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OCT 18 2016
MINERALS & MINING PROGRAM

AMERICAN COLLOID COMPANY

PERMITTING & RECLAMATION DEPARTMENT
P.O. Box 2010 • Belle Fourche, South Dakota 57717
PH. (605) 892-6950 • FAX (605) 892-6979

October 12, 2016

Mr. Eric Holm
Minerals and Mining Program
Department of Environment and Natural Resources
Joe Foss Building, 523 E. Capitol
Pierre, SD 57501

RE: Submittal of Request for Determination of Special, Exceptional, Critical, or Unique Lands and Notice of Intent to Operate for the Stateline Project Area

Dear Mr. Holm:
Enclosed is American Colloid Company's Request for Determination of Special, Exceptional, Critical or Unique Lands and the Intent to Operate form and associated document for the Stateline project area. Provision of this document is required as part of the mine permit application process.

A copy of this document is being concurrently submitted to individuals in five other offices for review as directed on the Request for Determination form and indicated in the cc list below. A copy of the document has also been placed on file at the Butte County Register of Deeds for public availability per correspondence included in the document.

Copies of Certified Return Receipts from the other five agency recipients will be mailed to you when they become available.

If you have any questions, please contact me at 605-892-7178 or melody.smith@mineralstech.com.

Sincerely,

Melody Smith
Environmental Specialist
Performance Materials
American Colloid Company
Division of Minerals Technologies Company

cc: Mr. Lucas Lentsch: Department of Agriculture, Resource Conservation and Recovery
Mr. Jay Vogt: Department of Tourism, State Historical Society
Mr. Michael Fosha: Department of Tourism, Archaeological Research Center
Mr. Stan Michaels: Department of Game, Fish and Parks
Mr. Jim Hagen: Department of Tourism, Office of Tourism
Butte County Register of Deeds

SD EForm - 0475 V2

Department of Environment and Natural Resources
Minerals and Mining Program
523 E Capitol Ave
Pierre, SD 57501-3182
Telephone: (605) 773-4201 Fax: (605) 773-5286

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REQUEST FOR DETERMINATION SPECIAL, EXCEPTIONAL, CRITICAL, UNIQUE LANDS AND NOTICE OF INTENT TO OPERATE

Name of Operator: American Colloid Company

Office Address: 2870 Forbs Avenue
Hoffman Estates, IL 60192

Telephone: (847) 851-1702

Local Address: PO Box 2010
Belle Fourche, SD 57717

Telephone: (605) 892-7178

Legal Description

T10N R1E: portions of Sections 18, 19, and 20 (see attached legal description)

County: Butte

Name and Address of Surface Owner

L&S Cattle Company: comprised of
Robert Shear, 17828 Prairie Winds Lane, Belle Fourche, SD 57717
Todd Larsen, 17816 Prairie Winds Lane, Belle Fourche, SD 57717

Name and Address of Mineral Owner

L&S Cattle Company: Robert Shear, 17828 Prairie Winds Lane, Belle Fourche, SD 57717/Todd Larsen, 17816 Prairie Winds Lane, Belle Fourche, SD 57717.
Smith Family Trust, P.O. Box 537, Belle Fourche, SD 57717.
McLeod Scientific, 2107 Highland Court, Bozeman, MT 59715

Name and Address of Surface Owners Within 500 Feet of the Proposed Mining Operation

L&S Cattle Company: Robert Shear, 17828 Prairie Winds Lane, Belle Fourche, SD 57717/Todd Larsen, 17816 Prairie Winds Lane, Belle Fourche, SD 57717.
Ben and Lori Garman, 61 US Hwy 212, Belle Fourche, SD 57717
Thomas and Melba McCoy Trust, 18830 McCoy Road, Belle Fourche, SD 57717

I declare and affirm under the penalties of perjury that this claim (petition, application, information) has been examined by me, and to the best of my knowledge and belief, is in all things true and correct.

Signature: Melody Smith

Title: Environmental Specialist Date: October 12, 2016

FOR DEPARTMENT USE ONLY

The land described in this Request for Determination of Special, Exceptional, Critical, or Unique Lands and Notice of Intent to Operate ( ) is ( ) is not eligible for inclusion on the list of special, exceptional, critical, or unique lands.

_____ Date _____

Secretary, Department of Environment and Natural Resources

Operator Appeal Date _____

Intervenor Contest Date _____

The land described in this Request for Determination of Special, Exceptional, Critical, or Unique Lands and Notice of Intent to Operate ( ) is ( ) is not eligible for inclusion on the list of special, exceptional, critical, or unique lands.

_____ Date _____

Chairman, SD Board of Minerals and Environment

LEGAL DESCRIPTION: PERMIT AREA

The following legal descriptions identify lands under private ownership that will be included in a Large Scale Mining Permit allowing for continued bentonite mining along the ridge extending northwest of current operations in the Shear Clarkson West permit area to the WY/SD state line.

The permit area is approximately 732 acres of which approximately 346 acres are defined as potential disturbance area.

