/H series will disturb soils with roughly 6" total salvage (4-6" topsoil/paralithic contact) and reclaimed soils (6" topsoil/0" subsoil). As this series is already active, it is unlikely that soil resources will need to be stockpiled. Native soils will be handled and respread separately from reclaimed soils. Any suitable material present in the upper overburden profile may be used as suitable subsoil substitute. Soils will be live spread. All soil resources salvaged will be used for seedbed replacement. Please see Appendix III for more information on soils of the area.

The vegetation community proposed to be disturbed by Series AA/H consists of Big Sagebrush Shrubland and Reclaimed Lands. Please see Appendix IV—Vegetation for more information on vegetation of the area. After soil resources have been replaced and prepared, the disturbance will be reseeded with an appropriate, approved seed mix. An approved seed mix containing Big sagebrush (Wyoming Big Sage Mix 2) will be used on areas where native soils were respread following mining disturbance, and a seed mix without Big sagebrush (Standard Mix 1) will be broadcast on lands where reclamation soils were respread.

No endangered, threatened, proposed, or candidate species (including Greater Sage-grouse) were observed in or around the Beckys project area. The project area was put through the USFWS IPaC program (Information for Planning and Consultation). Endangered Species listed as potentially affected by activities in this location include the grizzly bear and the monarch butterfly. Both Bald and Golden Eagles were also listed as potentially present in the project area. Migratory Birds that occur on the USFWS Birds of Conservation Concern that are potentially present in the Beckys project area include Bald Eagles, Golden Eagles, Broad-tailed Hummingbirds, Calliope Hummingbirds, Cassin's Finches, Evening Grosbeaks, Mountain Plovers, Olive-sided Flycatchers, Pinyon Jays, and Rufous Hummingbirds.

Please see Appendix V—Wildlife for more information on the wildlife of the area. A number of other species, especially migratory birds, were observed. As such, ground nest surveys will occur within 72 hours of any new surface disturbing activities scheduled to occur between April 10th and July 15th. If occupied nests are located, no activity will occur until the nest is vacated. Further, raptors were observed in and around the area; and so the area will be monitored for the presence and occupation of raptor nests between January 15th and July 31st as necessary. If new raptor nests are found in the vicinity (i.e. ½ mile for general raptors and golden eagles; 1 mile for bald eagles) of the proposed area of disturbance, ACC will consult with BLM to develop appropriate mitigation measures.

The Beckys project area is located within a Core Area for Greater Sage-grouse. However, as all of the Beckys project area is already within MTDEQ Opencut Permit 8, the project is not required to go through the formal consultation process with the Montana Sage Grouse Habitat Conservation Program. ACC does commit to comply with the following mitigation:

1. Surface disturbance will be minimized to the extent possible. Disturbance estimates were calculated using the maximum case scenario. The actual disturbance footprint is anticipated to be significantly smaller than the referenced 219.38 acres. The only active lek within the analysis area is the Bear Canyon Lek, over 3.0 miles away.
2. ACC will implement the required Stormwater Pollution Prevention Plan (SWPPP) covering ACC's mine permit for the Warren Mine Site. Erosion (off-site sediment migration) will be minimized through use of stormwater Best Management Practices (BMPs) during mining.
3. There are some existing BLM grazing allotment fences that will be affected by mining activities. These fences will be temporarily moved around disturbed areas and replaced after final reclamation. Markers will be installed on fence wires of replaced fences to enhance visibility per current guidelines from Montana Fish, Wildlife, and Parks (MFWP) and/or USDA (2012) Natural Resources Conservation Service (NRCS).
4. Noxious weed infestation may occur in and adjacent to the project area prior to mining. Visual monitoring and chemical control will be conducted for noxious weed species from the time disturbance is initiated through life-of-mine. Potential spread of noxious weeds will be managed by: seeding reclaimed lands with a native seed mix that is as weed-free as is commercially available, monitoring mine site and reclaimed lands periodically for noxious weed establishment and revegetation success (to outcompete weed species), and spraying noxious weed populations as necessary if significant infestations are noted.

Please see Appendix VI—Cultural Resources for more information on cultural resources of the area. A cultural survey of the project area was performed by Cultural Resource Analysts (CRA) during the 2023 field season.

The existing fences in the area will be crossed as the AA/H series progresses. These fences will be replaced as necessary after the area has been reclaimed. Temporary fences may be installed prior to reclamation if necessary. No utilities or public roads will be disturbed.

Processing Facilities and Waste Rock and Tailing Disposal Facilities

No buildings, processing plants, or other facilities will be constructed for this mining operation. All mined bentonite will be hauled to ACC's plant site as described below in the Plans for All Access Roads, Water Supply Pipelines, and Power or Utility Services subsection.

Water Management Plans

Please refer to Appendix II—Hydrology for detailed information on the hydrology of the area. No perennial or intermittent streams will be disturbed by the mining operation. However, ephemeral drainages will be disturbed and properly reclaimed.

Best Management Practices will be followed to minimize the potential for run-off to transport sediment to downstream locations. Erosion will be kept to a minimum. If necessary, straw bales or wattles, erosion blankets, sediment fences, and/or water bars will be used for erosion control. Sediment in storm water run-off may also be controlled around disturbed areas by constructing temporary diversion ditches. Given the size of the affected watersheds in the area, these ditches may be constructed using a grader blade. The ditches would be triangular in shape and be a minimum of 1.5 feet deep with 2:1 side slopes. Soil salvaged while constructing the ditch would be placed on the downslope side of the ditch in order to create a berm that will further prevent run-off from flowing over disturbed areas. Due to inadequate capacity or special concerns, larger interceptor ditches may also be constructed with a scraper. These ditches would have a bottom width of approximately 12 feet with 1:1 side slopes. All interceptor ditches will have sufficient capacity to pass the peak flow from the 2-year, 6-hour storm. All interceptor ditches will be blended into adjacent topography, soiled, and seeded when they are no longer necessary.

If surface water accumulates in an open pit, it will be buried or used to control dust in the disturbed area and/or on the haul road. Temporary overburden and soil stockpiles will not block drainages. Permanent overburden piles will be constructed to allow for natural drainage to occur. All disturbed areas will be revegetated as soon as possible to minimize the potential for post-mine erosion.

During the exploration drilling process, water was rarely encountered at relatively shallow depths and is likely perched water overlying bentonite beds. Based on the nature of the strata to be mined and past experiences, ACC does not anticipate that groundwater will be impacted.

Rock Characterization and Handling Plans

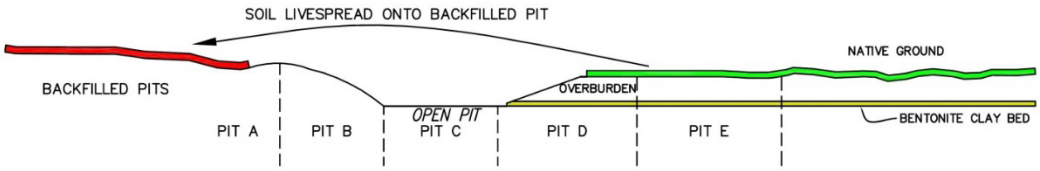
The bentonite to be mined on Beckys project area is associated with the Muddy Sandstone, Thermopolis Shale, and Mowry Shale. The average thickness of the bentonite beds within the area ranges from two to five feet.

Please see Appendix I—Geology for information on overburden characterization associated with this project. ACC is utilizing this information to develop the overburden handling plan described in this plan.

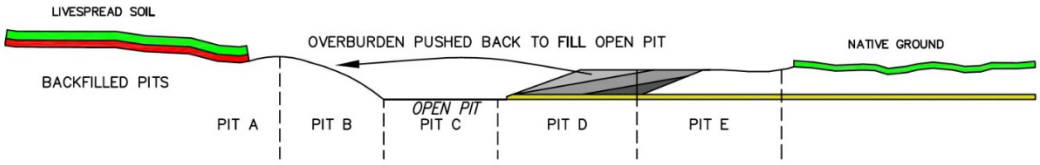
Overburden thickness in bentonite pit series typically ranges from 1 to 50 feet thick. Approximately 20,000 to 100,000 cubic yards of overburden is removed per pit. Overburden handling procedures are designed to immediately backfill an open pit as mining progresses with each new pit so that the resulting reclaimed substrate will support the successful growth of vegetation as quickly as possible. No permanent overburden features such as overburden borrow areas or temporary/permanent overburden stockpile

areas are proposed for the Beckys project.

PHASE 1



PHASE 2



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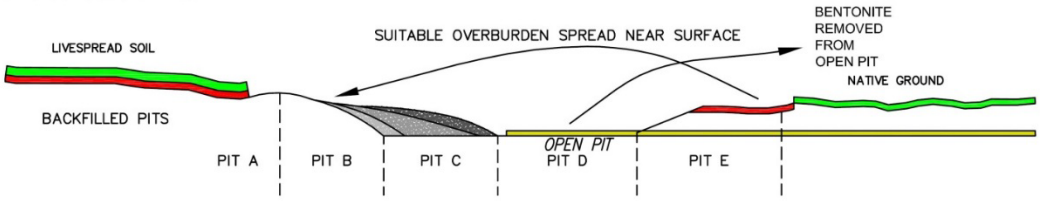

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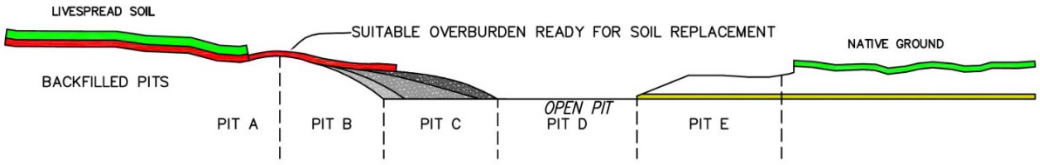


PIT SERIES PROGRESSION

Phase 1: An open pit (Pit C) has had the bentonite excavated from it. Behind Pit C are a partially backfilled pit (Pit B) and previous pits (Pit A and prior pits) that have been backfilled and contoured. In preparation of the opening of the next pit (Pit D), scrapers strip soil resources which are live spread over the backfilled and contoured pits. If no area is available to spread the soil, the soil will be stockpiled for later use.

Phase 2: The exposed overburden over future Pit D is ripped with dozers and then pushed with dozers or hauled by scrapers to finish filling Pit B and begin filling Pit C. This leads to the opening of Pit D. As the overburden is moved, it tends to be mixed across strata so that any potential undesirable chemical properties are diluted in the reclaimed pit. Material closest to the bentonite is typically buried deepest in the reclaimed pit. During this phase, the overburden over Pit B is contoured to blend with native topography.

Phase 3: After the bentonite is removed from Pit D, the most suitable material, which is often the uppermost material, is removed where soil resources have been stripped over future Pit E. At least 4 feet of suitable material is spread over the overburden moved in Phase 2 to establish an adequate root zone depth.

Phase 4: The suitable material from Pit E has been spread and contoured over the overburden of Pit B. All bentonite has been removed from Pit D. Phase 1 can now be restarted with the stripping of soil resources that will be live spread over the suitable material on Pit B.

Reclamation of the last pit in the mine series is accomplished by filling it with material from a temporary overburden stockpile. If no overburden stockpile is available for replacement, material from the surrounding area will utilized and contoured to provide through drainage. Specific overburden replacement plans are described above in the Operating Plans for Mining Areas subsection.

Quality Assurance Plans

The mine site will be inspected by ACC personnel at regular intervals. ACC's mine manager, surveyors, and environmental personnel visit the mine sites frequently. ACC personnel also coordinate mining activity with the site foreman, who is on site daily to ensure proper operations are followed according to plan and schedule. Areas of concern, such as erosion problems, are communicated to the mining foreman and mining manager directly from operators and other observers.

Spill Contingency Plans

Best Management Practices will be followed to minimize the potential for run-off to transport pollutants to downstream locations. Fuel will be delivered to the mine site and stored in mobile tanks that are relocated as necessary as mining equipment moves throughout the area. No equipment staging, servicing, or fueling areas will be constructed within 300 feet of any wetland or riparian areas. Containment berms are typically constructed from overburden around the mobile fuel tanks. These areas are always located where topsoil has been removed thereby creating a secondary containment basin. If a spill were to occur, mine personnel are instructed to make sure the site is safe, stop additional spillage, ensure containment of spilled materials, and contact the company's environmental representative. Per ACC's Stormwater Pollution Prevention Plan, all spills over 25 gallons will be reported. The spill cleanup process would be completed with the appropriate earth moving equipment depending on the size of the spill. Disposal of the contaminated material would be coordinated by ACC environmental personnel at an approved landfarm in accordance with state and federal regulations.

The potential exists for mined bentonite to unintentionally be spilled onto native land during mining operations. If this does occur, mine personnel are instructed to immediately remove the bentonite and then further clean the site to ensure that deleterious effects are minimized. If the magnitude of the spill requires the use of earth moving equipment to remove the spilled bentonite, any disturbance will be properly reclaimed once the bentonite has been properly removed from the area.

A General Schedule of Operations from Start through Closure

The life of the Beckys mine area is anticipated to be at least 30 years, with mining to commence upon approval. The timing and locations of active mining vary by market demands for various bentonite qualities as well as weather conditions. Minor changes to the mine plan are subject to revision at the actual time of mining. Significant changes to the mine plan will be submitted for approval prior to occurring.

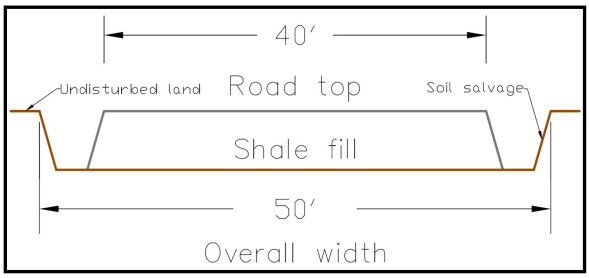
Reclamation will generally be concurrent with the mining progression and will begin as soon as possible. In general, the following schedule will be followed: Reclamation will begin within two years and be completed within four years of the date the lands were affected. If field drying operations are employed, reclamation will begin within three years and be completed within five years of the date the land is affected. However, under certain situations, this general schedule may not be followed: An out-of-pit haul road will be reclaimed within two years of the completion of mining in all series that the road is associated with unless

the landowner requests that the road be made a permanent feature. An in-pit haul road will be reclaimed within two years of the completion of mining in all series that the road is associated with.

Plans for All Access Roads, Water Supply Pipelines, and Power or Utility Services

All material mined in the Beckys area will be hauled to ACC's plant site, which is approximately three miles northeast of Lovell, Wyoming. In-pit and out-of-pit haul roads will be used to access mining areas. A typical haul road cross section is provided in the figure below.

Typical Haul Road Cross Section



In-pit haul roads are temporary roads constructed over areas of future mining or on backfilled pits. These haul roads are reclaimed along with associated mining. Out-of-pit haul roads are constructed outside areas that will be or have been mined. These roads are reclaimed once mining concludes in an area unless desired by the private landowner or the land manager.

Series T and Z will be accessed via in-pit haul roads that connect to ACC's existing nearby haul roads that connect to ACC's Blue Wash Haul Road. The Blue Wash Haul Road connects to Big Horn County, WY County Lane 9 ½ which connects to Wyoming State Highway 37, which ACC's plant site is located on.

Series AA/H will be accessed via in-pit haul roads connecting to ACC's existing haul road. This haul road connects to the pipeline road (Wyo-Ben HR 1.1), which then connects to County Road 7 1/2. This graded road connects to ACC's Blue Wash Haul Road, which then connects to County Lane 9 ½. County Lane 9 ½ connects to Wyoming State Highway 37, which ACC's plant site is located on.

No other facilities or utilities will be constructed in association with the Beckys project.

RECLAMATION PLAN

i. Drill-hole Plugging

A small number of development drill holes may be drilled in advance of mining operations, and the majority of these holes will eventually be mined through. However, each hole will be reclaimed whether or not it is to be mined through. Reclamation of the disturbed area related to each hole will be completed immediately prior to the drill truck leaving the exploration hole. Cuttings and materials extracted from the drill hole will be placed back into the drill hole and any remaining material around the hole will be raked level with the ground. A small amount of seed (from an approved seed mix) will be scattered prior to leaving the location.

ii. Regrading and Reshaping

Appropriate equipment (scrapers, dozers, etc.) will backfill open pits in a backcast system as outlined in the Description of Operations. As the pits are backfilled, they will be contoured and blended to surrounding topography. Past experience has shown that the "swelling" (~30% on average) of the replaced overburden will compensate for the volume of the removed bentonite bed in many reclaimed pits. As such, the post-

mine topography of reclaimed pits closely resembles pre-mine conditions. Efforts will be made to ensure that reclaimed slopes will not be steeper than 3:1 to provide stabilization against wind and water erosion. However, there may be situations when steeper slopes are required to properly blend reclaimed land into adjacent topography; these areas may require special erosion control practices that are described in the Description of Operations. Through drainage will be restored in all areas.