The permit area occurs in the following portions of Township 10 North Range 1 East (T10N R1E), Butte County, South Dakota:

Section 18:
- W1/2NW1/4
- W1/2E1/2NW1/4
- N1/2SW1/4
- N1/2SW1/4SW1/4
- SE1/4SW1/4SW1/4
- SE1/4SW1/4
- W1/2NW1/4SE1/4
- S1/2SE1/4

Section 19:
- N1/2NE1/4NW1/4
- SE1/4NE1/4NW1/4
- N1/2NE1/4
- N1/2SW1/4NE1/4
- SE1/4NE1/4

Section 20:
- NW1/4NW1/4NW1/4
- S1/2NW1/4NW1/4
- S1/2NW1/4
- SW1/4SW1/4NE1/4
- N1/2NW1/4SW1/4
- NE1/4SW1/4
- NW1/4NW1/4SE1/4

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MINERALS & MINING PROGRAM

STATELINE MINE

Request for Determination of Special, Exceptional, Critical or Unique Lands and Notice of Intent

for
Portions of Sections 18-20 T10N R1E
Butte County, South Dakota

American Colloid Company
P.O. Box 2010
Belle Fourche, SD 57717
Phone: 605-892-7178
Fax: 605-892-3178

October 2016

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- SE1/4NE1/4

Section 20:
- NW1/4NW1/4NW1/4
- S1/2NW1/4NW1/4
- S1/2NW1/4
- SW1/4SW1/4NE1/4
- N1/2NW1/4SW1/4
- NE1/4SW1/4
- NW1/4NW1/4SE1/4

SURFACE AND MINERAL OWNERSHIP

Surface Owners within Permit Area

L & S Cattle Company (100%) = Robert Shear and Todd Larsen

Robert Shear
17828 Prairie Winds Lane
Belle Fourche, SD 57717

Todd Larsen
17816 Prairie Winds Lane
Belle Fourche, SD 57717

Mineral Owners within Permit Area

Robert Shear
17828 Prairie Winds Lane
Belle Fourche, SD 57717

Todd Larsen
17816 Prairie Winds Lane
Belle Fourche, SD 57717

Smith Family Trust
P.O. Box 537
Belle Fourche, SD

McLeod Scientific, LLC
% Bruce McLeod
2107 Highland Ct
Bozeman, MT 59715

Surface Owners within 500 Feet of Permit Area

L & S Cattle Company = Robert Shear and Todd Larsen

Robert Shear
17828 Prairie Winds Lane
Belle Fourche, SD 57717

Todd Larsen
17816 Prairie Winds Lane
Belle Fourche, SD 57717

Ben N. and Lori L. Garman
61 US Hwy 212
Belle Fourche, SD 57717

Thomas and Melba McCoy Trust
% Thomas and Melba McCoy
18830 McCoy Road
Belle Fourche, SD 57717

Part I: GENERAL DESCRIPTION OF THE TYPE OF MINING OPERATION PROPOSED AND HOW IT WOULD BE CONDUCTED

ARSD 74:29:10:03 (5)

American Colloid Company (ACC), a division of Minerals Technologies, Inc., is submitting a Request for Determination in preparation for submittal of a mine permit application. ACC intends to apply for a large scale mine permit for the Stateline project area to expand bentonite mining into an area northwest of existing operations along the same ridge feature.

The project is located approximately 12 miles northwest of Belle Fourche, SD and approximately 0.50-miles north of U.S. Highway 212, adjacent to the Wyoming/South Dakota state line. The mine permit area will encompass approximately 732 acres in portions of Sections 18-20, T10N R1E in southwestern Butte County, SD. Access to the area is currently from Prairie Winds Lane; all mining related access will occur on a haul road that will be constructed on the Wyoming side of the border as permitted through the Wyoming Department of Environmental Quality – Land Quality Division (WDEQ-LQD). Surface and mineral ownership within the project area are is all private. See the Legal Description and Ownership section of this document for additional information.

Approximately 346 acres of the comprehensive 732-acre project area is anticipated to be disturbed under the planned action. Disturbance activities would include soil stripping, overburden removal, and mineral extraction as well as surface disturbances for supporting activities such as campsites, topsoil and subsoil stockpiles and overburden placement or borrow areas, sediment ponds, and other required activities.

Bentonite mining, reclamation, bond release and subsequent removal of that area from the existing mine permit previously occurred on a portion of the project area. This area may be mined for deeper material or support surface disturbing activities; for the purposes of this document and the pending mine permit application it is addressed as new permit area along with the rest of the project area.

ACC conducts open pit surface mining in a sequence of small pits excavated to expose and remove the bentonite deposit. Soils are stripped, overburden is removed, and material is extracted from a pit, then the process continues in successive pits. As the pits progress through a sequence, reclamation begins at the first pit and follows the active mining as overburden is back cast from the new pit into the previous pit and soils stripped from new pits are respread on mined and recontoured areas. Soils and overburden may be direct hauled and placed on areas being reclaimed, or stockpiled for later use, depending upon the location and need.

Equipment that may be used for various processes includes scrapers, dozers, excavators, front end loaders, blades, haul trucks and water trucks.

Mined material will be hauled to ACC's bentonite processing plant approximately 10 miles to the northwest in Colony, WY.

Mining of this area is anticipated to be completed within 15 years, depending upon product demand and economics.

Part II: DEFINING IF LAND IS SPECIAL, EXCEPTIONAL, CRITICAL, OR UNIQUE

ARSD 74:29:10:03 (6) and SDCL 45-6B-33.3

The Stateline project is located along a ridge system on which four other ACC mine permits providing baseline inventories and analysis have been procured in South Dakota (Permit 6 approved 1983, Kudlock Permit #469 approved in 2001, and the Shear Clarkson East Permit #471 and Shear Clarkson West Permit #472 both approved in 2006). All of these project areas occur within an 8-mile stretch along the northwest/southeast trending ridge. All existing permits are on file with the SD Department of Environment and Natural Resources (DENR).

Environmental baseline inventories do not indicate that the land covered by the Stateline project area is special, exceptional, critical, or unique. The project area does not appear to be ecologically fragile or differ significantly from that of the surrounding area. Plant and wildlife species in the vicinity are similar to those observed in the general bentonite region of northeastern Wyoming and the Belle Fourche, South Dakota area. These species are adapted to withstand a wide range of fluctuations in temperature, moisture, sunlight, and wind.

It is not expected that the proposed additional mine operations associated with the Stateline project will have a strong influence on the total ecosystem.

Vegetation

Vegetation communities in the Stateline mine project area were evaluated in 2015 by M. Smith of American Colloid. Vegetation communities were evaluated and mapped, resulting in the following communities common to the general area:

- Mixed Grass Prairie
- Agricultural Field (previously mined and reclaimed area)
- Riparian Woodland (along Crow Creek)
- Silver Sagebrush
- Big Sagebrush

Non-vegetation community occurrences consisted of Water (in the form of stock reservoirs), Marsh (stock reservoir fringes or tails), and Disturbed areas (roads, ranch sites) which are also common to the general area.

The Stateline project area vegetation community occurrence (by acres) within both the project and disturbance boundaries are summarized in Table 1 and cover sampling results are provided in Table 2. Vegetation community occurrences within the Stateline project area are similar to adjacent and general area communities.

Table 1: Stateline Community Acreage Summary

Community Identification	Project Area Boundary (acres)	Disturbance Boundary (Acres)
Mixed Grass Prairie (MGP)	536	223
Reclamation – Agriculture (RECA-AG)	123	121
Riparian Woodland (RW)	33	0
Big Sagebrush (BS)	17	2
Silver Sagebrush (SS)	15	0
Marsh (M)	0.3	0
Water (W)	7	0
Disturbed (D)	1	0.3
TOTAL	**732.3**	**346.3**

Cover sampling was conducted along randomly placed transects in Mixed Grass Prairie (15 transects), Riparian Woodland (3 transects), and Agricultural-Reclamation (hay field) area (15 transects) communities within the project area boundary. The Mixed Grass Prairie community type was also dominant on the three mine permits occurring southeast of the Stateline area and within the general area. The Riparian Woodland community occurs along the Crow Creek channel and outside of the planned Disturbance area. The Agricultural areas (hay fields) occur periodically throughout the area; the Stateline community supports a combination of native (similar to adjacent Mixed Grass Prairie) vegetation and introduced grasses and alfalfa. Table 2 presents Mixed Grass Prairie cover sampling results for the Stateline project area.

Table 2: Summary of Average Absolute Canopy Cover for the Stateline Project and Nearby Permits

Absolute Values (%)	Stateline Project Area (%)
Vegetation Canopy Cover	66
Total Cover	82
Bare Ground	18

The Mixed Grass Prairie community type commonly supports a dominance of western wheatgrass, buffalo grass, blue grama, and needle-and-thread grass all of which are common grasses on native rangeland within the area.

No plants species listed by the U. S. Fish and Wildlife Service (USFWS) as threatened or endangered were observed within the Stateline project area, or within nearby permit areas.

The Stateline project area has primarily been utilized as rangeland for cattle grazing, with incidental use as wildlife habitat and associated hunting. The area is commonly used for spring calving, and grazing pressure varies across the area with heavier use on the

southeast portion near the L&S Cattle Company ranch headquarters and lighter use on the distal northwest end of the project area.

Soils

A soil inventory was completed across the Stateline project area in July 2015 by Mr. Dave Buscher, certified professional soil scientist and professional geologist with Buscher Soil and Environmental. Natural Resource Conservation mapped was reviewed, followed by on site assessments that yielded delineation of nine soil mapping units across the area:

1) Absted – Slickspots complex, 1 to 5 percent slopes
2) Kyle taxadjunct, 1 to 10 percent slopes
3) Moorhead, 0 to 3 percent slopes
4) Marvan, warm phase, 1 to 5 percent slopes
5) Reclaimed Lands (Absted – Marvan), 5 to 20 percent slopes
6) Reclaimed Pits, 10 to 20 percent slopes
7) Stetter, channeled, 0 to 3 percent slopes
8) Wetland Soils (hydric soils), 0 to 3 percent slopes
9) Winler taxadjunct, 5 to 20 percent slopes

The first eight listed soils are deep soils derived in shale alluvium, while the last one is a moderately deep soil derived in shale alluvium/shale residuum.

Topsoil and subsoil suitability for reclamation was determined for each of the soils within the project area. Estimated depths and volumes of suitable soil for each map unit component, the proportion of each map unit component, and soil limiting factors for plant growth are provided in Table 3. The estimates were based on site-specific soil profile descriptions, WDEQ-LQD topsoil suitability guidelines for mine reclamation, and physical/chemical soils data obtained from field data and laboratory analysis.

Recommended soil salvage is based on the best/most suitable soil available. Topsoil generally includes the surface horizon, which is a natural seed bank and has higher levels of organic matter and nutrients and more suitable soil structure than the underlying soil. Subsoil is occurs below topsoil and generally lacks the enhanced seed bank and enhanced nutrient/structure of topsoil but has characteristics that support plant growth and generally includes root matter. The primary factor limiting soil salvage depth within the Stateline project area is high sodium adsorption ratios (SARs) where salvage depths are not to bedrock.