Due to factors such as terrain and economics, out-of-pit spoil (OOPS) piles and borrow areas are a necessary component of bentonite mining. Efforts are made to minimize the number of OOPS piles and borrows associated with mining. However, for the Beckys project, no OOPS piles or borrow areas are necessary because the startup and end of all the series involved occur off the project area.

iii. Mine Reclamation, Including Information on the Feasibility of Pit Backfilling That Details Economic, Environmental, and Safety Factors

Lands in the area affected by mining operations will be reclaimed to the pre-mine land uses of wildlife habitat, livestock grazing, and recreation. Additionally, ACC will replace any fencing removed or altered by mining operations.

As discussed in the Description of Operations, ACC uses a continuous backcast mining method that allows for reclamation to follow active mining as a series progresses. Because of this, the total amount of unreclaimed land remains relatively stable as a series progresses with a maximum of one open pit being present at any given time. Further, ACC designs its mine plans to maximize the efficiency in backfilling the final pits in a series. These factors, combined with ACC's long history of bentonite mining in the area, help ensure that successful reclamation is economically feasible.

ACC's reclamation plans are typically designed to reclaim the land to the pre-mine land uses. As such, all phases of reclamation, beginning with mining, are conducted with the most environmentally sound practices, as outlined in this section and the Description of Operations section. Additionally, ACC prioritizes safety in its mining operations and works to ensure that reclaimed lands are safe through the design and construction of post-mine topography.

Riparian Mitigation

No equipment staging, servicing, or fueling areas will be constructed within 300 feet of any wetland or riparian areas. Additionally, Best Management Practices will be followed to minimize the potential for run-off to transport sediment to downstream locations. Erosion will be kept to a minimum. If necessary, straw bales or wattles, erosion blankets, sediment fences, and/or water bars will be used for erosion control.

Wildlife Habitat Rehabilitation

The proposed seed mixes for this project were designed to closely resemble the species identified during baseline vegetation studies. As such, the mixes should lead to post-mine vegetation community, and habitat, types that resemble those found prior to mining. To ensure that revegetation can occur as fast as possible, reclamation will occur concurrently with mining. Seeding will occur during the first fall/winter after soil has been replaced. The seed mixes that will be used are described in the Reclamation Plan. Mining and reclamation areas will continue to be monitored throughout the life of the mine. These practices will be conducted as stated in Appendix V Wildlife.

Topsoil Handling

Prior to the movement of overburden, topsoil and subsoil will be stripped with equipment in at least two separate lifts. Salvaged topsoil and subsoil is either stockpiled separately or live spread (directly spread onto previously backfilled and contoured areas). Topsoil and subsoil from all affected areas will be salvaged prior to disturbance according to the recommendations in Appendix III—Soils. As the mining disturbance proposed by the Beckys project continues active mining series, it is anticipated that the majority of soil resources salvaged will be live spread rather than stockpiled.

Topsoil and subsoil will be clearly marked with signs reading TOPSOIL and SUBSOIL. Stockpiles left in place for more than one year will be seeded an approved seed mix in the spring or fall. Stockpiles will be reseeded if erosional stability has been significantly compromised due to insufficient vegetation establishment.

Topsoil and subsoil will be spread over all areas where it was salvaged during mining activities in preparation for reseeding. Soil resources are spread according to overburden handling plans presented in the Operating Plans for Mining Areas subsection in the Description of Operations section. Areas where backfilled overburden is compacted due to multiple scraper passes will be ripped with a motor patrol prior to spreading soils. The soil will be replaced by rubber-tired scrapers in at least two lifts in the reverse order of removal. Depending on its characteristics, the soil may then be disked in preparation for seeding or will be seeded immediately during the next seeding season.

The soil resources in the Beckys project area are composed of soils that were used in reclamation in 1977 and native soils. These two kinds of soils will be salvaged and respread separately from each other. The native soils that will be salvaged from the AA series are shallow; paralithic contact is typically encountered at 4-6”. Very little, if any, subsoil is present on this soil type. The overburden profile of the MOC bentonite bed contains a layer of brown shale material that is chemically and physically suitable to be used as a substitute for subsoil. ACC is currently using this material as substitute subsoil on the ML-59 mining series (D series, also mining the MOB/MOC bentonite beds) in Opencut Permit 8 to the southeast of the Beckys project area. Revegetation on this reclamation has been successful. ACC proposes to use this substitute subsoil material on mining disturbance of the MOB/MOC as well.

The area includes badland areas that may be affected by mining operations. Unless excess soil resources are available, no soil will be respread in these areas. Seeding will occur on badland areas that did have soil spread over them, and limited or no seeding will occur on badland areas that did not have soil spread over them. Areas without soil will be contoured into existing topography and harrowed to blend them back into adjacent native lands.

Any fences removed during the mining process will be reconstructed as necessary following seeding or final reclamation.

Revegetation

Seeding will be done with a tractor pulling a broadcast seeder mounted on a chisel plow/furrower. This method leaves a moderately rough seedbed to capture and hold water and help protect against wind erosion. In areas where soil compaction is significant, such as topsoil stockpile locations (typically referred to as “run on”), seeding will be preceded by ripping with a motor patrol as necessary. Ripping and seeding operations will be done along the contour or perpendicular to the prevailing winds whenever possible. Generally, seeding will take place between October 1st and mid-April. While late fall is the preferred planting season, weather conditions and the number of acres scheduled for seeding will largely dictate the

actual time of seeding in any given year. Seeding will occur during the first fall/winter after soil has been replaced.

The seed mixes that are proposed to be used are outlined in the tables below (Standard Seed Mix and Big Sagebrush Seed Mix). Changing market conditions and/or new vegetation species information may require adjustments to the seed mix at the time of actual seeding. Alternative species and rates are also shown here in the event some substitutions need to be made. Any variation from the proposed mix or listed substitutions must have approval from the BLM where public lands are involved.

Limited or no seeding will occur in select areas in which no soil has been replaced, such as areas previously mapped as badlands. The areas for which soil replacement is not required will be graded and harrowed to blend in with the surrounding reclamation and native topography. Micro sites such as swales and depressions that are likely to accumulate moisture and support revegetation will be selected for seeding as necessary. Targeted seeding methods will be utilized, and black greasewood, big sagebrush, and/or rabbitbrush will be seeded at a rate of 1 pound of pure live seed (PLS) per acre in order to recreate the diverse habitat that previously existed in disturbed areas.

ACC will be responsible for detecting and monitoring noxious and invasive weeds associated with the Beckys project area and its associated haul roads. Detection and monitoring will be the responsibility of ACC's environmental and other field personnel any time they are present in the area. ACC will also be responsible for any chemical or mechanical treatment with the intent to eradicate any noxious weed invasions associated with mining activities. Any chemical treatment of noxious or invasive weeds will be performed by a licensed individual who is knowledgeable about appropriate chemicals used for specific species and seasons of use. Any chemical treatment will first be approved by a Pesticide Use Proposal and include only BLM approved chemicals. All treatments on federal lands will be reported annually to the BLM. Mechanical treatment will also be performed by a licensed individual and/or ACC personnel.

If a noxious or invasive weed infestation is detected, it will be marked with the intention of chemical and/or mechanical eradication at the earliest appropriate time. If any vehicles associated with mining activities are required to travel near the infestation, they will be instructed to avoid the infested areas. American Colloid will minimize any noxious weeds.

Standard Seed Mix

This mix will be used where Gardner saltbush was dominant in the pre-mine vegetation communities.

Areas with topography particularly prone to catch and hold moisture may be targeted with 1 PLS lb./acre big sagebrush seeded separately to reestablish sagebrush inclusions present in pre-mine vegetation communities.

Standard Grasses:

Grass species (43% of total mix)	PLS lbs./acre	No. seeds per lb.	Seeds per sq. ft.	Percent of mix
Indian ricegrass	1.25	141,000	4	3%
Bottlebrush squirreltail	3	192,000	13	9%
Western wheatgrass	2	110,000	5	3%
Sandberg bluegrass	1	1,047,000	24	16%
Bluebunch wheatgrass	2	140,000	6	4%
Sand dropseed	0.1	5,298,000	12	8%

Standard Shrubs:

Shrub species (50% of total mix)	PLS lbs./acre	No. seeds per lb.	Seeds per sq. ft.	Percent of mix
Fringed sagebrush	0.5	4,536,000	52	35%
Fourwing saltbush	4	52,000	5	3%
Shadscale	2	64,900	3	2%

Shrub species (50% of total mix)	PLS lbs./acre	No. seeds per lb.	Seeds per sq. ft.	Percent of mix
Gardner saltbush	4	111,500	10	7%
Rubber rabbitbrush	0.5	400,000	5	3%

Standard Forbs:

Forb species (7% of total mix)	PLS lbs./acre	No. seeds per lb.	Seeds per sq. ft.	Percent of mix
Rocky Mountain beeplant	0.5	65,900	1	1%
Annual sunflower	1	58,500	1	1%
Blue flax	0.5	293,000	3	2%
Scarlet globemallow	0.5	500,000	6	4%

Total PLS lbs. per acre: 22.85

Total seeds per square foot: 151

Alternate species if others are in short supply

Alternate Grass Species

Grass species	PLS lbs./acre	No. seeds per lb.	Seeds per sq. ft.
Thickspike wheatgrass	2	154,000	7
Slender wheatgrass	2	159,000	7
Great Basin wildrye	2	130,000	6
Russian wildrye Bozoisky*	2	175,000	8
Alkali sacaton	0.5	1,758,000	20

Alternate Forb Species

Forb species	PLS lbs./acre	No. seeds per lb.	Seeds per sq. ft.
Western yarrow	1	2,770,000	64
Northern sweetvetch	0.5	46,000	1
Desert parsley	0.5	45,000	1
Yellow sweetclover*	0.5	260,000	3
American vetch	1	33,000	1

Alternate Shrub Species

Shrub species	PLS lbs./acre	No. seeds per lb.	Seeds per sq. ft.
Big sagebrush	1	2,500,000	57
Winterfat	0.5	123,000	1

*Only on private lands

PLS seeding rate is based on broadcast seeding. If drill methods are used the rate will be reduced by 30-40%.

Big Sagebrush Seed Mix

This mix will be used where Wyoming big sagebrush was dominant in the pre-mine vegetation communities.

Areas with topography particularly prone to catch and hold moisture will be targeted with this mix along with an extra 1 PLS lb./acre big sagebrush seeded separately.

Big Sagebrush Area Grass Species

Grass species (29% of mix)	PLS lbs./acre	No. seeds per lb.	Seeds per sq. ft.	Percent of mix
Bottlebrush squirreltail	2.5	192,000	11	6%
Thickspike wheatgrass	1	154,000	4	2%
Sandberg bluegrass	1	1,047,000	24	13%

Grass species (29% of mix)	PLS lbs./acre	No. seeds per lb.	Seeds per sq. ft.	Percent of mix
Bluebunch wheatgrass	1	140,000	3	2%
Sand dropseed	0.1	5,298,000	12	6%

Big Sagebrush Area Shrub Species

Shrub species (67% of mix)	PLS lbs./acre	No. seeds per lb.	Seeds per sq. ft.	Percent of mix
Fringed sagebrush	0.5	4,536,000	52	28%
Big sagebrush	1	2,500,000	57	30%
Fourwing saltbush	3	52,000	4	2%
Shadscale	2	64,900	3	2%
Gardner saltbush	4	111,500	10	5%
Winterfat	0.5	123,000	1	1%

Big Sagebrush Area Forb Species

Forb species (4% of mix)	PLS lbs./acre	No. seeds per lb.	Seeds per sq. ft.	Percent of mix
Rocky Mountain beeplant	0.5	65,900	1	0.4%
Annual sunflower	0.5	58,500	1	0.4%
Scarlet globemallow	0.5	500,000	6	3%
American vetch	0.5	33,000	1	0.2%

Total PLS lbs. per acre: 18.6

Total seeds per square foot: 189

Alternate species if others are in short supply:

Alternate Big Sagebrush Area Grass Species

Grass species	PLS lbs./acre	No. seeds per lb.	Seeds per sq. ft.
Indian ricegrass	1	141,000	3
Streambank wheatgrass	1	156,000	4
Slender wheatgrass	1	159,000	4
Great Basin wildrye	1	130,000	3
Western wheatgrass	2	110,000	5
Russian wildrye Bozoisky*	1	175,000	4
Alkali sacaton	0.5	1,758,000	20

Alternate Big Sagebrush Area Forb Species

Forb species	PLS lbs./acre	No. seeds per lb.	Seeds per sq. ft.
Western yarrow	0.5	2,770,000	32
Northern sweetvetch	0.5	46,000	1
Blue flax	0.5	293,000	3
Desert parsley	0.5	45,000	1
Yellow sweetclover*	0.5	260,000	3

Alternate Big Sagebrush Area Shrub Species

Shrub species	PLS lbs./acre	No. seeds per lb.	Seeds per sq. ft.
Rubber rabbitbrush	0.5	400,000	5

*Only on private lands

PLS seeding rate is based on broadcast seeding. If drill methods are used the rate will be reduced by 30-40% except for big sagebrush.

Isolation and Control of Acid-forming, Toxic, or Deleterious Materials

Based on baseline studies and past experiences, no acid-forming or toxic materials are expected to be encountered during mining operations. Should any such substance be encountered, it will be handled according to state and federal laws.

Overburden typically exhibits physical and chemical characteristics that are not conducive to vegetation growth, particularly high SAR values. Overburden handling practices are designed to prevent contamination of soil and surface material that will eventually be used for reclamation. A buffer with a minimum width of 4' and/or other containment structures will be constructed around disturbed areas as necessary to prevent overburden that has not been recontoured and/or had soil resources respread from sloughing onto adjacent vegetated land and to also contain any stormwater runoff.

Removal or Stabilization of Buildings, Structures and Support Facilities

No buildings or structures will be constructed for this operation. No power lines, utilities, or other support facilities will be moved, re-routed, or constructed for this operation.

Any new haul roads constructed during the mining of these properties will be reclaimed to their original condition. In cases where in-pit haul roads are constructed, the areas adjacent to the road will be reclaimed, with enough soil resources retained to reclaim the road when the final pit is reached. Reclamation of roads will include removal of culverts, fills, and surfacing materials, and grading to blend with native topography. Compacted areas will also be ripped with a motor patrol to decompact the roadbed prior to application of soil resources and seed.

Post-closure Management

Revegetation success will be monitored. Reseeding or interseeding efforts may be considered after four consecutive years of evidence that the initial seeding attempt has failed. However, if significant erosion problems become evident due to lack of vegetation during the four-year evaluation period, efforts to stabilize the erosion, including reseeding, will commence as soon as field conditions allow.

Noxious weed encroachment on reclaimed areas will be controlled as necessary. If it is necessary to control noxious or invasive weeds on federally managed areas, a Pesticide Use Proposal (PUP) and written approval from the Authorized Officer (BLM Field Manager) will be obtained prior to any treatments.

Reclamation standards will be met or exceeded to successfully achieve post-mining land uses. Achieving post-mining land uses will require that the reclaimed land consist of multiple, distinct vegetation community types that generally parallel, though are not necessarily identical to, the different community types found to be present prior to mining. The general success of reclaiming these communities will be evaluated through use of the extended reference area concept: The different reclaimed community types will be quantitatively and qualitatively compared individually to their associated community types as identified during baseline vegetation studies. The associated community types used for comparison should be located on undisturbed, native land in the vicinity of the reclaimed land. Baseline data (photographs, mapping, and other data) will assist with this comparison. Specific methodology for comparing and evaluating reclamation success will follow the standards mutually agreed upon by ACC, the BLM, and any other relevant agencies or landowners on a case-by-case basis at the time of final bond release.

MONITORING PLAN

The mine site will be monitored for excessive erosion from storm water runoff which could impact surface water quality. Average annual precipitation at the mine site is approximately 6" per year, so storm water is

not anticipated to be a significant problem. Monitoring frequency will coincide with significant precipitation events.

Reclaimed channels will be monitored monthly for erosional stability.

High walls of open pits are monitored for stability as mining and environmental personnel are in the area. Soil is salvaged from a buffer zone around all pits to ensure that any high wall slump would not result in loss of topsoil resources. Backfilled areas are also monitored for sediment releases.

Reclamation is monitored for vegetation establishment and the presence of noxious weeds, which may need to be controlled. Reseeding or interseeding efforts will be considered after four consecutive years of evidence that the initial seeding attempt has failed. However, efforts may occur before four years in order to control erosion. If it is necessary to control noxious or invasive weeds on federally managed land, a Pesticide Use Proposal (PUP) and written approval from the Authorized Officer (BLM Field Manager) will be obtained prior to any treatments.

Air quality is visually monitored for dust, and ACC maintains a steady road watering program wherever hauling activities are occurring. Dust is typically not a problem with actual mining activity due to the nature of the moisture laden shale and crude bentonite where mining occurs.