Table 3: Soil Depths, Volumes and Limitations for Map Units

Map Unit	Composition	% of Map Unit	Total Depth of Soil (in)	Average Depth Suitable Topsoil/Subsoil (in)	Limitations for Suitable Soil Salvage (driver for cut off depth)	Acres in Survey Area	Acres in Proposed Disturbance Area	Volume of Suitable Topsoil/Subsoil in Survey Area (yd^3)	Volume of Suitable Topsoil/Subsoil in Proposed Disturbance (yd^3)
AsA	Absted	75	>60	3/17*	clay texture/ high SAR	64	39	19,360/ 146,275	11,795/ 89,135
	slickspots	25	>60	0/17*	salts, high SAR				
D	Disturbed	100	0	0	gravel road	1	0	0/ 0	0/ 0
KlB	Kyle taxadjunct	100	>60	4/56	clay texture	251	133	134,980/ 1,889,750	71,525/ 1,001,340
MhA	Moorhead	100	>60	3/57	clay texture	31	1	12,505/ 237,565	405 7,665
MvA	Marvan	100	>60	4/13	clay texture/high SAR	178	41	95,725/ 311,105	22,050/ 71,660
RLC	Reclaimed lands (Absted – Marvan)	100	>60	4/9	clay texture/high SAR	101	96	54,315/ 122,210	51,625/ 116,160
RPC	Reclaimed pits	100	>60	8/0	clay texture/high SAR and rock fragments	32	32	34,415/ 0	34,415/ 0
StA	Stetter, channeled	90	>60	4/56	clay texture	41	1	19,845/ 277,815	485/ 6,775
	water	10	0	0	water				
WIC	Winler taxadjunct	100	20-40	5/32	clay texture/bedrock	14	2	9,410/ 60,230	1,345/ 8,605
WsA	Wetland soils	---	---	ND	---	13	1	ND	ND
W	Water	---	---	0	water	6	0	0	0
TOTAL						**732**	**346**	**380,555/ 3,044,950**	**193,645/ 1,301,340**

*use if subsoil is limited (volume summaries assume use of this material).

An estimated total of 1,494,985 yds^3 of soil will be available for salvage and subsequent respread within the disturbance boundary. The total is comprised of an estimated 193,645 yds^3 of topsoil and 1,301,340 yds^3 of subsoil. Assuming no losses from soil handling and storage, this would yield 2.6 inches of topsoil and 17.5 inches of subsoil for uniform respread across the disturbance boundary area, including all disturbed acres and use of marginal quality subsoil from Abstad-slickspot areas. However, reclamation (including soils respread) occurs concurrently with mining and the majority of soils salvaged will be directly respread onto recontoured areas rather than stockpiled. Direct haul soil respread depths will not be uniform across the disturbed area, but will be variable depending upon the depth salvaged.

Soils mapped within the Stateline project area are not special or unique to the general area.

Water Resources

No special, exceptional, critical, or unique water resources occur within the Stateline Project Area.

Groundwater was not encountered during extensive sampling to the bottom of material occurrence, and is not anticipated to be affected by the project.

Surface water resources consist of an ephemeral reach of the Crow Creek drainage and other weak ephemeral drainages with on-channel reservoirs. These types of water features are common within the general area. Crow Creek, the primary dry ephemeral drainage on the north side and associated on-channel reservoirs occur outside of the defined project disturbance area.

The Crow Creek drainage occurs along the southern portion of the project area. The creek is incised and predominantly dry, running only in response to significant precipitation or snow melt events. It supports isolated depressional ponding areas that contain water for varying periods of time after runoff causes channel flow or directly provides water to the depressional areas.

Vegetated dry ephemeral drainages also occur, predominantly along the north side of the project area. These drainages also support flow in response to significant precipitation or snow melt events and support isolated depressional ponding areas that may contain water for a period of time after flow. On-channel reservoirs utilized for stock water are also supported by this system.

Reservoirs occurring on dry ephemeral drainages receive water in response to channel flow events, sheet flow from adjacent areas, or snow accumulation within the features. The reservoirs are of varying size, some of which have breached berms but retain small

depressional ponding areas. The reservoirs retain water seasonally or year long, depending upon water availability and reservoir size and depth.

Groundwater will not be impacted by the Stateline Project.

No drinking water wells are located within the project area.

Wildlife

As noted, the baseline wildlife survey area (permit area and 0.5-mile perimeter) for the Stateline project is almost entirely comprised of upland grasslands, agricultural fields/pastures, and treed areas. These habitats are typical of the region, and no special, exceptional, critical, or unique wildlife features have been identified.

Due to the existing long-term data available for the general project area through monitoring completed for adjacent permitted projects, the South Dakota Game, Fish and Parks (SDGFP) indicated via email correspondence (dated 2/4/2015) to ACC that baseline surveys for nesting raptors and bald eagle (*Haliaeetus leucocephalus*) winter roosts were the only targeted wildlife survey requirements for the Stateline Project. Those efforts encompassed the proposed permit area and a 0.5-mile perimeter, per SDGFP guidance. Data for all other vertebrate species within the survey area were collected through incidental sightings recorded by biologists with Great Plains Wildlife Consulting, Inc. (GPWC, formerly Thunderbird Wildlife Consulting, Inc.; Gwyn McKee, Project Manager, Banner, WY) and ACC personnel during each site visit to the project area.

GPWC was contracted by ACC to perform the required wildlife surveys for the proposed Stateline Project. The SDGFP has identified GPWC as an approved contractor for such surveys. Initial survey efforts for this project were conducted in conjunction with ongoing monitoring of adjacent properties in 2013, with targeted annual monitoring continuing each year through 2016. The most recent detailed results from raptor monitoring within the survey area are available in the 2016 Raptor Monitoring Summary, on file with the SDGFP. That information plus summaries for other wildlife species will be included in the baseline wildlife report to be prepared for the mine permit application for this project. A brief overview of wildlife-related information is also provided below.

Four historical raptor nest sites have been identified within the Stateline project wildlife survey area. Two red-tailed hawk (*Buteo jamaicensis*) nests within the same territory are present along the southwestern boundary of the permit area. Additionally, two historical golden eagle (*Aquila chrysaetos*) nest sites within a single territory are located along the extreme eastern edge of the 0.5-mile survey perimeter; only one of those two nests was intact in 2016. The hawk pair fledged three young in 2016. The eagle pair fledged one young, but that successful nesting effort occurred at a different nest site within the territory which is located outside the Stateline project survey area. None of the four

known nest sites within the wildlife survey area are expected to be physically impacted by project activities.

The USFWS removed the bald eagle from the Federal list of threatened and endangered species in July 2007. South Dakota removed the bald eagle from its State list of such species in August 2015, though it is still tracked as a species of interest by the State's Natural Heritage Program (SDNHP). No bald eagles were observed within the Stateline Project survey area during winter monitoring conducted annually from late 2013 through early 2016, though one or two eagles were seen as occasional winter visitors elsewhere along the Crow Creek drainage during that period.

Other raptor species have also been recorded perched or hunting in the Stateline project survey area (permit and 0.5-mile perimeter) or at adjacent ACC properties since monitoring began for this project in 2013. Those species include the great horned owl (*Bubo virginianus*), rough-legged hawk (*Buteo lagopus*), prairie falcon (*Falco mexicanus*), American kestrel (*Falco sparverius*), turkey vulture (*Cathartes aura*), and northern harrier (*Circus cyaneus*). All raptor species documented in the survey area to date are common in the region. Of those, only the golden eagle and prairie falcon are tracked by the SDNHP.

Three big game species were documented in the vicinity of the Stateline project area during previous baseline surveys conducted for adjacent properties: pronghorn (*Antilocapra americana*), mule deer (*Odocoileus hemionus*), and white-tailed deer (*O. virginianus*). The pronghorn was the most common big game species observed in the area during those surveys, though they were not abundant. Mule deer were seen in upland habitats at times, though with relatively low frequency and in small numbers. Sightings of white-tailed deer occurred along Crow Creek as it flows along the southern boundary of the proposed permit area and in pastures adjacent to the creek.

Other mammals confirmed in the general project area during targeted surveys or as incidental sightings over the last few years include the coyote (*Canis latrans*), red fox (*Vulpes vulpes*), bobcat (*Felis rufus*), badger (*Taxidea taxus*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), cottontail (*Sylvilagus* spp.), white-tailed jackrabbit (*Lepus townsendii*), porcupine (*Erethizon dorsatum*), beaver (*Castor canadensis*), black-tailed prairie dog (*Cynomys ludovicianus*), deer mouse (*Peromyscus maniculatus*), northern grasshopper mouse (*Onychomys leucogaster*), thirteen-lined ground squirrel (*Spermophilus tridecemlineatus*), and diggings from northern pocket gophers (*Thomomys talpoides*). However, those sightings did not necessarily occur within the survey area for the Stateline project, itself."

The Stateline project is within the overall range of a variety of upland game bird species, including the greater sage-grouse (*Centrocercus urophasianus*) (hereafter, sage-grouse), plains sharp-tailed grouse (*Tympanuchus phasianellus*), wild turkey (*Meleagris gallopavo*), and mourning dove (*Zenaida macroura*), though the project area itself is not necessarily occupied by those species. Other introduced upland game bird species could also be present in the region. Sage-grouse are further discussed below.

As noted, the Stateline project baseline survey area is almost entirely comprised of upland grasslands, agricultural fields/pastures, and treed areas; none of which are considered as typical habitat for sage-grouse[1] in western SD. Furthermore, no known grouse leks of either species have been documented in or near the Stateline survey area, nor have grouse (birds or sign) been recorded using the general area during multiple baseline inventories conducted in similar habitats at adjacent ACC projects over the years. The nearest known sage-grouse lek (Middle Creek) is approximately 3.75 miles southeast of the proposed permit area. Given the habitats within the baseline survey area, the lack of documented leks in or immediately near the area, and the absence of grouse use at nearby projects with similar habitats over multiple years of surveys and across all seasons, no grouse surveys of any nature (i.e., leks, broods, or winter use) were required for the Stateline project. Nevertheless, all personnel watched for and recorded any sightings or signs of use by upland game birds during each site visit. Due to the long-term history documenting the lack of grouse use in the Stateline project area, these species did not receive any further consideration for this project.

Results from breeding bird surveys conducted on adjacent ACC properties in recent years indicate that the horned lark (*Eremophila alpestris*) and western meadowlark (*Sturnella neglecta*) were the two most prevalent species, outnumbering all other counts by at least a factor of two. The horned lark, meadowlark, and vesper sparrow (*Pooecetes gramineus*) were often the only species to occur in all habitats sampled for nearby baseline projects. The grasshopper sparrow (*Ammodramus savannarum*) and killdeer (*Charadrius vociferus*) were also documented during previous baseline surveys, though they were not seen in every habitat type. This is to be expected, as both species require more specialized habitat communities.