INTERIM MANAGEMENT PLAN

i. Measures to Stabilize Excavations and Workings

Prior to moving equipment from an active mine site, berms and ditches are constructed to divert surface water around the active mine area and to barricade pit highwalls for safety. Soil is salvaged from a buffer zone around pits to ensure topsoil resources are not at risk in the event of a highwall slump. Containment basins are constructed to collect stormwater runoff from temporary overburden piles or bentonite stockpiles as necessary.

ii. Measures to Isolate or Control Toxic or Deleterious Materials

Overburden typically exhibits physical and chemical characteristics that are not conducive to vegetation growth, particularly high SAR values. Overburden handling practices are designed to prevent contamination of soil and surface material that will eventually be used for reclamation. A buffer with a minimum width of 4’ and/or other containment structures will be constructed around disturbed areas as necessary to prevent overburden that has not been recontoured and/or had soil resources respread from sloughing onto adjacent vegetated land and to also contain any stormwater runoff. When mining resumes, the overburden will continue to be handled as described in the Description of Operations section.

iii. Provisions for the Storage or Removal of Equipment, Supplies, and Structures

All equipment is moved from the mine site once the area is determined safe, stable, and clean. Occasionally a piece of earthmoving equipment undergoing repair may be left in the area while waiting for parts.

iv. Measures to Maintain the Project Area in a Safe and Clean Condition

Informal monitoring of these sites typically occurs as ACC mining and environmental personnel travel between different mine sites. Any unsafe or undesirable condition observed in a temporarily closed site will be corrected as soon as possible.

v. Plans for Monitoring Site Conditions During Periods of Non-Operation

Inactive mine sites will be regularly inspected by ACC mining and environmental personnel. Areas of concern, such as erosion problems, are communicated to mining foremen and the mining manager; and these problems will be corrected as soon as possible.

vi. Schedule of Anticipated Periods of Temporary Closure

The timing and locations of active mining vary by market demands for various bentonite qualities as well as weather conditions. The BLM will be notified if conditions arise that will significantly affect mining and reclamation plans, as described in the A General Schedule of Operations From Start Through Closure subsection of the Description of Operations section. If necessary, a revised schedule will also be submitted.

APPENDIX I—GEOLOGY, Beckys Project

INTRODUCTION

The Beckys study area covers 378.09 acres within Section 24 of Township 9 South Range 25 East and Sections 19 and 30 of Township 9 South Range 26 East. The area consists of federal and private lands and is approximately four miles southeast of Warren, Montana. The affected area includes 201.20 acres of proposed disturbance related to bentonite mining and associated activities.

Beginning in the late Cretaceous Period, the tectonic setting of the west coast of North America was a subduction zone in which the Farallon Plate was subducting under the North American Plate. This subduction resulted in volcanism, which was periodically highly silicic and explosive. Violent eruptions deposited rhyolite (highly silicic volcanic ash) to the east, over the western half of North America. At this time, a large, shallow, inter-continental sea was present in the area. This inter-continental sea, called the Western Interior Seaway or Niobraran Sea, stretched from the Rockies to the Appalachians, and connected the Arctic Ocean to the Gulf of Mexico (which was then part of the Tethys Sea). Rhyolites deposited in this warm, shallow, marine environment were altered in situ to bentonite, a rock dominantly consisting of montmorillonite minerals.

Mining within the proposed Beckys project area will consist of surface mining for bentonite clay. The project area will be mined for bentonite formed in the Muddy Sandstone, Thermopolis Shale, and Mowry Shale of the lower Cretaceous Period.

The identification and proper management of the overburden resources in the proposed Beckys project area to American Colloid's Permit 8 is essential for the success of reclamation in the mine area and the achievement of the post-mining land use. The understanding of localized topography and geology in the area is also important in formulating proper management practices. The information presented in this appendix is designed to aid in formulating a practical and successful reclamation plan.

TOPOGRAPHY

The topography of the Beckys project area is relatively rugged. A large, steep ridge is located within the bulk of the project area. The topographic relief in the area is approximately 280 feet with a maximum elevation of approximately 4820 feet in the southeast corner of the project area and a minimum elevation of 4520 feet in the northwest corner of the project area.

GEOLOGY

Regional Geology

The Bighorn Basin is a large sedimentary basin in northwestern Wyoming. It is Laramide in age and style and trends northwest–southeast. The basin is surrounded almost completely by mountain ranges: the Bighorn Mountains to the east, the Owl Creek Mountains to the south, the Absaroka Range to the west, the Beartooth Mountains to the northwest, and the Pryor Mountains to the northeast. The Bighorn Basin is drained by the Bighorn River, which empties into the Yellowstone River approximately 50 miles to the north of Hardin, Montana.

Structurally, the Bighorn Basin is an asymmetric anticline. There is a thick sequence of relatively flat Eocene and Paleocene rocks that are underlain by Mesozoic and Paleozoic units that dip more steeply into the basin. The Mesozoic and Paleozoic rocks are also folded into sequences of anticlines and synclines in a zone between the surrounding mountains and the basin interior. Many of these anticlines host vast oil and gas reserves.

Local Geology

Proposed mining in the Beckys project area will affect the Muddy Sandstone, Thermopolis Shale, And Mowry Shales of the Lower Cretaceous Period. These units dip relatively gently to the southwest throughout the project area. Figure 1 displays the general stratigraphy for the Bighorn Basin. Figure 2 displays cross sections constructed through proposed disturbance perpendicular to progression of proposed mining. Cross sections were constructed using drilling information and land status obtained and maintained by ACC. Locations of these cross sections may be found on Appendix I—Geology Map.

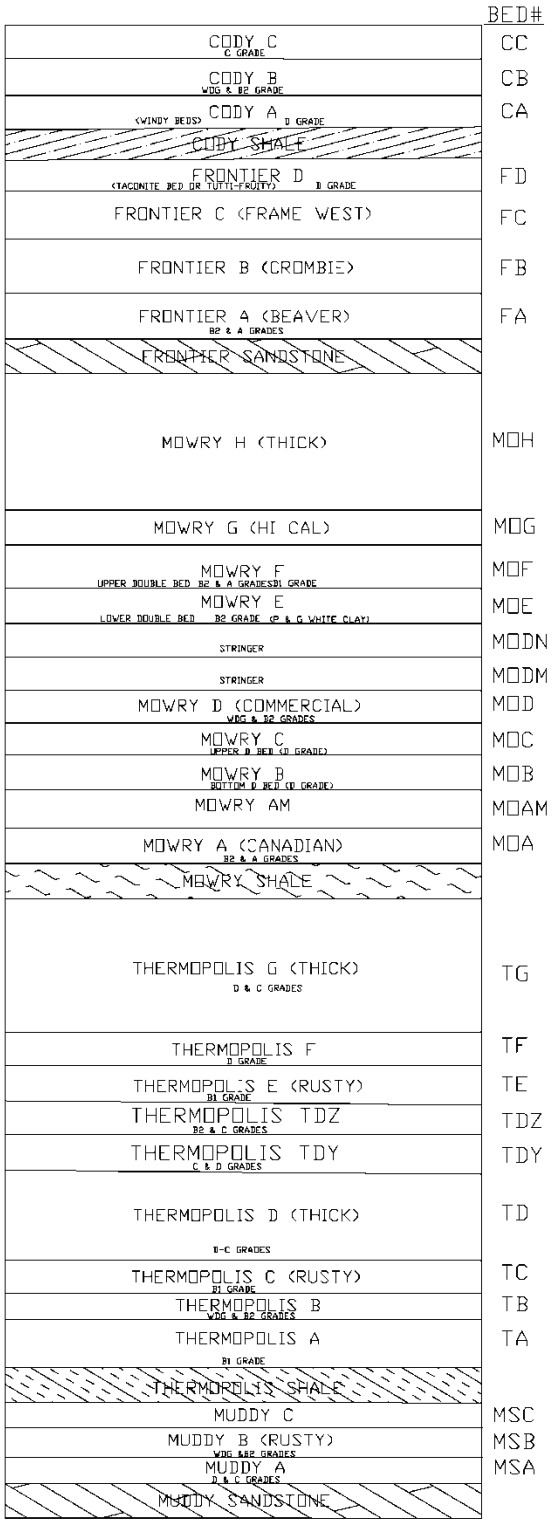
OVERBURDEN SAMPLING AND ASSESSMENT

ACC proposes to use standard back-casting and excavation techniques in the Beckys project area, and soil salvage and respreading will be handled according to methods described in Appendix III. No permanent overburden features (permanent or temporary overburden piles, overburden borrow areas) are proposed as part of the mining activities associated with the Beckys project. Back-cast overburden will be covered by a minimum or two feet of respread topsoil resources. These methods are not anticipated to negatively impact revegetation. Therefore, ACC did not collect any material to characterize the chemical suitability of overburden.

REFERENCES

United States Geological Survey. 2009. National Elevation Dataset. U.S. Geological Survey, Sioux Falls.

Figure 1 Cretaceous Stratigraphy in the Warren Site Area



APPENDIX II—HYDROLOGY, Beckys Project

1. INTRODUCTION

The Beckys study area covers 378.09 acres within Section 24 of Township 9 South Range 25 East and Sections 19 and 30 of Township 9 South Range 26 East. The area consists of federal and private lands and is approximately four miles southeast of Warren, Montana. The affected area includes 201.20 acres of proposed disturbance related to bentonite mining and associated activities.

This appendix on the hydrology of the Beckys project has been prepared by Mary Wilske, Environmental Specialist for American Colloid Company.

2. GROUND WATER

According to a search performed on Montana's Ground-Water Information Center performed on Monday, August 26, 2024, there are no wells located within the project area or within 1000 feet of the Beckys project area.

No alluvial aquifers exist within the Beckys area. Mining will not affect alluvial aquifers near the area because it will take place at least 3 miles from any alluvial aquifer (see Plafcan et al., 1993). Mining will occur between 4820 to 4520 feet above sea level for the area. Bentonite pits are shallow, typically within 30-50 feet of the surface. All mining will take place above the completed intervals of nearby alluvial wells and deeper wells.

Extensive exploration drilling was conducted by American Colloid for the project area, and no groundwater was encountered. Consequently, no groundwater is expected to be encountered during mining of these areas.

3. SURFACE WATER

One surface water right exists within the Beckys project area, right 81695 00, which is a dry reservoir owned by ACC. Please see Appendix II—Hydrology Map for the location of this water right.

Six unnamed ephemeral drainages run through the western portion of the proposed disturbance area. Please see Appendix II—Hydrology Map for the locations of these drainages.

One area mapped as a NWI Wetland is present within the Beckys project area. It is the surface water right described above (dry reservoir) that is owned by ACC. The NWI classification is PUSCh, which is palustrine, unconsolidated shore, seasonally flooded, diked/impounded. This wetland is not proposed to be disturbed by mining activities associated with the Beckys project. Please see Appendix II—Hydrology Map for the location of this wetland.

Mining will not impact surface water rights because the amount of runoff that could potentially reach perennial waters is minimal.

a. Background

The Beckys project area is geomorphically young with an active, weathered topography. The landscape is composed of hills, steep ridges, plateaus, and ephemeral drainages.

The Beckys project area contains several ephemeral drainage systems. These ephemeral drainage systems are composed of dry channels, gullies, or washes. Six of these channels are depicted on the USGS topographic map as blue lines, but actually consist of washes that normally flow only in direct response to precipitation. When infrequent rainfall does generate runoff, it is typically characterized by high-volume, high-velocity, sediment-laden, and turbulent flows with high kinetic energy that cease

soon after the precipitation event stops. For most of these highly localized, short-duration precipitation events, the runoff water never reaches the mainstem channels downstream. Flows typically run above ground for short to moderate distances and gradually dissipate into the channel beds as the channel slopes flatten out prior to leaving the project area boundary. Please see Section 3c Native Channel Characteristics for descriptions of these drainages in the project area.

Runoff in the area is characteristically generated by a single storm event that may last from a few minutes to a few hours. The dominant precipitation events that produce runoff are generally between 1-hour and 3-hour duration peaks. Typically, evidence of their passage is gone within a few hours to a couple of days except for a high-water scour line. Instability within the drainage system is readily observed with channel head-cutting, degradation, and bank slumping commonly occurring.

Although water is sparse, the amount of water that physically runs off is significant due to the nature of the soils and the lack of effective surface cover. Runoff has created the highly eroded landscape and variable topography that is so prevalent throughout the area.

Watershed Features

Proposed mining in the Beckys project area will disturb six unnamed ephemeral drainages. These drainages are displayed on Appendix II- Hydrology Map.

Native Channel Characteristics

The southernmost drainage that is within the proposed disturbance boundary is on ACC patented land. It has developed along the relatively steep sidehill present in the western portion of the project area that dips to the southwest. The beginning of the drainage is within the proposed disturbance boundary, and lower portions of the drainage within Opencut Permit 8 have been disturbed and reclaimed by ACC during previous mining activities. It is not anticipated that more than 175 feet of this drainage will be affected. The channel will be reclaimed and maintain through drainage.

The second southernmost drainage is the only drainage within the proposed disturbance boundary that has developed on federal lands. The channel roughly parallels the haul road and drains into ACC's permitted seasonal reservoir. The lower reaches of this drainage are within the approved disturbance boundary/bonded acreage of Opencut Permit 8. ACC will disturb and reclaim this channel according to methods included in the approved Opencut Permit. The channel will be fully reclaimed and maintain through drainage. It may be necessary to install an 18" culvert for an in-pit haul road in this drainage. If it is necessary, the culvert will be removed upon completion of mining and hauling in the project area.

Three channels on ACC patented land drain into the dry reservoir as well as the drainage described above. The eastern portions of these drainages have been mined through and reclaimed and are within the approved disturbance boundary/fully bonded acreage of Opencut Permit 8. ACC will disturb and reclaim these channels in the proposed disturbance boundary according to methods included in the approved Opencut Permit. The channels will be fully reclaimed and maintain through drainage. It may be necessary to install 18" culverts for in-pit haul roads through these drainages. If it does prove necessary, the culverts will be removed upon completion of mining and hauling in the project area.

The final drainage within the disturbance acreage proposed within the Beckys project area is the channel that drains the dry reservoir on the western side of the pond when the water level becomes high enough. It is unlikely that this drainage will be disturbed for mining, as no pit disturbance is proposed along the drainage. However; the area may be disturbed for an equipment campsite or other associated disturbance. ACC will disturb and reclaim these channels in the proposed disturbance boundary according to methods included in the approved Opencut Permit. The channels will be fully reclaimed and maintain through drainage. It may be necessary to install 18" culverts for in-pit haul

roads through these drainages. If it does prove necessary, the culverts will be removed upon completion of mining and hauling in the project area.

Surface Water Control During Mining

ACC may temporarily divert surface flow if deemed necessary to minimize the effect of runoff from mined lands onto undisturbed lands.

Diversion channels will be constructed as needed to convey runoff around the disturbed lands. ACC will divert flows from the ephemeral channels into the diversion channels. Given the size of the affected watersheds in the area, these ditches may be constructed using a grader blade. The ditches would be triangular in shape and be a minimum of 1.5 feet deep with 2:1 side slopes. Soil salvaged while constructing the ditch would be placed on the downslope side of the ditch in order to create a berm that will further prevent run-off from flowing over disturbed areas. Due to inadequate capacity or special concerns, larger interceptor ditches may also be constructed with a scraper. These ditches would have a bottom width of roughly 12

feet with 1:1 side slopes. All temporary interceptor ditches will be blended into adjacent topography, soiled, and seeded when they are no longer required.

If erosion/sediment deposition becomes a concern, ACC will utilize best management practices (BMPs) in the form of straw bales, straw wattles, sediment fences, erosion control blankets or water bars to be instituted within the channel as needed to control sediment deposition in undisturbed areas.

ACC plans to construct short in and out of pit haul road spurs which may require culverts. Although no streams or major channels will be crossed, a culvert may be necessary to allow the surface flow of these channels to pass underneath the temporary roads created to transport soil, overburden, and bentonite (Description of Operations Map). If necessary, an 18” culvert may be installed in order to allow surface flow and to reduce the amount of maintenance associated with silt removal. Typical culvert installation details are illustrated in Figure 1. A typical haul road design is depicted in Section 2(viii) of this submittal.

Typical Reclaimed Channel Description

Post-mine topography will be constructed to blend in with native topography, reclaimed channels will be constructed to tie into native channels and incorporate native bedrock where possible, and watershed sizes will remain roughly the same as pre-mine conditions. Because the size of reclaimed channels is dictated primarily by the size of equipment used to construct them, one typical reclaimed channel design based on equipment capabilities will be used for reconstruction of all channels when mining is completed. The typical base channel design diagram is shown in Figure 2.

Reclaimed channels will tie into native channels. Native bedrock will be incorporated into transition zones in areas where it exists. Feathering between the native and reclaimed channels will take place in order to ensure that the transition zones remain stable. Armoring and/or the use of grade control structures may take place if deemed necessary; however, the need for these structures should be minimal. Figure 3 illustrates an example of a structure which can be used to prevent erosion and the formation of nick points where reclaimed channels tie into native channels. The pre-mine and reclaimed channel cross sections are very similar and well-defined pilot channels have not yet eroded into the pre-mine channel bottom; therefore, the potential for unstable transitions zones to develop is less than in transition zones between reclaimed and native channels.

Figure 1 Typical Culvert Installation Details

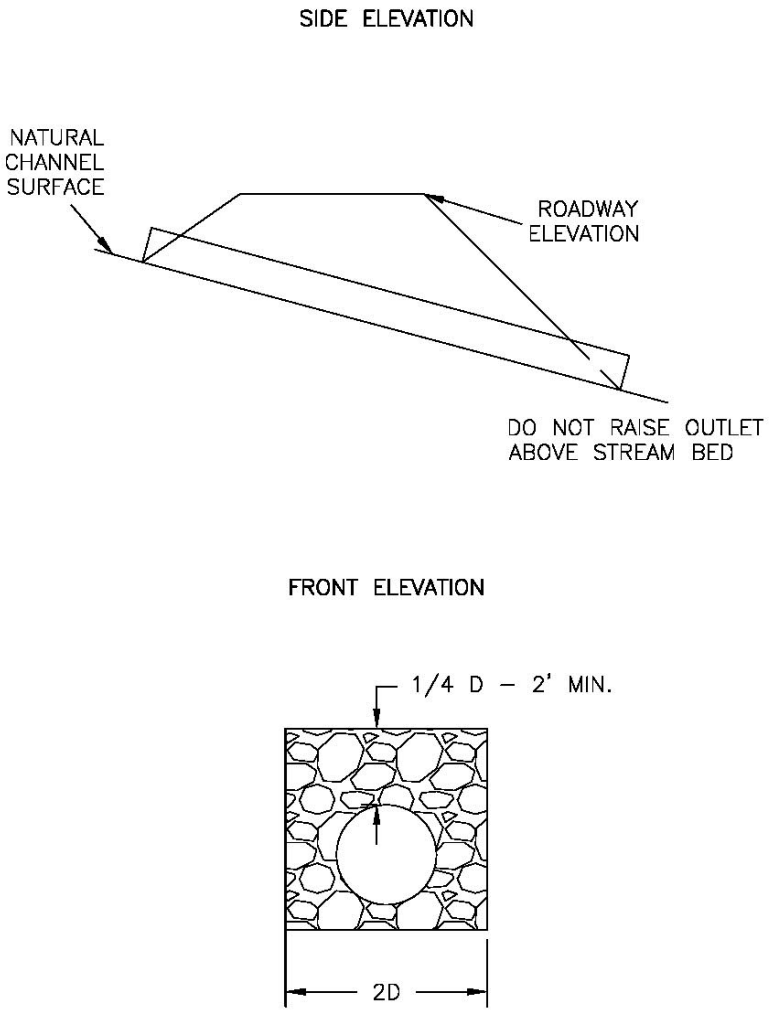


Figure 2 Reclaimed Channel Cross Section

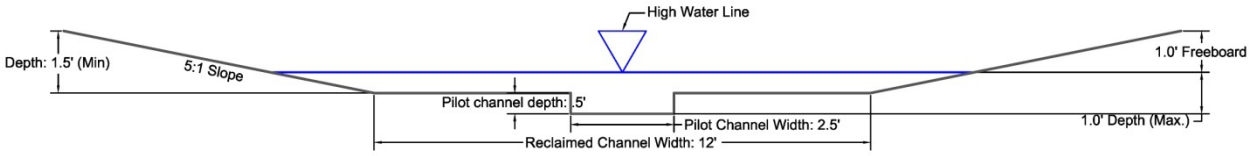
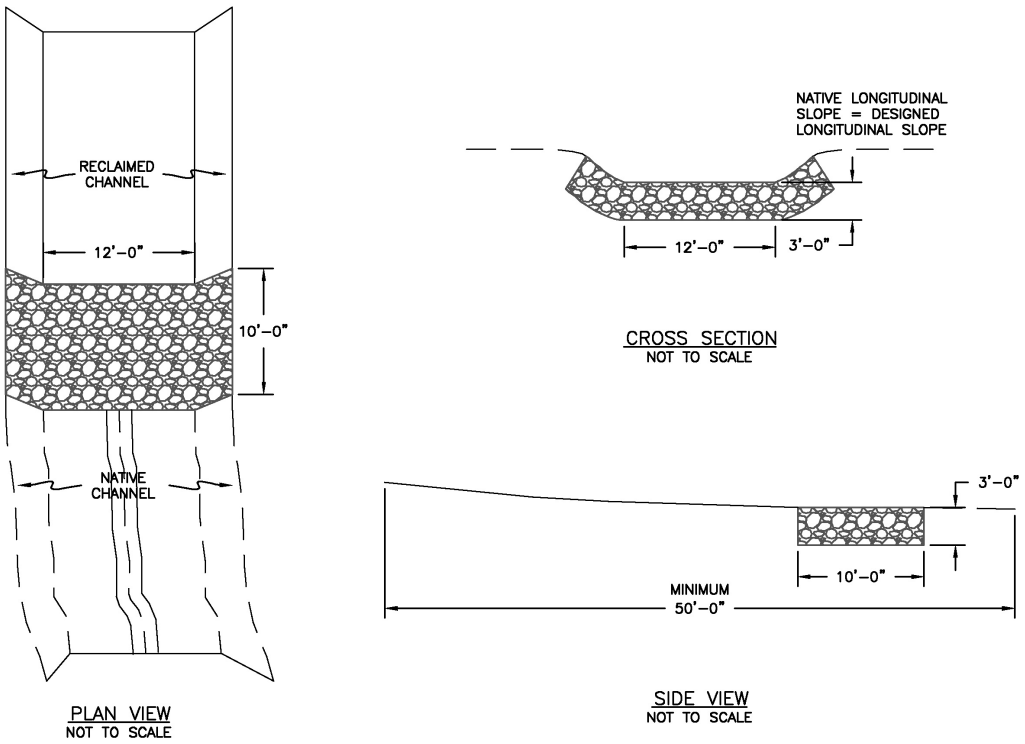


Figure 3 Grade Control Structure



4. WETLANDS

One wetland was identified within the project site but is not proposed to be disturbed. This wetland is a dry/seasonal reservoir whose surface water right is owned by ACC. No areas of dominant hydrophytic vegetation or adequate wetland hydrology to support the development of wetlands occur within the project boundary. The NRCS soil map indicates no hydric soil within the project site at the macroscale (NRCS 2015).

5. REFERENCES

Natural Resource Conservation Service (NRCS). 2015. Soil Survey, Hydric Rating by Map Unit. http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx, site accessed July 2015.

Plafcan, Maria, E.W. Cassidy, and M.L. Smalley. 1993. Water resources of Big Horn County, Wyoming. USGS Water-Resources Investigations Report 93-4021.

APPENDIX III—SOILS

1. INTRODUCTION

The Beckys study area covers 378.09 acres within Section 24 of Township 9 South Range 25 East and Sections 19 and 30 of Township 9 South Range 26 East. The area consists of federal and private lands and is approximately four miles southeast of Warren, Montana. The affected area includes 201.20 acres of proposed disturbance related to bentonite mining and associated activities.

Mining within the proposed Beckys project area will consist of surface mining for bentonite clay. The project area will be mined for bentonite formed in the Muddy Sandstone, Thermopolis Shales, and Mowry Shales of the lower Cretaceous Period.

The identification and proper management of the topsoil resources in the proposed Beckys project area to American Colloid's Opencut Permit 8 is essential for the success of reclamation in the mine area and the achievement of the post-mining land use. The understanding of localized topography and geology in the area is also important in formulating proper management practices. The information presented in this appendix is designed to aid in formulating a practical and successful reclamation plan.

2. TOPOGRAPHY

The topography of the Beckys project area is relatively rugged. A large, steep ridge is located within the bulk of the project area. The topographic relief in the area is approximately 280 feet with a maximum elevation of approximately 4820 feet in the southeast corner of the project area and a minimum elevation of 4520 feet in the northwest corner of the project area.

3. SOIL MAPPING UNITS

Soils in the Beckys area have previously been mapped for other permitting actions within Opencut Permit 8; therefore, no soil survey was performed for this modification. The survey was performed by James Nyenhuis for the Amendment 4 application submitted by ACC to the DEQ and BLM in 2006. Nine soil mapping units were identified in the Beckys project area. The descriptions and mapping submitted with this modification/amendment have been updated according to ACC's current mining and reclamation status. Descriptions of the soil units mapped in the Beckys project area, the recommended salvage depths, and handling methods are summarized and presented below. Table AIII.1 summarizes soil mapping units and recommended salvage depths.

a. Badlands (BDL)

Badlands are present along a steep shale ridge that runs northwest/southeast throughout the Beckys project area. The unit is composed of black to dark gray sodic shale with thin bentonite stringers. It is dominantly barren of vegetation and has very few, if any, soil resources. 30.6 acres of Badlands were mapped in the Beckys project area, and 25.2 acres of this mapping unit are proposed to be disturbed by mining activities. If any surplus suitable soil resources are available near mining in badlands, the material may be spread on areas mapped as badlands and reseeded. Please see Appendix III—Soils Map for the extent of this mapping unit.

Soil salvage recommendations for the Badlands mapping unit are 0" topsoil and 0" subsoil.

b. Disturbed Lands (DL)

Disturbed lands are present throughout the Beckys project area and are composed of haul road corridors and active bentonite mining. No soil is available for salvage in this mapping unit, as the material has already been salvaged for piling or respreading. As mining progresses and is completed in Opencut Permit 8, currently active mining will be reclaimed, and soil spread and seeded. 19.4 acres of disturbed lands are mapped within the Beckys project area, and 0.01 acres are within the proposed disturbance boundary. Please see Appendix III—Soils Map for the extent of this mapping unit.

Soil salvage recommendations for Disturbed Lands are 0" topsoil and 0" subsoil.

c. Haverson-Heldt silty clay loam (Hn)

Soils mapped as Haverson-Heldt silty clay loam are located along the drainages in the northern portion of the project area that drain into the pond in claim Ned 11A. The Haverson and Heldt soil types are

generally deep soils, with over forty inches of material until paralithic contact. They are fine to fine-loamy and are well drained. A few inclusions of poorly drained soils are also present in the mapping unit. Roughly 70% of the unit is composed of Haverson silty clay, while 25% consists of Heldt silty clay loam. 22.4 acres of this soil mapping unit was mapped in the Beckys project area, with 7.8 acres proposed to be disturbed by mining activities. Please see Appendix III—Soils Map for the extent of this mapping unit.

Soil salvage recommendations for Haverson-Heldt silty clay loam are 6" topsoil and 6" subsoil. Based on rooting depths to paralithic contact, the material from 12" to contact with bedrock (28") may also be salvaged as substitute soil material if necessary. Soils salvaged from this unit will be stockpiled and/or respread separately from reclaimed soils.

d. Reclaimed Lands (RL)

Reclaimed Lands are present along both slopes of the steep hill/ridge in the Beckys project area. Reclaimed lands on the southwestern side of the ridge are associated with Mowry bed bentonite mining that was reclaimed in 1977 (eastern side, MOD bentonite bed), and in 2001-2008 (western side, MOE/MOF bentonite bed). Reclaimed soils on the northeastern side of the ridge were seeded in 2012 through 2015 and are associated with mining in the Thermopolis Shales. 68.6 acres of Reclaimed Lands are present in the Beckys project area. Of those, 38.7 acres are proposed to be disturbed. Please see Appendix III—Soils Map for the extent of this mapping unit.

Based on respread depth associated with the approved mine plan and plan or operations associated with Opencut Permit 8, the recommended salvage depth for Reclaimed Lands is 6" topsoil and 0" subsoil. Soils salvaged from reclaimed lands will be stockpiled and spread separately from native soils. In areas where reclaimed soils were not vegetated, suitable subsoil substitute may be used as a subsoil or topsoil resource.

e. Sayles-Persayo Complex (SPA)

The Sayles-Persayo Complex is present within the Beckys project area along the northeastern slope of the steep ridge, just downslope of the areas mapped as Badlands. The unit is composed of approximately 80% Sayles clay and 15% Persayo loam, with 5% badlands or shale outcrops. The Sayles soil type is deep and well drained, with slow permeability with about 40" effective rooting depth. Persayo soils are shallow and well drained with paralithic contact ranging between 6-20 inches. 31.4 acres of Sayles-Persayo Complex is present within the Beckys project area, and 10.1 acres were mapped within the proposed disturbance area. Please see Appendix III—Soils Map for the extent of this mapping unit.

Soil salvage recommendations for this complex have been changed from those approved in Amendment 4 from 12" topsoil and 12" subsoil to 4" topsoil and 4" subsoil. Amendment 6 was approved in 2006, and ACC has disturbed the SPA soil mapping unit during mining activities since that approval. Reclamation in areas where less material was salvaged for topsoil and subsoil has proven to be more successful than in areas where a full twelve inches of soil resource was salvaged for topsoil. It is assumed that this is due to the higher sodicity and salinity that is often present in the lower horizons of the Sayles soil type than is typically present in the A horizon. Consequently, the recommended salvage depths for the Sayles-Persayo Complex are 4" topsoil and 4" subsoil. Soils salvaged from this unit will be stockpiled and/or respread separately from reclaimed soils and the more suitable Stormitt gravelly sandy loam.

f. Stormitt gravelly sandy loam (St)

Stormitt gravelly sandy loam is present in the northern portion of the Beckys project area in between the ephemeral drainages (Haverson-Heldt Complex). This soil type is deep, well drained, and relatively

coarse textured. 51.30 acres of Stormitt gravelly sandy loam are present within the project area and 19.95 acres are proposed to be disturbed. Chemically, this unit is suitable throughout. Please see Appendix III—Soils Map for the extent of this mapping unit.

Soil salvage recommendations for this complex have been changed from those approved in Amendment 4 from 15" topsoil and 13" subsoil to 4" topsoil and 4" subsoil. Amendment 6 was approved in 2006, and ACC has disturbed the SPA soil mapping unit during mining activities since that approval. Reclamation in areas where less material was salvaged for topsoil and subsoil has proven to be successful. However, all material in the soil profile is chemically and physically suitable. The recommended salvage depths for the Stormitt gravelly sandy loam are 5" topsoil and 10" subsoil. Material below this may be salvaged as substitute subsoil from 15 to 48 inches (23 inches). Soils salvaged from this unit will be stockpiled and/or respread separately from reclaimed soils and the more sodic Sayles-Persayo Complex.

g. Stutzman silty clay (Sz)

Stutzman silty clay is present on the most northwestern portion of the project area, west of areas mapped as Stormitt gravelly sandy loam. The Stutzman soil type is a deep and well-drained soil that is more fine-textured than the Stormitt gravelly sandy loam. Approximately 20.02 acres of the Stutzman silty clay were mapped within the Beckys project area, and 11.98 acres are within the proposed disturbance boundary. Please see Appendix III—Soils Map for the extent of this mapping unit.

Soil salvage recommendations for this complex are 6" topsoil and 6" subsoil. Based on rooting depths to paralithic contact, the material from 12" to contact with bedrock (28") may also be salvaged as substitute soil material if necessary. Soils salvaged from this unit will be stockpiled and/or respread separately from reclaimed soils and the more sodic SPA complex.

h. Travesilla-Rock Outcrop Complex (TRO)

Travesilla-Rock Outcrop Complex is the dominant native soil mapping unit on the southwestern face of the steep hill in the Beckys project area. The mapping unit consists of roughly 35% Travesilla channery fine sandy loam, 25% rock outcrop, and 10% inclusions. The Travesilla soil type is a very shallow to shallow and well-drained. Paralithic contact is encountered between four to six inches. Approximately 95.62 acres of the Travesilla-Rock Outcrop Complex were mapped within the Beckys project area, and 77.09 acres are within the proposed disturbance boundary. Please see Appendix III—Soils Map for the extent of this mapping unit.

Soil salvage recommendations for this complex are 4-6" topsoil, salvaging all soil material to paralithic contact. Soils salvaged from this unit will be stockpiled and/or respread separately from reclaimed soils.

i. Water (W)

Water is present in the northwestern portion of the project area and is roughly 0.33 acres in size. This area is a small reservoir/stock pond and is not proposed to be disturbed. No soil resources are available in this mapping unit.

4. REFERENCES

American Colloid Company, Amendment 4 Application to Opencut Permit 8 (2006).

United States Geological Survey. 2009. National Elevation Dataset. U.S. Geological Survey, Sioux Falls.