Numerous other avian species have been recorded in or near the Stateline project area over the last several years of annual monitoring. Some wide-flying species like turkey vultures, falcons (*Falco* spp.), swallows (*Hirundo* spp.), and American crows (*Corvus brachyrhynchos*) were observed in a variety of habitats as they passed over the area. Several avian species were predictably associated with the riparian corridor along Crow Creek and with various small stock reservoirs scattered throughout the area. Species found only in those habitats included waterfowl, warblers, woodpeckers, and other species associated primarily with trees and/or water. All of these species are common to the region.

Only two species each of amphibians and reptiles have been recorded in the general vicinity of the Stateline Project over the years, though not necessarily in that specific project area itself. Sightings and audio detection of the boreal chorus frog (*Pseudacris triseriata*) and northern leopard frog (*Rana pipiens*) were generally restricted to Crow Creek and some ponds beyond the Stateline Project area. The western painted turtle (*Chrysemys picta*) and western plains garter snake (*Thamnophis radix*) also have been

[1] South Dakota Department of Game, Fish and Parks (SDGFP). 2008. Greater Sage-grouse Management Plan South Dakota 2008-2017. South Dakota Department of Game, Fish and Parks, Pierre, South Dakota, USA.

documented in the general vicinity over the years. As noted, surface water resources within the Stateline Project area are relatively limited (often seasonally present) and of marginal quality.

No current Federal or State threatened or endangered vertebrate species have been observed by GPWC biologists or ACC personnel within the Stateline Project baseline wildlife survey area.

Overall, 12 vertebrate species currently tracked by the SDNHP (2016[2]) have been recorded in or near the Stateline wildlife survey area during baseline inventories or annual monitoring completed for ACC projects in recent years: the golden eagle, bald eagle, prairie falcon, burrowing owl (*Athene cunicularia*), ferruginous hawk (*Buteo regalis*), great blue heron (*Ardea herodias*), common merganser (*Mergus merganser*), hooded merganser (*Lophodytes cucullatus*), long-billed curlew (*Numenius americanus*), black-crowned night heron (*Nycticorax nycticorax*), black tern (*Childonias niger*), and northern mockingbird (*Mimus polyglottos*). However, only the golden eagle and great blue heron were documented within the Stateline project area (permit and 0.5-mile perimeter) itself over the years.

Eagle presence in the Stateline project area was discussed with other raptors, above. Individual great blue herons were infrequently observed hunting in a pond, perched in a tree, or flying over the project area. Most of the other tracked species were observed in the general vicinity only once or twice over the years. One pair each of burrowing owls and ferruginous hawks have historically nested in the area, though those efforts occurred well beyond the wildlife survey area for the Stateline project. No nesting pairs of either species have been detected in the vicinity in recent years. The other species historically documented in the general area were typically seen only during spring migration periods, but not necessarily every year.

As noted, the Stateline project area is comprised of common habitat types that support a variety of wildlife species known to frequent the region either as year-round residents, or as common seasonal residents or migrants. Analysis of the project area indicates that no significant impacts to wildlife are anticipated from mine operations associated with the Stateline project.

[2] South Dakota Natural Heritage Program (SDNHP). 2016. Rare, threatened, and endangered animal species tracked by the SDNHP. South Dakota Dept. of Game, Fish, and Parks. Available at https://gfp.sd.gov/wildlife/threatened-endangered/rare-animal.aspx.

Part III: ENVIRONMENTAL BASELINE SURVEYS DO NOT INDICATE THAT THE PROPOSED PERMIT LAND HAS SIGNIFICANT SCENIC, CULTURAL, HISTORIC, ARCHAEOLOGICAL, TOPOGRAPHIC, GEOLOGIC, ETHNOLOGIC, SCIENTIFIC, OR RECREATIONAL NATURE

Scenic

The Stateline mine project area is located along a northwest/southeast trending ridge system that supports four other ACC mine permits to the southeast of the Stateline project area. The Stateline project area is currently utilized as pasture for livestock grazing, with a portion also utilized as a hay field for dryland haying when conditions are appropriate. The terrain is similar to that in the general area, and does not exhibit unique scenic or aesthetic qualities.

The project area occurs along a ridge on the northeast side of Crow Creek, with the nearest boundary approximately 0.7-miles northeast of Highway 212. Portions of the operation will be visible to motorists and ranchers in the area but is not anticipated to have a significant impact due to periodic nature of mining in a given area and the practice of conducting reclamation concurrently with the mining process.

Residences nearest the project area are those of Robert Shear and Todd Larsen to the east, and Ben and Lori Garman to the west, all of which occur approximately 0.3 – 0.4 miles and within line of sight from the nearest portion of the Stateline mine project area boundary.

Cultural, Historic and Archaeological

Llano Consultants (principal investigator, Jack Savini, Casper, WY) was contracted by ACC to conduct an extensive field survey of the proposed permit land with attention to any archaeological, historic, ethnologic, or cultural remains.

An inventory was completed as a contiguous block over the project area occurring in portions of Sections 18-20, T10N-R1E. Where previous mining and reclamation had completely disturbed the ground surface, no pedestrian inventory was performed (approximately 300 acres). The remaining 430 acres was surveyed for cultural resources to Class III level standards.

Records searches were conducted through the Wyoming Cultural Records Office in Laramie, Wyoming and the South Dakota State Historical Society (SDSHS) in Rapid City , SD in June 2015 to identify any known sites within or adjacent to the project area. No surveys or known sites were recorded on the adjacent WY lands; five sites were previously identified within the project boundary according to South Dakota records. The SDSHS recommended the previously identified sites be further evaluated for listing on the National Register of Historic Places. Evaluation of these sites yielded that one site has

been completely destroyed and is in an area now supporting an alfalfa hay field, while the remaining four sites were determined to be "not eligible" for listing on the National Register of Historic Places.