Table Appendix III.1—Soil Salvage Summary

Map Unit	Project Area Acres	Disturbance Area Acres	Topsoil Salvage Depth (in.)	Subsoil Salvage Depth (in.)	Limitations to Deeper Salvage
Badlands (BDL)	30.6	25.2	0	0	No soil material
Disturbed Land (DL)	24.7	0.1	0	0	No soil material
Halverson-Heldt Complex (Hn)	22.4	7.8	6	6	none
Reclaimed Land (RL)	79.6	45.1	6	0	Overburden
Sayles-Persayo Complex (SPA)	31.4	10.1	6	0	Sodic lower horizons
Stormitt gravelly sandy loam (St)	70.8	20.8	5	10	none
Stutzman silty clay (Sz)	20.0	12.0	6	6	none
Travesilla-Rock Outcrop Complex (TRO)	98.2	80.1	5	0	Paralithic contact
Water	0.3	0.0	0	0	No soil material

Total Project Area Acres: 378.1

Total Disturbance Area Acres: 201.2

APPENDIX IV—VEGETATION

1. INTRODUCTION

The Beckys study area covers 378.09 acres within Section 24 of Township 9 South Range 25 East and Sections 19 and 30 of Township 9 South Range 26 East. The area consists of federal and private lands and is approximately four miles southeast of Warren, Montana. The affected area includes 201.20 acres of proposed disturbance related to bentonite mining and associated activities.

2. METHODOLOGY

a. Vegetation Inventory Study

A vegetation inventory was conducted on the Beckys project area by Mary Wilske (American Colloid Company) during June of 2024.

b. Species List

A vegetation species list was compiled based on observations made within the study area in June of 2024.

c. Vegetation Community Mapping

Vegetation community types were delineated across the Beckys project area. The community type delineations were based on dominant vegetation species and defined by utilizing data from previous studies. Inclusions of other small but distinct communities were considered to be characteristic of the larger community they were within. Community boundaries were primarily mapped through use of drone imagery obtained by American Colloid Company and ACC's current surveyed land status of affected areas within the project area.

d. Sampling Design

Quantitative vegetation data were measured at randomly located 50 meter transects. Random sample locations were created by first utilizing software to generate 50-point locations in each community.

These locations served as the start location for transects. Each location was also assigned a random bearing along which the transect would run. Data were collected from transects based on the order in which the random point was generated, in multiples of five, until sample adequacy was acquired.

Canopy cover data were collected for each location by use of the point intercept method along the random 50 meter transects. Data were summarized to include vegetation species, litter, rock, and bare ground hits at one-meter intervals along the transects. Additionally, shrub density was measured within a one-meter belt transect along each random 50 meter transect. All mature shrubs within the belt transect were counted. The sampling was also conducted across the entire study area without regard to the proposed affected area. As such, the vegetative cover results represent community types as a whole.

e. Sampling Density

The acres of all communities mapped within the affected area were calculated. If the cumulative acreage of a community within the proposed affected area was less than or equal to two acres, it was described in text but no quantitative sampling was conducted. For all other areas, sampling was required unless no significant vegetation was present (i.e. badlands). Sampling density consisted of a minimum of 20 locations and a maximum of 50 locations or attainment of sample adequacy, whichever was the lesser. Sampling locations were located within the Beckys claims.

f. Sample Adequacy

Data were collected from a minimum of 20 transects, and sample adequacy (SA) calculations were conducted based on the formula presented below. If SA was not met, additional data were collected, and SA was recalculated until SA was met or data were collected from the maximum number of sample locations defined in the approved methodology.

The Wyoming Department of Environmental Quality – Land Quality Division (WDEQ-LQD, 1997) provides the following formula to calculate a statistically representative sample size for percent vegetation cover on grassland and shrubland communities: $N = \frac{2(zS)^2}{(dx)^2}$, where:

N = the minimum sample size number
z = 1.28 (set in Guideline 2)
S = Standard Deviation
d = 0.1 (set in Guideline 2)
x = sample mean

g. Weed Occurrences

The study area was visually evaluated for the occurrence of noxious weed species listed on Carbon County's County Weeds of Concern List (Carbon County, 2015) and the Montana Noxious Weed List (MT-DA, 2015). The Carbon County Weed District was also consulted for additional information on potential weed occurrences in the area for previous projects, and those recommendations were also incorporated.

h. Species of Special Concern

The study area was visually evaluated for the occurrence of Ute ladies'-tresses (Spiranthes diluvialis), which the U.S. Fish and Wildlife Service has listed as a Threatened species. Additionally, the area was evaluated for the occurrence of species listed on the Montana Natural Heritage Program's Plant Species of Concern list (MT-NHP, 2015) and the BLM's Montana/Dakotas Sensitive Species List (BLM, 2009).

3. RESULTS

a. Species List

Plant species observed in the study area during June 2024 are listed in Table 2.

b. Vegetation Communities

Vegetation community mapping was conducted across the study area during summer 2024. Community type and acreage occurrences are presented in Table 1. Community boundaries and photograph locations are shown on the Appendix IV – Vegetation Map.

Table 1. Community Acreage Summary

Community	Affected Area (Acres)	Study Area (Acres)
Badlands	25.2	30.6
Big Sagebrush Shrubland	130.8	246.1
Disturbed Land – Mining	0.1	19.0
Disturbed Land – Haul Road	0.0	5.3
Reclaimed Land	45.1	76.9
Water	0.0	0.2

Total Affected Area (Acres): 201.2

Total Study Area (Acres) 378.1

Badlands (BDL)

This community type is common in the study area and primarily includes outcrop of black fissile shale and bentonite beds associated with the Thermopolis Formation. Soils in the community type are poor or absent with shallow to very steep slopes. As such, it is predominately non-vegetated. Vegetation inclusions primarily consist of annual forbs (Atriplex suckleyi and Monolepsis nuttalliana) though Gardner saltbush (Atriplex gardneri) inclusions were also observed.

A total of 25.2 acres of Badlands were mapped within the affected area. No sampling was performed due to the community's general lack of vegetation. A representative site for the community type is shown in Photograph 1 in Addendum 1. Please see the Vegetation Map for the photograph location and direction.

Big Sagebrush Shrubland (BSS)

This community dominates the native lands within the Beckys project area. The community type is dominated by perennial shrubs, especially big sagebrush (Artemisia tridentata). Inclusions of more poorly vegetated lands are also present within this community type.

130.8 acres of Big Sagebrush Shrubland were mapped within the affected area. See Table 3 for transect data, Table 4 for cover data, and Tables 5 and 6 for shrub data for this community. A representative site for the community type is shown in Photograph 2 in Addendum 1. Please see the Vegetation Map for the photograph location and direction. Transects are shown in Photographs 7 to 31 in Addendum 1.

Disturbed Land (DL)

This community type consists of land from which vegetation and/or soil have been removed or disturbed. In the study area, it consists of existing bentonite haul roads (Disturbed Land – Haul Road) and active mining areas (Disturbed Land – Mining).

A total of 0.1 acres of Disturbed Land – Mining were mapped within the affected area. No sampling was performed because the land has already been stripped of soil and vegetation A representative site for both community types are shown in Photographs 3 and 4 in Addendum 1. Please see the Vegetation Map for the photograph locations and directions.

Reclaimed Land (RL)

This community type is common throughout the study area and consists of bonded reclaimed land associated with previous bentonite mining activities. The majority of these areas supported a Big Sagebrush Shrubland community prior to mining disturbance and were reclaimed as such.

A total of 45.1 acres of Reclaimed Land were mapped within the affected area. Reclamation dates for these lands vary from 45 years ago to less than ten years ago. Sampling was performed on reclaimed lands to inventory the quality of revegetation in these areas and to identify any invasive or noxious weeds. See Table 7 for transect data, Table 8 for cover data, and Tables 9 and 10 for shrub data for this community. Transects are shown in Photographs 32 to 66 in Addendum 1. A representative site for the community type is shown in Photograph 5 in Addendum 1. Please see the Vegetation Map for the photograph location and direction.

Please note that during the vegetation inventory, the quality of revegetation on federal lands was broken into Reclaimed Lands – Poor (RL-P) and Reclaimed Lands – Good (RL-G). Ten transects were performed on RL-G and 25 were performed on RL-P. Following analysis, the two types were grouped together as no significant statistical difference was noted between the two. Transects RL-26 through RL-25 are labeled as RLG-1 through RLG-10.

Water (W)

Water is present in the northwestern portion of the project area and is less than a half an acre in size. This area is a small reservoir/stock pond and is not proposed to be disturbed. The vegetation in this area was not sampled because it is not within the proposed disturbance boundary. A representative site for the community type is shown in Photograph 6 in Addendum 1. Please see the Vegetation Map for the photograph location and direction.

c. Vegetation Cover Sampling

Vegetation cover sampling was conducted in June of 2024 in both the Reclaimed Land and the Big Sagebrush Shrubland community types. Sampling locations are shown on the Appendix IV – Vegetation Map and were only performed on federal lands. Sampling results are summarized in Tables 3 through 10. No sampling occurred in the other community types for the reasons cited in the community type descriptions.

d. Weed Occurrences

One species, Tamarix, listed on Carbon County's County Weeds of Concern List (Carbon County, 2015) and the Montana Noxious Weed List (MT-DA, 2015) was observed in the study area. However, the species was minimally present in association with the wetland-like areas associated with the reclaimed land in the western part of the study area. The species is targeted for eradication as part of the reclamation of the area and should not be present upon commencement of future mining associated with the Beckys project. Prior to chemical treatment of Tamarix on federal lands, ACC would obtain an approved pesticide use proposal (PUP) and treatments reported to the Billings Field Office of the BLM. No other weed occurrences were identified by Carbon County Weed District personnel.

e. Weed Occurrences

No Ute ladies'-tresses (Spiranthes diluvialis) were observed within the study area. Given the soil types present in the area, it is unlikely that this species would be present in the area. One species, Grayia spinosa, listed on the Montana Natural Heritage Program's Plant Species of Concern list (MT-NHP, 2015) and the BLM's Montana/Dakotas Sensitive Species List (BLM, 2009) has historically been observed in the area. However, this species was not observed within the Beckys project area during the 2024 inventory.

4. REFERENCES

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Table 2 Beckys Vegetation Species List

Table 2a Annual and Biennial Forbs

Species	Common Name
Atriplex suckleyi	Scurfless saltbush
Brassica sp.	Mustard species
Chenopodium sp.	Goosefoot species

Species	Common Name
Cleome serrulata	Rocky mountain beeplant
Halogeton glomeratus	Halogeton
Helianthus annuus	Annual sunflower
Kochia scoparia	Kochia
Lappula redowskii	Sticktight
Lactuca serriola	Prickly lettuce
Lepidium perfoliatum	Clasping pepperweed
Machaeranthera canescens	Hoary aster
Machaeranthera tanacetifolia	Tansyleaf tansyaster
Mentzelia albicaulis	Whitestem blazingstar
Monolepsis nuttalliana	Nuttall's povertyweed
Plantago patagonica	Woolly plantain
Polanisia dodecandra	Sandyseed clammyweed
Polygonum sp.	Knotweed species
Salsola kali	Russian thistle
Tragopogon dubius	Western salsify
Xanthium strumarium	Rough cocklebur

Table 2b Perennial Forbs

Species	Common Name
Allium textile	Wild onion
Comandra umbellata	Bastard toadflax
Cryptantha celesioides	Miner's candle
Grindelia squarrosa	Curlycup gumweed
Gutierrezia sarothrae	Broom snakeweed
Iva axillaris	Poverty sumpweed
Lomatium foeniculaceum	Desert biscuitroot
Machaeranthera grindelioides	Nuttall goldenweed
Oenothera caespitosa	Evening primrose
Penstemon glaber	Sawsepal penstemon
Platyschkuhria integrifolia	Basin daisy
Sphaeralcea coccinea	Scarlet globemallow
Suaeda nigra	Alkali seepweed
Vicia sp.	Vetch species
Bromus tectorum	Cheatgrass brome
Eremopyrum triticeum	Annual wheatgrass
Munroa squarrosa	False buffalograss
Achnatherum hymenoides	Indian ricegrass
Agropyron cristatum	Crested wheatgrass
Aristida purpurea	Red threeawn
Bouteloua gracilis	Blue grama
Elymus elymoides	Bottlebrush squirreltail
Hordeum jubatum	Foxtail barley
Pascopyroum smithii	Western wheatgrass
Poa secunda	Sandberg bluegrass

Table 2c Perennial Grasses/Grass-like

Species	Common Name
Psathyrostachys juncea	Russian wildrye

Species	Common Name
Pseudoroegneria spicata	Bluebunch wheatgrass
Schoenoplectus sp.	Bulrush species
Sporobolus airoides	Alkali sacaton
Sporobolus cryptandrus	Sand dropseed
Typha latifolia	Common cattail

Table 2d Perennial Subshrubs

Species	Common Name
Artemisia frigida	Fringed sagebrush
Artemisia pedatifida	Birdfoot sagebrush

Table 2e Perennial Shrubs

Species	Common Name
Artemisia spinescens	Bud sagebrush
Artemisia tridentata	Big sagebrush
Atriplex canescens	Fourwing saltbush
Atriplex gardneri	Gardner saltbush
Chrysothamnus viscidiflorus	Douglas rabbitbrush
Ericameria nauseosa	Rubber rabbitbrush
Grayia spinosa	Spiny hopsage
Salix interior	Sandbar willow
Sarcobatus vermiculatus	Black greasewood
Tamarix sp.	Tamarisk
Tetradymia sp.	Horsebrush
Opuntia polyacantha	Plains pricklypear
Populus deltoides	Plains cottonwood
Salix alba	Golden willow
Xanthoparmelia chlorochroa	Lichen

Table 3a Big Sagebrush Shrubland (BSS) Transect Data

The column headers are the sample point identification/transect direction (true north). The data cells below are the number of each species found.

Dates: 6/14/2024, 6/19/2024, 6/26/2024, and 6/27/2024

Species	Common Name	BSS-01/ 317°	BSS-02/ 298°	BSS-03/ 307°	BSS-04/ 84°	BSS-05/ 136°	BSS-06/ 322°	BSS-07/ 73°	BSS-08/ 133°	BSS-09/ 230°	BSS-10/ 212°	BSS-11/ 229°	BSS-12/ 5°	BSS-13/ 152°	BSS-14/ 113°	BSS-15/ 163°	BSS-16/ 191°	BSS-17/ 289°	BSS-18/ 16°	BSS-19/ 63°	BSS-20/ 272°	BSS-21/ 241°	BSS-22/ 354°	BSS-23/ 223°	BSS-24/ 18°	BSS-25/ 279°
Achnatherum hymenoides	Indian ricegrass	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Allium textile	Wild onion	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Artemisia frigida	Fringed sagebrush	1	0	1	3	0	0	0	3	1	0	0	0	0	0	4	0	1	2	0	2	0	2	0	0	0
Artemisia pedatifida	Birdfoot sagebrush	0	2	0	0	0	2	3	0	0	0	0	5	3	0	0	1	0	0	0	0	4	0	7	1	0
Artemisia tridentata	Big sagebrush	2	11	15	1	5	5	6	0	8	3	6	0	2	6	1	2	7	4	11	1	2	2	3	5	0
Atriplex missouriensis	Missouri milkvetch	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0	0	1	0	0	0	0
Atriplex confertifolia	Shadescale saltbush	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Atriplex gardneri	Gardner saltbush	2	0	0	8	0	2	0	2	0	0	0	3	5	1	1	0	0	1	0	0	0	0	0	2	6
Atriplex suckleyi	Scurfless saltbush	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Bouteloua gracilis	Blue grama	10	1	2	2	1	0	4	3	5	6	1	3	0	8	3	0	4	2	0	9	5	1	1	5	0
Bromus tectorum	Cheatgrass brome	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
Comandra umbellata	Bastard toadflax	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cryptantha celesioides	Miner's candle	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Elymus splatus	Bottlebrush squirreltail	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Gutierrezia sarothrae	Broom snakeweed	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	2	0	2	0	0	5	1	0	0
Halogeton glomeratus	Halogeton	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Hesperostipa comata	Needle and thread	2	3	3	0	0	4	0	3	2	1	9	0	0	0	1	2	2	4	6	0	3	6	2	1	0
Krascheninnikovia lanata	Winterfat	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lappula redowskii	Sticktight	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Machaeranthera tanacetifolia	Tansyleaf tansyaster	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Monolepsis nuttalliana	Nuttall's povertyweed	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Opuntia polyacantha	Plains pricklypear	0	0	0	0	1	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0
Phlox hoodii	Cushion phlox	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0
Platyschkuhria integrifolia	Basin daisy	0	0	0	2	0	3	0	1	0	1	0	2	0	0	2	0	1	1	0	1	3	1	1	1	5
Poa secunda	Sandberg bluegrass	0	2	1	0	6	0	0	2	0	0	1	0	5	1	3	2	1	2	0	1	0	1	1	0	0
Sarcobatus vermiculatus	Black greasewood	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1
Sphaeralcea coccinea	Scarlet globemallow	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	2	0	0	1	0	0
Sporobolus cryptandrus	Sand dropseed	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Suaeda nigra	Alkali seepweed	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

Table 3b Big Sagebrush Shrubland Transect Data Totals

Totals	BSS-01/ 317°	BSS-02/ 298°	BSS-03/ 307°	BSS-04/ 84°	BSS-05/ 136°	BSS-06/ 322°	BSS-07/ 73°	BSS-08/ 133°	BSS-09/ 230°	BSS-10/ 212°	BSS-11/ 229°	BSS-12/ 5°	BSS-13/ 152°	BSS-14/ 113°	BSS-15/ 163°	BSS-16/ 191°	BSS-17/ 289°	BSS-18/ 16°	BSS-19/ 63°	BSS-20/ 272°	BSS-21/ 241°	BSS-22/ 354°	BSS-23/ 223°	BSS-24/ 18°	BSS-25/ 279°
Total vegetation hits	18	20	22	17	18	18	13	19	19	12	20	15	17	18	16	14	18	20	20	16	18	18	18	18	12
Litter	2	7	9	1	9	3	0	4	2	2	1	1	3	1	0	14	2	3	3	3	1	6	0	1	4
Rock	27	3	13	26	14	26	34	23	26	32	28	29	9	28	29	14	27	23	26	23	30	24	28	30	30
Bare Ground	3	20	6	6	9	3	3	4	3	4	1	5	21	3	5	8	3	4	1	8	1	2	4	1	4
Absolute Vegetation Cover (%)	36	40	44	34	36	36	26	38	38	24	40	30	34	36	32	28	36	40	40	32	36	36	36	36	24
Litter and Rock Cover (%)	58	20	44	54	46	58	68	54	56	68	58	60	24	58	58	56	58	52	58	52	62	60	56	62	68
Bare Ground (%)	6	40	12	12	18	6	6	8	6	8	2	10	42	6	10	16	6	8	2	16	2	4	8	2	8
Total Ground Cover (%)	94	60	88	88	82	94	94	92	94	92	98	90	58	94	90	84	94	92	98	84	98	96	92	98	92

Table 4 Big Sagebrush Shrubland Cover Summary

Table 4a Annual and Biennial Forbs

Species	Common Name	Total Count	Relative Cover by Species (%)	Absolute Cover by Species (%)
Atriplex suckleyi	Scurfless saltbush	1	0.2	0.1
Halogeton glomeratus	Halogeton	2	0.5	0.2
Lappula redowski	Sticktight	1	0.2	0.1
Machaeranthera tanacetifolia	Tansy leaf tansy aster	1	0.2	0.1
Monolepsis nuttalliana	Nuttall's povertyweed	2	0.5	0.2

Total count of annual and biennial forbs: 59

Total relative cover of annual and biennial forbs (%): 1.6

Total absolute cover of annual and biennial forbs (%): 0.6

Table 4b Perennial Forbs

Species	Common Name	Total Count	Relative Cover by Species (%)	Absolute Cover by Species (%)
Allium textile	Wild onion	2	0.5	0.2
Astragalus missouriensis	Missouri milkvetch	5	1.2	0.4
Comandra umbellata	Bastard toadflax	1	0.2	0.1
Cryptantha celesioides	Miner's candle	1	0.2	0.1
Gutierrezia sarothrae	Broom snakeweed	13	3.0	1.0
Phlox hoodii	Cushion phlox	5	1.2	0.4
Platyschkuhria integrifolia	Basin daisy	25	5.8	2.0
Sphaeralcea coccinea	Scarlet globemallow	6	1.4	0.5
Suaeda nigra	Alkali seepweed	1	0.2	0.1

Total count of perennial forbs: 59

Total relative cover of perennial forbs (%): 13.6

Total absolute cover of perennial forbs (%): 4.7

Table 4c Annual Grasses/Grass-like

Species	Common Name	Total Count	Relative Cover by Species (%)	Absolute Cover by Species (%)
Bromus tectorum	Cheatgrass brome	4	0.9	0.3

Total count of annual grasses/grass-like: 4

Total relative cover of annual grasses/grass-like (%): 0.9

Total absolute cover of annual grasses/grass-like (%): 0.3

Table 4d Perennial Grasses/Grass-like

Species	Common Name	Total Count	Relative Cover by Species (%)	Absolute Cover by Species (%)
Achnatherum hymenoides	Indian ricegrass	2	0.5	0.2
Bouteloua gracilis	Blue grama	76	17.5	6.1
Elymus elymoides	Bottlebrush squirreltail	3	0.7	0.2
Hesperostipa comata	Needle and thread	54	12.4	4.3
Poa secunda	Sandberg bluegrass	29	6.7	2.3
Sporobolus cryptandrus	Sand dropseed	1	0.2	0.1

Total count of perennial grasses/grass-like: 165

Total relative cover of perennial grasses/grass-like (%): 38.0

Total absolute cover of perennial grasses/grass-like (%): 13.2

Table 4e Perennial Shrubs

Species	Common Name	Total Count	Relative Cover by Species (%)	Absolute Cover by Species (%)
Artemisia frigida	Fringed sagebrush	20	4.6	1.6
Artemisia pedatifida	Birdfoot sagebrush	28	6.5	2.2
Artemisia tridentata	Big sagebrush	108	24.9	8.6
Atriplex confertifolia	Shadscale saltbush	1	0.2	0.1
Atriplex gardneri	Gardner saltbush	33	7.6	2.6
Krascheninnikovia lanata	Winterfat	1	0.2	0.1
Sarcobatus vermiculatus	Black greasewood	3	0.7	0.2

Total count of perennial shrubs: 194

Total relative cover of perennial shrubs (%): 44.7

Total absolute cover of perennial shrubs (%): 15.5

Table 4f Succulents

Species	Common Name	Total Count	Relative Cover by Species (%)	Absolute Cover by Species (%)
Opuntia polyacantha	Plains pricklypear	5	1.2	0.4

Total count of succulents: 5

Total relative cover of succulents (%): 1.2

Total absolute cover of succulents (%): 0.4

Tables 4a-4f Summary:

Total count of perennial plants: 423
Total relative cover of perennial vegetation (%): 97.5
Total absolute cover of perennial vegetation (%): 33.8

Total Ground Cover Counts:

All vegetation: 434
Litter: 82
Rock: 602
Bare ground: 132
Total ground cover counted: 1118

Absolute Cover (%):

Litter: 6.6%
Rock: 48.2%
Bare ground: 10.6%
Total absolute ground cover: 89.4%

Table 5a Big Sagebrush Shrubland Shrub Density Belt Transect Data

The column headers are the sample point identification (BSS-)/transect direction (true north). The data cells below are the number of each species found.

Vegetation community: Big Sagebrush Shrubland

Species	Common Name	01/ 317°	02/ 298°	03/ 307°	04/ 84°	05/ 136°	06/ 322°	07/ 73°	08/ 133°	09/ 230°	10/ 212°	11/ 229°	12/ 5°	13/ 152°	14/ 113°	15/ 163°	16/ 191°	17/ 289°	18/ 16°	19/ 63°	20/ 272°	21/ 241°	22/ 354°	23/ 223°	24/ 18°	25/ 279°
Artemisia frigida	Fringed sagebrush	7	0	6	37	0	0	0	75	1	5	4	0	0	1	45	0	5	46	7	44	2	23	0	0	1
Artemisia pedatifida	Birdfoot sagebrush	6	30	0	14	0	31	77	0	31	0	0	178	51	8	36	41	0	0	0	1	97	0	142	17	0
Artemesia spinescens	Bud sagebrush	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Artemisia tridentata	Big sagebrush	9	27	27	5	34	20	19	7	39	19	40	0	12	31	15	5	28	8	38	6	11	17	12	15	1
Atriplex confertifolia	Shadescale saltbush	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Atriplex gardneri	Gardner saltbush	16	8	0	44	0	16	1	6	8	2	1	36	56	10	19	1	6	9	1	0	10	2	5	17	33
Ericameria nauseosa	Rubber rabbitbrush	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1
Krascheninnikovia lanata	Winterfat	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sarcobatus vermiculatus	Black greasewood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

Table 5b Big Sagebrush Shrubland Shrub Density Belt Summary

Totals	01/ 317°	02/ 298°	03/ 307°	04/ 84°	05/ 136°	06/ 322°	07/ 73°	08/ 133°	09/ 230°	10/ 212°	11/ 229°	12/ 5°	13/ 152°	14/ 113°	15/ 163°	16/ 191°	17/ 289°	18/ 16°	19/ 63°	20/ 272°	21/ 241°	22/ 354°	23/ 223°	24/ 18°	25/ 279°
Total Shrub Hits	38	76	33	100	34	67	98	89	79	26	46	218	119	50	115	47	39	64	46	51	120	42	159	49	37
Shrub Density (Shrubs/m^2)	0.76	1.52	0.66	2	0.68	1.34	1.96	1.78	1.58	0.52	0.92	4.36	2.38	1	2.3	0.94	0.78	1.28	0.92	1.02	2.4	0.84	3.18	0.98	0.74

Table 6 Big Sagebrush Shrubland Shrub Density Summary

Species	Common Name	Total Count	Shrubs/m^2
Artemisia frigida	Fringed sagebrush	309	6.18
Artemisia pedatifida	Birdfoot sagebrush	760	15.20
Artemesia spinescens	Bud sagebrush	1	0.02
Artemisia tridentata	Big sagebrush	445	8.90
Atriplex confertifolia	Shadescale saltbush	4	0.08
Atriplex gardneri	Gardner saltbush	307	6.14
Ericameria nauseosa	Rubber rabbitbrush	4	0.08
Krascheninnikovia lanata	Winterfat	11	0.22
Sarcobatus vermiculatus	Black greasewood	1	0.02

Total Shrub Cover

Total Count: 1842
Shrubs/m^2: 2.46

Table 7a Reclaimed Land (RL) Transect Data

The column headers are the transect direction (true north) and sample point identification number. The data cells below are the number of each species found.

Dates: 6/14/2024, 6/19/2024, 6/26/2024, and 6/27/2024

Common Name	22° / 1	166° / 2	134° / 3	189° / 4	96° / 5	116° / 6	83° / 7	357° / 8	131° / 9	347° / 10	331° / 11	347° / 12	189° / 13	199° / 14	316° / 15	301° / 16	8°/ 17	157° / 18	65° / 19	335° / 20	158° / 21	62° / 22	23° / 23	327° / 24	176° / 25	69° / 26	172° / 27	315° / 28	88° / 29	276° / 30	133° / 31	224° / 32	126° / 33	167° / 34	356° / 35
Indian ricegrass	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
Crested Wheatgrass	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
Wild onion	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Big sagebrush	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0
Fourwing saltbush	1	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shadscale saltbush	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Gardner saltbush	0	4	5	2	1	4	0	8	3	5	3	2	2	1	3	2	7	5	3	2	1	2	2	6	0	6	7	4	1	10	4	6	1	6	8
Cheatgrass brome	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Douglas rabbitbrush	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bottlebrush squirreltail	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	2	0	3	0	1	0	1	0	0	0	0	1	0	0	0	0	1	3	0	0
Rubber rabbitbrush	0	2	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Broom snakeweed	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0
Halogeton	0	0	0	0	0	0	0	0	0	0	0	3	4	0	3	0	2	0	2	4	2	0	0	0	0	0	0	1	0	1	2	0	0	0	0
Needle and thread	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0
Sticktight	0	0	0	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Basin wildrye	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	7	0	0	2	5
Tansyleaf tansyaster	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Plains pricklypear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Western Wheatgrass	0	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	4	0	0	2	0	0	0
Basin daisy	4	4	3	4	3	4	0	2	4	0	5	0	1	4	0	2	0	1	0	1	3	1	4	0	5	0	0	3	1	0	0	0	2	0	0
Black greasewood	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scarlet globemallow	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0

Table 7b Reclaimed Land (RL) Transect Data Totals

Items	22° / 1	166° / 2	134° / 3	189° / 4	96° / 5	116° / 6	83° / 7	357° / 8	131° / 9	347° / 10	331° / 11	347° / 12	189° / 13	199° / 14	316° / 15	301° / 16	8°/ 17	157° / 18	65°/ 19	335° / 20	158° / 21	62°/ 22	23°/ 23	327° / 24	176° / 25	69°/ 26	172° / 27	315° / 28	88°/ 29	276° / 30	133° / 31	224° / 32	126° / 33	167° / 34	356° / 35
Total Vegetation Hits	6	11	8	12	5	8	6	10	7	5	10	6	11	8	6	7	9	10	5	8	6	5	7	7	6	8	8	12	11	12	13	14	15	9	13
Litter	4	4	2	3	2	1	2	0	2	3	2	2	3	0	0	0	1	3	4	1	2	1	3	0	3	2	1	5	0	0	1	4	3	0	2
Rock	31	23	26	31	28	33	31	29	34	34	34	31	32	29	39	27	31	24	33	15	33	42	33	26	35	11	38	7	38	9	13	18	21	16	12
Bare Ground	9	12	14	4	15	8	11	11	7	8	4	11	4	13	5	16	9	13	8	26	9	2	7	17	6	29	3	26	1	29	23	14	11	25	23
Absolute Vegetation Cover (%)	12	22	16	24	10	16	12	20	14	10	20	12	22	16	12	14	18	20	10	16	12	10	14	14	12	16	16	24	22	24	26	28	30	18	26
Litter and Rock Cover (%)	70	54	56	68	60	68	66	58	72	74	72	66	70	58	78	54	64	54	74	32	70	86	72	52	76	26	78	24	76	18	28	44	48	32	28
Bare Ground (%)	18	24	28	8	30	16	22	22	14	16	8	22	8	26	10	32	18	26	16	52	18	4	14	34	12	58	6	52	2	58	46	28	22	50	46
Total Ground Cover (%)	82	76	72	92	70	84	78	78	86	84	92	78	92	74	90	68	82	74	84	48	82	96	86	66	88	42	94	48	98	42	54	72	78	50	54

Table 8 Reclaimed Land Cover Summary

Table 8a Annual and Biennial Forbs

Species	Common Name	Total Count	Relative Cover by Species (%)	Absolute Cover by Species (%)
Halogeton glomeratus	Halogeton	24	7 .9	1 .4
Lappula redowskii	Sticktight	5	1.6	0.3
Machaeranthera tanacetifolia	Tansyleaf tansyaster	1	0.3	0.1

Total count of annual and biennial forbs: 30

Total relative cover of annual and biennial forbs (%): 9.9

Total absolute cover of annual and biennial forbs (%): 1.7

Table 8b Perennial Forbs

Species	Common Name	Total Count	Relative Cover by Species (%)	Absolute Cover by Species (%)
Allium textile	Wild onion	2	0.7	0.1
Gutierrezia sarothrae	Broom snakeweed	3	1.0	0.2
Platyschkuhria integrifolia	Basin daisy	61	20.1	3.5
Sphaeralcea coccinea	Scarlet globemallow	2	0.7	0.1

Total count of perennial forbs: 68

Total relative cover of perennial forbs (%): 22.4

Total absolute cover of perennial forbs (%): 3.