No new cultural sites or isolates were discovered during the Class III inventory conducted in August and September 2015.

The complete CONFIDENTIAL cultural survey report was submitted directly by Mr. Savini to Mr. Eric Holm with the SD DENR and Mr. Michael Fosha of the SD Archaeological Research Center via US Postal Service on October 5, 2016.

Topographic

The project area lies along a northwest/southeast-trending ridge. Topography ranges from relatively flat on the ridge top and along the primary drainages (Crow Creek and unnamed dry ephemeral drainage) to moderately sloping along the ridge slopes. Elevations within the project area range from approximately 3,170 - 3,272 feet.

Topography in the area is similar to that of the surrounding area; no significant or unique topography occurs.

Geologic

Bentonite mining has occurred in the Belle Fourche area for over 50 years. Bentonite clay is a fine-grained rock composed mainly of montmorillonite minerals. The formation of bentonite was an in-situ alteration of volcanic ash; material was ejected into the atmosphere by volcanic activity and deposited as sediment in a marine environment. The resulting alteration is the material we call bentonite.

The State Line project area is the eastern flank of a small anticline that is near the larger LaFlamme Anticline, a northwest plunging asymmetrical anticline that extends for roughly 14 miles, from T8N R1E in Butte County, South Dakota to T56N R61W in Crook County, Wyoming. Proposed mining in the State Line project area targets the F and G bentonite beds in the Belle Fourche Shale and Greenhorn Formation exposed along the eastern flank of the small anticline. The stratigraphic positions of the F and G bentonite beds relative to the Belle Fourche Shale and Greenhorn Formation are not straightforward and are difficult to predict. The boundary between the two geologic formations is not uniform. Consequently, the material overlying both bentonite beds may be all Belle Fourche Shale, all Greenhorn Formation, or most often, will include both formations.

The Belle Fourche Shale and Greenhorn Formations, along with the associated F and G bentonite beds, are common within the general area and do not provide an special or unique features.

Overburden characteristics were assessed by review of six drill holes within the project area. The drill holes ranged in depth from 34 to 66 feet and all six included material from both the Greenhorn and Belle Fourche Shale Formations. G bed bentonite bed was encountered in five of the six holes at depths ranging from four inches to 34 feet with the encountered bentonite bed ranging in thickness from 1.5–2.0 feet. F bed bentonite was encountered in five of the six drill holes at depths ranging from 51 to 66 feet with the bentonite bed encountered ranging in thickness from 2-3 feet.

Ethnologic

There are no known ethnologic concerns on the proposed project.

Scientific

Results from baseline water resource, vegetation, soils, and wildlife inventories conducted in the Stateline project area indicated that no unique scientific characteristics occur. Additionally, no current Federal or State threatened or endangered plant or wildlife species have been documented in that area.

No water wells occur within the project area.

Recreational

The primary land use on the project area is livestock grazing, and no unusual or aesthetic features occur that would suggest the area be classified as a recreational site. The permit boundary includes an ephemeral reach of Crow Creek with trees occurring on the floodplain, and another dry ephemeral (herbaceous) drainage with reservoirs and seasonal depressional ponding areas, but there areas are located outside of the project disturbance boundary and will not be affected by mining.

Recreational use is limited to deer and antelope hunting which is restricted by the private landowners.

Reclamation activities will restore the area to grass pastureland with possible inclusions of hay fields or to a two-track trail/ranch roads if desired by the landowners.

PHOTO OVERVIEW OF PROJECT AREA

Photo Point P1, facing east across marsh area (outside of Disturbance boundary).

Photo Point P2: facing south across Agriculture (hay field) and Mixed Grass Prairie to Riparian Woodland (tree area) along Crow Creek.

Photo Point P3: Mixed Grass Prairie, facing southeast toward the hay field and Riparian Woodland.

Photo Point 4: Prairie dog burrows in Mixed Grass Prairie (new, only a couple of holes).

Photo Point 5: facing west along Riparian Woodland and across Crow Creek.

Photo Point 6: facing south from Mixed Grass Prairie to Riparian Woodland along Crow Creek.

Photo Point 7: Facing southwest along Riparian Woodland corridor.

Photo Point 8: facing east along Riparian Woodland (silver sagebrush and big sagebrush communities in upper left).

RECEIVED
OCT 18 2016
MINERALS & MINING PROGRAM

AMERICAN COLLOID COMPANY

PERMITTING & RECLAMATION DEPARTMENT
P.O. Box 2010 • Belle Fourche, South Dakota 57717
PH. (605) 892-6950 • FAX (605) 892-6979

October 12, 2016

Register of Deeds
839 5th Avenue
Belle Fourche, SD 57717

RE: Stateline Project Area Request for Determination of Special, Exceptional, Critical, or Unique Lands and Notice of Intent to Operate

To Register of Deeds Personnel:

American Colloid Company is intending to submit a Large Scale Mine Permit application to the South Dakota Department of Environment and Natural Resources (DENR) in Pierre, SD in the near future. As part of this process, we are required to submit the attached *Request for Determination of Special, Exceptional, Critical, or Unique Lands and Notice of Intent to Operate* document to the DENR and to concurrently make it available for public review through posting it at your office.

The referenced document is enclosed; please make it available for public viewing in your office.