Table 8c Annual Grasses/Grass-like

Species	Common Name	Total Count	Relative Cover by Species (%)	Absolute Cover by Species (%)
Bromus tectorum	Cheatgrass brome	1	0.3	0.1

Total count of annual grasses/grass-like: 1

Total relative cover of annual grasses/grass-like (%): 0.3

Total absolute cover of annual grasses/grass-like (%): 0.1

Table 8d Perennial Grasses/Grass-like

Species	Common Name	Total Count	Relative Cover by Species (%)	Absolute Cover by Species (%)
Achnatherum hymenoides	Indian ricegrass	2	0. 7	0.1
Agropyron cristatum	Crested wheatgrass	2	0.7	0.1
Elymus elymoides	Bottlebrush squirreltail	16	5.3	0.9
Hesperostipa comata	Needle and thread	5	1.6	0.3
Leymus cinerus	Basin wildrye	18	5.9	1.0
Pascopyroum smithii	Western wheatgrass	14	4.6	0.8

Total count of perennial grasses/grass-like: 57

Total relative cover of perennial grasses/grass-like (%): 18.8

Total absolute cover of perennial grasses/grass-like (%): 3.3

Table 8e Perennial Shrubs

Species	Common Name	Total Count	Relative Cover by Species (%)	Absolute Cover by Species (%)
Artemisia tridentata	Big sagebrush	9	3.0	0.5
Atriplex canescens	Fourwing saltbush	4	1.3	0.2
Atriplex confertifolia	Shadscale saltbush	1	0.3	0.1
Atriplex gardneri	Gardner saltbush	126	41.4	7.2
Chrysothamnus viscidiflorus	Douglas rabbitbrush	1	0.3	0.1
Ericameria nauseosa	Rubber rabbitbrush	5	1.6	0.3
Sarcobatus vermiculatus	Black greasewood	1	0.3	0.1

Total count of perennial shrubs:

Total relative cover of perennial shrubs (%):

Total absolute cover of perennial shrubs (%):

Table 8f Succulents

Species	Common Name	Total Count	Relative Cover by Species (%)	Absolute Cover by Species (%)
Opuntia polyacantha	Plains pricklypear	1	0.3	0.1

Total count of succulents: 1

Total relative cover of succulents (%): 0.3

Total absolute cover of succulents (%): 0.1

Tables 8a-8f Summary:

Total count of perennial plants: 273
Total relative cover of perennial vegetation (%): 89.8
Total absolute cover of perennial vegetation (%): 15.6

Total Ground Cover Counts:

All vegetation: 304
Litter: 66
Rock: 947
Bare ground: 433
Total ground cover counted: 1317

Absolute Cover (%):

Litter: 17.4%
Rock: 48.2%
Bare ground: 10.6%
Total absolute ground cover: 89.4%

Table 9a Reclaimed Land Shrub Density Belt Transect Data

Common Name	22° / 1	166° / 2	134° / 3	189° / 4	96° / 5	116° / 6	83° / 7	357° / 8	131° / 9	347° / 10	331° / 11	347° / 12	189° / 13	199° / 14	316° / 15	301° / 16	8°/ 17	157° / 18	65°/ 19	335° / 20	158° / 21	62°/ 22	23°/ 23	327° / 24	176° / 25	69°/ 26	172° / 27	315° / 28	88°/ 29	276° / 30	133° / 31	224° / 32	126° / 33	167° / 34	356° / 35
Fringed sagebrush	0	0	0	4	0	0	0	0	1	0	11	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3	0	0	2	8	0	0
Birdfoot sagebrush	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Big sagebrush	1	1	0	1	0	0	0	0	0	0	0	0	1	5	0	3	5	0	0	0	0	1	0	0	0	0	0	0	7	0	0	13	2	0	0
Fourwing saltbush	1	0	0	1	0	0	2	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0
Shadescale saltbush	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0
Gardner saltbush	11	46	66	19	25	67	6	46	32	46	11	19	18	39	14	28	43	43	18	21	14	58	20	47	7	87	46	80	8	125	29	87	26	92	51
Rubber rabbitbrush	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Black greasewood	0	4	0	11	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	7	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0

Table 9b Big Sagebrush Shrubland Shrub Density Belt Summary

Totals	22° / 1	166° / 2	134° / 3	189° / 4	96° / 5	116° / 6	83°/ 7	357° / 8	131° / 9	347° / 10	331° / 11	347° / 12	189° / 13	199° / 14	316° / 15	301° / 16	8°/ 17	157° / 18	65°/ 19	335° / 20	158° / 21	62°/ 22	23°/ 23	327° / 24	176° / 25	69° / 26	172° / 27	315° / 28	88° / 29	276° / 30	133° / 31	224° / 32	126° / 33	167° / 34	356° / 35
Total Shrub Hits	15	59	66	37	25	67	9	46	33	46	23	19	22	44	15	31	48	45	18	29	14	61	20	47	13	87	46	81	22	125	29	102	37	92	51
Shrub Density (Shrubs/m^2)	0.3	1.18	1.32	0.74	0.5	1.34	0.18	0.92	0.66	0.92	0.46	0.38	0.44	0.88	0.3	0.62	0.96	0.9	0.36	0.58	0.28	1.22	0.4	0.94	0.26	1.74	0.92	1.62	0.44	2.5	0.58	2.04	0.74	1.84	1.02

Table 10 Reclaimed Land Shrub Density Belt Summary

Species	Common Name	Total Count	Shrubs/m^2
Artemisia frigida	Fringed sagebrush	32	0.64
Artemisia pedatifida	Birdfoot sagebrush	3	0.06
Artemisia tridentata	Big sagebrush	40	0.80
Atriplex canescens	Fourwing saltbush	11	0.22
Atriplex confertifolia	Shadescale saltbush	4	0.08
Atriplex gardneri	Gardner saltbush	1395	27.90
Chrysothamnus viscidiflorus	Douglas rabbitbrush	7	0.14
Ericameria nauseosa	Rubber rabbitbrush	29	0.58
Sarcobatus vermiculatus	Black greasewood	3	0.06

Total Reclaimed Land Shrub Cover

Total Count: 1524
Shrubs/m^2: 2.03

APPENDIX V—WILDLIFE, Beckys Project

1. INTRODUCTION

The Beckys study area covers 378.09 acres within Section 24 of Township 9 South Range 25 East and Sections 19 and 30 of Township 9 South Range 26 East. The area consists of federal and private lands and is approximately four miles southeast of Warren, Montana. The affected area includes 201.20 acres of proposed disturbance related to bentonite mining and associated activities.

METHODOLOGY

a. Wildlife and Habitat Inventory Studies

A wildlife and habitat inventory was conducted for the Beckys study area. In spring of 2024, Mary Wilske (American Colloid Company) conducted four wildlife and habitat surveys in and near the project area. General wildlife observations in the area have also been made monthly during routine inspections. The project area is also very near to lands surveyed for the Amendment 5 project in 2014 and 2015. Species observed during that project are also included in the current survey.

b. Potential and Observed Fauna of the Area

A list of potential fauna for the study area was compiled as habitat types were identified. A list of fauna observed in and near the study area was compiled based on data from wildlife surveys associated with the recent study. The surveys were conducted both formally and informally within and around the area. Surveys were conducted by driving along roads, walking through different habitat types, and spotting from vantage points in order to locate wildlife in and within an area up to 1 mile of the project area. Surveys were typically conducted in the morning hours though observations were also made at other hours while performing related work.

Though all wildlife species found were documented, special attention was paid to determining the presence of the species listed by the U.S. Fish and Wildlife Service as Endangered, Threatened, Proposed, and Candidate; the Montana Natural Heritage Program's Animal Species of Concern list (MT-NHP, 2015); the BLM's Montana/Dakotas Sensitive Species List (BLM, 2009). Surveys were focused on areas that provided suitable habitat for these species of interest, though the entire project area was surveyed while other field work was being performed.

c. Habitat of the Area

Initial habitat data was developed while the baseline vegetation inventory for the area was completed. Additionally, during wildlife surveys, more specific data on habitat present in the area and the affinity of species to these different habitat types was collected in order to better understand how proposed mining could affect wildlife species.

RESULTS

a. Potential and Observed Fauna of the Area

A list of 183 potential fauna of the study area was compiled based on the identified habitat types. Please see Table 1 for a list of the potential and observed species and Table 2 for the field notes from the wildlife surveys. Surveys include those performed in 2014, 2015, 2024, and routine monthly inspections.

b. Endangered, Threatened, Proposed, and Candidate Species

No Endangered, Threatened, Proposed, or Candidate species were observed in or near the study area. The Greater Sage-grouse was listed as a candidate species during the development of the project but has since been withdrawn from the list. However, due to the past and present concern over the species, and the presence of two active leks within three miles of the project area, special attention was given to understanding how the species may be affected by mining operations. A collaring study (Pratt and Dillon, 2015) was conducted on sage-grouse in the area. Based on the results of the study, it is unlikely that the species will be affected by mining operations in the Beckys area.

The Beckys project area is located within a Core Area for Greater Sage-grouse. ACC consulted with the Montana Sage Grouse Habitat Conservation Program on February 9, 2022, regarding this project. All lands, federal and private, are currently within American Colloid Company's Opencut Permit 8. ACC received a response from Therese Hartman of the Montana Sage Grouse Habitat Conservation Program on February 10, 2022, regarding what would be required for this project. The Program responded that the Beckys project would be exempt from Program review as it was an existing authorized activity, as all lands were already within the Opencut Permit.

However, American Colloid Company does agree to comply with the following mitigation:

1. Surface disturbance will be minimized to the extent possible. Disturbance estimates were calculated using the maximum case scenario. The actual disturbance footprint is anticipated to be significantly smaller than the referenced 201.2 acres. There are only two active leks within three miles of the project area, both being approximately 1.5 miles away.
2. ACC will implement the required Stormwater Pollution Prevention Plan (SWPPP) covering ACC's mine permit for the Warren Mine Site. Erosion (off-site sediment migration) will be minimized through use of stormwater Best Management Practices (BMPs) during mining.
3. There are some existing BLM grazing allotment fences that will be affected by mining activities. These fences will be temporarily moved around disturbed areas and replaced after final reclamation. Markers will be installed on fence wires of replaced fences to enhance visibility per current guidelines from Montana Fish, Wildlife, and Parks (MFWP) and/or USDA (2012) Natural Resources Conservation Service (NRCS).
4. Noxious weed infestation may occur in and adjacent to the project area prior to mining. Visual monitoring and chemical control will be conducted for noxious weed species from the time disturbance is initiated through life-of-mine. Potential spread of noxious weeds will be managed by: seeding reclaimed lands with a native seed mix that is as weed-free as is commercially available, monitoring mine site and reclaimed lands periodically for noxious weed establishment and revegetation success (to outcompete weed species), and spraying noxious weed populations as necessary if significant infestations are noted.

c. Species of Concern and Sensitive Species

Three bird species (Golden Eagle, Brewer's Sparrow, and Loggerhead Shrike) and one reptile species (greater short-horned lizard) listed on the Montana Natural Heritage Program's Animal Species of Concern list (MT-NHP, 2015) and the BLM's Montana/Dakotas Sensitive Species List (BLM, 2009) have been observed in and around the study area. A number of other potential species are also present on these two lists.

d. Consultation with United States Fish and Wildlife Service

American Colloid Company generated the Beckys project within the Information for Planning and Consultation program of the U.S. Fish and Wildlife Service on September 10, 2024. Please see the attached Addendum 1 for the species list generated by IPaC.

The project identified one threatened species, the Grizzly Bear (Ursus arctos horribilis), and one candidate species, the Monarch Butterfly (Danaus Plexippus). No critical habitats for these species were present within the project area. Both Bald Eagles (Haliaeetus leucocephalus) and Golden Eagles (Aquila chryaetos) also have a probability of presence within the project area (please see the attached IPaC report for a visual representation of the probability of presence of these two species).

Ten migratory bird species protected under the Migratory Bird Treaty Act were identified as having a probability of presence within the Beckys project area. These include the above-mentioned Bald Eagle and Golden Eagle. Other species identified are the Broad-tailed Hummingbird (Selasphorus platycercus), the Calliope Hummingbird (Selasphorus calliope), Cassin's Finch (Haemorhous cassinii), the Evening Grosbeak (Coccothraustes vespertinus), the Mountain Plover (Charadrius montanus), the Olive-sided Flycatcher (Contopus cooperi), the Pinyon Jay (Gymnorhinus cyanocephalus), and the Rufous Hummingbird (Selasphorus rufus). Please see the attached species list for the Probability of Presence for these species within the Beckys project area. Two wetlands were also identified as being within the project area. One is the pond located in the northwestern portion of the project area. This is not proposed to be disturbed. The other is a riverine area that is associated with the drainage system into the pond.

e. Types of Habitat Affected

The project area primarily consists of Big Sagebrush Shrubland (65%), Seeded Reclaimed Land (20%), and Badlands (8%). The remainder of the area includes lands disturbed by mining and for haul roads, and a seasonal pond. Proposed disturbance will affect Big Sagebrush Shrubland (65%), seeded Reclaimed Land (22%), and Badlands (13%), and a minimal amount of lands disturbed by mining. For more information regarding vegetation within the area, please refer to Appendix IV - Vegetation.

f. Habitat Affinity

The Big Sagebrush Shrubland throughout the study area had the highest potential for wildlife species. However, quite a few species were observed using the seeded Reclaimed Lands.

MONITORING AND CONSTRUCTION STIPULATIONS

American Colloid Company routinely monitors the Beckys area monthly for wildlife and erosional stability nearby active mining activities. ACC monitors the area for the presence of eagles and other raptors. If any raptor nesting sites are identified, ACC will apply the appropriate seasonal non-disturbance buffer and halt mining and hauling activities during the time specified. Additionally, ACC will perform surveys for ground-nesting birds within 72 hours prior to surface disturbance from April 1 to July 31. If a nest is identified, mining activities will cease until the nest is no longer occupied.

REFERENCES

Bureau of Land Management, Montana/Dakotas Office. 2009. Sensitive Species List.

Montana Natural Heritage Program. 2015. Animal Species of Concern.

Pratt, A.C. and Dillon, M.T. December 2015. Seasonal Space Use of Greater Sage-

Grouse in the Carbon Core Area, Montana.

Table 1. Potential and Observed Fauna

Table 1a. Observed Birds

Species	Common Name	Type	Order	Family
Anas discors	Blue-winged Teal	Waterfowl	Anseriformes	Anatidae
Anas platyrhynchos	Mallard	Waterfowl	Anseriformes	Anatidae
Chordeiles minor	Common Nighthawk	Goatsucker	Caprimulgiformes	Caprimulgidae
Charadrius vociferus	Killdeer	Shorebird	Charadriiformes	Charadriidae
Zenaida macroura	Mourning Dove	Doves and Pigeons	Columbiformes	Columbidae
Aquila chrysaetos	Golden Eagle	Diurnal Birds of Prey	Falconiformes	Accipitridae
Falco sparverius	American Kestrel	Diurnal Birds of Prey	Falconiformes	Falconidae
Eremophila alpestris	Horned Lark	Passerines	Passeriformes	Alaudidae
Corvus corax	Common Raven	Passerines	Passeriformes	Corvidae
Chondestes grammacus	Lark Sparrow	Passerines	Passeriformes	Emberizidae
Spizella breweri	Brewer's Sparrow	Passerines	Passeriformes	Emberizidae
Quiscalus quiscula	Common Grackle	Passerines	Passeriformes	Icteridae
Sturnella neglecta	Western Meadowlark	Passerines	Passeriformes	Icteridae
Lanius ludovicianus	Loggerhead Shrike	Passerines	Passeriformes	Laniidae
Salpinctes obsoletus	Rock Wren	Passerines	Passeriformes	Troglodytidae
Sialia currucoides	Mountain Bluebird	Passerines	Passeriformes	Turdidae
Sayornis saya	Say's Phoebe	Passerines	Passeriformes	Tyrannidae

Table 1b. Potential birds

Species	Common Name	Type	Order	Family
Aix sponsa	Wood Duck	Waterfowl	Anseriformes	Anatidae
Anas acuta	Northern Pintail	Waterfowl	Anseriformes	Anatidae
Anas americana	American Wigeon	Waterfowl	Anseriformes	Anatidae
Anas clypeata	Northern Shoveler	Waterfowl	Anseriformes	Anatidae
Anas crecca	Green-winged Teal	Waterfowl	Anseriformes	Anatidae
Anas cyanoptera	Cinnamon Teal	Waterfowl	Anseriformes	Anatidae
Anas strepera	Gadwall	Waterfowl	Anseriformes	Anatidae
Aythya affinis	Lesser Scaup	Waterfowl	Anseriformes	Anatidae
Aythya americana	Redhead	Waterfowl	Anseriformes	Anatidae
Aythya collaris	Ring-necked Duck	Waterfowl	Anseriformes	Anatidae
Aythya valisineria	Canvasback	Waterfowl	Anseriformes	Anatidae
Branta canadensis	Canada Goose	Waterfowl	Anseriformes	Anatidae
Bucephala albeola	Bufflehead	Waterfowl	Anseriformes	Anatidae
Bucephala clangula	Common Goldeneye	Waterfowl	Anseriformes	Anatidae
Bucephala islandica	Barrow's Goldeneye	Waterfowl	Anseriformes	Anatidae
Chen caerulescens	Snow Goose	Waterfowl	Anseriformes	Anatidae
Cygnus buccinator	Trumpeter Swan	Waterfowl	Anseriformes	Anatidae
Cygnus columbianus	Tundra Swan	Waterfowl	Anseriformes	Anatidae
Lophodytes cucullatus	Hooded Merganser	Waterfowl	Anseriformes	Anatidae
Mergus merganser	Common Merganser	Waterfowl	Anseriformes	Anatidae
Mergus serrator	Red-breasted Merganser	Waterfowl	Anseriformes	Anatidae
Oxyura jamaicensis	Ruddy Duck	Waterfowl	Anseriformes	Anatidae
Aeronautes saxatalis	White-throated Swift	Hummingbird	Apodiformes	Apodidae
Phalaenoptilus nuttallii	Common Poorwill	Goatsucker	Caprimulgiformes	Caprimulgidae

Species	Common Name	Type	Order	Family
Charadrius montanus	Mountain Plover	Shorebird	Charadriiformes	Charadriidae
Charadrius semipalmatus	Semipalmated Plover	Shorebird	Charadriiformes	Charadriidae
Pluvialis squatarola	Black-bellied Plover	Shorebird	Charadriiformes	Charadriidae
Himantopus mexicanus	Black-necked Stilt	Shorebird	Charadriiformes	Recurvirostridae
Recurvirostra americana	American Avocet	Shorebird	Charadriiformes	Recurvirostridae
Calidris alba	Sanderling	Shorebird	Charadriiformes	Scolopacidae
Calidris bairdii	Baird's Sandpiper	Shorebird	Charadriiformes	Scolopacidae
Calidris melanotos	Pectoral Sandpiper	Shorebird	Charadriiformes	Scolopacidae
Calidris minutilla	Least Sandpiper	Shorebird	Charadriiformes	Scolopacidae
Calidris pusilla	Semipahnated Sandpiper	Shorebird	Charadriiformes	Scolopacidae
Gallinago delicata	Wilson's Snipe	Shorebird	Charadriiformes	Scolopacidae
Limnodromus scolopaceus	Long-billed Dowitcher	Shorebird	Charadriiformes	Scolopacidae
Limosa fedoa	Marbled Godwit	Shorebird	Charadriiformes	Scolopacidae
Phalaropus lobatus	Red-necked Phalarope	Shorebird	Charadriiformes	Scolopacidae
Phalaropus tricolor	Wilson's Phalarope	Shorebird	Charadriiformes	Scolopacidae
Tringa flavipes	Lesser Yellowlegs	Shorebird	Charadriiformes	Scolopacidae
Tringa melanoleuca	Greater Yellowlegs	Shorebird	Charadriiformes	Scolopacidae
Tringa semipalmata	Willet	Shorebird	Charadriiformes	Scolopacidae
Tringa solitaria	Solitary Sandpiper	Shorebird	Charadriiformes	Scolopacidae
Chlidonias niger	Black Tern	Gulls and Terns	Charadriiformes	Laridae
Hydroprogne caspia	Caspian Tern	Gulls and Terns	Charadriiformes	Laridae
Larus californicus	California Gull	Gulls and Terns	Charadriiformes	Laridae
Larus delawarensis	Ring-billed Gull	Gulls and Terns	Charadriiformes	Laridae
Leucophaeus pipixcan	Franklin's Gull	Gulls and Terns	Charadriiformes	Laridae
Sterna forsteri	Forster's Tern	Gulls and Terns	Charadriiformes	Laridae
Sterna hirundo	Common Tern	Gulls and Terns	Charadriiformes	Laridae
Ardea Herodias	Great Blue Heron	Wading Birds	Ciconiiformes	Ardeidae
Botaurus lentiginosus	American Bittern	Wading Birds	Ciconiiformes	Ardeidae
Nycticorax nycticorax	Black-crowned Night-Heron	Wading Birds	Ciconiiformes	Ardeidae
Plegadis chihi	White-faced Ibis	Wading Birds	Ciconiiformes	Threskiornithidae
Cathartes aura	Turkey Vulture	Diurnal Birds of Prey	Ciconiiformes	Cathartidae
Columba livia	Rock Pigeon	Doves and Pigeons	Columbiformes	Columbidae
Accipiter cooperii	Cooper's Hawk	Diurnal Birds of Prey	Falconiformes	Accipitridae
Accipiter striatus	Sharp-shinned Hawk	Diurnal Birds of Prey	Falconiformes	Accipitridae
Buteo jamaicensis	Red-tailed Hawk	Diurnal Birds of Prey	Falconiformes	Accipitridae
Buteo lagopus	Rough-legged Hawk	Diurnal Birds of Prey	Falconiformes	Accipitridae
Buteo regalis	Ferruginous Hawk	Diurnal Birds of Prey	Falconiformes	Accipitridae
Buteo swainsoni	Swainson's Hawk	Diurnal Birds of Prey	Falconiformes	Accipitridae
Circus cyaneus	Northern Harrier	Diurnal Birds of Prey	Falconiformes	Accipitridae
Haliaeetus leucocephalus	Bald Eagle	Diurnal Birds of Prey	Falconiformes	Accipitridae
Falco columbarius	Merlin	Diurnal Birds of Prey	Falconiformes	Falconidae
Falco mexicanus	Prairie Falcon	Diurnal Birds of Prey	Falconiformes	Falconidae
Falco peregrinus	Peregrine Falcon	Diurnal Birds of Prey	Falconiformes	Falconidae
Alectoris chukar	Chukar	Gallinaceous Birds	Galliformes	Phasianidae
Centrocercus urophasianus	Greater Sage-Grouse	Gallinaceous Birds	Galliformes	Phasianidae
Perdix perdix	Gray Partridge	Gallinaceous Birds	Galliformes	Phasianidae
Grus canadensis	Sandhill Crane	Marshbirds	Gruiformes	Gruidae
Fulica americana	American Coot	Marshbirds	Gruiformes	Rallidae
Porzana carolina	Sora	Marshbirds	Gruiformes	Rallidae

Species	Common Name	Type	Order	Family
Bombycilla cedrorum	Cedar Waxwing	Passerines	Passeriformes	Bombycillidae
Corvus brachyrhynchos	American Crow	Passerines	Passeriformes	Corvidae
Gymnorhinus cyanocephalus	Pinyon Jay	Passerines	Passeriformes	Corvidae
Pica hudsonia	Black-billed Magpie	Passerines	Passeriformes	Corvidae
Ammodramus savannarum	Grasshopper Sparrow	Passerines	Passeriformes	Emberizidae
Amphispiza belli	Sage Sparrow	Passerines	Passeriformes	Emberizidae
Calamospiza melanocorys	Lark Bunting	Passerines	Passeriformes	Emberizidae
Calcarius ornatus	Chestnut-collared Longspur	Passerines	Passeriformes	Emberizidae
Melospiza lincolnii	Lincoln's Sparrow	Passerines	Passeriformes	Emberizidae
Melospiza melodia	Song Sparrow	Passerines	Passeriformes	Emberizidae
Pipilo chlorurus	Green-tailed Towhee	Passerines	Passeriformes	Emberizidae
Pipilo maculatus	Spotted Towhee	Passerines	Passeriformes	Emberizidae
Plectrophenax nivalis	Snow Bunting	Passerines	Passeriformes	Emberizidae
Pooecetes gramineus	Vesper Sparrow	Passerines	Passeriformes	Emberizidae
Rhynchophanes mccownii	McCown's Longspur	Passerines	Passeriformes	Emberizidae
Spizella pallida	Clay-colored Sparrow	Passerines	Passeriformes	Emberizidae
Hirundo rustica	Barn Swallow	Passerines	Passeriformes	Hirundinidae
Petrochelidon pyrrhonota	Cliff Swallow	Passerines	Passeriformes	Hirundinidae
Riparia riparia	Bank Swallow	Passerines	Passeriformes	Hirundinidae
Stelgidopteryx serripennis	Northern Rough-winged Swallow	Passerines	Passeriformes	Hirundinidae
Tachycineta bicolor	Tree Swallow	Passerines	Passeriformes	Hirundinidae
Tachycineta thalassina	Violet-green Swallow	Passerines	Passeriformes	Hirundinidae
Agelaius phoeniceus	Red-winged Blackbird	Passerines	Passeriformes	Icteridae
Euphagus cyanocephalus	Brewer's Blackbird	Passerines	Passeriformes	Icteridae
Molothrus ater	Brown-headed Cowbird	Passerines	Passeriformes	Icteridae
Xanthocephalus xanthocephalus	Yellow-headed Blackbird	Passerines	Passeriformes	Icteridae
Lanius excubitor	Northern Shrike	Passerines	Passeriformes	Laniidae
Oreoscoptes montanus	Sage Thrasher	Passerines	Passeriformes	Mimidae
Geothlypis trichas	Common Yellowthroat	Passerines	Passeriformes	Parulidae
Icteria virens	Yellow-breasted Chat	Passerines	Passeriformes	Parulidae
Sturnus vulgaris	European Starling	Passerines	Passeriformes	Sturnidae
Catherpes mexicanus	Canyon Wren	Passerines	Passeriformes	Troglodytidae
Cistothorus palustris	Marsh Wren	Passerines	Passeriformes	Troglodytidae
Sialia mexicana	Western Bluebird	Passerines	Passeriformes	Turdidae
Turdus migratorius	American Robin	Passerines	Passeriformes	Turdidae
Tyrannus tyrannus	Eastern Kingbird	Passerines	Passeriformes	Tyrannidae
Tyrannus verticalis	Western Kingbird	Passerines	Passeriformes	Tyrannidae
Pelecanus erythrorhynchos	American White Pelican	Pelicans, Cormorants, and Frigatebirds	Pelecaniformes	Pelecanidae
Phalacrocorax auritus	Double-crested Cormorant	Pelicans, Cormorants, and Frigatebirds	Pelecaniformes	Phalacrocoracidae
Aechmophorus clarkii	Clark's Grebe	Grebes	Podicipediformes	Podicipedidae
Aechmophorus occidentalis	Western Grebe	Grebes	Podicipediformes	Podicipedidae
Podiceps auritus	Horned Grebe	Grebes	Podicipediformes	Podicipedidae
Podiceps nigricollis	Eared Grebe	Grebes	Podicipediformes	Podicipedidae
Podilymbus podiceps	Pied-billed Grebe	Grebes	Podicipediformes	Podicipedidae

Table 1c. Observed Mammals

Species	Common Name	Type	Order	Family
Antilocapra americana	Pronghorn	Ungulates	Artiodactyla	Antilocapridae
Odocoileus hemionus	Mule deer	Ungulates	Artiodactyla	Cervidae
Vulpes vulpes	Red Fox	Carnivores	Carnivora	Canidae
Sylvilagus audubonii	Desert Cottontail	Lagomorphs	Lagomorpha	Leporidae
Neotamias minimus	Least Chipmunk	Rodents	Rodentia	Sciuridae

Table 1d. Potential Mammals

Species	Common Name	Type	Order	Family
Lynx rufus	Bobcat	Carnivores	Carnivora	Felidae
Puma concolor	Mountain Lion	Carnivores	Carnivora	Felidae
Mephitis mephitis	Striped Skunk	Carnivores	Carnivora	Mustelidae
Mustela frenata	Long-tailed Weasel	Carnivores	Carnivora	Mustelidae
Mustela vison	American Mink	Carnivores	Carnivora	Mustelidae
Spilogale gracilis	Western Spotted Skunk	Carnivores	Carnivora	Mustelidae
Taxidea taxus	American Badger	Carnivores	Carnivora	Mustelidae
Procyon lotor	Northern Raccoon	Carnivores	Carnivora	Procyonidae
Corynorhinus townsendii	Townsend's Big-eared Bat	Bats	Chiroptera	Vespertilionidae
Eptesicus fuscus	Big Brown Bat	Bats	Chiroptera	Vespertilionidae
Lasiurus cinereus	Hoary Bat	Bats	Chiroptera	Vespertilionidae
Myotis evotis	Long-eared Myotis	Bats	Chiroptera	Vespertilionidae
Myotis lucifugus	Little Brown Myotis	Bats	Chiroptera	Vespertilionidae
Myotis volans	Long-legged Myotis	Bats	Chiroptera	Vespertilionidae
Myotis yumanensis	Yuma Myotis	Bats	Chiroptera	Vespertilionidae
Lepus townsendii	White-tailed Jackrabbit	Lagomorphs	Lagomorpha	Leporidae
Thomomys talpoides	Northern Pocket Gopher	Rodents	Rodentia	Geomyidae
Dipodomys ordii	Ord's Kangaroo Rat	Rodents	Rodentia	Heteromyidae
Perognathus fasciatus	Olive-backed Pocket Mouse	Rodents	Rodentia	Heteromyidae
Microtus longicaudus	Long-tailed Vole	Rodents	Rodentia	Muridae
Microtus ochrogaster	Prairie Vole	Rodents	Rodentia	Muridae
Neotoma cinerea	Bushy-tailed Woodrat	Rodents	Rodentia	Muridae
Ondatra zibethicus	Common Muskrat	Rodents	Rodentia	Muridae
Onychomys leucogaster	Northern Grasshopper Mouse	Rodents	Rodentia	Muridae
Peromyscus maniculatus	Deer Mouse	Rodents	Rodentia	Muridae
Reithrodontomys megalotis	Western Harvest Mouse	Rodents	Rodentia	Muridae
Cynomys leucurus	White-tailed Prairie Dog	Rodents	Rodentia	Sciuridae

Table 1e. Potential Amphibians

Species	Common Name	Type	Order	Family
Anaxyrus woodhousii woodhousii	Rocky Mountain Toad	Toads and Frogs	Anura	Bufonidae
Pseudacris maculata	Boreal Chorus Frog	Toads and Frogs	Anura	Hylidae
Spea bombifrons	Plains Spadefoot	Toads and Frogs	Anura	Pelobatidae
Lithobates pipiens	Northern Leopard Frog	Toads and Frogs	Anura	Ranidae
Ambystoma mavortium	Tiger Salamander	Salamanders	Caudata	Ambystomatidae

Table 1f. Observed Reptiles

Species	Common Name	Type	Order	Family
Phrynosoma hernandesi	Greater Short-horned Lizard	Lizards	Squamata	Iguanidae

Table 1f. Potential Reptiles

Species	Common Name	Type	Order	Family
Pituophis catenifer sayi	Bullsnake	Lizards	Squamata	Colubridae
Thamnophis elegans vagrans	Wandering Gartersnake	Lizards	Squamata	Colubridae
Thamnophis sirtalis parietalis	Red-sided Gartersnake	Lizards	Squamata	Colubridae
Crotalus viridis	Prairie Rattlesnake	Lizards	Squamata	Crotalidae
Sceloporus graciosus graciosus	Northern Sagebrush Lizard	Lizards	Squamata	Iguanidae

Table 2—Wildlife Observation Field Notes

- February 3, 2014, 8:00 AM, 6° F, 0-5 mph, cloudy: Golden Eagle, Common Raven, coyote, Horned Larks, desert cottontails
- February 26, 2014, 8:45 AM, -1° F, 0-5 mph, clear: Common Ravens, desert cottontails
- March 13, 2014, 9:25 AM, 39° F, 0-5 mph, partly cloudy: Horned Larks, Mallards
- April 7, 2014, 8:10 AM, 36° F, 0-5 mph, partly cloudy: Blue-winged Teals, Mallards, Horned Larks, Brewer's Sparrow
- June 16, 2014, 7:40 AM, 55° F, 0-5 mph, clear: Horned Larks, Lark Sparrow, Loggerhead Shrike, Western Meadowlark, desert cottontail, Common Grackle, Brewer's Sparrows, Mourning Doves, Killdeers
- July 29, 2014, 7:30 AM, 75° F, 0-5 mph, clear: Horned Larks, Lark Sparrows, Rock Wrens, greater short-horned lizards, Common Ravens, American Kestrels, mule deer, coyote, Mourning Doves, desert cottontails, least chipmunks, Say's Phoebes
- September 26, 2014, 8:00 AM, 71° F, 0-5 mph, clear: Horned Larks, Common Ravens, Mountain Bluebirds, desert cottontails, American Kestrels, least chipmunks, greater short-horned lizard, Mourning Doves, Western Meadowlarks
- October 31, 2014, 8:00 AM, 34° F, 0-5 mph, partly cloudy: Desert cottontails, Common Ravens
- November 19, 2014, 8:15 AM, -8° F, 0-5 mph, partly cloudy: Desert cottontails, Mallards, Horned Larks
- December 12, 2014, 7:45 AM, 36° F, 0-5 mph, cloudy: Coyote, Common Ravens, desert cottontails
- January 20, 2015, 8:55 AM, 24° F, 0-5 mph, partly cloudy: Common Ravens, desert cottontail
- March 4, 2015, 9:30 AM, 14° F, 0-5 mph, clear: Horned Larks, desert cottontails
- June 14, 2024, 11:45 AM-3:45 PM, 88ºF-92ºF, 5-10 mph, partly cloudy: Western Meadowlarks, Horned Larks, Common Ravens, Brewer's Sparrows
- June 19, 2024, 10:00 AM-2:00 PM, 63ºF-86ºF, 5-10 mph, clear: Horned Larks, Mourning Doves, Common Nighthawk, Common Ravens, Least Chipmunk, Common Grackle, Western Meadowlarks, Brewer's Sparrows
- June 26, 2024, 12:00 PM-3:15 PM, 73ºF-85ºF, 5-10 mph, overcast: Western Meadowlarks, Horned Larks, Common Ravens, Brewer's Sparrows, Horned Toad
- June 27, 2024, 8:15 AM-3:15 PM, 63ºF-92ºF, 5-10 mph, partly cloudy: Western Meadowlarks, Horned Larks, Common Ravens, Brewer's Sparrows, Horned Toads
- Various monthly inspections: Pronghorn Antelope, Common Ravens, Nighthawks, Western Meadowlarks, Horned Larks, Brewer's Sparrows, Common Grackles, Desert Cottontails, Mourning Doves

APPENDIX VI—CULTURAL RESOURCES

INTRODUCTION

The Beckys study area covers 378.09 acres within Section 24 of Township 9 South Range 25 East and Sections 19 and 30 of Township 9 South Range 26 East. The area consists of federal and private lands and is approximately four miles southeast of Warren, Montana. The affected area includes 201.20 acres of proposed disturbance related to bentonite mining and associated activities.

CULTURAL INVENTORY

Cultural Resource Analysts, Inc. of Sheridan, Wyoming conducted a Class III cultural inventory for the Beckys project in early fall of 2023. The report was submitted to the BLM and SHPO.