When the document is approved by the DENR and the public review period is closed, we will return to retrieve the document so it does not remain on your shelves indefinitely.

Please sign the statement below, as required by the DENR.

The Butte County Register of Deeds Office has the above referenced document available for public viewing.

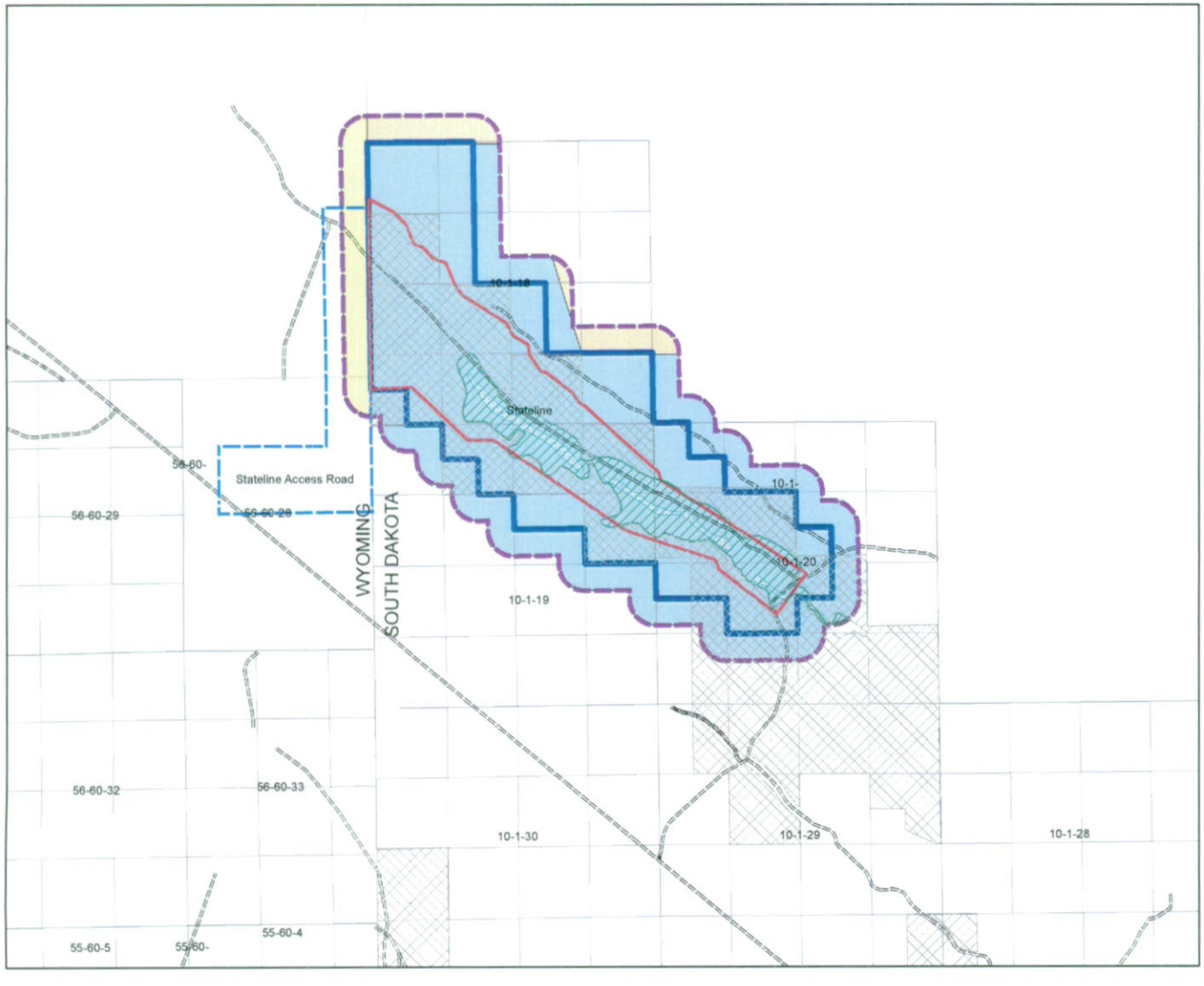
Julie Brunner - deputy — 10/13/16
Signature ***Date***

Thank you for your time and assistance!

Sincerely,

Melody Smith

Melody Smith
Environmental Specialist
Performance Materials
American Colloid Company
Division of Minerals Technologies Company



Legend

- Stateline Mine Request for Determination Area
- Stateline Access Road Area (WY Permit Pending)
- Stateline Mine Disturbance Boundary
- Project Area Buffer - 500 Ft
- Permit 6 Update & Original
- Previously Mined, Reclaimed, and Bond Released (Permit 6)
- Pits Previously Mined under Permit 6
- Roads
- Ben and Lori Garman - Surface Owner
- L & S Cattle Company - Robert Shear and Todd Larson (Surface Owner)
- Thomas & Melba McCoy Trust (Surface Owner)

10-1-18 = Township/Range/Section

N
W E
S

Stateline Mine Project Area: Surface Ownership		
American Colloid Company P.O. Box 2010 Belle Fourche, SD 57717 Butte County, SD with overlap into Crook County, WY		
Permit No: Legal Description of Project Area: Portions of Sections 18-20, T10N R1E (SD)		
Map Scale: 1 in = 2,000 ft Contour Interval: N/A	Date: 10/3/2016 Revised:	Map: 1 of 1 Page:
USGS 7.5 Minute Quad Map: Background: N/A Coordinates: NAD 1983 State Plane Wyoming East Feet		